

Internet and Socio-Cultural Transformations in Information Society



Ministry of Culture of the Russian Federation
Federal Agency for Press and Mass Communications
Government of the Sakhalin Region
Commission of the Russian Federation for UNESCO
UNESCO / UNESCO Information for All Programme
Russian Committee of the UNESCO Information for All Programme
Interregional Library Cooperation Centre

Internet and Socio-Cultural Transformations in Information Society

Proceedings of the international conference
(Yuzhno-Sakhalinsk, Russian Federation,
8–12 September 2013)

Moscow
2014

Financial support for this publication is provided by the Ministry of Culture of the Russian Federation, the Federal Agency for Press and Mass Communications of the Russian Federation and the Government of the Sakhalin Region

Internet and Socio-Cultural Transformations in Information Society. Proceedings of the international conference (Yuzhno-Sakhalinsk, Russian Federation, 8–12 September 2013). – Moscow: Interregional Library Cooperation Centre, 2014. – 280 p.

The book includes communications by the participants of the international conference “Internet and Socio-Cultural Transformations in Information Society” (Yuzhno-Sakhalinsk, Russian Federation, 8–12 September 2013) which has become an attempt to develop a comprehensive understanding of the direction, dynamics, character, scope, driving forces, content and results of socio-cultural changes under the impact of the Internet and other ICTs as they are spreading worldwide.

World experts express their views of the Internet as a socio-cultural phenomenon, as well as of the nature and character of contemporary socio-cultural processes, possible directions and ways of the humanization of information society, development of strategies, policies and practices of knowledge societies building. Special attention is paid to the issues of multilingualism promotion in cyberspace and to the role of libraries in the digital world.

The authors are responsible for the choice and presentation of facts and for the opinions expressed, which are not necessarily those of the compilers.

ISBN 978-5-91515-061-3

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PREFACE

International conference *Internet and Socio-Cultural Transformations in Information Society* took place in Yuzhno-Sakhalinsk, Russian Federation, on 8–12 September 2013 within the framework of the Russian chairmanship in the UNESCO Information for All Intergovernmental Programme. This first-ever international forum on the topic has become an attempt to develop a comprehensive understanding of the direction, dynamics, character, scope, driving forces, content and results of socio-cultural changes under the impact of the Internet and other ICTs as they are spreading worldwide.

The conference's highlight was an interdisciplinary approach to discussing all these issues with the participation of both theoreticians and practical experts on information and communication, researchers in the social sciences and humanities – philosophers, sociologists, cultural anthropologists, historians and political scientists, as well as political and community activists, executives, creative writers, journalists and representatives of libraries, museums, archives, universities and other institutions of culture, science, education, civil society and private sector from 46 countries of the world.

The conference was organized by the Ministry of Culture of the Russian Federation, the Federal Agency for Press and Mass Communications of the Russian Federation, the Government of the Sakhalin Region, UNESCO / UNESCO Information for All Programme, the Commission of the Russian Federation for UNESCO, the Russian Committee of the UNESCO Information for All Programme and the Interregional Library Cooperation Centre.

Greetings to the conference were sent by UNESCO Director-General Irina Bokova, Russia's Minister of Foreign Affairs Sergey Lavrov and Deputy Minister of Culture of the Russian Federation Grigory Ivliyev, Chairman of the Foreign Affairs Committee of the Federation Council of the Russian Federation Mikhail Margelov.

Governor of the Sakhalin Region Alexander Khoroshavin, Head of the Federal Agency for Press and Mass Communications of the Russian Federation Mikhail Seslavinsky and Executive Secretary of the Commission of the Russian Federation for UNESCO Grigory Ordzhonikidze spoke at the Conference Opening Gala, presided by Evgeny Kuzmin, Chairman of the Intergovernmental Council and Russian Committee for the UNESCO Information for All Programme, President of the Interregional Library Cooperation Centre.

The first plenary meeting (moderated by the Deputy Prime Minister of the Sakhalin Region Irina Trutneva) included communications by Indrajit Banerjee, Director of the UNESCO Knowledge Societies Division; Aleksei Volin, Deputy Minister of Communications and Mass Media of the Russian Federation; Sinikka Sipilä, President of the International Federation of Library Associations and Institutions (IFLA); Evgeny Kuzmin, and Ludovit Molnar, President of the Slovak National Commission for UNESCO.

In debating conference participants pointed out the contradictory nature of social and cultural changes forced by the development of the Internet in modern society, bringing both new opportunities for human development and previously unknown risks of dehumanization associated with the development of new technologies.

In particular, the following fundamental principles were formulated:

- The Internet is not a technology of limited functionality, but rather a global systemic phenomenon with a tendency to self-development and producing a broad range of socio-cultural effects. On the one hand, Internet development and penetration lead to significant socio-cultural transformations. On the other hand, it is the societal development tendencies of the past decades that have stimulated the Internet and ICT penetration in all spheres of life.
- Discourses related to the concepts and policies of building information society and knowledge societies should embrace the understanding of ICTs as an essential but not sufficient component of converging nano-, bio-, information and cognitive (NBIC) sciences and technologies, being of paramount importance for modern technological development and able to impact global socio-cultural processes.
- The Internet defines the process and forms of culture mediatization. The Internet and new media have become a major space for group and interpersonal communications, generating new cultural meanings and ways of interaction. In particular, the following socio-cultural impacts should be noticed:
 - ▷ The Internet creates a basic environment for the socialization of new generations, changing their values and ways of thinking.
 - ▷ A culture gap between generations is thus getting deeper. Traditional mechanisms of cultural reproduction are broken down. Lagging behind in mastering new technologies, the older generation is losing its status as a carrier of valuable cultural experience.

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- ▷ A phenomenon of new escapism is coming into being which implies diving into the virtual space to avoid solving real world problems.
 - ▷ Logocentric, narrative way of thinking is losing its dominance, getting supplemented and partly replaced by “clip” mentality characterized by a lower degree of logical connectivity, criticality, consistency.
 - ▷ Consciousness immersed in cyberspace largely loses the ability for supra-situational activities and long-term planning. As a result traditional models of intellect-enabled basic processes of social control are defied.
 - ▷ Internet development is an integral part of a global challenge to national cultures and national languages.
- Against this background the promotion of competencies (skills, knowledge and attitudes), united by the term “media and information literacy” (MIL) gains importance. MIL ensures responsible, safe and critical use of networks for free access, production and exchange of information and knowledge within all linguistic, cultural and social groups.
 - Traditional copyright institutions and legislation should be updated in the context of digital environment to provide free access to information necessary for living and receiving quality education, as well as for scientific progress.
 - Studies of contemporary socio-cultural processes under the impact of the Internet and other ICTs should be based on interdisciplinary and inter-sectoral approaches.

During the conference sessions of three thematic sections and two roundtables were held.

The first section presented participants’ vision of the Internet as a socio-cultural phenomenon:

- *The Phenomenon of Internet in the Context of Macroevolutionary Culture Dynamics* (Andrey Pelipenko, Chief Research Associate of the Research and Development Centre, Moscow Psycho-Social University (Russian Federation));
- *Digital Initiates: Digital Natives in the Coming Age of “Internet of Everything”* (László Karvalics, Chairman, Hungarian Committee for

the UNESCO Information for All Programme; Associate Professor, University of Szeged (Hungary);

- *21st Century Man in Cyberspace: Infinite Possibilities and New Perils* (Yekaterina Shapinskaya, Chief Research Associate, Russian Institute for Cultural Research (Russian Federation));
- *Internet Development: Devastating Consequences* (Leonid Konovalov, Senior Regional Strategic Account Manager, Xerox CIS (Russian Federation))
- *Investigating the Effects of Using the Internet on Cultural Attitudes of Shiite Clergymen* (Hamid Abedi Doyomi, Researcher, Allameh Tabatabaiee University in Tehran (Iran));
- *The Internet and Its Influence on Quality and Authenticity of Audiovisual Documents* (Dietrich Schüller, Vice-President, Intergovernmental Council for the UNESCO Information for All Programme (Austria));
- *Ethical Aspects of Communication in Information Society: the Case of Malawi* (Emmanuel Kondowe, Acting Deputy Executive Secretary, Malawi National Commission for UNESCO (Malawi));
- *Political Functions of the Internet: Russian Perception* (Oksana Dmitriyeva, Director of the Institute of Humanitarian Technologies for Social Computing, Sholokhov Moscow State University for the Humanities (Russian Federation)).

The participants of the second thematic section argued on the nature and character of contemporary socio-cultural processes:

- *From Cultural Consumers to Cultural Prosumers: Citizens' Co-Creation of Cultural Changes in Information Society* (Susana Finquelievich, Director of the Research Programme on Information Society, National Council for Scientific and Technical Research, University of Buenos Aires (Argentina));
- *Society Virtualization and Glam-Capitalism* (Dmitry Ivanov, Professor, Saint-Petersburg State University (Russian Federation));
- *The Internet, Global Governance, and the Surveillance State in a Post-Snowden World* (Michael Gurstein, Executive Director, Centre for Community Informatics Research, Development and Training (Canada));

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- *Effect of Cross-Cultural Communication on Socio-Cultural Transformations in ASEAN Information Society* (Pornntip Yenjabok, Assistant professor, Kasetsart University (Thailand));
 - *Public Sector Information: Openness or Universality* (Maciej Gron, Director of Department of Information Society, Ministry of Administration and Digitalization (Poland));
 - *Regularities in the Behaviour of the Russian Internet Audience* (Alexander Sharikov, Professor, National Research University – Higher School of Economics (Russian Federation));
 - *Socio-Cultural Changes in Pakistan Due to the Proliferation and Impact of the Internet and other ICTs* (Nazeer Hussain, Director of IT/Regional Centre, Higher Education Commission (Pakistan)).

The third section *On the road to knowledge societies* provided an opportunity to share opinions on the possible directions and ways of the humanization of information society, development of strategies, policies and practices of knowledge societies building:

- *Digital Natives, Netizens, eCommunities. Civitas Solis or a Nightmare?* (Alfredo Ronchi, Secretary, European Commission – MEDICI Framework of Cooperation; Professor, University of Milan (Italy));
- *Addressing Ethical Challenges of Information Society* (Andrejs Vasiljevs, Member of the Bureau, Intergovernmental Council for the UNESCO Information for All Programme; Chairman of the Board, Tilde Company (Latvia));
- *The Digital Revolution and the Need of National and International Information Policies and Strategies* (Winnie Vitzansky, Member, Danish National Commission for UNESCO (Denmark)).

Within each section a broad range of other issues related to the conference topics were discussed.

The communications at the plenary meeting of the second day focused on the perspectives of the character and dynamics of the ICT impact on society, as well as on the state-of-the-art in the field of copyright:

- *Reflecting on Information Society* (Yuri Chyorniy, Deputy Director, Institute of Scientific Information for Social Sciences, Russian Academy of Sciences (Russian Federation));

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- *Impact of Information and Communication Technologies on Society* (Renaldas Gudauskas, Director General, National Library of Lithuania);
 - *The Great Copyright Swindle* (Jarosław Lipszyc, President, Modern Poland Foundation (Poland));
 - *Information Society and the New Copyright Concept* (Vladimir Kharitonov, Executive Director, Online Publishers Association (Russian Federation)).

At the roundtable *Linguistic Diversity in the Digital World* the following communications were made:

- *Towards a Multilingual Cyberspace* (Daniel Prado, Executive Secretary, MAYAA World Network for Linguistic Diversity (Argentina));
- *Redefining Digital Divide Around Information Literacy and Linguistic Diversity in a Future Context of Access Provision* (Daniel Pimienta, Director, Networks and Development Foundation FUNREDES (Dominican Republic));
- *Web-Based Vulnerable Peoples – Focusing on Language* (Katsuko Tanaka, Assistant Professor, Nagaoka University of Technology (Japan));
- *Web Fonts for Multilingual Information Community* (Sergey Bobryshev, Commercial Director, ParaType Ltd (Russian Federation));
- *Activities of the Centre to Advance Multilingualism in Cyberspace* (Liudmila Zaikova, Head of the Centre to Advance Multilingualism in Cyberspace, North-Eastern Federal University (Russian Federation));
- *Moldavian Cultural Code. How Moldavian Culture Presents Itself at the General Eurasian Space* (Constantin Rusnac, Secretary General, National Commission of the Republic of Moldova for UNESCO (Republic of Moldova)).

Another roundtable was dedicated to the role of libraries in the digital world. The participants were greeted by Evgeny Kuzmin, Chair of the Intergovernmental Council and the Russian Committee for the UNESCO Information for All Programme; Sinikka Sipilä, IFLA President, and Valentina Malysheva, Director of the Sakhalin Regional Research Library (Russian Federation).

The following communications were presented and discussed:

- *Academic Libraries as Facilitators of the Digital Scholarship: Defining and Designing Online Research Support* (Maria Carme Torras Calvo, Governing Board Member and Division Chair, IFLA; Library Director, Bergen University College (Norway));
- *Union Catalogue of Russian Libraries* (Boris Loginov, Director General, National Information Library Centre (LIBNET); Director, Central Scientific Medical Library of the Sechenov First Moscow State Medical University (Russian Federation));
- *On the Way from Information Society to Knowledge Society: Searching for New Priorities and Modes of Interaction* (Piotr Lapo, President, Belarusian Library Association; University Librarian, Belarusian State University (Belarus));
- *Youth Library Behaviour* (Irina Mikhnova, Director, Russian State Youth Library (Russian Federation)).

The conference closing plenary meeting ended up with an impressive speech by Aharon Aviram, Chairman of the Israeli Committee for the UNESCO Information for All Programme, Professor of the Ben-Gurion University (Israel). He proposed a «green policy» concept as an alternative of digital development.

Plenary meetings, sections and roundtables were moderated by:

- Evgeny Kuzmin, Chair, Intergovernmental Council and Russian Committee for the UNESCO Information for All Programme; President, Interregional Library Cooperation Centre (Russian Federation);
- Irina Trutneva, Deputy Head of Government of the Sakhalin Region (Russian Federation);
- Jarosław Lipszyc, President, Modern Poland Foundation (Poland);
- Vladimir Nechayev, Rector, Sholokhov Moscow State University for the Humanities (Russian Federation);
- Ludovit Molnar, President, Slovak National Commission for UNESCO; Professor, Slovak University of Technology (Slovakia);
- Tatiana Murovana, Executive Secretary, Russian Committee for the UNESCO Information for All Programme (Russian Federation);
- Indrajit Banerjee, Director of the UNESCO Knowledge Societies Division (UNESCO);
- Verena Metze-Mangold, Vice President, German National Commission for UNESCO (Germany);

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- Irina Gonyukova, Minister of Culture of the Sakhalin Region (Russian Federation);
 - Andrejs Vasiljevs, Member of the Bureau, Intergovernmental Council for the UNESCO Information for All Programme; Chairman of the Board, Tilde Company (Latvia);
 - Daniel Prado, Executive Secretary, MAYAA World Network for Linguistic Diversity (Argentina);
 - Vladimir Firsov, President, Russian Library Association; Deputy Director-General, National Library of Russia (Russian Federation);
 - Rosa Berdigaliev, President, Kazakhstan Library Association; Director of the Library, Kurmangazy Kazakh National Conservatory (Kazakhstan);
 - Alfredo Ronchi, Secretary, European Commission – MEDICI Framework of Cooperation; Professor, University of Milan (Italy);
 - László Karvalics, Chairman, Hungarian Committee for the UNESCO Information for All Programme; Associate Professor, University of Szeged (Hungary);
 - Winnie Vitzansky, Member, Danish National Commission for UNESCO (Denmark);
 - Susana Finguelievich, Director of the Research Programme on Information Society, National Council for Scientific and Technical Research, University of Buenos Aires (Argentina).

Conference rich cultural programme included visiting the Sakhalin Regional Art Museum, the Regional Museum of Local History, the Museum of Anton Chekhov's *Sakhalin Island*; tours to places of interest in Yuzhno-Sakhalinsk, in particular, to a CNG plant; performances by Nivkh, Russian and Korean ensembles. The conference ended with a classical music concert by the Symphony Orchestra of the Ministry of Defense of the Russian Federation conducted by Valery Halilov, with participation of Sergei Tarasov (piano) and Hibla Gerzmava (soprano).

The conference final document, the Sakhalin Declaration on Internet and Socio-Cultural Transformations, has become the first international document ever to highlight not only positive, but also negative consequences of the ever growing use of the Internet and other ICTs.

MESSAGES TO CONFERENCE PARTICIPANTS

Remarks of Irina Bokova, UNESCO Director-General

Excellencies,

Ladies and Gentlemen!

I am deeply honoured to welcome all of you to this international conference on Internet and Socio-Cultural Transformations in Information Society, organized in this most unique and historical part of the Russian Federation – the Sakhalin region.

I wish to start by expressing my thanks to the Ministry of Culture of the Russian Federation and its head, Mr. Vladimir Medinsky, to the Federal Agency for Press and Mass Communications headed by Mr. Mikhail Seslavinsky, and to the Commission of the Russian Federation for UNESCO and its leaders – Chairman of the Commission, Minister of Foreign Affairs of the Russian Federation, Mr. Sergey Lavrov, and Mr. Grigory Ordzhonikidze, the Commission's Executive Secretary – for their active and effective support to the Russian Committee of the UNESCO Information for All Programme.

This support has allowed the Committee to launch and implement numerous and outstanding international projects, which are of great importance for UNESCO.

I wish also to express my appreciation to the Government of the Sakhalin Region and the Governor, Mr. Alexander Horoshavin, for the tremendous support in hosting this international conference.

And finally, my special thanks go to Mr. Evgeny Kuzmin, Chairman of the Russian Committee and Intergovernmental Council of the UNESCO Information for All Programme – for his tireless work to strengthen this UNESCO programme, to assist UNESCO Member States in developing and implementing the policy frameworks and capacities for building inclusive and equitable knowledge societies.

The Internet is having a profound transformational impact on all aspects of society, so this international, inter-disciplinary conference is timely and relevant to understand these transformations in our socio-cultural life.

It is critical to map and analyse the dynamic and complex nature of changes we are witnessing in the age of the Internet and digital technology, in order to take stock of developments over the past decade or more and to harness better these new technologies for sustainable knowledge societies.

UNESCO is deeply engaged in key Internet related programmes, which we are now enhancing to ensure that all dimensions of the Internet, Information and Communication Technologies (ICTs) are fully integrated into UNESCO's mandate.

In this respect, strengthening freedom of expression in cyberspace is essential, to ensure that everyone's voice is heard and that the Internet becomes a fully open and participatory platform for dialogue and access to information and knowledge.

UNESCO has also been a leader in the use of ICTs in education and our flagship programmes include the Open Educational Resources programme (OER) and the Open Access to knowledge initiative (OA).

Our policy guidelines in these areas are being adopted in a number of countries around the world.

We are also actively engaged in promoting multilingualism in cyber space, and IFAP organized an important international conference on this subject two years ago in Yakutsk, Russian Federation.

Cultural diversity is a pillar of knowledge societies, and we are continuing to advocate for the promotion of cultural and linguistic diversity on all media platforms.

For UNESCO, universal access to information and knowledge is an essential pre-condition for inclusive development and empowerment.

Ladies and Gentlemen,

I hope that this gathering of experts from around the world will help shape new partnerships for addressing the challenges that lie ahead and help us capitalise on the tremendous potential that the Internet and ICTs offer.

I will be following closely the outcomes of this meeting with a view to ensuring that your recommendations are reflected in UNESCO's work and disseminated through our global networks.

I wish you fruitful and productive deliberations.

Greeting by Alexander Khoroshavin, Governor of the Sakhalin Region

Dear friends!

I send my sincere greetings to the participants of the International Conference “Internet and Socio-Cultural Transformations in Information Society.”

This forum is taking place within the frameworks of the UNESCO Intergovernmental Information for All Programme which is aimed at advancing universal access to information and knowledge for the sake of development.

It is for the first time ever that an event of such a purport is taking place in the Sakhalin Region and we are happy to welcome guests from all over the world and to bring our contribution to the implementation of IFAP. A delegation of our island region took part last February in Paris in the international event “Information and Knowledge for All, Emerging Trends and Challenges.”

That meeting dealt with such topical issues as accessibility and storage of information, development of multilingualism in cyberspace, information literacy and ethics. A useful and constructive exchange of opinions took place in all those subjects, and I rest certain that this work has contributed to elaboration of new approaches in the development of the informational space in the Sakhalin Region.

On the one hand, our island region is an outpost of our state on its eastern border, and on the other hand – it is a disseminator of social and cultural opinions and traditions, of economic interests of our country in the Asian Pacific Region, so we can and must play a most notable part in this process. In order to perform this task, it is important to take account of the latest trends, to borrow advanced practice in the field of digital technologies for efficient business, in social dialogue, in national state government, and in raising the living standard of the population.

One most important area of this work is implementation of the project “Electronic Government,” which makes it possible for citizens to receive state services in digital form. As early as next year already, those services will be available to 90 percent of the population in the Sakhalin Region. Advanced modern technologies are used for major political events, such as election campaigns, and for implementation of citizens’ legislative initiatives. There exists a special web-site where all Russian people can vote in favor of, or against, draft laws of federal purview.

The significant technological breakthrough, the new opportunities provided by the Internet, could not help but influence the social and cultural life of our society. The global network has shaped new communicational and behavioral patterns, has opened a broad access to information resources, to distance learning, has made it possible for people to interpret and to translate knowledge, to manage business, to resolve problems of daily life. We must also state at the same time that Internet affects people's habits, preferences and motivations, it dilutes the traditional views of life, dilutes the basic human and cultural values.

All these sorts of transformation call for serious study and analysis, for identification of the possible risks. It is important to understand as to what kind of effect is being produced by the information and communication technologies upon the social-cultural field, and to elaborate coordinated action in order to minimize the dangers that are lurking in the cyberspace. I am certain that this conference will make a substantial contribution to the search for optimal solutions in this problem field.

I wish to all the participants fruitful work, interesting discussions, useful professional contacts and pleasant impressions as you come to know the Sakhalin Region!

**Address by Gennady Gatilov,
Deputy Minister of Foreign Affairs of the Russian Federation**

I am happy to address the organizers and participants of this conference!

The theme of this conference is particularly timely. The landslide development of information and communication technologies (ICT), together with the development of external observation systems and improving technologies for control over communications, including social networks – is causing new developments in the character and in the system of social relations, thus considerably limiting the sphere of man’s private life. This is but corroborated by recently discovered facts of monitoring citizens’ private lives and use of electronic communications by governments in various countries.

Internet and other ICTs, being powerful tools of influence, have come to be used for “remodeling” the political map of the world, for changing political regimes and governments. The Twitter and Facebook revolutions have proved that social networks may serve as efficient means of stimulating mass action.

The conference in Yuzhno-Sakhalinsk represents an attempt to understand the humanitarian challenges faced by the information society. It is called upon to become a contribution to be made by the UNESCO Information for All Programme (IFAP), and by Russia, to the realization of the UNESCO mission as a laboratory of ideas, a centre for information exchange, and a catalyst of international cooperation in the field of implementation of decisions taken by the World Summit on the Information Society.

You, the specialists who are present here, are called upon to make a tangible contribution to these efforts.

I rest certain that this conference will serve as a means of stronger cooperation towards the study of ICT and will become yet another step towards building a new and just information society.

I wish you fruitful work and all the best.

**Address of Grigory Ivliyev,
Deputy Minister of Culture of the Russian Federation**

Allow me, on behalf of the Ministry of Culture of the Russian Federation, to extend my greeting to all participants and organizers of this conference which has gathered leading experts from various countries and continents, from various sectors of science, culture, education, communications and information.

I am certain that the theme of the conference is highly important and topical to all countries of the world – both developed and developing – and as we see Internet and other information and communication technologies entering our life, this issue is bound to grow ever more important. The task which is faced by the entire world, and which may be the predominant one, consists in overcoming the existing contradictions and finding a reasonable balance between globalization, on the one hand, and preservation of cultural diversity and national identity, on the other hand; the task of finding a balance between freedom of self-expression, for which the Internet has opened gigantic opportunities, and the responsibility and the need for providing for our collective and individual security, the need for protection against alien intrusion into our private life, so that we can organically inscribe the great cultural heritage of the past and the luxury of lively human communication into the life of new generations which came to be formed during the era of computer communications.

The conference agenda is rich and many-faceted. Its rich content and the broad scope of its subjects, the clearly expressed interdisciplinary approach to discussion of the problems, must provide a good basis for reaching a qualitatively new level of understanding of the acute challenges of our times.

Russia has been supporting the UNESCO Information for All Programme throughout its entire existence. We are of the opinion that its strategic priorities – access to information, information preservation, information literacy, information ethics, information for development – are those areas of growth and spheres of activity, in which it is necessary to encourage and to develop international cooperation.

This is already the fourth major international conference to be organized by the Russian Committee of the UNESCO Information for All Programme with the support of the Ministry of Culture of the Russian Federation, the Federal Agency for Press and Mass Communications, and the Commission of the Russian Federation for UNESCO, within the frameworks of the Russian chairmanship in the Intergovernmental Council of the Programme.

I want to express special appreciation to the Government of the Sakhalin Region for their assistance and their active participation in the organization of this conference.

The three previous forums which were held in Moscow and in Yakutsk, devoted to problems of preservation of electronic information, promotion of multilingualism in cyberspace, and to media and information literacy, brought together, the three of them, representatives from about 100 countries and were able to elaborate three important international documents all of which are frequently cited all over the world.

I wish you that your work be as fruitful, I wish you meaningful and highly professional discussions, pleasant stay and rich cultural impressions of the Sakhalin Island, visiting which at least once in a lifetime is a dream of virtually every inhabitant of Russia.

**Message of Mikhail Margelov,
Chairman of the Committee for Foreign Affairs of the
Federation Council of the Federal Assembly
of the Russian Federation**

Dear colleagues!

This conference, organized within the frameworks of the Russian chairmanship in the Intergovernmental Council of the UNESCO Information for All Programme, gives us an example of timely attention on the part of the political and expert community to the issue of information security in the contemporary world. This issue is included today into the agendas of most important international negotiations and lively discussions by most prominent politicians of the entire world. The latest events in the Middle East and in other regions of the world have quite graphically been showing the level of the influence exerted by the Internet and by other similar technologies on the minds and hearts of people belonging to most diverse confessions, cultures and social strata. We should not stay aside from undertaking a detailed analysis of the challenges of our time, which may create prerequisites for further development of mankind. This is exactly why I am convinced that the work of this conference will make a most important contribution to the process of discussion of the described problem. I wish you success and productive discussion.

PLENARY SESSIONS

The IFLA Trend Report

Sinikka SIPILÄ

President, International Federation of Library
Associations and Institutions (IFLA);
Secretary General, Finnish Library Association
(Helsinki, Finland)

It is a great pleasure and honour for me to represent IFLA at the UNESCO Information for All Conference and talk on the IFLA Trend Report.

The IFLA Trend Report isn't the first study to consider the impacts of new technologies on our global information environment. How citizens, sectors and governments adapt in the Internet age is a question that is being considered in many contexts, with many voices, around the world.

Our intention in compiling the IFLA Trend Report was to do more than add another static report to the digital archive, looking at the impacts of the Internet and technology on a particular sector. We wanted to do something to harness the unique perspective IFLA can offer, as an international voice for library & information associations. The Trend Report isn't looking at libraries in the information environment – it's looking across the society. The Trend Report is the starting point for libraries to work back from, and consider how they fit into the new global economy.

The IFLA Trend Report is perhaps more aptly described as the IFLA Trend 'Resource' – a comprehensive, and ever evolving, repository of information and forum for discussion among IFLA members. With the Trend Report platform, we want to initiate a conversation with IFLA members around the world: how are information trends affecting libraries in Russia, as compared with libraries in Singapore or Kenya or Lithuania? The IFLA Trend Report being launched here today is just the tip of the iceberg – and it's now for you to explore what's under the water.

Time line

Over the past 12 months a number of components have been drawn together to develop the Trend Report:

- In November 2012, IFLA commissioned a comprehensive literature review surveying recent studies and reports on emerging trends. This was completed in January 2013.
- In February and March 2013, a panel of ten key experts prepared submissions based on these materials and participated in a round table meeting in Mexico City.
- In May and June 2013, the experts continued to discuss and expand on the trends via the online discussion forum, with input from a wider pool of experts.
- In July 2013, all of these different resources were drawn together to produce the web platform and *Riding the Waves or caught in the tide? Insights from the IFLA Trend Report*.

Among the experts who contributed to the Trend Report were Olivier Crepin-Leblond, Chairman, Internet Corporation for Assigned Names and Numbers (ICANN), At-large Advisory Committee (ALAC), Anriette Esterhuysen, CEO, Association for Progressive Communications (APC), Divina Frau-Meigs, Professor, Université du Paris III: Sorbonne Nouvelle, and many others.

Riding the waves or caught in the tide? Insights from the IFLA Trend Report synthesizes the enormous amount of information that has gone into discussions over the past twelve months. It's a snapshot of the IFLA Trend Report, and can be downloaded at: www.ifla.trends.org.

From the discussions with our experts, the Trend Report extracts five high level trends emerging in the global information environment. The IFLA Trend Report looks in detail at these trends which will change our information environment.

Trend 1. New technology will expand access to information, but also present barriers. An ever-expanding digital universe will bring a higher value to information literacy skills such as basic reading and competence with digital tools. People who lack these skills will face barriers to inclusion in a growing range of areas.

The nature of new online business models will heavily influence who can successfully own, profit from, share or access information content in the future.

Trend 2. Online learning will transform and disrupt traditional education.

The rapid global expansion in available online education resources will make learning opportunities more abundant, cheaper and more accessible. There will be an increased value on lifelong learning and more recognition of non-institutional and informal education.

Trend 3. Boundaries of data protection and privacy will be redefined.

Expanding data sets held by governments and companies will support the advanced profiling of individuals, while sophisticated methods of monitoring and filtering communications data will make tracking those individuals cheaper and easier. Serious consequences for individual privacy and trust in the online world could be experienced.

Trend 4. Hyper-connected societies will recognise and empower new voices.

More opportunities for collective action are realised in hyper-connected societies – enabling the rise of new voices and promoting the growth of single-issue political movements at the expense of traditional parties. Open government initiatives and access to public sector data will lead to more transparency and citizen-focused public services.

Trend 5. Our global information economy will be transformed by new technologies.

Proliferation of hyper-connected mobile devices, networked sensors in appliances and infrastructure, 3D printing and language-translation technologies will transform the global information economy. Existing business models across many industries will experience creative disruption spurred by innovative devices that help people remain economically active in later life from any location.

We may look at these trends and think: “And? So what? We knew that already”. But these trends are evolving rapidly and set to collide, or already colliding, with one another – with reverberations that ripple through the services, and identify libraries around the world.

We’ve been looking at the questions that arise for libraries at the points in which these trends come into conflict. We tried to ask ourselves: what impacts could these trends have on the way libraries operate currently and into the future?

For me, when I look at the trends, I see that they all have a connection to technology. Even if the trends are education or privacy or heritage, they are all shaped by “technology” in some way. In this respect the Trend report could really boil down to how evolving technology impacts our lives, our societies. Technology is the key connector.

Let’s take a look at some of the collision points for libraries.

Google Glass

Google Glass is a hot topic right now. For those of you who might not be aware of Google Glass, it's a tiny wearable computer attached to a pair of glasses, with information projected on its lenses. It has a camera, is connected to the Internet at all times and is voice activated.

Mobile, and increasingly wearable technology like Google Glass is redefining the boundaries of privacy.

According to Cisco's Global Mobile Data Traffic Forecast 2011–2016 by 2016 there will be over 10 billion mobile devices connected to the Internet, with the Middle East and Africa alone experiencing a 104% increase in mobile data traffic.

The next generation of wearable computers, like Google Glass, have the computer turned on, and its camera turned outwards, all the time. Putting that in the library setting for a moment: a user walking into a library wearing Google Glass has, in a fashion, put all their fellow library users under surveillance. Everything he or she sees is captured by its lens.

What does the library do about it? Libraries position themselves as 'safe' spaces for the benefit of the whole community. Can this be maintained once Google Glass is in the reading room?

Or, to put it another way, as new generations of technology users embrace wearable tech, will they even care about privacy?

Personal data in libraries

Let's look at another scenario.

The online economy is increasingly built on 'information mining' – using personal data like our most visited websites, online conversations, google searches, purchasing habits, our geo data, to produce better targeted goods and services.

Let's put this in a library setting. A couple of years ago, librarians at the University of Huddersfield realised that analysing the electronic trail left every time a student swiped into the library, borrowed a book or looked something up online, and putting it together with other student records could not only help to improve library services but also answer more fundamental questions about the way students learn. Was use of the library, for example, related to how well students performed academically? The answer proved emphatic. By plotting

library usage against academic achievement they discovered that students who did not use the library were more than seven times more likely to drop out of their degree than those who did.

Universities around the world are waking up to the value of student data. From applications of student data, universities can develop better course modules, term timetables and ways of responding to the particular needs of different students.

Is there a point, though, at which too much information about our students is being collected? How do libraries manage this treasure trove of personal data? What about their obligations to their students/users?

Things get even murkier when libraries are acting as conduits for access to digital content subscriptions and e-books owned by publishers.

E-books

Reading an e-book today reveals a lot about you – how fast you read, your favourite parts, your spending habits. This kind of data is immensely valuable to authors, publishers and distributors producing and selling new content. If libraries are providing publishers with a rich pool of personal information on user reading habits, have they become part of the business model?

The algorithm has all the answers – so what's a library?

A recent study by the Oxford Internet Survey found that “trust in people providing Internet services” exceeds trust in other major institutions including newspapers, corporations and government.

Today, automated search technologies limit information available to us based on our search habits, language and geographical location. Can the results returned by our search engines really be trusted?

Discovery

A big question libraries around the world have been discussing is discovery.

How can libraries and educators ensure students and users are accessing the information they need, and not simply the information their amalgamated data tells the algorithm they're looking for?

This gives rise to more unsettling questions for libraries, like:

- If the primary vehicle for information seeking is a privately owned algorithm, how do libraries engage with that? Build a competing algorithm? Or should they focus on building digital literacy skills to assist users navigate to the most authoritative information returned by existing search technologies?
- Fundamentally, can libraries actually deliver different vehicles for serendipitous discovery if everyone is getting from A to B using a search engine?

Many more questions are posed of libraries in the Insights document accompanying the Trend Report.

Digital preservation

A priority for libraries, with several challenges. How do libraries identify content of historical or cultural significance in the information deluge? How to deal with copyright restrictions? Preserving obsolete formats?

In an era where libraries are increasingly turning to automated technologies like web harvesting and search algorithms to identify any record or digital output – what have we lost in turning curation and preservation over to algorithms?

Machine translation

Automated machine translation, like Google Translate, is changing the way we communicate with one another and breaking down language barriers.

Researchers and users will be able to read in their own language any book, article or online blog ever written, from any location.

The likes of Google Translate are breaking down barriers, but they pose questions too. If we are relying on machines to translate, say, Anton Chekhov's works into our own language, what will we be reading? We can translate it, but do we understand it? What is the cultural impact of using machine translations without the benefit of cultural context?

While new creative partnerships and business models will emerge as language barriers dissolve, what impact will it have on existing business models and regulatory frameworks? If you can run any work through an automated translator, what impact could this have on publishing?

Education going global and mobile

And what impact will automated translation have on education? In an environment where students can theoretically access content from anywhere in the world in their own language, what impact will this have on literary analysis and cultural understanding?

Open access and automated machine translation together pave the way for the global classroom. But what impacts will global access to content have on the production of local content? Will students be learning from resources originally produced in their own language, in their own country? What will be lost?

Emergence of new voices in surveillance society

Mobile technology and automated machine translation are also helping new voices and groups connect across the globe. We've witnessed the power of mobile technology in successful campaigns against the Stop Online Piracy Act (SOPA) in the US, and the Anti-Counterfeiting Trade Agreement (ACTA) in the EU as well as the rise of the Arab Spring.

Knowing, however, that these technologies can also be used negatively, to coordinate terrorist movements and rally extremist ideologies, governments around the world are taking steps to monitor, moderate and control the flow of information. The question generally asked is: how far should information surveillance go to protect the public interest? Can fringe/grassroots activism movements have an impact in a society where nothing is private?

Governments around the world, even those seen as democratic, are taking steps to filter online access to information that is extremist, criminal, sensitive or deemed otherwise "immoral". Libraries have historically opposed government censorship – have our responses to Internet censorship been adequate? If filtering is becoming a standard government practice, what impact could that have on libraries' ability to adequately collect and preserve our digital history?

Website and what's in it

You can access the IFLA Trend Report at ifla.trends.org.

You need to sign up to access the online discussion forum, other resources are freely available. Having participants sign in helps us identify where contributions are coming from.

On the website you will find everything I mentioned in this paper, from the literature review which kicked off the Report process, to the extensive information repository as well as links to the expert submissions and a summary of discussions in Mexico. You will also find the Insights Document, *Riding the Waves or Caught in the Tide?* which pulls all of this information together into a short and succinct snapshot of the information trends.

There's an amazing depth and diversity of information contained on the site, that has been boiled down into the Insights Document. You might look at some of it and think, "how is this useful for me?"; or "that's not relevant in my region" or "so what?". But this is where you, the IFLA members, come in.

Adding the voices of our members

We've outlined the high level trends shaping the global information environment – now it's over to you to add colour. IFLA members are so diverse – diverse in geographic location, language, user base and special expertise. We want to hear how various information trends are shaping your library.

What does the intersection of new technologies and protection of privacy mean for libraries serving children, or adolescents? How are public libraries going with the uptake of mobile and wearable technology? Is wearable tech even happening in your library yet? How does an academic library think MOOCs and Open Access might impact on their role?

We want to hear how information trends, both those we've identified in the IFLA Trend Report, and others, are having an impact on your library and how you're prepared to respond to it.

Without your input, it's just another report.

What IFLA wants to do with you

Over the next year, IFLA will be encouraging you to engage and build on the Trend Report, and promoting the web platform.

We want to see Trend Report discussions being continued at the local, national and regional level. It can be workshops, seminars, online discussions, blogs, interviews – get creative! Get engaged!

Your contributions will be what makes the Trend Report a useful resource to take to discussions on information trends affecting the sector. We're hoping

to be able to incorporate the outcomes of the Trend Report and member contributions into work with strategic partners, conversations with policy makers, other organisations, in communications with various IFLA sections, and in the president's theme and activities.

So start thinking about ways to build on the IFLA Trend Report in your region. Add it as an agenda item to your mid-term meetings; host events at your regional conferences; circulate the Trend Report to your friends and colleagues; blog, tweet and Facebook about it. Let us know what's happening in your region. Most importantly, feed the outcomes of your discussions back onto the Trend Report website to continue the discussion. You are writing the next chapter as we head into new Trend Report territory.

UNESCO Information for All Programme in the Context of the New Information Environment

Evgeny KUZMIN

Chairman, Intergovernmental Council and
Russian Committee for the UNESCO Information for All Programme;
President of the Interregional Library Cooperation Centre
(*Moscow, Russian Federation*)

Ladies and gentlemen, friends,

The context of our work consists of certain mutually contradictory processes and formative problems of the global information society. So, I want first to present to you my view of them.

Second, I am the Intergovernmental Council Chair of the UNESCO Information for All Programme, and it is my duty to introduce it to you with a concise account of what it is, what its goals and specifics are, how it arranges priorities, what can and must be done within its frame, and what we are doing for these goals.

Let us begin with the context.

Evidently, we live in a thoroughly new information environment. What are its essential differences from what we had mere 25–30 years ago?

Previously, publicly accessible content was created by a limited number of authors, publishers, and television and radio companies. Today, practically every man and woman on earth can assume that mission if they have an access to the Internet through a computer or any other gadget.

Printed texts were previously distributed in a limited number of copies and usually in a limited area – within one country or region, or in the territory of one culture and one language. Now, information spreads worldwide. The period of time for purposeful circulation of a particular content was also limited. Only topical content was circulated to recede into the background as it got outdated, and eventually land in the largest archives and libraries. Today, both the latest and stale information is universally accessible online. It is hard, and usually takes special skills, to tell the one from the other.

The amount of created and circulated information is growing exponentially. The volume of textual information that appeared last year alone exceeded the

volume of all books written throughout history. More than that, the share of textual information in the overall information torrent is steadily shrinking. It accounts presently for mere 0.1% of the whole. The rest is made by video and sound recordings – films, clips and pictures. As for languages in which content is created, we cannot but notice linguistic inequality in cyberspace. Experts say that 95% of information available in the world is circulated in mere 3% of languages.

In the Paper Age, publicly accessible texts were usually created by the most educated and responsible minds. Information was also thoroughly selected by publishers. Created by competent people, it was evaluated and verified by other competent people – reviewers, editors, proofreaders and, at last, went through censorship. Graphomaniacs were kept away, and authors' and publishers' names were known to everyone who wished.

At present, almost the whole world has recognized the human right of self-expression. As the result, stupid, ignorant, evil and irresponsible people have flooded cyberspace. They create publicly accessible content, freely circulate it, and even impose it on others. That is why an overwhelming majority of information in the IT environment, especially the Internet, is useless, senseless, false, disorienting, and downright dangerous. Vast amounts of information are anonymous, and there is no professional monitoring of its creation and circulation.

Everyone is speaking about the right of self-expression but there is no ethics of self-expression.

It was hard to find information once. Now, it's hard to hide away from it and avoid the dangerous impact of certain information. We live in a dirty, over-saturated information environment, which influences us whether we like it or not. The danger of information environment pollution has just become visible unlike physical pollution, whose danger is clear to all – so clear that the whole world is working for clean and friendly environment.

Is there a way to combine freedom of speech with responsible communication and private, public and national information security? This is also an essential question pertaining to information ethics.

There are even more spectacular challenges in cyberspace – dangers to the economy and personal safety, to say nothing of grave crimes: cyber-attacks at vital projects, information thefts and defamation.

The present-day information environment obliterates the ideas of norm and ideal in personal conduct and in oral and written speech.

People of one culture meet more and more often with terms, content, ideals, clichés and stereotypes from other cultures. They borrow it all and use it, spontaneously and often indiscriminately, to give rise not only to cultural enrichment but also to cultural expansion. Every borrowing from another culture made without consideration for the social and other specifics of the recipient culture brings unexpected fruit, sometimes contrary to what was expected. The open information environment robs many nations of informational and cultural sovereignty.

A question should be posed from the information ethics point: can cultures prosper in the global digital environment, avoiding either isolation or the loss of identity?

The world is working hard to preserve private information. However, we can get access to only a few electronic services without opening personal data to providers while you don't know if they are reliable at all, and who might use your personal data, how, and with what purpose.

Young and not so young people communicate in social media with total strangers. Voluntarily rejecting privacy, they are only rarely aware of the results of their unlimited openness. Children tell everything about their parents – and the whole vast amount of information is stored somewhere, processed and used. Technology allows spot our whereabouts, and watch our travels, hobbies, habits, our intimate circle, our likes and dislikes, and the specifics of our conduct. Video cameras follow us without our consent.

How to guarantee privacy and protection of personal data? How to balance out the right of safety and the right of privacy?

Mass media degenerate ever quicker into tools of mass entertainment and manipulation. Public mentality is blatantly manipulated in the Internet and global media. The amount of information has grown a trillion times. We take it for granted that the number of basic information sources has also grown a trillion times, that the more information the greater its variety, and that all this is to the benefit of pluralism and of democracy and its export. But then, ever new hundreds of digital television companies buy information, whether texts or pictures, from two dozen families who own almost all principal media outlets in the world – so the whole world is fed on one and the same content.

An info-ethical question follows: how to guarantee the human right of access to precise, reliable and exhaustive information about the world we live in?

As I see it, the most serious problem is that there is a tremendous difference between the understanding of human rights and the correlation of rights and duties by different communities and cultures. Many researchers and politicians have pointed out this difference.

Should community rights limit the individual right of self-expression in the Internet and the entire cyberspace? Which are more important – human rights or social rights? Western communities insist on the priority of individual rights – a point to which the East has great objections. Besides, cyberspace is above political, administrative and other borders, so it's unclear what community rights should and can influence human rights. Should we limit the freedom of self-expression? For instance, does the Internet need censorship? To this, the East says an enthusiastic yes while the West says a firm no, with token exceptions.

Here is a crying example from the recent past. I mean the film *Innocence of Muslims*. I think it was an ugly, repulsive movie, one that surely instigated strife between religions and provoked violence worldwide. When the Muslim world was enraged to the point of explosion, the US Administration dared appeal to YouTube to check compliance with the user agreement. The company bosses reassured that there was full compliance and the US law was not violated.

This might be so but was the issue within the American jurisdiction alone? Ethics was silent, and so was the law. Meanwhile, the whole world could see the movie, and it provoked one storm of violence after another.

How is UNESCO Information for All Programme addressing these burning global problems?

UNESCO endorsed the IFAP Strategic Plan in 2008 to implement it before the end of 2013. In compliance with it, the Programme envisages the study of such problems of the emergent global information society as accessibility and preservation of information, information ethics, information literacy, and the use of information for development. Such are IFAP priorities officially approved by the UNESCO Member States. A sixth priority added a few years ago on Russian initiative supported by many countries: the preservation and development of multilingualism in cyberspace.

Assistance to the UNESCO Member States to determine the policy of building knowledge societies and approaches to this policy in general and in particular fields is the top priority of the Programme, which is attained by elaborating frameworks to be recommended for such policy.

What, now, is the specific of IFAP, why is it essentially important, and to what nations and institutions?

A recent UNESCO global review of IFAP activities and achievements shows it as the only international programme for comprehensive studies of all above-listed problems in their interconnection, on the basis of an interdisciplinary method and involving all interested parties. We call leading cultural and ICT experts, educationists, scholars, managers, politicians, theorists and practical workers to take part in our projects and attend our events. This is graphically demonstrated by the participants of this conference. We deem it necessary to organize our work this way because a top-to-bottom view of the trends and problems of the global information society, and of the ways and means of addressing these problems is achieved on the borderline between many research disciplines by blending them and combining professional approaches at many levels – international, regional, national, institutional, and personal.

The name “Information for All” surprises some people. They think information really for all is a goal never to attain.

I, for my part, regard it as a beautiful and noble name. It is the same in literature: only few novels have titles closely reflecting their content, let alone giving an exhaustive idea of it. “Information for all” is a sublime ideal even if it might be found excessively romantic, even utopian. We can’t do without ideals – and what other ideal do we need in a society known as “information society”, when almost all nations of the world say they are building knowledge societies?

As the country presiding IFAP, Russia convenes major international conferences every year, attended by the world’s foremost experts.

Particularly, big forums were held in Yakutsk and Moscow in 2011 on the development of multilingualism in cyberspace and the preservation of digital information.

Moscow hosted an international conference on media and information literacy in 2012.

All these forums finished by adopting landmark political documents in the relevant fields, which are amply quoted.

Two forums on the policy of building knowledge societies were held in the Caribbean region and Latin America. An international conference on information ethics will gather in Latvia, September.

Now, we are here in Yuzhno-Sakhalinsk for an international conference on “The Internet and Socio-Cultural Transformations”.

All these unprecedented token events of a global scale have been organized by none other than the UNESCO Information for All Programme.

IFAP regularly publishes information and analytical collections, recommendations and monographs on all themes within its competence.

All nations of the world, with token exceptions, have been represented in its projects and events these three years. We closely cooperate with many national and international institutions and offices. The most fruitful partnership is with the International Federation of Library Associations and Institutions (IFLA) and the MAAYA World Network for Linguistic Diversity.

The Russian-hosted events of the last three years alone gathered topmost experts from 120 countries and every part of the world. It is 140 countries, considering this conference.

The main mission of the Programme, assistance to the UNESCO Member States as they form their knowledge society building policies, demands permanent monitoring of all political and practical changes in the information and communications field.

IFAP accumulates global knowledge in each of its priority fields as it promotes contacts between many nations’ experts, and generalizes their achievements, raising them into a new qualitative level – which amounts to creating new knowledge.

It has become perfectly clear today that the UNESCO Information for All Programme **is able** to efficiently organize transnational cooperation to face acute challenges in such a new field as the use of ICT.

Complicated as they are, the problems IFAP tackles are all the more baffling due to their close interconnection. For instance, universal access to topical and reliable information is impossible without information storage, information literacy, effective and development-oriented information policy, elaboration and compliance with the principles of information ethics, and provision of information in languages the users are fluent in.

The preservation of digital information is impossible without scientifically based policy, information ethics, and sufficient information competence. To achieve the latter, it is necessary to promote it in the national education networks, etc., etc.

The world has never yet encountered such a sophisticated cluster of philosophical, political, economic and legal problems in the communication and information sphere.

What forecasts can we make for the development of information civilization?

Space flights and ocean exploration endeavours were predicted by 19th century literary classics.

SF predictions dominating today's culture are far more sinister. Thus, Hollywood blockbusters released worldwide show cyber-attacks paralyzing essential services: electricity, gas and water supply stops, and public transport gets to a standstill – and so does entire human life. Other films show a gang of scoundrels ruling the world with a supercomputer after a nuclear disaster. Still others show the Earth inhabited by cyborgs. Can we ever expect these dystopias come true? Can one imagine what can never be? Ontology says no: human imagination pictures only what can really happen.

We hope this conference will give start to a new kind of collaboration aimed to estimate the Internet impact on social changes, highlight these changes, call experts' and political leaders' attention to them, discern the new developmental patterns, put the latest problems into explicit words, and determine the approach to these problems, which demand discussion and solution.

As the organizer of this conference and Chair of the UNESCO Information for All Programme, I am eager to look together into the future we will all share. I want us all to summarize and analyse presently available knowledge so as to gradually improve the understanding of trends and prospects and proceeding from them, recommend the world how to build a society of justice and safety.

On Negative Consequences of IT Use

Ludovit MOLNAR

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An euphoria of positive consequences of Information Technology (IT) use makes us underestimate or overlook other consequences, very far from being positive. We will point out to some of them that come from an unintended use of computers.

Introduction

My motivation to speak on negative consequences of IT use comes from an old wisdom as well as from my personal experience. A Slovak proverb says: *Not all that glisters is gold*. As a professor of Informatics (computer engineering) I concentrated naturally on positive aspects of IT use in education as well as in research. To be honest, I used to point out that using IT to *solve a problem* doesn't automatically mean a "good/better solution" (what is still valid), but nobody was willing to discuss such an opinion. "Euphoria" of IT was (and still is) stronger. What should be stressed is a profit which doesn't come directly from IT but rather from its being used to *solve user problems*.

Second source of motivation comes from my membership of the Interim Committee for the preparation of the current Intergovernmental UNESCO programme – IFAP. The predecessors of IFAP were Intergovernmental Informatics Programme (IIP) and General Information Programme (PGI). Motivation for "merging" of these two programmes was a potential profit from closer collaboration and mutual enrichment and also from the quick development of Information and Communication Technology (ICT) as well. IFAP's mission and content has been specified and *information* became a core notion of the Programme. One unintended consequence of this "innovation" is that informatics has been *dropped* or *replaced* by information. What is of course even worse is that people from informatics has been "dropped" from the Programme as well.

Profit from science and technology – problem solving

Throughout the history of human beings "new ideas" (may be in the material form – products) helped us overcome problems, improve the quality of life,

survive. It is still the same in our “modern” society – new ideas are coming from science and technology. They both contribute to resolving actual problems of human beings. Therefore it is no surprise that people are thankful for this contribution and appreciate it.

There are also other aspects of problem solving which people overlook (or are pushed to overlook, or underestimate, or don’t want to see?) – the financial one being an exception. “The world of problem solving aspects” is of course far more complex. It covers aspects like *price* (economical aspects), *environmental consequences*, *culture*, *ethics*, etc.

Computers – IT – information

Computers have brought a revolution to problem solving, originally to problem solving which required numerical computing. They have changed completely the notion of computing – speed, scope, etc. There have been more and more applications in non-numerical computing, non-algorithmic computing, artificial intelligence use, information processing and so on. New branches of science and technology have emerged like *informatics* and *information technology*, and *information* has become the key object of IT use. IT have allowed accessing, storing and processing information in real time. IT in network organization, first of all, the Internet, have brought a new type of communication and computing. IT has become a socio-economical phenomenon. Nevertheless we should still keep in mind that a profit comes from IT use as a tool in solving problems of a user.

Green computing

Development in technology leads to innovation, which usually improves the functionality and/or price of a technological system. What best characterizes IT is the so called Moore’s law. It is the observation that over the history of computing hardware, the number of transistors on integrated circuits doubles approximately every two years. As a consequence market offers new, better and cheaper computers and makes a press on consumers to replace their “old fashioned” computers by new and modern ones. Even if we take away the question of real reasoning for replacing a computer which still fulfils our needs and expectations, replacement always brings a new problem: what to do with the old, replaced computer (this is valid for any technological equipment). Suddenly computers become garbage, waste with negative consequences for the environment. At the beginning these were underestimated and

overlooked, but later on consequences grew worse and worse and now we have a “*green computer*” programme or “*green computing*”. While “green computers” concerns more computer technology, green computing rather concerns computer use. In February 2003, the European Union adopted the Restriction of Hazardous Substances Directive (RoHS). The legislation restricts the use of six hazardous materials in the production of various types of electronic and electrical equipment. The directive is closely linked to the Waste Electrical and Electronic Equipment Directive (WEEE)¹, which sets collection, recycling, and recovery targets for electrical goods and is part of a legislative initiative that aims to reduce the huge amounts of toxic e-waste. This Directive is certainly important, but I would like to stress once more the important role of each individual user: it is up to the user to decide when to buy a new computer, which one to buy and how to utilize it.

IT and education

IT use (utilization) requires corresponding knowledge, IT use requires education. IT thus becomes a subject and an object of education. It is an excellent tool for education (certainly the best in our history). IT is also behind the information explosion and as a consequence is behind the validity of knowledge as well. The validity of knowledge reached during education is limited in time and must be innovated as well. Learning in education is more and more important and Life Long Learning has become an inevitable part of our life.

Knowledge required for IT use led to a *new type of literacy – computer, information, media*. This new literacy is now a part of educational curricula at each level of education.

IT allows accessing information in real time whenever it is in a global world, storing and processing it. It certainly has a positive influence on education, makes it easier to access and allows to present educational resources in different modes, dynamic processes, etc. Easiness of presentation and access to information on the web has led to the slogan “Everything is on the web”. One of the negative consequences is a temptation to present information as “our own product” – *plagiarism*.

Another problem of IT and education is *gender equality*. The education of IT professionals is a special case. At the Slovak University in Bratislava the percentage of female students in IT programmes range from 3 to 10%. The

¹ http://en.wikipedia.org/wiki/Waste_Electrical_and_Electronic_Equipment_Directive.

situation in other universities is not dramatically different. It is a complex problem. On the one side, it is typical for the field of technology, IT in particular, but on the other side, IT business offers for professionals good working conditions (on distance, home, etc.) which seem to be very suitable for female professionals. Moreover, IT business needs female professionals for their creativity and special approach to problem solving.

Our university tries to solve the gender equality problem and we have come with a new project “Aj Ty v IT” (You too in IT) aimed at attracting interest to IT professional education through positive examples, success stories and information campaigns. We have received first positive results.

Digital divide

IT can be found also behind the digital divide (DD). There are many reasons or interpretations of DD. DD can come from: IT ownerships or access, knowledge of IT use – computer literacy, knowledge of problem solving – information literacy + informatics, knowledge of problem solving results use – information literacy, etc. Each of these reasons can further strengthen the divide.

One of the DD aspects is that of “young and old generation”. Young generation is better skilled in IT use as computer/information/media literacy is a part of their education. On the other side, old generation is “stronger” in problem solving. Both sides might profit from closer cooperation. But this is a different story.

Digital divide coming from problem solving

As it has been stressed, profit from IT is not straightforward, but comes from its use in ***user problem solving***. Nevertheless if we look at any country’s statistics dealing with information literacy, Information Society, etc., it will be concentrated on the potential of IT use: number of HW components such as PC’s, laptops, Internet access points, mobiles per 1000 citizens. They don’t take into account what IT is used for – whether to access pornography, learning materials, games or something else. It is clear that for real utilization of IT we need different indicators.

Poverty

IT can really contribute to reducing global poverty. What bothers me is the reduction of poverty to its economical or material form. Besides economical/

material poverty there is also *immaterial poverty* – concerning literacy, culture, ethics, etc. I think this kind of poverty is even more important and belongs more to the competency of UNESCO.

On the other side, IT is a big business. As such it influences decision makers, IT users and society in general. It brings a new richness – richness of “0/1” with special properties. One example of this kind of richness is “.com”.

IT security/information privacy

The importance of IT security increases together with the importance of IT use. The more sensitive information we process the more important IT security is. Today we can see examples of misuse of IT, or information, or both, unauthorized access, disclosure, disruption. Therefore we cannot be surprised when people ask whether we can believe anybody in the world of PRISM, XKeyscore and other similar programmes for monitoring and analysis of the global network operation.

What to do with the current situation?

Negative consequences of IT use are a reality. The question is how to overcome this problem, what can help. My opinion is that what can help is *truth* and *education*. And “who can help”? Individuals, schools, organizations like UNESCO and its Information for All Programme.

Dwelling on Information Society

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*Progress in science consists in replacing a theory
that is wrong with one that is more subtly wrong.*

Stephen Hawking

Introduction

A great deal of papers on information society has been published by now², yet there exists no universally accepted definition for this term³. As has been repeatedly noted, there is no such thing as non-information society as the life of just any community involves communication. Speaking of modern-day society, which would be more appropriate to call “electronic”, “digital” or “ICT”, it is not quite clear whether the term “information society” applies in this case to a quality already reached by some countries in real life or rather to a desired mental image projected onto the future⁴.

A number of philosophers and researchers (including Jurgen Habermas, Anthony Giddens, and Herbert Schiller) are skeptical about the theory

² The most internationally acclaimed of related papers are by authors such as Daniel Bell, Zbigniew Brzezinski, Manuel Castells, Robert Kahn, Fritz Machlup, Yoneji Masuda, John Naisbitt, Simon Nora, Alain Mic, Mark Poster, Alvin Toffler, and Alain Touraine. Among the Soviet and Russian counterparts, worthy of note here are R. Abdeyev, I. Alekseyeva, O. Vershinskaya, V. Glushkova, T. Yershova, V. Inozemtsev, K. Kolin, I. Melyukhin, N. Moiseev, I. Morgenshtern, A. Neklessa, A. Rakitov, A. Skvortsov, A. Sokolov, A. Ursul, and R. Yusupov

³ See: Informatsionnoye obshchestvo. Sushchestvuyut li mezhdunarodno priznannyye opredeleniya informatsionnogo obshchestva? (Information Society: Do Internationally Recognized Definitions Exist? <http://iph.ras.ru/page46589323.htm>; Parshin, Pavel: Globalnoye informatsionnoye obshchestvo i mirovaya politika (Global Information Society and World Politics)/Foreign Ministry's Moscow International Relations Institute (MGIMO), Global Research Centre; Analytical Reports, Issue 2 (23), July 2009. Moscow: MGIMO-Universitet, 2009; p. 37, <http://www.mgimo.ru/files/138392/ad-23.pdf>; Karvalics L.: Information Society – what is it exactly? (The meaning, history and conceptual framework of the term). – Budapest, March–May 2007, http://www.ittk.hu/netis/doc/ISCB_eng/02_ZKL_final.pdf.

⁴ See: Sokolov, A., Informatsionnoye obshchestvo v virtualnoi i sotsialnoi realnosti (Information society in virtual and social reality). St Petersburg, Alteya, 2012, p. 352.

of information society. The British social scientist Frank Webster argues that the revolution of information technology has accelerated society's informatization without changing its essence. In his book "Theories of the Information Society", Webster writes: "While at pains here to emphasize the novel features of the current era, it seems to me essential that we appreciate that these are consolidations and extensions of long-established principles. That is, today's global economy represents the spread and growth of capitalist ways of behaviour – witness the increased use of market mechanisms, of private rather than public provision, of profitability as the *raison-d'être* of organizations, of wage labour, and of the ability-to-pay principle as the determinant of goods-and-services supply. In short, the global network society in which we find ourselves today expresses the continuation – transmutation, if one prefers – of long-held capitalist principles."⁵

Yet, in the late 1980s, the information society concept transcended the boundaries of the academia to eventually become a significant factor in global politics. Nowadays, all the nations are involved in the process of building a global information society (GIS).⁶

I personally go along with researchers who believe that the term "information society" is more ideological than scientific, and has been designed as a mythologem. This is probably the reason for its theoretic elusiveness. A society we classify as "information society" per se makes no sense, perhaps, but is meaningful only as a step in the technology advance ladder, between the social system known as "industrial society" and the one expected to replace it in the future (this one is commonly referred to as "knowledge society"). Knowledge society, for its part, will subsequently give way to a new phase, with an appellation of its own. Ongoing technology improvements are not driven by the intention to make our world a better place. Admittedly, though, we do benefit from this process in our everyday lives, with increasingly more comforts and possibilities available.

The meaning of many phenomena and processes related to the information society becomes clearer if viewed through the prism of the civilizational

⁵ Webster, Frank: *Theories of the Information Society*. Russian translation by M Arapov, N. Malykhina; edited by E. Vartanova – Moscow, Aspekt Press, 2004, pp. 369–370.

⁶ See: Parshin, Pavel: *Globalnoye informatsionnoye obschestvo i mirovaya politika (Global Information Society and World Politics)*/Foreign Ministry's Moscow International Relations Institute (MGIMO), Global Research Centre; Analytical Reports, Issue 2 (23), July 2009. Moscow: MGIMO-Universitet, 2009; p. 37, <http://www.mgimo.ru/files/138392/ad-23.pdf>.

development theory suggested by the Russian philosopher Vyachslav Styopin⁷ and based on two key developmental types.

1. Traditional development vs. technogenic development

According to Styopin, with all their diversity, the world's civilizations can be classified as belonging to either of the two main development types – traditional and technogenic. The former is characterized by the reproduction of established patterns in life activities while innovating is what defines the latter type, with both industrial and social innovative technology being constantly looked for and applied.

The technogenic civilization came as a result of two mutations in traditional Western culture – the Antiquity's polis culture and the medieval culture of European Christianity. And a synthesis of their achievements on the European continent in the Reformation and Enlightenment periods in the 16th – 17th centuries was what brought forth the underlying value system.

Technogenic civilization sees man as a being predestined to transform nature as he sees fit and to dominate it. Nature is viewed as an orderly array of objects, available for scientific research and technological change. Scientific rationalism comes to dominate the system of human cognition. Central to the value system is the ideal of a free individual who can join any social community he likes, enjoying equal rights with others. In culture, the supreme value is innovation – something that moulds original patterns of activity. Power in a technogenic society is mainly about controlling objects, not humans. These values form some sort of a cultural genetic code to define the civilization's self-reproduction and development.

The emergence of technogenic societies has made a strong impact on traditional societies, prompting these to change as well. Such transformations used to come about as result of military aggression and colonization. But now catching up with others in modernization becomes the key stimulus.

⁷ Styopin, V.: Nauchnoye poznanie i tsennosti tekhnogennoi tsivilizatsii (Scientific Research and Values of Technogenic Civilisation)// Voprosy filosofii. Moscow, 1989, Issue 10, pp. 3–18, http://rozova.net/materials/VSSStepin_Nauchnoe_poznanie_i_cennosti_tekhnogennoy_civilizacii.pdf; Id.: Problema budushchego tsivilizatsii (Expanding on the Issue of Human Civilization's Future), <http://spkurdyumov.narod.ru/Stepin11.htm>; Id.: Teoreticheskoye znaniye (Theoretical Knowledge). Moscow, 1999. Chapter 1. Scientific Research: Socio-Cultural Dimension, http://www.sibsubit.ru/images/2835_magistratura.stepin_teoriticheskoe_znanie.pdf; Id.: Epokha peremen i stsennarii budushchego (Times of Change and Scenarios for the Future), http://philosophy.ru/library/stepin/epoch.html#_ftn12.

In the second half of the 20th century, the technogenic civilization entered a post-industrial development stage and, under the banner of globalization, began a new cycle of its territorial expansion. This is driven by information and communication technology (ICT) advance, and involves two phases:

1. Gaining a competitive edge in technology development among countries that constitute the nucleus of the technogenic civilization.
2. Competing globally with the help of international political institutions.

I will be using ICTs as an example to explain how the process worked in the 1980s – 2000s.

2. Building an information structure in the United States and the European Union

The United States and European Union member nations began forming their national and supra-national information infrastructures in the late 1980s – early 1990s⁸. Albert Gore, Jr., who served as U.S. Vice President in the Clinton Administration (1993–2001), made an outstanding contribution to the advancement of telecommunications networks in his country. Computer scientist Vinton Cerf, one of the developers of the TCP/IP communication protocols, has repeatedly referred to Gore as “the father of the Internet”⁹.

On August 11, 1988, Senator Albert Gore led hearings in the Senate’s Committee on Science, Technology and Space, where computer networks were discussed, along with the future of the U.S. National Science Foundation’s

⁸ Used below are data cited in papers by V. Drozhzhinov and F. Shirokov; I. Agamirzyan; Y. Shraiberg, as well as in a monograph by A. Chernov. See: Drozhzhinov V., Shirokov F. *Ot kompyuternoi revolyutsii k postroyeniyu globalnogo informatsionnogo obshchestva 21 veka* (From Computer Revolution to the Building of a 21st-Century Global Information Society). PCWeek, No. 168 (44), 1998, <http://www.pcweek.ru/themes/detail.php?ID=49267>; Agamirzyan, I. *Upravleniye Internetom – vyzov novogo veka ili strakh pered budushchim?* (Internet Management: A Challenge of the New Century or Fear of the Unknown?). In: *Tekhnologii sovremennogo obshchestva* (Technology in Modern Society); *Internet i sovremennoye obshchestvo* (Internet and Modern Society); Proceedings of the 7th National Conference. St Petersburg, November 10–12, 2004. St Petersburg, University of St Petersburg Linguistics Department Publishers, 2004, pp. 153–155; Shraiberg, Y., *Rol bibliotek v preobrazovanii grazhdanskogo obshchestva v informatsionnoye* (The Role of Libraries in Transforming Civil Society into Information Society). In: *Nauchnye i tekhnicheskiye biblioteki*, Issue 4. Moscow, 2000, http://www.gpntb.ru/win/ntb/ntb2000/4/f04_19.html; Chernov, A.: *Stanovleniye globalnogo informatsionnogo obshchestva: Problemy i perspektivy*. Moscow, Dashkov & Co. Publishers, 2003, p. 232.

⁹ See Griomov, G.: *Dorogi i perekryostki istorii Interneta. Doroga pervaya. Iz SShA v Evropu* (Roads and Crossroads in the History of the Internet. Road One: From the U.S. to Europe), <http://www.netvalley.com/library/hyperbook/road1.htm>.

network, NSFNet¹⁰. Set up in 1984, this network effectively competed with the ARPANET, to become the early Internet's main pillar.

In 1991, Gore made a motion to build a National Research and Education Network (NREN)¹¹. The related bill got through parliament and was then signed into law, to become known as the High Performance Computing Act of 1991¹². The NREN network linked together the nation's supercomputer centres and made high-performance computing accessible to all members of the academia, including the teaching staffs and students of small colleges and universities.

On September 16–18, 1993, a conference on NREN was held in association with the U.S. National Science Foundation. The gathering unanimously agreed that NREN should facilitate the development of a National Information Infrastructure (NII)¹³.

In October 1992, the U.S. elected Bill Clinton as a new President and his running mate, Gore, as Vice President. On February 2, 1993, the Executive Office of the President in Washington D.C. published the two men's memorandum "Technology for America's Economic Growth, a New Direction to Build Economic Strength"¹⁴. This memorandum became the first document to officially declare a national information infrastructure initiative. The ambition was a staggering one – to create high-speed information networks, a "digital highway" and a "superhighway"¹⁵.

The European Union almost immediately joined the U.S. in networks-related discussions. By December 1993, the EU European Communities prepared a report entitled "Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century"¹⁶. The document argued that information

¹⁰ NSFNet, <http://ru.wikipedia.org/wiki/NSFNet>.

¹¹ National research and education network. http://en.wikipedia.org/wiki/National_Research_and_Education_Network.

¹² High Performance Computing Act of 1991. http://en.wikipedia.org/wiki/High_Performance_Computing_Act_of_1991.

¹³ National Information Infrastructure. http://en.wikipedia.org/wiki/National_Information_Infrastructure.

¹⁴ Clinton W. J., Gore A. Technology for America's Economic Growth, a New Direction to Build Economic Strength. Executive Office of the President. – Washington, DC. 1993. – 36 p. <http://ntl.bts.gov/lib/jpodocs/briefing/7423.pdf>.

¹⁵ Information superhighway. http://en.wikipedia.org/wiki/Information_Superhighway.

¹⁶ Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century – White Paper. Parts A and B. COM (93) 700 final/A and B, 5 December 1993. Bulletin of the European Communities, Supplement 6/93. <http://aei.pitt.edu/1139/>.

society has a significant potential, whose realization could benefit sustainable development and job creation, along with raising the competitiveness of European economies and the living standards of each and every EU national.

The EU gave a positive appraisal to this report and decided to an extended follow-up on information society, completed with specific recommendations. The follow-up report was to be considered at a European Council session scheduled to take place on Corfu June 24–25, 1994.

As part of preparations for that session, a group of experts led by EU Commissioner Martin Bangemann compiled a report, “Europe and the global information society. Recommendations to the European Council,”¹⁷ and it was published on May 26, 1993. The report offered a detailed analysis of the issue, along with recommendations for the EU. Liberalizing the telecommunications industry to enhance its efficiency and competitiveness was proposed as the main political course. And it was suggested that information infrastructure should be developed and financed mainly through private-sector efforts.

On July 19, 1994, the Bangemann-led group developed a roadmap for building an information society in the EU, “Europe’s Way to the Information Society. An Action Plan.”¹⁸

At a session in Essen in December 1994, the European Communities presented a report entitled “The Information Society in Europe: A First Assessment since Corfu.” The document gave an appraisal to the steps that had by then been taken to implement the Action Plan and re-emphasized it was the private sector that should take the lead in infrastructure building efforts. Later that month, the Information Society Project Office (ISPO) was set up. This was followed shortly by the establishment of the Information Society Activity Centre (ISAC), whose responsibilities involved the development of a system to gauge how close the EU gets to its destination¹⁹. The U.S. and EU Member States then carried on with their efforts to build information infrastructure.²⁰

¹⁷ Europe and the global information society. Recommendations to the European Council. <http://www.echo.lu/eudocs/en/bangemann.html>.

¹⁸ Europe’s Way to the Information Society. An Action Plan. Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions. http://aei.pitt.edu/947/1/info_society_action_plan_COM_94_347.pdf.

¹⁹ See Haglund K. H.: Sources, Principles and Perspectives of Development of the Information Society in Europe. http://www.issc.cz/archiv/1999/sbornik/en/haglund_e.htm.

²⁰ See, as an example, the EU initiative «Europe – An information society for all». http://europa.eu/legislation_summaries/information_society/strategies/l24221_en.htm.

3. Global information society as a political reality

The appeal to build a global information infrastructure was voiced for the first time in March 1994. Albert Gore made it as he addressed an International Telecommunication Union conference in Buenos Aires²¹.

On July 8, 1994, developing global information society projects became an issue on the agenda of the Group of Seven summit in Naples. The discussions ended with a decision to hold a special ministerial G7 conference that would focus on the issue.

That meeting took place on February 25–26, 1995, in Brussels²². Along with ministers and delegations sent in by France, Germany, the UK, Italy, Japan, the U.S. and Canada, it was attended by international business leaders in ICT and entertainment technology as well as prominent members of the research community. The ministers identified 11 global Project Areas of the information society²³.

In the mid-1990s, the business community and experts joined in the effort to organize effective global ICT management. In 1998, an international Information Society Technologies conference was held in Vienna at the European Commission's initiative, to become the basis for the first global interactive forum in the ICT sector. The video link Global 360 brought together 19 audiences in America, Europe, Asia and Russia²⁴.

Acting on a request from the Tunisian government, the International Telecommunication Union (ITU)'s plenipotentiary conference in Minneapolis, MN, in 1998 approached the United Nations²⁵ with the proposal to hold a World Summit on the Information Society (WSIS)²⁶.

²¹ See Brown R. H., Irving L., Prabhakar A., Katzen S.: The Global Information Infrastructure: Agenda for Cooperation, <http://www.ntia.doc.gov/report/1995/global-information-infrastructure-agenda-cooperation>; Buenos Aires Declaration on Global Telecommunication Development for the 21st century, <http://www.itu.int/itudoc/itu-d/wtdc/wtdc1994/badecl.txt>.

²² G-7 Information Society Conference Brussels, 25–26 February 1995. http://www.channelingreality.com/Digital_Treason/e-Gov/G7_Information_Society_Conference.pdf.

²³ These have incorporated the following issues: global inventory; global interoperability of broad-band networks; trans-cultural training; a universal e-library; multimedia access to the world's cultural heritage; managing the natural environment and the natural wealth; global management of emergencies; global applications in healthcare; government online; global market for small and medium-sized businesses; maritime information society.

²⁴ See Mendkovich A.: Global360/NICE. Novaya model videokonferentsii (A New Model for Video-conferencing), <http://www.iis.ru/events/19981130/mendk.ru.html>.

²⁵ International Telecommunication Union (ITU) is a specialized UN agency issuing recommendations in telecommunications and radio broadcasting while also acting as a regulator on international use of radio frequencies.

²⁶ Resolution 73 of the ITU Plenipotentiary Conference, Minneapolis, 1998. <http://www.itu.int/wsis/docs/background/resolutions/73.html>.

The World Economic Forum (WEF) in Davos in early 2000 arranged further discussions on ICT management. These led to the establishment of a WEF ICT Taskforce. This group prepared materials to serve as a basis for the Okinawa Charter on Global Information Society adopted at the G8 summit on July 22, 2000. The charter focused on the problem of the digital divide, calling on all nations to join hands in trying to overcome it. In November 2000, in keeping with the Okinawa Charter, G8 DOT Force (Digital Opportunity Taskforce) was set up. Its lineup included three representatives from each of the G8 member states (a government official, a member of the business community, and a non-profit organization activist) as well as delegates representing international organizations. The World Bank took upon itself the DOT Force's funding. Basically an extension of the WEF ICT Taskforce, the DOT Force had, as its primary task, to prepare a report analysing opportunities offered by the new global information situation, along with an action plan that would propose concrete ways to benefit from those opportunities. The results of that work were presented to the next G8 summit, in Genoa in 2001. The G8 leaders approved the DOT Force's Genoa Plan of Action to narrow the digital divide²⁷ and extended the group's mandate for another year.

In November 2001, the United Nations ICT Taskforce was set up. This was supposed to act as an advisory to the UN Secretary General on issues related to information society and to information and communication technology. At the Kananaskis summit in the summer of 2002, it was decided that the G8 DOT Force should now hand over its functions to the UN ICT Taskforce²⁸.

In 2001, the International Telecommunication Union's board decided to hold the World Summit on the Information Society (WSIS) in two stages: December 10 to 12, 2003 in Geneva and November 16–18, 2005 in Tunisia²⁹. This decision was approved by the UN General Assembly on December 21, 2001 (Resolution 56/183)³⁰. In line with that resolution, the ITU had a central role to play in organizing the global forum.

²⁷ Digital Opportunities for All: Meeting the Challenge. Report of the Digital Opportunity Task Force (DOT Force) including a proposal for a Genoa Plan of Action. http://www.iis.ru/dotforce/library/DOT_Force_Report_V5.0f.doc.

²⁸ See Agamyryzyan, I. Upravleniye Internetom – vyzov novogo veka ili strakh pered budushchim? (Internet Management: A Challenge of the New Century or Fear of the Unknown?). In: Tekhnologii sovremennogo obshchestva (Technology in Modern Society); Internet i sovremennoye obshchestvo (Internet and Modern Society); Proceedings of the 7th National Conference. St Petersburg, November 10–12, 2004. St Petersburg, University of St Petersburg Linguistics Department Publishers, 2004, p. 153.

²⁹ Why a Summit on the Information Society. <http://www.itu.int/wsis/basic/why.html>.

³⁰ Resolution adopted by the General Assembly [on the report of the Second Committee (A/56/558/Add.3)]. 56/183. World Summit on the Information Society. http://www.itu.int/wsis/docs/background/resolutions/56_183_unga_2002.pdf.

Its first two editions were held on a grand scale (11,000 delegates in Geneva and close to 20,000 in Tunisia) and involved the first ever global discussion of information society management mechanism.

Internet regulation proved to be the most controversial of the issues discussed. The governments of the EU nations and the U.S. argued that regulation should be mainly technical, and done under the watch of the Internet Corporation for Assigned Names and Numbers (ICANN)³¹. But the developing countries affiliated with the G20 (China, Brazil, South Africa, India, etc.) insisted on the inclusion of measures against spam, illicit content, and the like. With several governance models considered, it was eventually decided that the U.S. should, in line with its historical right, exercise unilateral control over the World-Wide Web. ICANN was to remain in charge of technical management, with some of the old approaches to be revisited.

Another contentious issue was the prospect of creating a special foundation to narrow the digital divide between the wealthy nations and those less advantaged economically. It was officials from developing countries who came out with the idea. After intense discussions at the Tunisian summit, decision was made to set up a digital solidarity foundation and have it sustain itself with voluntary contributions. Also, principles of deregulation and of the openness of information markets were established. Along with that, the G20 governments committed themselves to financing the development of technical infrastructure for a broader access to telecommunication networks.

UNESCO – the United Nations Educational, Scientific and Cultural Organization – has been instrumental in arranging the WSIS. In 2000, it developed an intergovernmental Information for All Programme, with the idea behind being to improve social justice through wider access to information.

One of the arguments UNESCO addressed to the gathering consisted in that the information society concept, related to the idea of innovative technology, is just a basis for building knowledge societies, oriented toward the needs of human development. According to the UN culture agency's Assistant Director General for Communication and Information, Abdul Waheed Khan, the concept of "knowledge societies" is preferable to that of information society because the former "includes a dimension of social, cultural, economical, political and institutional transformation, and a more pluralistic and developmental perspective"³².

³¹ ICANN. <http://ru.wikipedia.org/wiki/ICANN>.

³² Na puti k obshchestvam znaniy (Towards Knowledge Societies)//Nauka v informatsionnom obshchestve (Science in the Information Society)// Russian Ministry of Culture and the Mass Media; Russian Committee of the UNESCO Information for All Programme; Russian National Library. Compiled by Kuzmin, E., Firsov, V. St Petersburg, 2004, p. 23.

The international community approved of UNESCO's stance. Attesting to that is the final, 67th point of the Geneva Declaration, adopted on December 12, 2003: "We are firmly convinced that we are collectively entering a new era of enormous potential, that of the Information Society and expanded human communication. In this emerging society, information and knowledge can be produced, exchanged, shared and communicated through all the networks of the world. All individuals can soon, if we take the necessary actions, together build a new Information Society based on shared knowledge and founded on global solidarity and a better mutual understanding between peoples and nations. We trust that these measures will open the way to the future development of a true knowledge society."³³

The WSIS became a momentous event in the history of the new global information order. The four underlying documents it adopted – Declaration of Principles. Building the Information Society: A Global Challenge in the New Millennium (Geneva, December 12, 2003); the Plan of Action (Geneva, December 12, 2003); the Tunis Agenda for the Information Society (Tunisia, November 15, 2005); and the Tunis Commitment (Tunisia, November 15, 2005)³⁴ – provided a framework for further efforts to bring order into the global information flow.

On March 27, 2005, in its resolution on the WSIS results (Resolution 60/252), the UN General Assembly declared May 17 as World Information Society Day³⁵.

4. Prospects for the development of a global information society

The newly-set vector for moving away from the "information society", with its mechanistic culture, to "knowledge societies", oriented toward human development³⁶, should, in the longer term, make it possible for information processes to recover their humanistic dimension³⁷. Having said

³³ Declaration of Principles. Building the Information Society: A Global Challenge in the New Millennium (Geneva, 2003)//Russian Committee of the UNESCO Information for All Programme: Documents. <http://www.ifapcom.ru/ru/news/387>.

³⁴ Proceedings of the World Summit on the Information Society//Russian Committee of the UNESCO Information for All Programme: Documents. <http://www.ifapcom.ru/ru/news/387>.

³⁵ Resolution adopted by the General Assembly [A/60/L.50/Add.1]. 60/252. World Summit on the Information Society. <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N05/502/74/PDF/N0550274.pdf?OpenElement>.

³⁶ See, as an example, Towards Knowledge Societies: UNESCO World Report. Paris: UNESCO Press, 2005, p. 239. <http://unesdoc.unesco.org/images/0014/001418/141843r.pdf>.

³⁷ In distinguishing between the notions "information" and "knowledge", the authors of "Towards Knowledge Societies: UNESCO World Report" followed Castells and Bell. "Information is data that have been organized and communicated" (Castells); knowledge is "a set of organized statements of facts or ideas presenting a reasoned judgement or an experimental result, which is transmitted to others through some communication medium in some systematic form." (Bell) In: Towards Knowledge Societies: UNESCO World Report. Paris: UNESCO Press, 2005, p. 224. <http://unesdoc.unesco.org/images/0014/001418/141843r.pdf>.

that, it is important to bear in mind that the ethically appealing idea of making knowledge a resource for the entire world community to share is, obviously, at odds with the values of the driving force behind global change – the technogenic civilization. Its cultural genetic code aims to pro-actively transform the world with the help of technology rather than work toward inner harmonization.

Russian researcher Arkady Sokolov makes a wise point by saying that both dimensions – humanistic and technocratic – have their pluses and minuses. This is why, in his view, information society turns out to be a social myth “about global post-industrial intellectually developed society, which, by using computers and telecommunication equipment in information distribution, tries to satisfy the material and spiritual needs of its individual members as well as those of its consistent communities and the state.”³⁸ Looking through the prism of this contradictory image, each of us may place accents where he or she sees fit³⁹.

It is not all about information technology, though. The world has now found itself on the threshold of a new technological revolution, whose scale is likely to exceed the most daring of hopes and expectations. Already, there is a demiurge-like superengineer type emerging, who, along with improving work tools and living conditions, also creates new worlds for us to live in, building from atoms and molecules. Russian philosopher Mikhail Epstein notes, not without anxiety: “All that has until now been deemed permanent, preexistent to Being is now coming to be seen as producible by manual or intellectual effort. On its cognitive paths, humanity seems to have reached the foundations of the universe and is now beginning to build it anew, from the bottom upward, and to its own designs. And so the tragic knots of Existence get untied – only to turn into thin threads in the hands of engineers, genetic scientists, computer programmers, and electronics guys.”⁴⁰

A leading role in the new technological order will belong to the converging Nano, Bio, Info, Cogno (NBIC⁴¹) technologies⁴². By the mid-21st century, they

³⁸ See Sokolov, A., *Informatsionnoye obshchestvo v virtualnoi i sotsialnoi realnosti* (Information society in virtual and social reality). St Petersburg, Alteya, 2012, p. 328.

³⁹ This is a manifestation of the dual sacred/profane level of the mythological mind.

⁴⁰ Epstein, M.: *Mir kak matritsa. O novom psikhotype*. Still Jates. (The World as a Matrix. On a New Psychological Type. Still Jates). In: *Chastnyi korrespondent*. September 23, 2012. http://www.chaskor.ru/article/mir_kak_matritsa_25366.

⁴¹ Sometimes we can come across the acronym NBICS, standing for Nano, Bio, Info, Cogno, Socio.

⁴² To get an idea, see also Kovalchuk, M.: *Konvergentsiya nauk i tekhnologii: Proryv v budushchee*. (Converging Science and Technology: A Breakthrough into the Future), http://www.strf.ru/material.aspx?CatalogId=221&d_no=38178; Medvedev D.: *Konvergentsiya tekhnologii – novaya determinanta razvitiya obshchestva* (Converging Technology: A New Determinant in Societal Development), <http://transhumanism-russia.ru/content/view/621/48/>; Yefremenko, D. et al.: *NBIC konvergentsiya kak problema sotsialno-gumanitarnogo*

are predicted to lead to technology taking control over human nature, including over the activity of man's consciousness. Artificial intelligence will then reach the level of human intelligence and in some cases may well outperform it⁴³. There will be more hybrid robots around – cybernetic organisms (cyborgs), made of both biological and mechanical parts, and humanlike androids similar in their characteristics to cyborgs.

All this would look like a sci-fi story if it were non-existent in our real life. In any case, the infrastructure currently being created to advance NBIC technology in the U.S. and EU member countries very much resembles the model that ICT development followed about a decade ago.

The term “converging technologies”⁴⁴ was introduced in 2002, by the U.S. nanoscale technology specialist Mihail Roco and the social scientist William Bainbridge in “Converging Technologies for Improving Human Performance. Nanotechnology, Biotechnology, Information Technology and Cognitive Science,” a report compiled for the U.S. National Science Foundation⁴⁵.

The report outlines the main features of the process of Nano-Bio-Info-Cogno unification (intensive interaction between various branches of science and technology; large-scale research and impact (from the atomic level of matter all the way up to intellectual systems); technological prospects for enhancing human performance) and also dwells on possible implications of that convergence for human civilization. Of the four NBIC fields, IT is described as the most developed one.⁴⁶

Incidentally, Roco was the mastermind of the National Nanotechnology Initiative (NNI), whose implementation got underway in the year 2000.

In July 2004, a group of European experts led by philosopher Alfred Nordmann presented to the European Commission a foresight project

znaniya (NBIC Convergence as a Problem of Cognition in the Humanities), http://nbic-convergence.narod.ru/olderfiles/1/Efremenko_Evseeva_Giryayeva.pdf; Alekseyeva, I. et al. Tekhnolyudi protiv postlyudei. NBICS revolyutsiya i budushchee cheloveka (Generation Techno vs. Generation Post: NBICS Revolution and the Future of Humankind), http://vphil.ru/index.php?option=com_content&task=view&id=717&Itemid=52.

⁴³ By 2009, Artificial Intelligence will allegedly measure up to human intelligence. In: Izvestia newspaper. February 18, 2008. <http://izvestia.ru/news/418765>.

⁴⁴ Another popular term is “converging technologies”. The word “convergence” refers not just to mutual influence of technologies, but also to their becoming part of one another, with the borders between them blurred as a result.

⁴⁵ Converging Technologies for Improving Human Performance. Nanotechnology, biotechnology, information technology and cognitive science. NSF/DOC-sponsored report. Ed. By Mihail C. Roco and William Sims Bainbridge. National Science Foundation. – Dordrecht (The Netherlands). – Kluwer Academic Publishers (currently Springer), 2003. – 482 p. http://www.wtec.org/ConvergingTechnologies/Report/NBIC_report.pdf.

⁴⁶ See Lipschitz V.: NBIC-konvergentsiya (NBIC Convergence). <http://www.proza.ru/2011/06/19/1130>.

“Converging Technologies – Shaping the Future of European Societies”⁴⁷. The report proposed a distinctly European approach to NBIC technology, which became known as CTEKS (Converging Technologies for the European Knowledge Society).

Like in the 1990s, approaches realized within the U.S.’ and Europe’s innovative technology advancement programmes are not the same. The States, with its upbeat futuristic outlook, focuses on ways to raise the quality of life for private individuals while in Europe, priority is traditionally given to socio-cultural factors⁴⁸.

In 2008, Roco published his essay “Possibilities for global governance of converging technologies”⁴⁹. The paper gained wide acclaim. Its publication left no doubts that in their further development, these technologies will follow in the ICTs’ footsteps. Global political institutions of the level of the World Economic Forum in Davos, the G8, United Nations agencies and the UN General Assembly are likely to get involved with the issue before long. There is also a very realistic possibility of a related world summit taking place some time soon.

What are the prospects for the development of the global information society?

I believe that at the level of individual nations and regions, we should expect further acceleration in the process of building information infrastructure, to eventually create virtually unlimited telecommunication capabilities globe-wide. But per se, that infrastructure will serve only to pave the way for a new phase in the technology revolution. Further down the road, the “information society” concept will – with its historical mission now accomplished – leave the stage, giving way to the concept of NBIC-based “knowledge societies”.

⁴⁷ Converging Technologies – Shaping the Future of European Societies, by Alfred Nordmann, Rapporteur. Report. Foresighting the New Technology Wave, 2004. http://www.ntnu.no/2020/final_report_en.pdf.

⁴⁸ See Berger M.: Europe and the U.S. take different approaches to Converging Technologies. <http://www.nanowerk.com/spotlight/spotid=6905.php>; Andreyev, A.: Tekhnonauka (Technoscience), <http://gtmarket.ru/laboratory/expertize/5993>.

⁴⁹ Roco, Mihail C. Possibilities for global governance of converging technologies // Journal of Nanoparticle Research. – January 2008. – Vol. 10. – Issue 1. – Pp. 11–29, http://www.nsf.gov/crssprgm/nano/global_govt_online_jnr.pdf; See also Roco M. C. Converging science and technology: opportunities for global education and training (Seoul, Korea, November 6, 2008), <http://www.slideshare.net/mindrom/global-hr-forum2008mihail-rococonverging-science-and-technologyopportunities-for-global-education-and-training>.

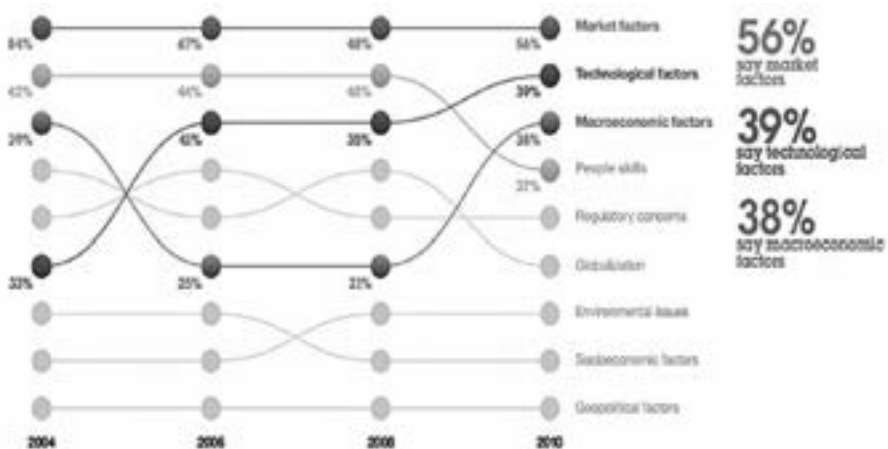
Information and Communication Technologies and Their Impact on the Society

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(Vilnius, Lithuania)

X Factor – constant connectivity. “Connectivity enabled by the Internet could be changing our cognition in ways that are less suitable to deal with complexity, uncertainty and sustainability” (Source: Global Risks 2012. Insight Report. World Economic Forum 2012).

Information dissemination and accessibility is an underlying factor for sustainable economic, political, communal, and social development. Information policy affects all of us because without information we do not function individually and definitely not as a society. The aim of the information society is to gain competitive advantage through using information and communication technologies (ICT) in a creative and productive way internationally. Globalization refers to the rapidly developing and ever densening network of interconnections and interdependencies that characterize modern social life. Modern communication techniques enable quick and easy interaction between countries and cultures.



*Figure 1. Top external factors
(the relative impact of technology as an external factor rises year by year)*

(Source: Capitalizing on Complexity Insights from the Global Chief Executive Officer Study IBM, 2010)

In the Peoples Communication Charter it is written “...communication can be used as a force to support the powerful and to victimize the powerless and [...] communication is fundamental to the shaping of the cultural environment of every society”. In spite of “information revolution”, today’s reality shows an increasing gap between the information-rich and information-poor sectors within the society. Figure 2 represents the growing complexity of all types of literacy.

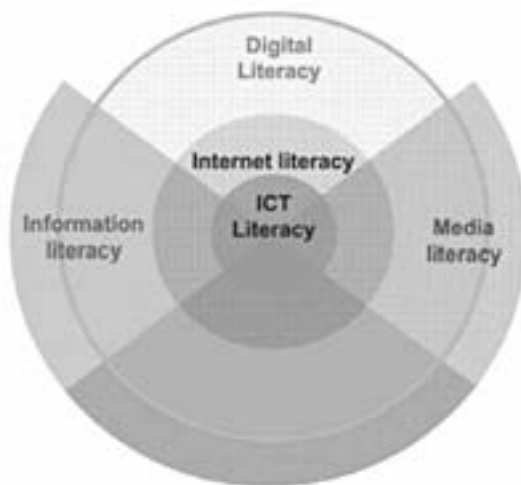


Figure 2. Digital literacy and other related literacies

(Source: Anusca Ferrari. Digital Competence in Practice: An Analysis of Frameworks. Luxembourg: Publications Office of the European Union, 2012)

The Europe 2020 strategy’s objective is to use smart, sustainable and inclusive growth to emerge from the crisis. The *Digital Agenda for Europe*⁵⁰ pinpoints as obstacles the lack of digital skills, the risk of low trust in networks, cybercrime, and missed opportunities in addressing societal challenges.

The EESC considers this objective to be absolutely vital. No citizen should suffer e-exclusion, although e-inclusion should first of all open the way to personal development, participation in social life and independence⁵¹.

Universal e-inclusion is supposed to increase employment and growth. The crisis, the demographic situation and rising unemployment and insecurity do not facilitate the development of skills, from either the employees’ or the employers’ perspective. Action against job insecurity and isolation is one of the conditions needed to allow people to obtain qualifications, especially in IT,

⁵⁰ COM(2010) 245 final/2, OJ C 54, 19.2.2011.

⁵¹ EU Ministerial Declaration, Malmö, Sweden, 18 November 2009.

in order to access an inclusive labour market⁵², as the gap between the qualified and unqualified is widening. It is absolutely vital for social dialogue, especially sectoral dialogue,⁵³ and public policies to converge in order to increase and transform the e-skills of groups that are at a disadvantage on the labour market.

The key challenge for each organisation is to become the architect of revolution in its industry, leaving others to play catch-up. The competitive advantage for organisations intending to win in the new economy is non-linear innovation.

The world today is already heavily dependent on ICT for the creation of wealth and our quality of life. It is important that our growing dependence on technologies is matched by an increasing sophistication of security measures to protect critical information infrastructure (power, water, transport, security systems etc.) and to protect citizens from cybercrime. We also need to have strategic plans defining how technology can respond to the needs of an ageing society, as ICT can help to improve their quality of life, stay healthier, live independently for longer and remain active at work in their community. A wide range of services could be offered in the area of communication, safety and health to name a few.



Figure 3. A summary of challenges posed by the digital agenda and people's expectations

(Source: Opinion of the European Economic and Social Committee on Enhancing digital literacy, e-skills and e-inclusion exploratory opinion, p. 14, 2011)

⁵² Framework Agreement concluded by ETUC-BUSINESSEUROPE, CEEP and UEAPME (2010).

⁵³ Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning (2008/C 111/01).

One of the main new challenges today is to ensure persistent and consistent growth of knowledge economy serving the basis for human development. Our concept consists of two main components of development: information society development; knowledge economy development.

The information policy is determined as a set of rules, regulation and standards that control the access to information for the society. National information policy is a key issue of culture, knowledge and information institutions. It is important to note that the knowledge economy encourages these factors: improving productivity, competitiveness, and growth; new approaches to education, innovation, and the use of ICT; networking, inclusiveness, partnership; a different role for government.

Knowledge economy is based on these four principles, which promote the process of development: education system that ensures that citizens are equipped to acquire, use, and share knowledge; innovation systems that bring together researchers and businesses in commercial applications of science and technology; an information society infrastructure that gives all people access to affordable and effective information and communications; an economic and institutional framework that ensures a stable macroeconomic environment, competition, flexible labor markets, adequate social protection.

CEOs now see technology change as the most critical factor.

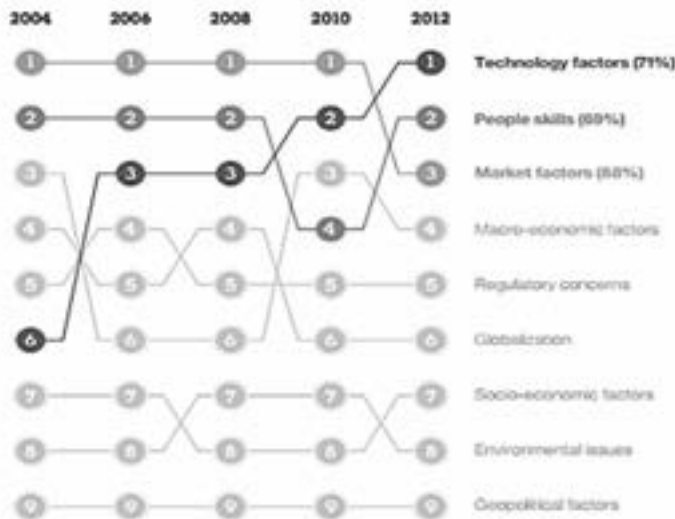


Figure 4. Technology pushes to the top of all the external forces that could impact organizations over the next three to five years

(Source: Leading Through Connections – Insights from the Global Chief Executive Officer Study, IBM, 2012)

Now the political and economic power shifts from the physical to the virtual world. In the World Economic Forum Report “Global Risks 2012” it is stated that “the impact of crime, terrorism and war in the virtual world have yet to equal that of the physical world, but there is fear that this could change”, because hyperconnectivity is already a reality. In the current world with over five billion mobile phones occupied with Internet connectivity and cloud-based applications, daily life is more vulnerable to cyber threats and digital disruptions. Indeed, we need to agree with the idea that related constellation of global risks in this case highlights that incentives are misaligned with respect to manage this global challenge. Consequently, “...online security is now considered a public good implying an urgent need to encourage greater private sector engagement to reduce the vulnerability of key information technology systems”. We desperately need a healthy digital space to ensure stability in the world economy and balance of power in order to avoid the Dark Side of Connectivity.

Technological category addresses risks that are of greatest concern in the area of current and emerging technology. Figure 6 shows a landscape of global technological risks as plotted by their perceived likelihood and potential impact over the next 10 years. Technological risks range from cyber attacks to critical systems failure having the highest impact and lower likelihood and to unintended consequences of nanotechnology.

Critical systems failure	Single-point system vulnerabilities trigger cascading failure of critical information infrastructure and networks.
Cyberattacks	State-sponsored, state-affiliated, criminal or terrorist cyberattacks.
Failure of intellectual property regime	Ineffective intellectual property protections undermine research and development, innovation and investment.
Massive digital misinformation	Deliberately provocative, misleading or incomplete information disseminates rapidly and extensively with dangerous consequences.
Massive incidents of data fraud/theft	Criminal or wrongful exploitation of private data on an unprecedented scale.
Mineral resource supply vulnerability	Growing dependence of industries on minerals that are not widely sourced with long extraction-to-market timelag for new sources.
Proliferation of orbital debris	Rapidly accumulating debris in high-traffic geocentric orbits jeopardizes critical satellite infrastructure.

Unintended consequences of climate change mitigation	Attempts at geoengineering or renewable energy development result in new complex challenges.
Unintended consequences of nanotechnology	The manipulation of matter on an atomic and molecular level raises concerns on nanomaterial toxicity.
Unintended consequences of new life science technologies	Advances in genetics and synthetic biology produce unintended consequences, mishaps or are used as weapons.

Figure 5. Technological Risk Descriptions

(Source: World Economic Forum, 2012)

Conclusions

The quality, innovation, transparency and accessibility that can be expected from services of general interest (SGI) and the authorities in Europe and the Member States are the very foundations of e-inclusion. As businesses are broadly in touch with the digital world⁵⁴ while 30% of households had yet to be connected to the Internet in 2010⁵⁵, the EESC believes that the EU's role must be to provide impetus and guidance, giving people equal opportunities, and that the EU could, without delay, introduce a harmonised approach for Member States covering protection to make practices and data secure.

The new knowledge-networked economy requires a totally different strategic management mindset and toolbox. The traditional approaches are not completely obsolete, but used on their own they are inappropriate for sustainable organizational performance and survival in today's knowledge-networked economy. National governments must set the appropriate ICT strategies, which underpin social, cultural and economic prosperity.

To realise fully the benefits that networked technology promises the world, informational systems must function reliably and securely. People must have confidence that data will travel to its destinations without disruption. Assuring the free flow of information, the security and privacy of data, and the integrity of the interconnected networks are all essential to global

⁵⁴ OJ C 116, 20.4.2001, p. 30; OJ C 77, 31.3.2009, p.60 and p. 63; OJ C 175, 28.7.2009, p. 92; OJ C 317, 23.12.2009, p. 84; OJ C 128, 18.5.2010, p. 69; OJ C 255, 22.9.2010, p. 116; OJ C 48, 15.2.2011, p. 72; OJ C 54, 19.2.2011, p. 58; OJ C 107, 6.4.2011, p. 44 and p. 58; CESE 816/2011, 4/5.5.2011.

⁵⁵ See Eurostat-STAT10/193, 14.12.2010.

economic prosperity, security, and the promotion of universal rights. For these technologies to continue to empower individuals, enrich societies, and foster the research, development, and innovation essential to building modern economies, it must retain the openness and interoperability that have characterized its explosive growth.

The idea of the Future Internet is to develop the Internet along four dimensions: the Internet of knowledge and content, the Internet of people, the Internet of services and the Internet of things. Networks covering the whole of Europe, the development of broadband to boost high speed connections and the use of the digital dividend band⁵⁶ have to be completed as soon as possible in order to guarantee universal service.

⁵⁶ OJ C 94, 18.4.2002; OJ C 110, 9.5.2006; OJ C 175, 27.7.2007; OJ C 224, 30.8.2008; OJ C 175, 28.7.2009; OJ C 128, 18.5.2010; OJ C 44, 11.2.2011; OJ C 54, 19.2.2011; OJ C 107, 6.4.2011, p.53.

The Great Copyright Swindle

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With the advent of new international treaties, the global copyright system is being slowly petrified. With proliferation of online services, our information sovereignty is now lost on every level. It's already impossible for almost any country to shape its legal system in the area of the flow of information freely and independently. So the question arises: who profits from this and why control of information became the central problem of modern societies?

In the course of the previous meetings under the aegis of the UNESCO «Information for all» programme we have been discussing different problems of modern media: media literacy, access to knowledge, freedom of speech. The Moscow Declaration on Media and Information Literacy signed in 2012 is a visionary document defining challenges and dangers in this area. Today I would like to concentrate on one aspect of the Moscow Declaration: the processes of “commercialization, privatization, and monopolization of information” and their impact, with special attention to legislative norms of human communication and the special role of the copyright law.

I need to make it clear that I'm neither a lawyer nor an economist. I'm a culture anthropologist who researches copyright as a system of social norms and analyses the language of the Polish and global copyright debate.

Language is a normative sign system. Thus language does not reflect reality: it's a tool which we use to comprehend reality. As such it may be easily used to influence our decisions by introducing certain words and ideas. It often happens that language tricks us to be more concerned about non-existent problems, while keeping our attention away from real problems. Language is the key to people's minds.

In the area of copyright this language is being seriously misused. Words such as “pirates”, “stealing” and “property” are being used more often than ethically neutral terms such as “breach of the copyright” and “intellectual monopoly”. Careful wording of the copyright debate attaches moral stigma to anyone who opposes the current system.

Due to the ever increasing importance of copyright in the modern world we need to seriously re-evaluate and assess our beliefs in this area. But as every system, copyright needs to be questioned exactly in the same way we assess any other law: why was it enacted and what are its goals, who is supposed to benefit from it, does it work as designed?

Copyright is a global system which regulates the trade of ideas and allows for their privatization. The aim of copyright used to be to advance sciences and arts (in the Anglo-Saxon tradition) and allow authors to benefit from their works (the European tradition). It is worth mentioning that the concept of copyright is exceptional and relatively new – it appeared in the middle of the 19th century, and was gradually developed in the course of the past 150 years. So, what is copyright and how does it change the nature of information?

In the old times, trade involved transferring things. Meat and rice, cotton and oil were things of the value. The result of such a transaction was beneficial for both sides. But information is not a thing and does not have a value by itself. We may benefit from obtaining a piece of information, but the main source of value of things is their scarcity. Things, which are abundant, are free. They become expensive only if our resources dwindle – which is why water is free in places where there is plenty of it and very expensive in places which lack water sources.

Information is never scarce because in the contemporary world we can duplicate and proliferate information with zero marginal cost. To make information a subject to transactions, we need to make it scarce, and this scarcity needs to be artificially created.

This scarcity is called intellectual monopolies. Intellectual monopoly is an artificial, state guaranteed privilege. The basic promise of copyright is: if we grant the monopoly to the creator he will be able to profit from his creative work, and the power to allow or deny further uses of the work gives the creator a stable source of income and makes it possible for authors to create other works. The mechanism of “intellectual monopoly” is a reason why in the beginning copyright was often part of censorship laws – as was the case of Russia in the 1828 act.

You have probably never heard the term “intellectual monopolies”, and there is a reason for that. This is because today they are no longer called by the name reflecting what they really are. Nowadays they are called “intellectual property” because, as you probably know, in the neoliberal ideology “property” is always good, and “monopoly” is always bad. Now we know also other kinds of such monopolies, for example patents and trademarks.

But of course all those are not property, because there is no property to sell. Intellectual monopolies are not meant to transfer things. They are meant to transfer wealth from those without power to those who hold power. If we strip ideologies built over the past years down to facts, it becomes very clear: every transaction that involves intellectual monopoly is just an act of exerting money from the unprivileged ones to those in power.

Copyright does have its merits. We do need mechanisms to benefit authors and inventors for their works and inventions. But current version of copyright does not benefit those who create most. It benefits all different kinds of intermediaries: publishers and distributors, collecting societies and corporations. In the field of literature an author may be happy, if he gets 10% of the value paid for the work by an audience.

In the same time intellectual monopolies do not really benefit culture and society. A study conducted by Paul J. Heald (University of Illinois) regarding availability of music and books reveals that the copyrighted status of a work makes it highly unlikely to be published again⁵⁷. On the other hand, public domain books are widely available and being used. Thus intellectual monopolies seriously hurt culture and society in this regard, mostly due to overstretched copyright term which for the most countries is the life of an author plus 70 years, and the Berne Convention puts it at minimum of life of an author plus 50 years.

So, who exactly benefits from intellectual monopolies? We can look at this on two levels: the individual level and the macroeconomic one. On the individual level, this is somewhat simple: intellectual monopoly benefits those who control works, and usually those are powerful intermediaries who control the market. This is why the current copyright system is designed to extract as much money as possible from the market, and not around the values of balance, by respecting both authors' and users' rights, and giving both incentives for creation and the right to participate in culture, by helping develop stable business model and taking advantage of the impact innovation and education make in the life of people. It's not designed to benefit authors, and society, and economy as a whole. It's designed to be a global tax on knowledge.

At this point, let us take a look at the macroeconomic level. The most interesting data was published by WTO, the World Trade Organization, which is very active in the field of ensuring that copyright is the same all over the world. This does not apply only to the copyright length – it also applies to the copyright scope and enforcement. If we strengthen the process of privatization of

⁵⁷ http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2290181.

information by making the scope of monopoly wider – for example by making it illegal to use copyrighted material for personal or non-commercial purpose – we simply generate more tools to exercise monopolistic power on the market.

And this power is being exercised on a global scale. We can clearly see it while looking at the WTO data⁵⁸. In 2011, the United States' share of royalties and license fees was 103,797 million dollars. No matter how we analyse the data, the United States and Japan are net exporters of intellectual monopolies, while the European Union imports just a little bit more than it exports due to extra-UE imports and the rest of the world are simply net importers.

The basic logic behind global trade is that net exporters should try to protect their sources of income. And they do. Let us look at the example of Russia. In 2006 Russian government was working hard to get the Russian Federation accepted into WTO. What was the most important demand of the USA? The United States' Trade Representative Susan Schwab decided that the most important issue was to shut down a service allowing people to listen to the music – Allofmp3.ru⁵⁹. According to my best knowledge this website was fully compliant with the Russian copyright law back then. But the website operators have been anyway sued both in Moscow and New York, and despite the fact that the independent court confirmed legality of their service, they had to close it down.

Since then Russia has updated its copyright law – just like most other countries in the world did in the last 50 years – to keep it compliant with the WIPO and WTO treaties. The system of international treaties – the Berne Convention and TRIPS – effectively closes the possibility to shape the copyright scope and term according to the needs of local communities. The system of international treaties is designed to make sure that the scope and enforcement is the same all over the world.

In most developing countries, copyright and other intellectual monopolies are a matter of lesser concern. If we cope with problems such as poverty and unemployment, lack of education and underdeveloped industry, wars and other conflicts, lack of natural resources or difficult access to export markets – than intellectual monopolies seem to be really a non-issue.

But they are not. Intellectual monopolies are new tools in which some economies may exercise colonial exploitation. In the times of easy and cheap global production of even most advanced products, the competitive advantage based on the know-how of advanced economies is becoming less and less important. That is the reason why there is a very strong pressure on developing countries

⁵⁸ http://www.wto.org/english/res_e/statis_e/its2012_e/its12_trade_category_e.pdf.

⁵⁹ http://www.ustr.gov/assets/Document_Library/Transcripts/2006/September/asset_upload_file794_9872.pdf.

to adopt strict and restrictive laws in the area of intellectual monopolies. By making that a truly global system some developed countries get most of the money, and at the same time export all the costs of executing payments: at the end, it is public administration, police and justice system responsible for collection of this money and sending it abroad. For most of the countries, the promise of the copyright law is that you import nothing, at least nothing of the value of real things, and you send real money. Hardly a good deal for most of the world.

In 2010, the United States' export generated 105,583,000,000 USD in royalties and license fees alone. In the same year, import accounted for only 33,450,000,000 USD. That adds 75 thousands of millions of dollars to USA trade balance⁶⁰, which in most other areas is negative. And we are not taking into account other services or advanced products, just royalties and licenses which means that no real product changed hands. This explains why the United States is using its diplomacy and power to force everyone to adopt the global copyright system.

This is not surprising. With English being the lingua franca of the contemporary world, it is natural that cultural production in this language is widely used all over the globe, but you cannot realistically expect that the American market will be open for production in your language. It is difficult not to look back and see history repeating itself. In the end of the 19th century, the biggest lobbyist for the Berne Convention was France. At that time, French was the language of global elites and French literature was among those most widely read abroad. Thus, it was France to benefit most from copyright becoming a global monopoly system.

One notable country not having adopted the Berne Convention back then was... the United States. In fact, for most part of the 20th century USA opted-out of the Berne Convention and signed it very late, in 1988. At this point the USA was no longer a net importer (relying on British literary authors for most of its cultural history), but a net exporter, thus it decided that it was no longer beneficial for its economy to opt out.

The story does not end at the Berne Convention and WIPO. When it seemed unlikely that within WIPO there is a consent to make copyright and other intellectual monopolies more strict, another approach was tested: signing bilateral and multilateral treaties. The first such treaty was implemented when WTO shaped TRIPS, The Agreement on Trade Related Aspects of Intellectual Property Rights. This treaty has taken away from the countries who signed it the freedom to shape the copyright scope freely⁶¹.

⁶⁰ <http://www.census.gov/compendia/statab/2012/tables/12s1300.pdf>.

⁶¹ http://en.wikipedia.org/wiki/File:World_Trade_Organization_Members.svg.

It was demanded that fair use and fair dealing portions of the copyright law are limited to communication which cannot be commercially exploited, in a so-called three step test. This was a serious blow for countries which relied on the broad scope of fair use to make sure that their citizens benefit from broad access and rights to participate in cultural life, and opted to keep certain kinds of communication out of the scope of copyright monopoly. And if you do not come from certain Northern African or Eastern and Central Asian countries, this applies to you as well.

The story goes on. Now the scope of the lobbyists is on enforcement. ACTA (now effectively killed by the European Union after the series of protests which originated in Poland), TPP and other international treaties are being prepared to make sure that not only the time and the scope of monopoly is set globally – but also how we enforce and punish the breaches of this law is the same in all countries.

We are not yet at the point where our citizens need to pay 150,000 USD for downloading just one song, which is the amount of statutory damages in the US. But we will be at this point, if we do not stop this process.

Information Society and a New Concept of Copyright

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Copyright has been, for some three centuries, the legal foundation of the industrial production of culture, of the institution of authorship, and of the system of information propagation in society. With the advent of mass propagation of computer technologies and access to Internet, the traditional copyright begins not only to impede spreading of information, but it also ceases to correspond to the general socio-cultural need for altering the status of the author and of authorship in culture.

It was not always that information was a commodity. It was the emergence of industrial production of books in the 15th century, and the emergence in the 18th century of copyright as its legal infrastructure, and of the concept of universal intellectual property for produced information in early 20th century, which turned information into a commodity, the chief product of the contemporary industry of content. Society has given its consent to attribute to the author partial and time-limited monopoly for the sake of supporting the industrial mechanism of production of cultural artifacts and knowledge.

The emergence of copyright, and particularly international agreements in this field, have played an important part in rendering traits of civilization to the unorganized and predatory market. We should recall that it was the term “piracy” in the context of breach of copyright, not in the context of the law of the sea, which was used by British publishers in relation to US publishers who, being protected by their legislation, shamelessly published British authors without paying royalties to them. Only the signing of the international treaties and the adoption of the international agreements, including the Bern Convention, provided for the introduction of more or less general rules for the relations between authors and publishers, and also consolidated the economic character of the author and of the authorship, both of which had for centuries stayed as merely symbolic notions: in the context of industrial production the author is not only the one who carries

the authorship, but (which is so often more important) the one who is authorized to sign the licensing agreement.

The logic of industrial production revealed however, long before the advent of the computer revolution, the negative effects of even such limited monopoly which had been gifted to copyright holders by legislation: it was not infrequently that authors would transfer their rights to publishers who used those rights, being motivated by their own interests, not by authors' interests.

While authors are interested in a widest possible propagation of their works, publishers are interested in minimizing their expenses and maximizing their income. The interests of authors and publishers coincide mostly in cases when the work of literature turns out to be a bestseller, a cinema blockbuster, or a musical hit. As the result, the copyright system in its contemporary form is only for the profit of information intermediaries – major operators in the market of content, such as the blockbuster industry, several publishing houses, and majors in the sound recording industry. All the rest, including users, the new content business, and society which is interested in the development and spreading of culture, stay the losers. They are the large corporations in the content industry which are interested in the perpetual protection of the copyright for works that continue to bring profit.

The advent of the computer revolution, the emergence of technologies for digital replication and for the transfer of information have changed radically the method of content production: now the price of one digital copy tends to zero, with the money made from sale of each copy of, let us say, Disney cartoon films, making the net marginal profit of the corporation. Such replication requires already neither production investment, nor payment for the authors' labor (the licensing payment has long since been made), leaving just advertizing and marketing expenses.

Far not all works fall into this category, but the present-day copyright system is not capable of protecting different works according to different rules, so the lobbyists of the content industry are interested in the lawmakers of various countries of the world preserving everything as it is for as long as possible and in a maximum possible rigid manner.

As a result, culturally significant works whose protection term has not yet expired, but whose marketing can no longer bring super profit, are actually washed out of the present-day cultural space. We find as quite indicative in this sense the results of a research carried out by Paul J. Heald (University

of Illinois)⁶²: the excessive protection regime limits the circulation of most books to a degree where commercial publication of works which are too old for guaranteed commercial success, but not old enough for going over to public access, becomes unprofitable. Thus, out of the total number of books which are being published in the USA at the present time, the number of books that were published for the first time 50 to 70 years ago is several times smaller than the number of books published 100 or even 150 years ago.

The contemporary copyright regime impedes to an even greater degree the cultural circulation of so-called orphan works, the search for whose authors and copyright holders is either impossible, or calls for excessively great efforts and expenses. According to the basic principles of the Berne Convention, publication of works without a direct permission from copyright holders is prohibited. What if the copyright holder cannot provide such permission because it is unknown whether he (she) is alive? American librarians have made a calculation according to which about 70 percent of the books published in the 20th century can be referred to “orphan works.” They can technically be restituted to the cultural turnover without great expense through the digitizing procedure, but the barrier of the copyright does not allow this to be done because there always stays the probability of a sudden appearance of the “lost” author.

The mass spreading of computer technologies and of access to Internet has changed radically the author’s status in the field of culture. Nearly every person can be an author now and most users of the Network already are, often without realizing the fact. All of us publish short notes and comments in blogs and in social networks. From the point of view of the generally adopted standards of copyright, as inscribed in the Berne Convention, all of us, absurd as it looks, do become authors and do have the same exclusive moral and property rights with regard to Twitter messages that are owned by authors who publish their books in publishing houses.

The way authorship is exercised has changed too. A huge number of texts millions of which appear every day, are created not by individual authors but by more or less organized bodies of authors who so often may not even know one another personally. Wikipedia is one example of such a creation, and this is how open source software is created, and this way millions of entries are made in blogs and social networks.

⁶² <http://ssrn.com/abstract=2290181>.

It must be pointed out that authorship today as such, if we go by statistics only, is exercised mostly not for commercial purposes at all. However, non-commercial exercise of authorship, or non-commercial use of literary works in the contemporary law of copyright is perceived rather as an exception (in the countries of the continental law) or else is allowed by the shaky structure of bona fide use (in the common law countries). We must also point out that changes in authorship legislation result not infrequently in changed status of works which are considered already as public domain assets, automatically withdrawing from free cultural turnover a huge number of works, regardless of commercial expedience of such a transfer.

Something that we notice particularly well is the inadequate character of the traditional copyright in its relation to modern realities inasmuch as it implies regulation of the geographical distribution of works. Copyright holders are free to allow or to prohibit distribution of works in certain countries, and to establish different priorities and different price levels for distribution of content. Transferring information from one hemisphere to the other takes split seconds now, but the procedure of content licensing for spreading works takes weeks, months, even years. Such a copyright structure profits in reality only and exclusively those countries and those corporations, which are the chief suppliers both of mass entertainment content and of scientific knowledge.

The mass spreading of computer and network technologies has changed the method of content production and propagation, but legislation and copyright holders are unwilling to take note of the objective realities. Mere half a century ago creating a copy of a work was virtually impossible outside the professional industry because this implied creation of a material copy. As to copying digital content, it presents no problem whatsoever but is virtually inconspicuous and everyday practice of hundred million users of computers and Internet. Moreover, limiting copying is a complex problem of itself, and content providers still persist to try to shift the cost of solving it over to users by creating cumbersome systems of digital rights management.

While there was a time when nature itself was supporting the monopoly of information intermediaries, they now have no such support. It is difficult to create a material copy, unlike a digital copy. Major copyright holders who groundlessly act as defenders of the authors' rights, are left to appeal for more strict structures of law enforcement and to appeal to users' morality which contradicts, however, man's need of cooperation, which is a property of his

as a social creature, such cooperation including exchange of information and cultural artifacts. In this respect the traditional copyright directly contradicts social interests, which fact is clearly seen in the acts of wide spreading of unauthorized copying (described usually as “piracy”) even in OECD countries. A recent research by Joe Karaganis and Lennart Renkema⁶³ shows that in the USA and in Germany illegal copying of works protected by copyright is practiced by one half to two thirds of all Internet users.

By the way, the same research has shown also that the most active “pirates” bring most of the money received by the content industry because they are the most generous buyers of content. Numerous research projects prove that, contrary to ideas proposed by representatives of big content business, unauthorized distribution does not undermine the industry’s commercial interests, but, on the contrary, assists that industry, acting as free advertising in the situation of information overloading which has become a feature of modern society. It is not “the pirate” who is the chief “enemy” of the author and the publisher, but lack of publicity, lack of attention and lack of the time which the user can spend on any particular content.

We cannot say that legislators are blind and follow completely those lobbying the traditional publishing industry. The need for transforming the copyright system is becoming ever more evident to politicians in various countries. Over the past two years important steps were made in Europe along the road of important transformations in national legislations, which are modest but nonetheless important. To give an example, a law was passed in France in 2012 “on digitizing inaccessible books of the 20th century,” which excluded in effect from the purview of the Berne Convention works of French authors published in the 20th century, which are no longer represented in the commercial market. Law 2012-287 dated March 1, 2012 provides for creating a mechanism to result in all these books to be digitized and returned into commercial turnover by a procedure of enforcement.

The European Union has gone even farther by solving the problem of the use of orphan works. Directive 2012/28/EU, adopted and enforced in 2012, provides that during the next 3 years EU member-countries amend their national copyright legislations to allow use of orphan works within the frameworks of a clear legal procedure.

⁶³ http://americanassembly.org/sites/default/files/download/publication/copy_culture.pdf.

Similar initiatives for revision of key copyright legislation provisions have been appearing over the past few years in Russia as well. Two years ago copyright experts under the Association of Internet Publishers formulated principles which can be used for creating a new international concept of copyright. The draft of the Moscow copyright convention was used for the address Russian President Dmitry Medvedev delivered to the G-20 meeting in the autumn of 2011.

The new copyright concept should be based on realistic and realizable principles which correspond to the interests of the entire society, protect both authors' rights for use of literary works and the rights of society for access to culture and knowledge. It is only when these requirements are met, that copyright will be commanding respect and will be creating new possibilities for creative work and for development of society.

The state must protect personal (moral or non-proprietary) rights of the author, his proprietary rights (and the right to commercial use of his works), his rights for free distribution of his works, as well as the cultural heritage which is kept as public domain assets.

Protection of copyright must distinguish two types of the right – proprietary rights (the right of commercial use) and non-proprietary rights (personal or moral rights). Personal rights, including the right to name, must be protected regardless of the period of validity of the rights protection. Protection of the right of commercial use is provided by the state to the author as a matter of privilege for a fixed term of time. The nature of the protection must depend on the circumstances of the publishing and of the use of the work. For one, use of a work for personal purposes without deriving profit must not be subject to state regulation or limitation.

Implementation of the above principles is possible through going to the historical legal experience that is available in some countries, namely to registration of works which were meant by the authors for the stream of commerce with paying material remuneration to them. It is impossible to control use of a literary work for personal purposes without deriving profit, since we can only control something about which there exists respective information. To receive material remuneration, a work of literature must be registered. The register is kept under the control of the state which learns in this way as to which works it is necessary to protect, for example, through introduction of paid registration, similarly to any registration of property.

Introduction of registration will make it possible to resolve the problem of “orphan” works of literature and to limit the scope of the state control, it will make authors take conscientious decisions with regard to their rights and it will contribute to growth of the volume of information with the status of public domain assets.

An author who wishes to set conditions for distribution of a work of literature, can express his will in the form of a free public domain license. Free licenses for works, which do not imply receipt of material remuneration by their authors, do not require official registration, they are recognized and protected by the state. Works regarding which their authors have not expressed their will in the form of a free public domain license, or which they have not registered for commercial use, shall be considered as having become public domain assets.

Literary works should be registered for a limited period of time. Specific period of registration may be discussed in the process of drawing a new international copyright convention, but it should be sufficiently short and foreseeable. The registration itself can be extended several times, if the author thinks that commercial use of his work is still worthwhile.

Registration cannot be extended without a time limit. Duration of the protection period is a subject of future discussion of specific provisions in a new copyright convention. However, it is clear already now that for an overwhelming number of objects of art and science the term of protection that is adopted in most countries must be reduced – “70 years after the death of the author” means in reality “a life imprisonment” for such works.

The time limit must depend on the form of the work – the same protection term for films, scientific articles, computer programmes and blog comments is clearly irrational. This consideration refers, among other things, to scientific texts. Considering the rapid changes taking place in the world of science, it would be wise to limit their term of protection to the extreme minimum and to provide thereby for a faster turnover and increase of scientific knowledge.

The state must take care not only of the interests of authors, but also of the interests of society, that is, of safeguarding and supporting public domain cultural assets. According to the principles of the new copyright convention, the sphere of public domain assets shall be replenished with works regarding which the time limit of protection of property rights has

expired, with works not registered for commercial use, and with works regarding which the authors have not expressed their will in the form of free public domain license, as well as with works created at the state expense.

The state must not allow a backward transition of a work from public domain assets, and it must also take care of preservation of the sphere of public domain assets and of providing for access to them in digital form.

Implementation of the new principles of protection calls, absolutely, for political will founded on articulate and consolidated opinion of the cultural and scientific community. As well as for efforts on the part of all the participant countries of the international agreements in the sphere of copyright. The doors for such actions stay open: even the most strict international agreements like TRIPs provide for – within the frameworks of those agreements – any transformation of national laws. Settlement of the situation with orphan works, return of cultural values into the stream of commerce, expansion of the list of exclusions and of the sphere of bona fide use – these are the first steps in the direction of the requisite transformation of the copyright system.

The human race has long since left its workbench production prime and has entered the epoch of information society for which the concept of monopoly for propagation of culture and knowledge, be it a limited monopoly of individual authors, corporations or national states, is not merely outdated but is endangering further development. A well-considered and responsible renovation of the copyright system and a critical rethinking of the concept of copyright represents a guarantee of further developing the information society and of preserving the balance of interests of all the active participants of the information industry: authors, commercial agents, the state, and the entire society.

What Should We Do Next?

Towards the Encouragement of Green Policy on Digital Development

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1. The rise of green consciousness

50 years ago, when a company designed an engine for any kind of use, it was guided only by a very simple consideration of cost effectiveness: how to design the engine with minimum investment and market it in a way which will maximize profit. Similar considerations guided consumers in deciding which engine to buy.

Today, a similar company and consumers have another major set of considerations relating to the question: How to minimize damage to the environment in the short and long terms – to the immediate environment as well as to our globe in its entirety? These considerations often relate to legislated guidelines and benchmarks that have been put in place during the last decades; but in many other cases, companies go beyond the legal requirement and (for example) indicate on their products that most of the packaging is made of recycled materials. They do this in order to have an edge over competitors since they know that for a growing number of consumers, being “green” is an advantage even when it does not immediately affect their pocket. One can certainly say that in the last three decades we have “gone green” in this basic ecological sense.

Ecological considerations are not the only ones that are now added to the “good old” narrow cost effectiveness considerations that have guided research, design, production and consumption. Take the area of cosmetic industry for example. Many companies indicate that their products are not tested on animals. In some countries this is required by law, but often such statements label products even when there is no such legal requirement. Or in the area of sportswear some companies take the trouble to indicate that they are not employing unfair work practices or use underage workers even though it is still not required by law in many countries.

One can say that in these cases we have “gone green” in a metaphorical sense. Common to all three cases, as to many others, is that most individuals in many societies – producers and consumers alike – realize that the processes of research, design, and production of products, as well as their use, has to rely, among else, on considerations that are not strictly technological and economic. In the first case, these considerations are ecological; in the other two cases they are ethical – the commitment to defend animal rights (second case) or workers and children rights (third case). Thus, I use the term “going green” in the large sense as relating to adopting any set of guidelines or constraints to the processes of research, design, production and consumption of any product, which is not strictly technology- and market-driven but presents value or consideration for society, or at least many consider it to be so.

These examples reflect dramatic changes in the R&D of many products, and in the same time in their consumption during the last decades. While the situation is still very far from being ideal in all relevant contexts it clearly indicates that a new consciousness has developed – the “green” conciseness in a broad sense. This new consciousness hasn’t arisen of itself. It started with struggles of a few “weirdows,” continued with the development of a few – first peripheral, later influential – groups and NGOs that have continued the struggle in a more established way. It then further continued with the assistance of celebrities, public opinion shapers, and finally politicians and decision-makers who realized that their voters support the relevant processes. What characterizes the “green consciousness” in general is not the desire to prevent the development of any industry or limit it. Rather, it is the desire to balance the potential blessings of the development against potential damages (ecological, ethical or others) to which it may lead, and find the optimization point, which in the ecological context is called “sustainable development”.

2. The green consciousness, Humanism, and the digital media

My claim here is that we also have to go green concerning the digital media and try to balance their blessings against their possible damages. In other words, we have to strive for their sustainable development and use. “Sustainable” or “green” in any sense or context require a clear normative starting point. The starting point that seems natural, certainly in a conference sponsored by the Russian UNESCO IFAP Committee, is the Humanistic one since UNESCO was formed in light of Humanistic values and in order to promote them after World War II. It is its basic mandate to foster these values.

The question arises here: what are the relevant Humanistic values? Obviously one can go deep into the large number of unending philosophical discussions on this issue and never find a definitive answer, not to speak of an operational one. On the other hand, I simply chose the answer which I believe is ethically, socially and psychologically valid. Further, I believe it is intuitive and can be easily understood by anyone who cherishes the Humanistic values that are foundational to UNESCO's mandate and activity. I will not clarify or substantiate it here – this is a matter for a different context and which I did elsewhere (Aviram 2010).

Humanism in this context boils down to three groups of values and principles:

Most basic values

- Enhancement, support and defense of individuals' well-being in all contexts of human life.

On the individual level

- Development of *autonomous, self-fulfilling* individuals, who can enjoy a *meaningful life*.
- Moral, empathic and caring individuals.
- Individuals who feel committed to their communities and societies, but at the same time do not give up their right to have their own voice and to act for social change within the democratic procedures.

On the social level

- Development of Humanistic societies which are committed to the above principles and to guaranteeing the basic conditions necessary for their implementation: freedom, tolerance, pluralism, and equality.

These are obviously still abstract values (even the secondary ones). However, in a series of R&D projects I was involved in I showed that they can be translated into operational requirements and design guidelines for web based platforms and other digital media, which in turn lead to concrete programming specifications as well as clear and operational use recommendations, mainly for educators using digital media (iClass, EdComNet, Today's Stories; see Aviram et al. 2008; Aviram & Bar-Lev 1999).

In this paper I speak on the more general level on:

- the “Janus face” of digital technology when judged in light of Humanistic values;

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- the “Janus face” of the literature on digital technology – glorifying it as leading to Humanistic salvation, or lamenting it as leading to human decadence and social deterioration;
 - the need to adopt a balanced approach acknowledging the immense blessings as well as the horrifying perils;
 - the need to establish an international body to be in charge of enhancing research and other relevant activities;
 - the very challenging tasks that such an endeavor will have to tackle.

I conclude by saying that while we should approach this endeavor with open eyes – well aware of the difficulties, these should not deter us since the future of humanity and Humanistic values in the next generation is at stake.

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SECTION 1. THE INTERNET AS A SOCIO-CULTURAL PHENOMENON

The Phenomenon of the Internet in the Context of Cultural Macroevolution

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It would be fair to say that the advent of the Internet and the screen revolution have transformed the psyche, as well as the mindset, of modern-day humans. Which means that along with a major technology breakthrough, we are also witnessing an important change taking place in cultural evolution, or aromorphosis. This latter is defined by the general logic of civilizational development throughout history, rather than by some short-lived factors.

Human evolution over the centuries can be succinctly described as the ever-accelerating process of man moving away from nature and the environment. Living as part of the natural world is an inherent human need, and people have been striving to restore that underlying unity ever since consciousness came into being and spontaneous failures and delays in mental activity broke the integrity of the web of life, where all things are interrelated. But each attempt to reconnect will unavoidably lead to a new alienation and, consequently, to new cultural endeavours toward overcoming it situationally. This triggers the perpetuum mobile of a parallel evolution in human mentality and culture. Overcoming the discrete, atomised character of existence in a new syncretic environment created by culture is a fundamental unconscious goal behind evolution. The modern times have made this goal all the more apparent.

Virtual reality manifests neo-syncretism in a next nature (a secondary world) while also being the brightest manifestation of an emerging mythological mentality. The argument that virtual reality is the most efficient and most technologically accessible form of transcendence may sound rather abstract, but, to substantiate it, there is ample evidence from psychiatrists who register

an increasing number of disorders caused by what is known as “mental intoxication”. It does not take a degree in anthropology to see that a personal account in the social media is, for a modern neo-pagan, some sort of magical alter ego in the transcendental/virtual realm, whose borders are as porous as those that once detached an archaic person from the world of spirits.

The path to that neo-syncretism has been a long and thorny one. To be able to reach the finishing line in their race for new interconnectedness, people first had to explore the limits of the Opposite – discrete fragmentariness in life forms and in thinking. Toward those limits was oriented the logocentric cultural paradigm, which initially governed the axial civilizations and caught on subsequently with most humanity. The life cycle of the historical period associated with this paradigm was defined by landmark events such as separation of myth from ritual, the appearance of written language, the establishment of logocentrism in monotheistic salvationist religions, the invention of book printing and, finally, the recent information revolution. In the European cultural landscape, logocentrism reached its acme in Modernity, with the rise of rationalism, scientism, mechanistic and other suchlike attributes of the European litterati’s mindset. All this reflects European logocentrism’s ingrained unconscious striving to analyse the reality, an attitude that leads one to divide an elusive “self” and its semiotic forms – or try to split any kind of entity all the way down – with the goal being to discover the ultimate indivisible foundations of life.

The string of cultural and civilizational crises of the 19th and, especially, the 20th centuries raised the issue of the logocentric stage in human history drawing to a close, only to give way to neo-syncretism. One of the key indicators – along with the demise of logocentric discourse (philosophical and religious metaphysics, traditional arts, literature and cinema) – is the formation of a new type of cultural mindset, which I believe would be appropriate to refer to as “New Naturalness”. This emerging anthropological type is a subject of the screen revolution; its mentality is patchy, fluid, and oriented toward relativism, short-term processes, and current circumstances.

To be able to understand the nature of this phenomenon, we will need to look at the history of the cultural mindset, which could be regarded, in a sense, as a dynamic reflection front splitting up the syncretic blocks of raw material that the reality is built with. On unscrewing it into discrete pieces, the sense-building mechanism then proceeds to synthesize these as ideas and artefacts. In the avant-garde of that syncretism-driven splitting since the High Middle Ages, the Westerner has now found himself in a unique situation when ahead of the

reflection front, there is almost nothing – nothing pristine, that is – left for him to process (or at least this is how the reflecting mind sees it). The reflection front has responded by unfolding backwards – to draw from the historical heritage of discrete artefacts, shapes, signs, “traces”, semiotic constructs, etc. But instead of a well-structured array of forms and meanings, there is a disorderly dump here, whose fragmentariness generates new syncretism. No longer of a natural or a natural-cultural type, though. This time round, syncretism is purely cultural, with integrity being a function of the multidimensional diversity of semantic ties between cultural phenomena’s discrete elements. The depletion of the syncretic resource ahead of the reflection front is directly related to [Nietzsche’s] “God is dead” and to the end of metaphysics, in a broader sense of this term. All this has set the stage for the advent of homo naturalitatis novae. The appearance of this new type of mindset has been predetermined by the ascent from a “scattered” collective mentality, holding knowledge that is both direct (thanks to its predominantly intuitive relations with the world) and unconditioned (due to the authority of sacred tradition), up to an autonomous breakaway mind, dwelling in a realm of “dispersed” meanings (according to Jacques Derrida). Here, in the field of arbitrary associations (ahead of the backward-looking reflection front, semantic structures of any other kind are yet to be built), everything can mean everything, because to an autonomous mind, which has broken away from humanity’s common cultural background, all meanings are fluid, impermanent, and defined by convention. To that kind of mind, the chain of semantic hierarchies that was the premise of the traditional European worldview with its transcendental absolutes, breaks at the very start, having hardly begun. Its perception of phenomena is purely informative, and it automatically arranges their qualities across a semiotic coordinate system set by this or that cultural background. “Partaking” in things – a process crucial to establishing a profound subject-object relationship – no longer seems relevant. We are dealing with a realm of mechanisms designed to reduce the unknown to the known, a realm of knowledge without understanding, acquiring without experiencing, and apperception without involvement. There is no precedent to this in the history of culture. The world revealing itself before the backward-looking reflection is that of signs and semiotic codes. According to Jean Baudrillard, sign predates object; sign eclipses object; sign dominates object. Aberrations of this kind bring forth a phenomenon known as “semiotic extremism”.

Moving away from the logo-centric cultural paradigm with its monotheism, the presumption of Duty, the diktat of “normative regulation” (using Zygmunt Bauman’s terminology) and the entire spectrum of philosophies – ranging from various forms of socio-centrism (anthropological minimalism) to liberal

democracy (anthropological maximalism) – is, perhaps, the most fundamental and wide-spread of changes we are facing in the current transition era. And the screen revolution is not the cause of this process, but one of the brightest manifestations thereof.

Dwelling on this turning point in the history of human civilization, some speak of the advent of a new “prehistoric” era, implying the return to archaism at a new civilizational level. Along with some socio-economic, political and environmental aspects of the crisis of the modern post-industrial civilization, related discourse often mentions magical renaissance and neo-mythologism, as well as the rise of mysticism and all forms of irrationality, new (or revived, rather) forms of religiosity, and so forth. Interestingly, there is some similarity between the mentality of homo digitalis, with his virtual way of thinking, and the archaic mindset. In both, semantic units are built, more often than not, by linking together rather than by integrating structurally. In both, consciousness makes its way through units of the reality, zigzagging along its itinerary point by point and improvising as it draws intricate, loosely structured curves, whose silhouettes predicate on nature. These two mental types are different only in that the archaic mind looks at real-life objects whereas the digital mind sees an object represented by a bunch of meanings and dissolved in them. The very nature of sense-building is very much alike, though. The way of thinking that arises from an imbalance of structural relations archaizes textual semantic relations, replacing structural arrangements with links. And features like the dismissal of a centering mythologem, fragmentariness, a loose structure, and the openness of systemic entities with weakly pronounced “bunches of differences” seem quite appropriate in describing the archaic mentality. This kind of interpretative thinking paradigm, associating, paradoxically enough, the archaic and the Internet mindsets, does presuppose some background knowledge, about the world at large as well as about a specific phenomenon under consideration (text, entity, etc.). To an archaic person, such knowledge was provided by humanity’s hitherto unruptured ties with the universe and by his or her own connectedness to the universal information flow. This could manifest itself in personal prophetic insights or, more precisely, in recognising the nature of things and phenomena. To a screen-evolution person, by contrast, the success of interpretative strategy is based on his or her experience in intellectual and analytical practices.

The analogy also applies to the aspects of integrity and hierarchy in our perceptions of reality. In the archaic mind, the world is not yet reflected upon in its integrity while to the Internet mind, it [the world] no longer comes across as a coherent whole, but is divided into “regional ontologies”. The archaic person

faces hierarchical chains at work in real life, but is not yet fully aware of them mentally. The Internet-era person, meanwhile, sees any hierarchy as something imposed by convention and therefore unessential and non-binding.

The disintegration of hierarchical structures in certain culture areas – an event solemnly proclaimed by the Post-Modernism – arises from the Western mentality having reached the latest stage in its adaptation to a borderline state that people back in the early 20th century, faced with a cultural crisis, found quite excruciating as an experience. The logo-centric way of transcending and the logo-centrism-based worldview manifest themselves in an infinite progression of mutual involvement with certain phenomena or, as Baudrillard will have us believe, with signs representing them, to be followed by a painful estrangement. Consistent and steady movement along this path ultimately brings a culturally-aware person to total disillusionment with his/her value system, a “funeral” of God, and to the loss of a *raison-d’être*. The Western mind (meaning the Post-Modernist mind) has found a way out of this deadlock in the involvement not with sense per se, but with the sheer act of constantly oscillating between meanings. The ego-meaning premise has been replaced with the ego-mediator. The process of the mind’s moving, drifting, wandering across semantic structures and, by extension, across cultural systems is considered to be a strategy free of any risk of estrangement. Here, the stream of individual consciousness joins in organically with the process of ever-flowing mediation, where nothing discrete is viewed as an unconditional value and no partaking occurs. In a flowing phenomenological cultural space, the flowing ego is free of any hardship, and does not suffer from the tragedy of alienation and abandonment. Indeed, if there is no escaping from culture, then the only option is to get focused on the very process of running, with cyberspace surfing being a perfect embodiment thereof. Surfing horizontally across the Internet is more exciting as, unlike the chains of vertical ascent toward supreme beings, it has no end. Brought by hierarchical verticalism upwards, the mind eventually reached sort of a ceiling and had to reorient itself. It then began to drift along that ceiling, drawing all kinds of shapes and patterns on its surface. This is the fundamental difference of the current situation from all the many previous revolutionary upheavals, when various hierarchical and value systems came and went, replacing one another within the framework of a logo-centric strategy. Having said that, we should bear in mind that for this horizontally flowing I-media paradigm to be effected, cultural matter should be sliced down to the smallest possible bits – a condition that always reaches its extremes during dusk periods in history. Only in this newly-formed cultural syncretism, with its “homogeneous density”, is media drifting and manoeuvring really possible.

Here, the mind can let itself take it easy, with no obstacles to potentially collide with along the way. This state cannot last forever, though, nor can it be long-standing. Unavoidably, the virtual post-logo-centric mentality will have to go through the phase of general self-reflection and then inner division of the self. But this is a prognostic domain, hence one beyond the scope of this paper.

New Naturalness is thus the defining feature of the new mentality that is coming to replace the logo-centric mindset. The psychological and cultural orientations of the digital mentality, about to take centre stage, are marked by wide-ranging relativism, including in ethics, as well as by opportunism, pragmatism, a lack of semantic precision, and the conventionality of all values, sometimes even the value of life itself. And the Internet is a zone of comfort for all these qualities. Apart from the well-known properties of the World-Wide Web, we should also note the fact that it has brought Existence discourse into being. Within the logo-centric system, Duty discourse was prevalent – or, more precisely, the only one recognised as valid. Existence had no discourse of its own here, and dwelling upon it was considered ingenuine, inauthentic, ontologically impaired and unauthorised. It could be permitted only if brought in line with Duty or presented as its direct opposite. Everything that failed to find ontology in the idea of Duty ended up marginalised. Everyday life, the realm of childhood, and many other things absent from Duty discourse were virtually non-existent for the Duty-dominated medieval mind. Starting in Modernity, Duty discourse became increasingly diluted by Existence. But Existence discourse was not given the floor until after the advent of the Internet era. Human spontaneity, free expression with all its non-standardised, irregular forms then found itself for the first time beyond culture regulation. Small wonder, then, that the weakening logo-centrism has since had to channel all its remaining energy into efforts to keep Existence within the rules of Duty discourse. Hence the continuous attempts to impose some sort of a regulatory framework on the Internet. And the motives behind are far deeper than any specific political and ideological interests may be.

Let us now try to formulate the very essence of the Internet as a cultural phenomenon. The development of culture and mentality pushed human existence away from the natural world's intercommunication flow, thus setting an away-from-nature evolutionary vector. Overcoming this traumatic rupture has ever since been an unconscious a-priori striving of man. In the Axial Age, as that alienation reached a new level and assumed new forms, the striving to rediscover Oneness – or to reconnect with the cosmos by simplifying and archaising mental constructs – emerged as a cultural doctrine. But the history of culture knows of no successful attempts at reviving things, and syncretic ties

cannot possibly be restored to their original form. In its formative period, logo-centrism tapped into the energy generated by that back-to-the-source doctrine to benefit its own ends – specifically to create a mental image of the Absolute in salvationist religions.

Dialectics teaches us about the unity of opposites. As humanity's image of the reality became discretised down to the smallest indivisible particles, an era of neo-syncretism began and, with it, came new technology capabilities enabling the development of an artificial analogue to the universe's web of interrelations – the Internet. It is no secret that humanity tends to set itself only goals it can realistically achieve. And, let us add, it usually does so in response to some profound needs, of which it may or may not be aware. The Internet, as we know it today, corresponds only to the beginning of the neo-syncretic era, rhyming, “over the head” of the logo-centrism era, with the pre-Axial period.

The World Wide Web is just a network so far, not a communicative field with no bounds. But the developmental vector clearly points in this direction, so in the foreseeable future, the Web may well end up transformed from an information medium into a space for comprehensive intercommunication.

Digital Initiates: Digital Natives in the Coming Age of “Internet of Everything”

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Introduction

Since the term was coined by Marc Prensky (Prensky 2001), it is more than popular to use the phrase “*digital natives*”, zooming into the latest “online-born” generation⁶⁴: this fertile and productive term is right the only and exclusive conceptual frame in the discourse, talking about their characteristics.

On the other side, thinkers and bloggers are increasingly dissatisfied with the expression (see Thomas 2011), because it simplifies the complex nature of this multidimensional social science domain, impoverishing the contexts radically. The main problem is the illusion, that this mere terminology innovation is soothingly enough to provide an analytic solution facing with the most challenging social psychology, cultural philosophy, techno-sociology and pedagogy narratives of the digitally socialized age-groups.

How to (re)approach digital natives?

We have to understand and colorfully describe the *totality of their social subsistence*, with its structural changes and special features. How about their relation to the World, the society, their ancestors, moreover, to each other and to their followers? Which kind of transformations we have to expect on the personality and group level, when the mental models, the world view, the ethos and the identity-compositions are permanently pressured by the empirical and experiential changes of everyday life? Are we prepared enough to these new activity, intervention and behavioral patterns?

⁶⁴ The first generation of “Digital Natives” – children who were born into and raised in the digital world (Palfrey and Gasser 2008).

We need a real Copernican turn. Dealing with the new generations, proofed and impregnated by information culture, we have to seek for and find the most important points around *their new kind of relations to and role in their society, locality and civilization problems*. All our approaches and ideas about the development and management of their digital ecosystems, tools and literacies have to be rest on the changing nature of their social life, integration and involvement level.

Little Red Riding Hood, Cinderella and the Manga Girl

Paradoxically, all social scientists who try to draw an authentic picture about the digital natives, are digital immigrants, and their points of view are unavoidably external. To come closer to the real portrait of this generation, we need to get an internal approach. Let's illustrate the "microcosm" of digital natives through their most popular and emblematic media content compared with its antecedents from previous epochs.



Picture 1. Three heroines – three complex worlds

Little Red Riding Hood is a child of the *Pre-modern* era. Her activity radius takes a few square kilometers, her horizon is her locality, without any *outside* perception. The natural and social environment is a permanent source of danger for her, in almost every minute. The idyllic part of her life is an illusion: her world is rude, harsh and severe. A young girl is an inferior human. A sexual victim. Social connections are coordination mechanisms for the reproduction

of everyday conditions of life. The main objective is staying alive, the survival. As a kid, she is defenseless in an adult environment, her norm of action is the execution of commands, her values are mediated by the tradition, based on simplified patterns about the Good and the Bad. She does not make decisions by her own, she does not possess of herself. Trackless for the World.

Disney-Cinderella is a personalization and child of the emerging *Industrial* age. The aristocratic backstage is misleading: this is an urban and philistine territory, with every malfunction of the evolving mass societies. The risk of the existence is smaller than before, the security is regulated by relatively successful control structures – which simultaneously subject human relations to the social status and money. The alienation is multiple: not only the adult, but the children part of the world is also hostile and unfriendly. The main objective – despite of the hardships and deprivation – is not the survival, but the worthy life. A kind of dignity, which is predestinated by ancestry and wealth. The horizon of a child is a ceaseless mental mapping of and falling into step with a complex and male-centric society to be able to maximize the life conditions. Theoretically, there is a latitude to shape everyone's fate, but the practical mathematics of the social stratification is more than cruel: success is open for very few people, most of all miraculously. The Good and the Bad are sometimes relative, sometimes changing, but the fate of a child is always a variable of bigger forces.

The Manga Kids live in an extraordinary world. Their life have two strong frames: the peer community, which is – despite of smaller rivalries and competitions – the most important identity maker and has the most positive feedback mechanism, and the target-oriented behavior, which is manifested in common actions, missions outward, and in the ethos and programme of self-development and self-perfection, inward. They live in the eternal “now”, the Past and the adult universe are irrelevant for them, even if its members are transmitting positive messages from the foreground, from time to time. The Manga striplings are very independent, self-contained people, totally autonomous in their choices. They are almost asexual, but in a group sometimes there are couples. Men and women are co-equal. Their emotional life is intensive, their sensibility to values is continuously developing. Learning is a basic norm, performance and knowledge are respectful, solidarity is a kind of reflex. The relativity and interconnectedness of the Good and the Bad is clear for them, they can find the Bad in the Good, and the Good in the Bad. Their action radius is planetary, they perform missions anywhere on the Earth, and what is more, there are no obstructions to venture outside the cosmic space.

The Manga Kids reify and instantiate everything, which is given for the digitally growing up generation as a content of everyday life and future planning in the

highly developed information societies. These aspects are strongly connected to the leap in life conditions and the re-stratification of culture. This never-existed-before generation, without doubt, is an extraordinary, vocative cluster of Mankind, which is cumulatively incompatible with the industrial age schooling system, philosophy and practice, with hypocrite political subsystems, and at the same time very sensitive for global inequality, contradictions and conflicts of development, civilization challenges, global warming and other environmental issues.

And in this point set our eyes on the fact that in the next few thousand days the digital landscape will totally change again – so let’s see how about our digital natives in a radically new online culture and environment.

Digital natives in the coming age of *Internet of Everything*

*For every person online, there are two who are not.
By the end of the decade, everyone on the Earth will be connected.*
(Eric Schmidt, Google chairman)

The above statement was tweeted on Saturday, April 13, 2013, and provoked a “*lively discussion as to whether it would be possible (and desirable) for the entire world population to be online by 2020*” (Richter 2013).



Figure 2. Online population: From the one third to all⁶⁵

⁶⁵ <http://www.statista.com/topics/1145/internet-usage-worldwide/chart/1048/global-internet-penetration-in-2012/>.

However, the new level of digital culture is not determined by the absolute number of Netizens. It is also not about the new lap of technology – new types of energy solutions for mobile tools, intelligent materials, storage, processing and transmission capacity improvements or new interfaces (including wearable computing) or screening solutions.

To a certain extent it is about a new, holistic quality of the altering digital universe, as it transubstantiates to a UCC (Universal Communication and Collaboration) environment, creating effective PANs (Personal Area Networks), originating the so-called “Industrial Internet”, dissolving all these sequels into the paradigm of “Internet of Everything” (IoE).

The IoE approach totally re-draws the close-knitted digital world as we used to live with. When the number of active “agents” (objects) and processes spawn exponentially, the new space of people to machine (p2m), machine to people (m2p) data to data (d2d or linked data) connections needs new, high level protocols, semantics, meta-languages, design and mission.

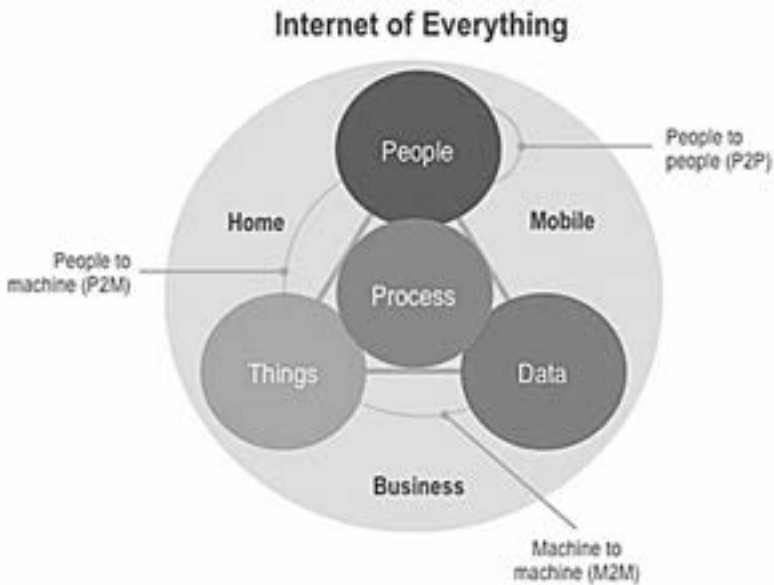


Figure 3. The paradigmatically new world of Internet of Everything (Evans, 2012)

Everybody will be a digital immigrant again in this emerging, hyperconnected world (Aducci 2008), but it would be a dead-end to choose an old target: becoming digital natives again.

Do not seek the profoundly new element around the revolutionary tools, the capacity or the topology: the real novelty is the *complexity*, which challenges every actor: individuals, communities, enterprises, organizations, nation states.

This more complex (symbolic) environment needs the re-evaluation of the progressively reducing resources – our attention and time – in an essentially changing identity and collaboration space. This space can be none but open, since the closed terrains are hindering the flows and transformations. “*The future is open*” – propagates Jonathan Rosenberg (2012).

It is very important to accommodate to the rules of the game of this future hyperconnective arena prematurely, with new forms of information literacy, with self-confident navigation in a well-designed interface culture, with semantic weapons, and new routines of man-machine communication. A new type of human beings, the *hyperpeople*, as Mark Pesce⁶⁶ calls them, will be born before our eyes.

The birth of hyperpeople as a social innovation process

In our days the development of digital culture is spontaneous and incidental: not constructed, but formed in a swim of technological and business innovations. We do not find awareness, conscious objectives and overall intentionality behind the information tools and environments. The guiding principle is the selling. There are no flows, changing of meanings, sharing of jobs between code-makers, hardware developers, users, businessmen and strategy makers, thinking about the future of different subsystems of society: everything goes on their way. There are island-like “digital small worlds”, providing benefits for different target groups.

The state-of-the-art of digital games convincingly represents what is missing from the current digital culture. Jane McGonigal demonstrated cleverly, that the digital natives dawdle away enormous time (man-hour), allocated for computer games, if the content of these games is *anything* (McGonigal 2011). Ever since we know, that there is a possibility to build full value game buzz around educational, personality and ability developmental contents or cooperative creation of new knowledges, we have to regard as profit loss every minute, spending with games without generation of new values. McGonigal is downright looking on games as a tool to solve civilization problems (and this is partly true for local communities, too).

⁶⁶ The author of The Human Network Blog in his every blog entry systematically tries to find an answer to the question: “What will happen, when we are all connected?”(<http://blog.futurestreetconsulting.com/about/>).

From this point it seems obvious why we put the cart before the horse of digital culture. *We should come before the technology and service planning with an action and intervention-centered view of society and children, which has an explicit “logos” (spirited, normative conception, originating from intrinsic disposition about the reason and direction of shaping the determining relations.)*

It is easy to accommodate this concept to the system levels and institutions of digital culture affecting the stakeholders to serve the common goals in an appropriate way. Following this logic, everything has to have a definite reason as early as the smallest age groups. The basic solutions, tools, game interfaces, typical interaction forms could prepare special functions, wiring special activity forms of higher age, in an unperceived manner.

The growing up generation is not a problem that faces us – but more and more a (human) resource, with innate ability to contribute building better life, taking them into responsible nurturing of common issues. Such a turn in their outlook re-writes the architecture: a “handy” tool is not only a personal digital assistant henceforward, but also a mobile laboratory, with lots of options and apps to measure, capture and share important data. Democracy simulations could develop a real working platform to support community decisions. A multiplayer game at the same time can be a kind of a “launch game”, where the well-known functions, menu points, solutions, communication channels and routines once become an integrated platform, serving cooperative knowledge production – since there is no need to get the hang of it, because hyperpeople have it at their fingertips, as a part of their Personal Learning Environment (PLE).

This simultaneously needs very conscious, studious, sober-minded cognition and information environment planning (as recently we call it *design thinking*). *This kind of complex pre-forming through the digital culture creates the possibility for every fellow in the growing up generations to become a member of their community in their entirety, personally – earlier, than ever before in the advanced societies.*

We know this kind of initiation logic from the well-documented ritual practice of indigenous people⁶⁷. It is an amazing chance to resuscitate this evolutionary outcome as a Global Village practice. And, practically, accepting this viewpoint, we get hold of a clear evaluation platform to future strategic initiatives.

⁶⁷ Acknowledgements to Thomas Victorisz for the introduction of this analogy (In: Victorisz, Z. Karvalics 2007).

Why “digital initiates⁶⁸”?

So, we need *digital initiates*, a new kind of hyperpeople, growing up in a systematically and consciously re-planned and re-designed socialization arena. The ultimate reason of implementing and developing the IT-infrastructure should be the support of this inclusion-rich, logo-centric and knowledge-based vision, transcending the current eventuality, island-like nature and redundancy of the supply side.

In effect, the phenomenon still does not exist – only the concept, which can serve discourses, conversations and dialogues about the proposed, grandiose social innovation. It also provides a chance to get ready for the “Internet of everything” era, not only with (pre)adaptations, but with aware, deliberative decisions and interventions in the smooth course of its emergence.

Therefore autonomous and cooperative participation in the educational-scientific problem solving and community reproduction processes is of great significance for our future hyperpeople, because similarly to the ancestral rites of passage, it builds a *peak transformational experience* meant to last a lifetime. Yet beyond its personal impact, this modern equivalent of the ancient initiation rituals reflects the dynamic of three social innovations that are already underway or just starting up: ever closer intertwining of science with education; increasing recognition of the sustainable development imperative; and first glimpses of the evolving new control structure of a humanity that has entered its global era (Vietorisz, Z. Karvalics 2007).

Epilogue. Quest for a term

It was not an easy way to coin the term “*digital initiates*”. The first idea with esoteric reminiscences was the *digital adepts*, so much the more it was used in a similar context in a 2008 MySpace campaign of Cartier, the famous jewelry maker (“*new generation of adepts of the digital world*”). However, this expression has a strongly narrowing meaning, referring particular, selected people or small groups with lot of secrecy – while we tried to find a universal expression to denominate the whole future generation. So, suddenly came the “novice”, who committed himself to a religious, monastic community, but have not got the green lamp yet to finally join. Unfortunately, the “*digital novice*” has a standard meaning in the Anglo-Saxon world: they are those vague freshmen, who are

⁶⁸ In the dictionaries “initiation” means the formal admission into an organization or group, the ceremonies or rites of admission, the act of initiating and the fact of being initiated. The first known usage of the word is from 1583.

absolutely newcomers in different online environments. This meaning is just the opposite of the wanted sense, so we had to change it for a better one.

The “*digital initiate*” is referring to the above mentioned tribal-inborn meaning, there is no mistaking it. The other, very popular usage of the word “initiation” does not query the validity of the concept: the impregnation of a textile material with paint or other special chemicals before usage, to form or reinforce a feature. Moreover, we can identify the next generation with the textile, metaphorically, and in this case the digital culture is the absorbent paint, into which the textile is plunged, before setting up the execution of its intrinsic mission.

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The Internet as a Space of Escapism: Limitless Possibilities and New Dangers

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The phenomenon of escapism has always been present in culture, taking different forms depending on the cultural determinants of a certain cultural community or a certain epoch. The desire for escapism in our time is associated with the “pressure of daily routine” and its dynamics, with the giant expansion of the space of this routine, with the “decharming of the world,” with entering the everyday reality of artifacts that, for centuries, were a fairy tale or an unattainable dream. Escapism is a universal phenomenon, but its forms change in various socio-cultural contexts and are connected to a great degree to the technologies that facilitate man’s exit into the “realm of other worlds.” The epoch of total informatization and multimedia offered to the man of “post-culture”⁶⁹ a new method of escaping the everyday humdrum, not associated with travel hardships, or internal tension of religious experience or meditation, not even with intense aesthetic experience of a work of art. The invention of computers, followed by the rapid spreading of the Internet, created hitherto unseen conditions for escapism by capturing virtually the entire population of the Earth and by rendering most daring fantasies realizable. Moreover, cyberspace is filled with all sorts of fantasy worlds which attract not only children and teenagers but also adult people who fall easily for seduction of virtual phantasmagories that are so attractive and so bright by comparison to the banality of ordinary life.

Computer networks, virtual reality – these are the realia of our days, which have influenced the formation of a whole generation. The process of creating a new identity has begun even earlier, with the arrival of mediatization as a major trend in culture. Over the latest decades multimedia have become an inalienable part of human life, the present-day young generation has been accustomed from infancy to use mobile phones, notebooks and all the new gadgets, whose number is steadily growing, although the basic functions stay

⁶⁹ The notion of “post-culture” is explained in: E. Shapinskaya. Kulturologichesky diskurs posle postmodernizma. *Observatoriya kulturey*, 6, 2010.

basically unchanged. The computerization explosion has demanded that “the adults” should master these new technologies as well, or else the generation gap will threaten to become an abyss. The technological context determines personal characteristics to a substantial degree whereas changing that context has always led to complications in interaction and in forming the dialogue. In the world of the computer screen reality is turned into hyper-reality, text is turned into hyper-text, while the user (the subject) meets with some difficulty in order to tell the real world from the virtual one. This new reality creates unlimited possibilities for all kinds and for all spaces of escapism, but it also harbors in it the greatest dangers of total escape from the “real” reality.

Since the times of antiquity it has been common to man to imagine existence of a world different from the everyday world, a reality which is perfect and beautiful by comparison to the surrounding world with all its injustices and cruelties. This “Other-Worldliness” was imagined by religious mystics and philosophers in forms and images, replenished with fantasy, in utopian dreams and artistic images. While ideas of “other reality” were for centuries the lot of religious visionaries, romantic poets and men of literature endowed with imagination, in the 20th century “other-worldliness” is within anybody’s reach, which fact fully corresponds to the principles of mass society and globalism. The phenomenon originated in the late decades of the past century in the form of “virtual reality,” which became a part of a huge and all-embracing space of the information age – the cyberspace in which there began to appear with unusual rapidity ever new forms of digital communication and possibilities for escaping the routines and obligations of everyday life, and even the necessities of one’s own body. American researcher Erik Davis claims that, similarly to novels, cinema or comic books, cyberspace makes it possible for us to switch off “the usual scientific rules that constrain the physical reality where our bodies live.”⁷⁰

Speaking about the potential of cyberspace, we must admit that it is incomparable to any forms of escapism that existed before the advent of the computer. The computer, as far as its potential is concerned, has become a means of rational orderly placement of the growing information flows, and at the same time – a space and a haven to harbor most irrational fantasies and multiplying images based upon ancient magical and animistic believes. Computer-created virtual worlds reflect, on the one hand, the contradictory character of the technogenic civilization, and on the other hand – omnivorousness of the culture industry which is ready to satisfy most exotic escapist fantasies through ever more

⁷⁰ Erik Davis. *Technognosis: mif, magia i mistitsizm v informatsionnyu epokhu*. Yekaterinburg: Ultra. Kultura, 2008. P. 274

numerous methods of attracting people to virtual consumption requiring, quite often, not virtual, but real expenses.

Cyberspace originated during the epoch of post-modernist turn in culture and fitted organically into the post-modernist context; it was filled with all kinds of simulacra that were gladly consumed by the man of “post-culture” who substitutes them for realistic experience loaded with difficult situations, tension and expenses. The structure of virtual space as such leads man in a direction that is quite different from his original intention. The Internet space can be compared to a jungle forest that has overgrown over the entire surface of the Earth. So the escapist of our days comes to find himself in this space; he has only to press a few buttons for wonderful worlds to open for him, worlds so advantageously different from everyday humdrum, uninteresting duties and rules and hardly attractive cityscapes. Children for whom virtual space opens the world of play to an unlimited degree, and adults who want to while away an hour or two in the bright world of computer fantasy, and people who originally do not use the Internet for their escapist purposes but find themselves drawn into hyper-reality – all these find themselves having entered virtual space. The escapist pleasures of computer games surpass many times over what was created earlier in this sphere, capturing man more and more, making him forget time and rendering ever more difficult his return to the reality. The causes of this phenomenon are being studied by psychologists and sociologists, who are sending more and more alarm signals about the growing game dependence, pointing out that teenagers and middle-aged men who need to realize their fantasies are the ones affected the most. The very notion of “virtual reality” contains the assertion that “reality may be multiple or may take various forms.”⁷¹ Together with the notion of “real time,” it forms the basis of the simulation culture of the society of total mediatization. By comparison to all other forms of realizing one’s imagination and one’s fantasy (literature, cinema, television), the computer creates the brightest and the most capturing feeling of staying in “otherworldliness.”

So what is it that makes the Internet today the most popular space for realizing escapist dreams? Cyberspace provides the opportunity for finding an exit for all forms of escapism without submitting oneself to the dangers and complexities of the real life. Thanks to the technological possibilities of the Network, the virtual traveler has access to all the spaces of the Earth and outside it, the voyage quite often turning out to be more attractive than actually real visits to places disappointing people in contrast to the attractive visual images with

⁷¹ Poster M. *The Second Media Age*. Cambridge, Polity Press, 1995, p. 30.

which the travel industry has saturated the Network. Cyberspace provides unlimited opportunities to the “internal escapist” as well, by amplifying and making stronger the virtual experience of religion, love and arts, all of which have been creating ample opportunities for the escapist for centuries and which have come to being digitized during the era of the computer.

Instances of religious experience and the quest for transcendental provide to man the opportunity to experience a different reality in the depths of his own conscience. One would think that internal experience of man is quite different from the information flows of cyberculture whose space is superficial and whose spiritual search is visualized as bright pictures. But religion, both official and one having the form of various esoteric currents and teachings, enjoys tremendous demand in the Internet where it has found so many opportunities for popularizing its doctrines and for increasing the number of adepts. Being eclectic in its nature, cyberspace shows a diversity of religious experience and possibility of coexistence of most different forms of spiritual activity in one and same space. Ancient varieties of religion are particularly in demand, such as esoterics, magic, and archaic mythology, which have become the bases for numerous computer games. Virtual space is not only becoming the preferred haven for adepts of various religious traditions, but it is also determining the religious images of mass conscience which is taking shape these days mostly in the context of global virtualization of life worlds.

As to such sphere of human existence as love, which is capable of making man to forget about the surrounding world in the ecstasy of fusion with the loved one, here virtual space creates also the richest opportunities for escaping everyday routine problems which so often destroy the charm of feelings. It would seem that important in love relations are such moments as visual perception, tactile feelings, aromas and other erotic stimulants. But when we speak about the dematerialized post-modern individual, the above factors are not as important as are the resources of virtual love. It is the cyberspace where a mediocre individual can position himself as a romantic hero, and a lady who cannot boast beauty and youthfulness can play the part of a fair princess. The Internet space makes it possible for a man or woman of our times to be not merely a passive onlooker of somebody else’s love feelings but also to share them, assuming a particular role, engaging in correspondence, commenting characters’ actions, and even starting a love game. It is hardly surprising that, as a rule, virtual relations do not stand the test of reality, because they were constructed at the inception as escapist, contradictory realities, not envisaging implementation in real life, no matter how much attractive they seemed to the players.

One most important traditional space of escapism is art, art which has always created a most favorable ground for the escapist, which the computer times made limitless both from the viewpoint of perception and from the viewpoint of realizing one's own creative capabilities. There has always existed a contradiction in the field of art: on the one hand, it creates "otherworldliness" which is distanced from everyday life; on the other hand, the "otherworldliness" must emerge in bright images which are more attractive than the reality that was the prototype. No field of art is capable of creating images of "otherworldliness" as expressive as the Internet. It captures in its web everything that has been created during thousands of years by people representing most different creative professions. It looks like the entire world art has been digitized and one can make a virtual excursion of any museum or any monument (such an excursion can often substitute a real visit). In the time when digital reproduction of works of art is possible, art has become a most wide field of cyberspace. At the same time, however, computer itself has become the source of a new type of art, which is widely used, among other things, in order to create in the cinema attractive images of "otherworldliness". Thanks to computer technologies, it has become possible to create, without particularly large expenses, most fantastic visual images and to carry over to the screen a host of works of science fiction. This is how there have appeared the most successful projects of the latest decades – The Lord of the Rings, The Chronicles of Narnia, Harry Potter, and others. The fantastic images that originally populated book pages (which required from the readers considerable efforts and imagination in order for them to become submerged in the characters' worlds) travelled later to the cinema screen where they acquired visible (and three-dimensional in 3D technologies) shapes that made later an expansion unto computer games and other gadgets of the digital age. But it is not only texts of popular culture that make the giant escapist space in the Internet. Classical art also filled numerous sites in digitized form, having made a visit to any museum an attractive virtual excursion and providing a participation effect at an opera performance⁷². Technical facilities render the works of painters and sculptors vividness, "glamour", and three-dimension effect, compared to which the original could look pale and devoid of expressiveness. Doing a real museum tour is much more exhausting (and possibly much duller) than a walk in the virtual museum, which creates an image of an attractive "otherworldliness" which we, thanks to the same technologies, can enter and can feel staying "inside" the space of the work of art.

⁷² See E. Shapinskaya. Opera kak prostranstvo eskapizma. Polignozis, 1–4, 2012.

Escapism is a contradictory phenomenon. On the one hand, it can ease the “stress of monotony”, give you a charge of power in order to stand hardship, boredom, and perchance the humiliation of everyday existence, even a most satisfactory existence from the material point of view. On the other hand, when sinking into the escapist space, there is a danger of reaching the “point of no return”, when the way back into everyday routine becomes either too difficult or undesirable, or else one loses the ability to distinguish between the “primary” and “virtual” reality. In this case escapism becomes a dangerous phenomenon from the psychic, social, and even physiological points of view. The escapist meets in cyberspace as many, or even may be even more, dangers as he does in the traditional forms of escapism.

Disruptive Consequences of Internet Development

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Introduction

The term “disruptive consequences” has, in the context of the Internet, both negative and positive aspects. Due to development of the surrounding information space and deeper penetration of the Internet into our life, we have a qualitative change in life as such.

We should list the following as the most important negative impacts:

- access to posting and using various types of content, without any control thus far. This causes information chaos (growth of entropy);
- new possibilities for manipulating personal and social conscience and behavior;
- a shift from strategic priorities to tactical ones. This causes noticeable reduction in the scopes of financing for long-term projects in science, culture and education.
- As to the positive aspects of Internet development, they are as follows:
- new communication opportunities that are created, for example, owing to the Internet of Things⁷³;
- time and distance in human communication are becoming shorter;
- new industries appear and develop, such as lenticular printing.

Some statistics

The number of units of mobile equipment and computers with access to the Internet is already numbered by hundred millions. Simple smartphones are carried

⁷³ The term “Internet of Things” stands for all kinds of devices from IP television sets to arterial pressure sensors which are permanently connected to the Internet. As early as in mid-2009 the Ericsson corporation publicized its forecast, according to which about 50 billion pieces of various electronic devices all over the world will be operating with Internet connections. Thus far the number of network-connected gadgets is doubling every 5.32 years, and the rates are growing.

by everybody, excepting those who do not need them at all. Russia also witnesses a steady growth in the use of various mobile devices. According to the MTC company, in our country smartphone sales grew in 2012 by 1.6 times to reach 13 million pieces per year. A total of 42.2 million mobile phones were sold in Russia last year. The share of smartphones has grown by 31% as compared to 2011.⁷⁴

According to TNS data for early 2013, 76.5 million Russians (accounting for 53% of the total population of the country) go online at least once a month. The share of the Internet audience has already exceeded 50 percent of the total number of the population in all federal districts of the Russian Federation⁷⁵.

These figures are quite impressive.

Much is being said these days about great social and personal problems and opportunities, which have been brought about by the growing cyberspace. The emotional coloring of these discussions and predictions is changing virtually every passing day. I would like, however, to dwell within the frameworks of this article on certain facts which are, in my opinion, particularly important:

1. Information chaos: Uncontrolled growth of the scope of content (entropy).
2. A high speed of transformation in the informational environment.
3. Information technologies of pinpoint impacting of individual persons.
4. Impacting the quality of education and, as a result, impacting the level of qualification required in society.⁷⁶

Information chaos: uncontrollable growth of volume of content (entropy)

As it has already been pointed out, there exist hundreds of millions of devices creating different kinds of digital content. These devices, in combination with the numerous available resources for publishing content in the Internet, result in uncontrollable and irresponsible filling of these resources. This takes place now at rates that are quite noticeable and this is well illustrated by the dynamics of the changing world Internet traffic for various types of content.⁷⁷ The ongoing acceleration of the speed of data transfer in the Internet, as well as

⁷⁴ http://marketing.rbc.ru/news_research/28/06/2013/562949987588263.shtml.

⁷⁵ http://www.bizhit.ru/index/users_count/0-151.

⁷⁶ http://www.strf.ru/material.aspx?CatalogId=222&d_no=60630#UndgY9yGi70.

⁷⁷ http://www.json.ru/poleznye_materialy/free_market_watches/analytics/rynok_cifrovogo_kontenta_v_rossii_i_mire_2009-2013/.

the growing popularity of the “heavy” media content, produce a tangible effect upon the structure of the world traffic, and of the Russian traffic in particular. It is expected that online-streaming Internet video and IPTV will be making in 2015 almost 60% of the world Internet traffic.

It is noteworthy that the structure of content consumption differs considerably from one country to another. It is obvious that the consumption level for different types of content depends on the specific country’s level of cultural and social development. In Russia the bulk of the content is represented now by the sector of online games⁷⁸, but attention should also be paid to high market growth rates in other sectors of the mobile content. Thus the sector of mobile music which accounted for about 0.03% of the market in 2010, reached in 2012 the level of 0.15%, and is expected to show an increase to 1.37% by the year 2015. The mobile video sector grew from 0.25% in 2010 to 1.24% in 2012.

Uncontrolled increase in the volume of content (entropy) results in quite an abrupt devaluation of information that is available in the Internet. According to expert evaluation⁷⁹, more than 75% of data is created and controlled these days by individual citizens. Mass access content is becoming prosaic “chewing gum,” information dross. Similarly to archaeology, the digital cultural stratum is being actively formed, covering the priceless informational treasures of our civilization. One may suggest that removing unneeded content from all the resources presents no particular difficulties, but considering the way things now stand, probability is quite high that truly valuable and irreplaceable information will be definitely lost. The main reason is here virtually complete absence of professional expert evaluation of the flows of content entering the Internet. During the pre-digital epoch the function of expert evaluation and information selection was performed by the main memory institutions: museums, libraries, and archives. These days they are no longer capable of efficiently processing the existing content.

An alternative process pursued by so-called content aggregators is actively developing⁸⁰. A huge number of subscribers to a particular variety of content (more than 80 million) gives us a vivid testimony of the deficit in the services of professional expert evaluation of the content entering the net.

The Internet of Things is a relatively new but actively growing generator of new content and traffic. We have long since stopped wondering at various

⁷⁸ <http://www.cybersecurity.ru/telecommunication/183866.html>.

⁷⁹ http://informationgovernance101.com/2013/07/24/predicting-the-future-of-information-governance/?goback=%2Egde_3698_member_260741052.

⁸⁰ <http://www.kommersant.ru/doc/2261061>.

information services using the Internet, although a mere 10 years ago many of those looked like fantastic phenomena – automobile navigators, Smart TV sets, electronic tickets, services of functional modernization of household appliances, and many other things.

According to expert evaluation, the total volume of **Internet traffic will cross the threshold of 1 ZettaBytes (1 billion terabytes)!**

High speed of changes in information media

Internet development causes an ongoing increase in the speed of changes taking place in information media. This phenomenon creates a situation where it becomes virtually impossible to forecast the state of the business environment in any remote perspective. This is why many corporate CEOs change their priorities from strategic level to tactical one.

An important consequence of tactical priorities prevailing with heads of large corporations and administrations can be seen in the considerable reduction of the sizes of funding for resolving fundamental (prospective) tasks. We see reduction of investment into science, culture and education. Hence we have devaluation of science schools, which is particularly topical and noticeable in Russia, although this takes place in other countries as well.

The main problem connected to the prevailing position of the tactical level of management is the fact that this may cause serious crises in all spheres of the public and economic aspects of life. I feel like resorting to a simple role analogy between a head of a corporation and a vehicle driver. Found as guilty in most road accidents there have been those drivers who were unable to calculate the actions of the surrounding travelers and, as a consequence, failed to avoid a traffic emergency situation.

Well-prepared corporate strategies make it possible to avoid serious problems due to the permanent analysis of the standing situation as relevant to the stated aims and ready-made versions of overcoming problem situations. However, in order to operate within the frameworks of the adopted strategy, enterprises and corporations must employ highly professional personnel. This is why, given the situation of the noticeable personnel deficit, corporations must necessarily invest into development and training of their own staff. This investment is also strategic.

The high speed of changes in information (knowledge) must be taken into account when setting tasks in the field of education. Teachers' level of qualification (the command of the requisite knowledge) must be very high.

Educational standards should meet the needs of the age, which means they must be flexible in order to comply with the standing requirements for the qualification and for special training for students graduating from lyceums, colleges and universities in the frameworks of the continuous educational process. At the same time, the Internet, being one of modern inexpensive communication channels, provides to educational establishments unique opportunities for creating conceptually new services. Major North American universities, like the Massachusetts Institute of Technology and Harvard, have already been actively developing, within the frameworks of an initiative, open access study courses.⁸¹

Information technologies of pinpoint impacting of people

The high mobility in the production of goods, globalization and heavy competition, the desire of corporations to sell even more goods and services under conditions of a relatively limited level of consumption have resulted in a situation where modern information technologies are actively developing in the direction of ever more pinpointed impact upon the consumption requirements of private citizens.

But the communication potential of the Internet can be used for other purposes as well. The more an individual gets involved in various resources of the Global Network, the lower becomes his/her resistance to outside manipulation of his/her conscience and behavior. Serious apprehensions are caused by potential threats to exercise outside influence upon large groups of Internet users for the purpose of forming values, attitudes, conceptual and behavioral models, which are all in the interests of the agent of influence.⁸² For example, we see now in Russia a process of extensive cooperation of banks, retail networks and large trading corporations. Projects of integrated plastic cards, which are developing quite actively, are aimed at solving the following two tasks:

- the bank wants to know what, how much and when you buy, so that it is able to offer you new personified crediting programmes;

⁸¹ <http://ocw.mit.edu/courses/physics/index.htm>, <http://www.extension.harvard.edu/open-learning-initiative>.

⁸² <https://www.facebook.com/notes/%D0%BA%D0%BE%D0%BC%D0%BC%D1%83%D0%BD%D0%B8%D0%BA%D0%B0%D1%86%D0%B8%D0%BE%D0%BD%D0%BD%D0%B0%D1%8F-%D0%B3%D1%80%D1%83%D0%BF%D0%BF%D0%B0-g3/%D1%81%D0%B5%D1%82%D1%8C-%D0%BA%D0%B0%D0%BA-%D0%B8%D0%BD%D1%81%D1%82%D1%80%D1%83%D0%BC%D0%B5%D0%BD%D1%82-%D0%B2%D0%BB%D0%B8%D1%8F%D0%BD%D0%B8%D1%8F-%D0%B2-%D1%81%D0%BE%D0%B2%D1%80%D0%B5%D0%BC%D0%B5%D0%BD%D0%BD%D0%BE%D0%B9-%D0%BF%D0%BE%D0%B%D0%B8%D1%82%D0%B8%D0%BA%D0%B5/434467156629426>.

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- it is important for the trading company to receive your entire statistics of sales through use of advanced information technologies of the partner bank.

At the same time, personified multichannel communications, making wide use of the Internet, are considerably useful to society. We may cite as an example the information campaigns for providing assistance to sick children and communication campaigns carried out by various specialized funds for development of cultural institutions and universities, which are aimed at mass target audiences. The initial response from the addressee to the direct personal request for aid may reach the fantastic figure of 60%! This means that 6 out of 10 persons to whom appeals were sent, send in their replies. Compare this to no-address advertizing in the mass media where the response seldom exceeds 1%! Recent examples of personified information campaigns using the Internet include the campaign carried out by the Europeana digital library in support of preserving its funding conditions.⁸³

As this article was prepared for publication, information⁸⁴ was received reading that the President of the RF signed late in July 2013 a document listing the main priority areas in the national information security policy for the period ending in 2020. Indicated as the major threats were cybernetics crimes (including unlawful access to computer information), use of IT as information weapon for military-political or terrorist purposes, as well as for “interfering into internal affairs of states,” for “violation of public order”, for “inciting hatred”, and for “propaganda of ideas inciting violence.”

In order to fight these threats, Russian authorities plan fostering the adoption on international level of a number of standard-setting pieces of legislation. These are to include, among other acts, international rules for behavior in the Internet and systems of control over the World Network, which measure will possibly allow in the future to reduce considerably information entropy and to normalize the process of filling Internet resources with new content.

Conclusion

It is obvious that in order to normalize use of the Internet for keeping and exchanging information, it would be very useful to restore the institution of editors (editorial revisers) and professional experts, who would be able

⁸³ <http://www.ipetitions.com/petition/keep-europes-culture-open-to-everyone-online/>.

⁸⁴ <http://www.fontanka.ru/2013/08/01/022/>.

to process the incoming content in today's thread regimes. This possibility will allow for sifting out unnecessary and preserving actually valuable and substantial information. I am convinced that it would be appropriate to assign these functions to libraries, museums and archives. It must not be a mere transfer, but we should uphold the high significance of the task of preservation of the valuable content through establishing an appropriate level of the state policy and an adequate level of funding. Without these conditions, neither high-quality education, nor efficient management of factories, organizations, and of the state, nor harmonious development of society as a whole – are possible in the future.

Investigating the Effects of Using the Internet on Cultural Attitudes of Shiite Clergymen

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Introduction

Throughout history, ideological and belief systems has always been considered as the most important signifying factor in lives of people, and they still maintain this influential role in shaping personal and social life. Among these systems, religions are of high priority due to their antiquity and wide spread presence. No religion, faith or belief is undoubtedly capable of producing, reproducing and distributing its desired insight without practical mechanisms and without relying on integrated religious structures and institutions.

Establishing and running such structures and institutions in the early centuries of Islam was on the shoulders of Prophet Mohammad, Imams and companions. In the times of technologies there is an opportunity to promote, propagate and spread Islam at an international level.

Since the late 20th century and the introduction of virtual computer networks, “communications era” literally began. The media went from analogue to digital form and the level of communication changed from monologue to dialogues paving the way for masses to communicate in this new age.

The Internet is considered one of the most effective media in the modern era due to such qualities as interactivity or reciprocity, timelessness, boundlessness, unlimited capacity, high flexibility, personalization, etc.

According to the most recent official reports⁸⁵, Iran with its 42 million Internet users has achieved the first rank in using the Internet throughout the Middle East. This figure is equivalent to 46.7% of users in the Middle East and 1.8% of Internet users throughout the world. Meanwhile in 2000 the number of Internet users in Iran was only 250,000. The remarkable growth in using the Internet shows its capacity and potency as a basic element in the area of communication and exchanging information in the present era.

⁸⁵ www.internetworldstats.com.

Shia clergy are one of the oldest and most fundamental religious institutions in Islam and they are custodian of religious affairs of the religious society of Iran. The presence of Shia clergy in the Internet communications sphere is of high importance considering Internet usage by specific groups with a particular cultural identity which is Internet driven, as well as the amount of influence this media has on them compared to ordinary Internet users.

It is important to note that any orientation of thoughts, beliefs, behavior and lifestyle of clergymen, as the major “reference group” among religious people of Iran, can have deep influence on religious or even non-religious parts of the Iranian society. This influence is significant considering that clergymen rule not only in the religious but also in the political arena. This is critical because “clergies” and “political rulers” have always been considered as influential reference groups that are role models for others. Some other reference groups, such as athletes or artists or scientists, possess selective audiences and are therefore role models for limited parts of the society. But the influence and power of religious and political institutions create an increasing authority to define “lifestyles” and induce them to all people and layers of the population of Iran. This is “hard power” for rulers and “soft power” for clergymen, therefore, in the case of political ruling of clergymen the amount of behavioral and role modeling influence increases.

Also, due to the religious nature of the Islamic Republic of Iran and clergymen’ authority at the top levels of government, any positive or negative change in clergymen’ attitude can deeply influence cultural policymaking at national and international levels thus leading to success or failure in cultural, social and political realms.

Fortunately, positive attitude of Qom hawza towards communicational technologies has led to vast adaption of modern communication devices by clergymen in order to study, research, promote and efficiently communicate with political, social and cultural sectors of the society and the world and this has caused their influential and strong presence in the virtual realm. In fact, the complex communicational world of nowadays (especially the Internet) has drawn clergymen from their traditional studying corners to the open scene of the international community (to face various viewpoints, attitudes and ideological, cultural, behavioral and value views). But every media has certain drawbacks, and the strong presence of Shia clergymen in the Internet is of no difference.

It is more visible when noticing that since the Enlightenment and especially for the last few decades (after rapid processes of globalization and spread of worldwide communication), religious societies have always witnessed a

struggle between “fundamentalism” and “secularization” and what may help them is the approach (or attitude, or lifestyle) that these religious reference groups – Shia clergymen in Iran – use to respond to global modern changes.

Against this background, the necessity of “Investigating the Effects of Using the Internet on Cultural Attitudes of Clergymen” – the subject of this research – is highlighted. Therefore, in this interdisciplinary study the impact of the Internet is investigated according to the communicational theories (media ecology theory and theories related to the approaches of powerful media), as well as social psychology theories on formation and transformation of attitudes.

The core topic of this research is the “assessment of the degree of influence of the Internet on cultural attitudes of clergymen”.

The research is regarded as a “cross-sectional” study as it studies the statistical population within a specified period of time. Since no similar study has been carried out in this area so far, this research may be considered as a “creative” research work, where sampling and data collecting within the statistical population have been made with three objectives – discovery, description, and definition of the topic of the research.

Definitions and concepts

Culture

“Culture” is an easy yet difficult concept for which one may fail to provide a clear cut and precise definition on which everybody will agree. However, through studying the existing definitions five main characteristics may be enumerated in general for culture:

1. Culture is formed in the community.
2. Culture is specific to human beings.
3. Culture helps meeting the needs (material and spiritual) of human beings.
4. Culture is transferrable.
5. Culture is dynamic.

According to the foregoing it is obvious that despite the public belief culture is not something that is related merely to the past or that has been inherited from the old times. Instead, culture of a tribe or a nation is the basis of its current

life. This culture and its constituents could have been inherited from the past to the present or it may have been imitated from other cultures or it may even be formed at the very moment based on the demands of the present day. Therefore if we look at culture as the “cultural heritage” of our ancestors (Satturland & Wooddovard 1940) which is inherited by way of “social heritage” (Linton 1936, and Angial 1941), we will not get a proper definition.

Culture could not thus mean only an old process or specific lifestyle of the elites of every community. Instead as Raymond Williams points out “culture is ordinary” (Tamlinson 2002); or as Margaret Mid claimed in 1942: “we [humans] are our culture”. On this basis all of these ordinary ways and practices of life bear the conditions of “cultural context” to the extent that they play a role to give meaning to everyday life of people and are included in the concept of culture.

Based on definitions and characteristics considered for culture, a new definition could be offered which constitutes the conceptual foundation of the present research. On this basis, *“culture is a conscious or unconscious agreement about the shape and content of life that is accepted and practiced by individuals of a human community in meeting their material and spiritual needs”*.

Attitude

Attitude is one of the most important and fundamental concepts in social psychology. Some scholars have even considered “attitude” as the main topic of this science and defined social psychology as the science of studying the attitudes of individuals (Alport 1935; Igli and Chaikan 1998; Petti and Wagner 1998).

By studying definitions provided for attitude, the following characteristics could be enumerated for this concept:

1. Attitude is a type of internal mood and readiness.
2. The issue of attitude may include every material and immaterial thing that is understandable and perceivable in the surrounding environment of the individual.
3. Attitude is not inherently present in the individual and is formed in one’s mind due to some stimuli.
4. Attitude occurs in all cognitive, emotional, and behavioral aspects.
5. Usually the “assessment” factor is hidden in attitudes.
6. Attitude is always formed before behavior.

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7. Formed attitudes may change.
 8. Attitudes may influence each other.
 9. In case the attitudes of individuals reach their behaviors they could be construed as their behaviors.

Study of attitudes allows examining and analyzing social changes occurring in a society on macrolevels, or changes that are expected to happen in the future.

Clergyman

In the history of human generation where a religion has existed a foundation has been established in the name of scholars and leaders of religion, or clergymen, for understanding, interpreting and promoting religious instruction. Some people have undertaken the role of preserving and expanding religion within this foundation. The role of Hawzas has been so important that many believe that the ups and downs of religions and their internal changes are subject to the changes in Hawza ‘Ilmiyya (religious seminary) and their spirituality.

But to which category or social class does a religious leader or clergyman belong to if we are to give a definition? Is being a clergyman a job? Does a student of a seminary have a career? Is Hawza ‘Ilmiyya a guild union? If we doubt that being clergyman is a “job” meaning a “special income-producing activity that is taken to afford living expenses”, there remains no doubt that a “hawza student (seminarian)” owns a job in the sense that he is “a member of a specialized group that is committed to rendering specific services to the society, and has a series of skills and technical knowledge” (Alimzadih Nuri 2010: 9).

In general terms some social guilds (such as teaching, judging, medical practice, etc.) that have a special professional ideal enjoy a special spiritual position in the eyes of the public. Although the representatives of such professions receive wage for the services they provide people expect from them a kind of commitment beyond financial arrangements. In their careers they should heed to human and immaterial aspects as well as it is not acceptable that they do not discharge duties on the excuse that person receiving their services cannot afford it. Material or spiritual life of an individual or society depends on these services.

Here the clergymen have even a higher position because a religious society considers its prosperity and salvation in following the instructions of its religion. Clergymen is the only power that is formally obliged to define the proper ways of obeying religious instructions, presiding over the style of religious life of people and presenting practical models of life in a religious society. A

clergyman strives to know the God's religion deeply, and defend and practice it. He concentrates his social service programme on this mission, namely, while other people who spend most of their time and might on other programmes, a clergyman spends most of his strength and time on communicating with religious references and endeavoring to understand, promote or defend them, or expand religious life throughout the society.

Therefore as per Islamic instructions being a clergyman is neither a position to gain material benefits nor a career that is practiced by some people like other careers to afford living expenses. Clergyman in Islam means having the virtue of science and piety and being prepared to perform a series of religious and social duties and general obligation; without making science and piety as a source of acquiring material benefits.

In a definition "clergyman" could be regarded as "promoter of religious instructions who is obligated to teach the religious practice rules and desired spiritual conduct to others" (Alimzadih Nuri 2010: 18). On this basis, a clergyman should act systematically and have a clear cut justification about his way and style. He should also successfully and skillfully teach the codes of conduct to others as he is a teacher of behavior.

Today in Iran the Islamic schools of higher learning have the duty to train the seminarians and clergymen. Therefore, taking into account that the statistical population of this research consists of Qom's Islamic schools, we considered that all (male) individuals who enter and begin studying at one of the Islamic schools of Qom presided over by the Islamic Schools High Council in order to acquire religious sciences are clergymen. These individuals include the Shia and Sunni, Iranian and non-Iranian clergymen, dressed or not dressed in the clerical clothing.

Methods

The information required in this research has been arranged, brought into operation, collected and analyzed based on a "survey method" relying on the "questionnaire technique". The experts of research in human sciences consider survey research as one of the oldest and most common techniques. They believe that this method is the most appropriate way of carrying out studies where the individual is considered as an "analysis unit". It is considered the best method for the social researchers who are interested in collecting the main data to describe big populations to which they cannot have direct access and hence make samples of them. Surveys have also been recognized as a very good means of assessing the attitudes and orientations in big populations.

Statistical population

The influential history and standing of the clergymen in the Iranian religious society is not hidden from anyone. Hundreds of Islamic schools of higher learning (Hawza 'Ilmiyya) throughout Iran have made this country one of the most important authorities for education, promotion, and dissemination of religious fundamentals of Shia Islam throughout the globe.

Based on the statistics by the Department of Opinion Poll of the High Council of Qom Hawzas, until 2009 (the latest census) the number of religious seminarians in Iran was 171,427 including the living clergymen, and those whose files are not closed yet (such as those who have withdrawn, dismissed, left Iran, graduated, and the deceased who have no guardianship). This group included 149,207 Iranians and 13,880 non-Iranians. 95.18% were Shia religious seminarians, and 4.82% were Sunni students. As for age, more than 55% of students aged below 30 years, and over 35% were between 30 to 50 years, indicating the young age of students of religious centres. 112,938 people were married and 58,489 were single. 41.8% were studying religious sciences in "level one", 16.5% in "level two", and 13.8% in "levels three and four" (no exhaustive statistics was available)⁸⁶.

At present Qom city is considered to be the largest and the most well-known educational, research, and promotional centre of Shia Islamic sciences in Iran (and in the world). For this reason and taking into account the concentration of Shia clergymen of Iran in the city the research statistical population has been selected from among the clergymen settled in Qom city.

According to the 2009 census, over one third of the total population of Iranian hawza students (36.5%) dwell in Qom and the rest reside in three big cities of Khorasan (13%), Esfahan (7.5%), and Tehran (7%)⁸⁷. 84.2% of the 62,569 Qom hawza students were male and 15.8% were female. 78% of men were married and 22% were single. 61.5% of female students were married while 38.5% were single. Statistics shows that most marriage events among Qom-settled clergymen occurred at the age between 25 years and 30 years. The highest percentage of singles aged below 30 years. More than 50% of Qom religious seminaries were below 30 years. 43.6% were studying religious sciences in "level one", 24.7% in "level two", and an unknown percentage in "levels three and four"⁸⁸.

⁸⁶ Based on the existing statistics, the education level of 27.9% of students of religious science was unknown.

⁸⁷ Almost 2% of the total number of religious seminarians is dispersed in other cities of Iran.

⁸⁸ Based on the available statistics, education level of 11.2% of religious seminaries was not recognized.

Comparing this statistics with the average education of religious seminaries in the country shows a higher concentration of clergymen with higher level of religious studies in Qom than in other cities in the country.

It is worthy of mentioning that visiting hawza schools and distributing questionnaires among hawza students needs obtaining an official permission, and due to the sensitivity of the research area obtaining this permission faced many difficulties. Finally it was acquired after several contacts of university officials with the High Council which is one of the most fundamental proctors of seminaries' affairs. In this way, research statistical population became constrained to all clergymen studying in hawza schools of Qom city under the supervision of the High Council.

Sampling method

As mentioned in the previous section, the latest official statistics about the seminarians studying in Qom is related to 2009. Therefore at the time of conducting the research (2012) there was no precise information on the number of religious seminarians studying in hawza schools in Qom city to be used for sampling. From 35 Islamic learning centres identified in Qom, 16 centres were randomly selected (cluster sampling) to fill out questionnaires, so that the selected sample could sufficiently represent the entire population. A proportionate number of questionnaires was then distributed among them taking into account the population of each centre. As not all religious seminarians were present in schools (many religious seminarians coming to study from other cities were not staying permanently in Qom and travelled to other cities for promotional activities and other purposes), our task of probable sampling in each school was quite difficult. Therefore measures were taken to make an in-access sampling to select individuals for completing questionnaires in each school.

Technique of gathering information

The information required in this research was gathered through distributing a written questionnaire which consisted of 77 "open-end" and "close-end" questions. Self-administered questionnaires were completed by every respondent not needing to mention the names. This technique was chosen for two considerations imposing limitations on the presence of an interviewer: first, the research topic is studying and assessing the individuals' attitudes; second, the respondents in this research were clergymen. Taking into account the

prestige and position of clergymen, many of them might avoid giving authentic answers to the questions in presence of an individual that might show that their attitude is different from the norms defined for hawza people and clergymen.

Results

In this regard we attempted to define the theoretical framework of the research based on the theories introduced in two areas of communication and social psychology. On this basis hypotheses were made and information was gathered from the respondents:

1. There is a relationship between the “amount” of Internet usage by clergymen and their cultural attitudes.
2. There is a relationship between the “content type” used in the Internet by clergymen and their cultural attitudes.
3. There is a relationship between using the Internet (both the amount and the type of consumption) and cultural attitudes of clergymen.
4. There is a relationship between the clergymen’ cultural attitudes and control variables such as “age”, “marital status”, “hawza education level”, “having or not having university education”, and “birth place” (including city, district, or village).

After statistical surveying and analyzing the results, four out of five hypotheses were confirmed and one hypothesis was rejected.

In order to assess the dependent variable, the questions that were likely to be associated with the cultural attitudes of clergymen were gathered from various sources and research works close to the topic of our research. After that appropriate items were presented to eight lecturers of social psychology to define to which extent each of these questions is appropriate to assess cultural attitudes of clergymen. A selection of questions with the highest scores was put in the final questionnaire. All questions were changed into nominal levels as “traditionalist cultural attitude” and “modernist cultural attitude” and their relationship with the independent variable was tested.

The first question was whether or not there was a relationship between cultural attitudes of clergymen and their using or not using the Internet. Based on the studies carried out in this regard and on the basis of various theories discussing the influence of media on addressees, it was foreseen that such a relationship should exist. This hypothesis was confirmed after surveying

and analyzing the data. In the 400-person sample population of the research a significant difference was observed between the cultural attitudes of those who used the Internet and those who did not. This result shows that the time of communicative theories that refer to the powerful influences of the media has not come to its end yet and we are still witnessing the impact of media on various aspects of human life.

To prove the second and the third hypotheses it was necessary to assess using the Internet in two aspects: “the amount of use” and “the type of content used”. For this purpose questions related to the independent variable (using the Internet) were designed in a way that these dual aspects were considered (X1) and (X2) respectively and their impact on the dependent variable was tested. As at the information analysis stage various levels of the independent variable changed to the “traditionalist cultural attitude” and “modernist cultural attitude”, various levels of each aspect of the independent variable also changed to two levels (“frequent use” and “rare use” for the first aspect; and “used in framework” and “used outside the framework” for the second aspect).

The results of related tests showed that there is a significant relationship between the clergymen’ cultural attitudes and both the amount of using the Internet and the type of content. Those respondents who use the Internet more or use Internet content more outside the framework, demonstrate a more modern cultural attitude. Conversely, the less they use the Internet or the less they use the content outside the framework, the more traditionalist is their cultural attitude. The important point got in this section was that according to the statistics the degree of influence of Internet content on cultural attitudes was much higher than that of using this media.

Testing and confirming the above three hypotheses, we have confirmed the main hypothesis of the influence of using the Internet on cultural attitudes of clergymen. To see whether or not other variables have any role in this influence, the impacts of other five variables (age, place of birth, marital status, hawza education level, having a university education) were tested as control variables on the tested dependent variable. The obtained results indicated that none of those had a significant relationship with the changes in the dependent variable.

Discussion

Although one may think that the Internet is a neutral media, with regard to the structural, form, and content characteristics it is one of the most influential media shaping and changing the attitudes of their users. Perhaps one of the

most important reasons for such an impact is that as a communication media the Internet is not seemingly under the direct control of a specific group and allows everybody to freely express their opinion.

In our research we proved that the Internet impacts cultural attitudes of individuals. But how this impact is formed is a separate topic that demands a detailed discussion. Nonetheless in this section we will try to define the general mechanism of this influence with a focus on the psychological theories introduced in the theoretical framework.

Under the theory of stimulus-organism-response, Aronson (1988) claims that the impact of a messenger will be stronger when we believe that he argues against his interests. In fact, messages that do not reflect personal interest of the messenger are better acceptable and hence are more likely to change the attitudes of people. The reason is probably that with this kind of reasoning his trustworthiness increases. On this basis since the topics displayed in the Internet are provided horizontally by users who have no superior topic for the addressee as vertical media may do, the addressee will have more trust on such contents and we will witness a stronger impact on changing the attitudes of Internet users in comparison with other media.

On the other side, the results of studies made by Howard, Vank et al. show that the simpler a message is and the more convenient for the addressee to understand, the higher is its convincing power. The Internet with its public and communication nature enables getting messages from speakers who are closer to the addressees. This could be one of the reasons why this media has more impact on the attitudes of people.

Another point is that compared to other media the Internet has no limitations concerning the form of sending messages; it can provide users with various multimedia messages in text, voice, image, etc., and benefits from simultaneous and live communications to contact with other users. Therefore it certainly has a much higher impact in different situations.

Another point to state about the impact of the Internet on cultural attitudes of its users is that in traditional media content is conveyed vertically, it conforms to values and attitudes of the addressees and therefore its function is mostly strengthening the attitudes toward the existing status. Due to countless interactions that the Internet creates among users and also due to the wide variety of content, the Internet makes individuals face lots of versatile and sometimes contradictory viewpoints and attitudes. According to the cognitive dissonance theory, a user either limits his use of the Internet or changes his

attitudes in order to reduce the stress created as a result of this dissonance. If the user's social standing compels him to use the Internet frequently, he will necessarily change his attitudes. This is one of the reasons why internet users' change their attitudes more than users of other media.

In accordance with the social judgment theory, most of the changes in attitudes made due to using the Internet are related more to the fact that Internet users are more likely than users of other media to get familiar with new attitudes in cyberspace about which they have no special prejudgment. Hence it is more likely that a user will accept them very soon and consequently change or adjust his previous attitudes. As an Internet user selects the source of message personally we can infer that he/she receives a message from a source which he has more trust for. It could be asserted that as the inducing source is trustworthy to the user, these messages are more likely to change his attitude than the messages translated by other media where the user has no role in selecting the source of information.

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The Internet and Its Influence on Quality and Authenticity of Audiovisual Documents

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With the advent of digital technologies in the 1980s, the quality of audio and video documents has been substantially improved. Beyond widely accepted distribution quality like CD for audio, and High Definition Television (HDTV) for Video, “high end” audio is spreading, and recently first transmissions in Ultra High Definition Television (UHDTV) have started.

The Internet, however, expanding since the early 1990s, has been a limiting factor for distribution in adequate quality. Although Internet bandwidth has been dramatically improved, and powerful data compression algorithms have been developed, the gap between high quality production potential and the quality perceived by the average consumer is considerably widening. Is the Information Society, despite ever growing quality potentials, happy with “Low Fi” perception quality?

The paper surveys the situation and also explains that data compressed production and dissemination influence the authenticity of documents. This has to be taken into account when choosing standards for the preservation of audiovisual documents for posterity.

From the earliest beginnings in the 19th century, the development of audio and film can be characterised as a continuous process to overcome the imperfections of the recording and reproduction systems. The intention was to create the most perfect possible illusion of reality.

In audio it was not before the 1950s that magnetic tape and the microgroove “vinyl” disc permitted to reproduce the entire audible frequency spectrum free of distortions, hence called “High Fidelity”. In the late 1950s two-channel stereophony was added, which permitted to higher or lesser sophistication the illusion of a “natural” spatial sound. The only limiting factor at the time was the unavoidable noise of magnetic tape, which to some degree was successfully overcome by analogue noise reduction systems (e.g. Dolby). The real breakthrough, however, happened with the advent of digital

audio technology: in 1982, the Compact Disc (CD) was launched, which – at the time – was considered to be free of noise. Since then, “CD quality” has become a widely accepted yardstick for high audio quality, although further improvement took place, eventually reaching a signal-to-noise-ratio which practically matches the human ear. This “High End” quality in the form of DVD-audio, however, is covering only a small niche of the market.

Film reached a preliminary perfection already in the 1930s. The resolution of 35mm film has to date been considered standard. Colour film was introduced and Technicolor, though discontinued around 1970, is still praised by some film enthusiasts as the most brilliant system. In the 1950s wide screen formats were developed, partly followed by bigger film formats (up to 70mm) which exceeded the standard 35mm film by permitting bigger projection screens. Multichannel sound systems, also developed from the 1950s onward, added ever increasing perfection for spatial aural illusions up to what is now called “Surround Sound”. 3D films, although available for almost 100 years, have also recently developed to some perfection.

It is important to note that analogue film contains an enormous amount of information. Therefore, digital technology, leaving aside its potential for the restoration of damaged film and the production of transrealistic illusions, has had its problems to match analogue film, specifically in preservation and projection. Only very recently, digital projection has been taking over from analogue, but analogue film quality is still the yardstick for digital cinema.

Television can be regarded as the young sister of cinema. Although standard definition television (SD) was originally developed to leave the lines invisible in normal viewing distance, film was always considered to be the quality standard. This led to the development of high definition television (HDTV) already in the 1980s, but its breakthrough came only recently with the digital broadcasting technology. As opposed to classical film and SD, which have an aspect ratio of 4:3, HDTV has a higher resolution as well as a wide screen format (16:9) to better match with wide screen cinema films. Before a wider introduction of HDTV, a variant of SD television has already adopted the 16:9 screen format of HD (without its resolution)⁸⁹. The transition from SD to HDTV is currently under way.

⁸⁹ SD has a nominal vertical resolution of 525 (NTSC) and 625 (PAL, Secam) lines. The actual resolution in pixels is 640x480 (NTSC), 768x576 (PAL, Secam) and 1024x576 (PAL-plus with 16:9 aspect ratio). HDTV exists in two resolutions: 1280x720 and 1920x1080 (“Full HD”, which is five times that of SD). The resolution of UHD TV is 3840x2160.

Before television broadcasting adopted it on a broader scale, HDTV and most recently 3D television have already become popular by reproduction from high density Blu-ray discs (BDs). This presently ultimate quality of home film reproduction is spreading fast. Aside of ever growing monitor sizes, home cinema projection is becoming popular, including appropriate speaker systems for surround sound effects.

It must be noted, however, that HDTV still does not match the quality of cinema film. So it does not come as a surprise that, while HDTV is only about to become a general TV broadcasting standard, Ultra High Definition Television (UHDTV) has just been launched in Japan. This has four times the resolution of HDTV and matches film quality. Its promoters predict that UHDTV, also called “4k”, will be a standard by 2025.

In summarising, it may be stated that audio, film, and television have been decisively developed to ever higher perfection with the target to optimise the aural and optical illusion of the medium. The yardstick for this development, whether for documentary or artistic productions, was reality, or the illusion thereof.

Compared to analogue, the digital representation of audio, video, and photographic (= film) contents is in demand of high amounts of data. This affects storage as well as transmission. With the advent of the CD in 1982, the first step to successful digital storage was done⁹⁰. The bottleneck in the general introduction of digital technology, however, was transmission and access. By then, neither cables nor wireless transmission had offered the bandwidths to transport digital audiovisual contents of high quality.

Around 1990, digital signal processing technology had developed to a degree that permitted what has meanwhile become known as signal – or data – compression. This term is actually an euphemism, as it generally describes audio and still as well as moving images (video, film) data which have been reduced to their mentally perceivable content. There are many superfluous and hence irrelevant data in analogue and linear (= full) digital documents which can be omitted without significant deterioration of the transmission quality. In audio, e.g. loud partial tones hide the weak ones, so these weak ones can be omitted. For images, a lower resolution is often sufficient, and our comparatively low human sensitivity for colour permits reduction of its representation. Also, encoding only the differences between the frames

⁹⁰ Meanwhile, storage capacities have been multiplied by the advent of DVD and Blu-ray discs, and by high capacity hard disk drives and professional computer back-up tapes with storage capacities of now up to 4 Terabytes.

(the single images of video and film) instead of the entire images, is another way to reduce dramatically the amount of data. International technical working groups, such as the Joint Photographic Experts Group (JPEG) and the Motion Picture Experts Group (MPEG), have worked on such data reducing standards in order to make use of the upcoming Internet for the transmission of still and moving images and audio contents. In the early 1990s, development aimed at enabling digital audio broadcast (DAB). But as signal processing capabilities developed further, digital video broadcasting became possible over the last decade which enabled HDTV to succeed.

Data compressed (or more correctly: data reduced) audiovisual coding became a standard in the distribution of and access to audiovisual data on the Internet. Meanwhile, compression is also used for all digital video and film distribution media (DVD, BD), digital terrestrial and satellite audio and video broadcasting, as well as for video and digital film production.

It should be noted, however, that despite intensive research, data reduction is not perfect. Algorithms can be applied at different levels, according to the demands of the user. Therefore, levels used for production or broadcast transmission are optimised for higher quality, while Internet delivery often uses considerably lower standards (although all attempts are made to improve transmission capacity). Even highest quality (= lowest compression) levels may become noticeable in critical cases, and postproduction capabilities of such productions are limited. While MP3, the de-facto standard for Internet audio, is comparatively close to CDs, the quality difference between Internet transmission and the potential of film and video is more significant, often considerably lower in comparison to television transmission or reproduction from DVDs.

In fact, any lossy data “compression” is a deletion of information and therefore a basic infringement of authenticity. Consequently, archival standards for audio, video and film prescribe that analogue and linear digital originals must not be subjected to any data reducing encoding. Originals produced by employing data reduction algorithms should be preserved – if at all possible – in the original encoding, because any code switching is the source of additional distortion. It must be clearly stated that, apart from aesthetical imperfections, data reduction not only affects postproduction capabilities but also limits the use of such encoded documents for scientific analysis.

It should be noted that for dissemination on carriers, uncompressed audio quality is standard by the use of CDs. Video and film dissemination on carriers like DVD or Blu-ray, however, works only on the basis of data compression. This is an infringement of authenticity not only for documents that have

originally been produced on analogue film or video or in uncompressed, linear digital technology, but also for those videos that have been produced by employing data reducing encoding, albeit at lower compression rate (=higher quality) than the rate distributed on carriers. The data rates needed for carrier distribution, whether linear and fully authentic for audio, or already compressed for moving images, cannot practically be achieved in online distribution over the Internet⁹¹. Therefore, MP3 for audio and higher compression rates (= lower quality) for films has to be employed for online distribution. This, as already stated, constitutes an infringement of authenticity.

It is now interesting to note that, while audiovisual recording and reproducing technology has reached a high level of technical perfection, the actual quality of audiovisual contents consumption is, in quantitative terms, degrading, or at least spreading on a sub-optimal level. This observation leads immediately to the following question: does the quality limitation of audiovisual content delivery by the Internet spoil the sense for quality optimisation which we have observed over the past decades? Or was the success of audio high fidelity, which we have noted for years, a snobbish attitude of people who do not really hear the difference between acoustical gourmet delights and fast food?

To complicate the matter, different trends prevail for audio and video: for audio, MP3 indeed seems to satisfy the great majority of listeners. Consequently, audio mastering for music intended predominantly for Internet distribution is different from mastering for high quality reproduction. It must also be noted that reproduction of MP3 files is additionally limited in quality because of the portable equipment which is increasingly used. Finally, over the past years high quality audio reproduction equipment, as it has boomed in pre-MP3 times, has become an ever shrinking market. This seems to suggest that consumer behaviour has been influenced by the Internet.

For moving images, however, acceptance of low reproduction quality can be observed only for portable equipment such as notebooks, tablets, smart phones and portable DVD and BD players. In contrast to audio, though, there is a clear tendency to optimise home equipment by ever bigger monitors, surround sound installations and also home cinema projection. This, contrary to the situation of audio reproduction, seems to suggest that the Internet has no or less influence on quality expectations.

⁹¹ Internet capacity constantly improves so that today, at least theoretically, under ideal circumstances and employing latest technologies, HDTV films can be transmitted online. In practice, however, the average transmission capability of the Internet is much lower.

A deeper empirical study is necessary for a clearer understanding of this multi-parametric situation, but for adopting a working hypothesis, however, the following observation seems important. The original aspect ratio of SD television was 4:3, the same as the classical film. With the advent – or in anticipation – of HDTV, wide screen television monitors with an aspect ratio of 16:9 have been marketed over the past 10 years. The old 4:3 monitors have quickly faded from the market, although to date not all TV stations have adopted HDTV and its wide screen format.

When screening (old) 4:3 programmes over such monitors, a correct use would display two black vertical bars on both sides (“pillarboxing”), as was the case for decades when wide screen films were shown on 4:3 monitors with two horizontal black bars on top and bottom (“letterboxing”). However, most modern wide screen monitors have a provision to stretch the image over the entire width, which is indeed widely used. This produces considerable geometrical distortions, but for the majority of viewers does not seem to constitute a major problem. The same problem occurs when new documentaries include excerpts from old films or television productions. It frequently happens that either images are stretched horizontally, or that tops or bottoms (or both) are truncated in order to fill the screen without black bars. Such practices, distorting reality or the original creation of the camera man, or both, can unfortunately be observed even in productions of television stations of reputation. They happen, and are more a standard than an exception, not only in museums, but also, e.g. in fitness studios, ironically making elegant gymnasts look short and fat, before 16:9 film were available.

*Correct and incorrect display of 4:3 original aspect ratios on a 16:9 screen.
Phonograph recording in an Indian library 1904, © Phonogrammarchiv*



Original 4:3



Correct: Pillarboxed display 16:9



Incorrect: Truncated display 16:9

No geometrical distortion, but information on top and bottom is missing



Incorrect: Stretched display 16:9

Geometrical distortion, often applied to historical films and 4:3 videos

Such experiences suggest that the general sensitivity for geometrical distortions is low, even amongst producers, as many seem to prefer a fully filled screen over a correct reproduction of reality. And if this is true, it is unlikely that the permanent lower Internet quality consumption of audiovisual contents is

influencing the quality expectations of users. It rather seems that the great majority of consumers are fairly insensitive for audiovisual reproduction quality and that their interest for sophisticated reproduction formats and equipment is to a certain extent triggered by the technical attraction of the gadgetry.

From the discussed perspective it seems unlikely that Internet consumption is the originator of lower audiovisual quality acceptance for a wider audience. By its notorious bandwidth limitations, however, the Internet is the greatest indirect supporter of this insensitivity.

As the Internet is the greatest disseminator of information, content providers should strive for accuracy and trustworthiness. Unnecessary and unprofessional distortions of reality must be avoided and online transmission quality should be as high as feasible. Of course, for the foreseeable future online information will be affected by limited bandwidth. Therefore, audiovisual repositories are challenged to enable downloading documents in full quality on a special request.

Finally, the adequate processing, handling and use of audiovisual documents depend on media literacy. The Internet is the right forum to implicitly and explicitly sensitise consumers towards a critical use of audiovisual documents.

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Ethical Aspects of Communication in Information Society: The Case of Malawi

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1. Introduction

Malawi, like practically all countries in the world today, has embraced ICTs and in doing so has benefitted from the many uses that ICTs are put to, such as the promotion of socio-economic development and the improvement of access and quality of education among many others. Given the importance of ICTs, Malawi has developed a policy to ensure that there is a focused and at the same time all encompassing approach to harness the potential of ICTs.

At the international level, the last ten years or so have seen considerable research and implementation of initiatives relating to information and communication technologies being undertaken as one method of identifying ways of contributing to efforts to reduce economic and social disparities in society (Johri & Paul 2012:16). Mobile technologies have had an impact on economic development and on the lives of millions of people across Africa and Latin America.

This paper reviews Malawi's ICT policy with the aim of assessing the extent to which the policy addresses ethical issues that arise from the use of these technologies given the importance attached to ICTs by the Government of Malawi (as demonstrated by the development of a policy and the establishment of the Directory of e-Government).

2. Ethical and social challenges related to ICT use

The use of ICTs has not been without voices calling for care and caution in view of the inherent ethical and social challenges. A few will be cited here.

According to Peters (2003), new information and communication technologies raise complex ontological, epistemological, ethical and identity issues. Edewor (2011: 136) states that ethical and social challenges related to ICT use include recognition for personal and corporate ethics associated with ICT; striking

a balance between ethical, economic and technological as well as political considerations; intellectual property rights issues (trademarks, patents, copyright and trade secrets); non-violation of privacy and associated rights amidst electronic information data mining; the possibility of committing a crime with ICT (computer crime); legal issues and limitations; consequences of using ICT; and professional responsibilities.

On their part Johri and Pal (2012:7 2) argue that one of the critical issues about technology is a lack of understanding of society and institutional issues that need to be taken into account in technology deployment.

3. Malawi's ICT policy

Malawi's ICT Policy "aims at developing the ICT sector, promoting the development and use of ICT in all sectors and enhancing universal access to ICT services to achieve socio-economic development" (Malawi 2013: 1). To achieve its objectives the policy focuses on areas which the country deems necessary for rapid growth of the economy. These areas are: strategic ICT leadership; human capital development; e-Government Services; ICT in Industries; ICT in the Growth Sectors; ICT Infrastructure Development; responsive ICT legal and institutional regulatory framework; international cooperation; and universal access and universal service.

The policy takes cognisance of the fact that some of the socio-economic challenges the country has faced over the years are associated with inadequate communication infrastructure, very low utilization of ICTs and lack of information. According to the policy, without the use of ICTs, developing a vibrant, globally competitive industrial and service sector in the emerging new economic order will be very difficult. The ICT Policy is a framework for ICT to support and accelerate various initiatives and interventions at all levels of society.

The following are identified as challenges to the successful promotion of the use of ICTs:

- Inadequate ICT infrastructure especially in the rural areas;
- Underdeveloped research and development capacity in ICT;
- Inadequate human, financial, and technological resources in ICT;
- High cost structures in the economy including transport, telecommunications and electricity;

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- Low levels of education resulting in high illiteracy rate that makes it difficult to implement ICT programmes particularly amongst women, youth, the elderly and other disadvantaged groups;
 - Unreliable electricity;
 - The impact of HIV and AIDS pandemic and other killer diseases; and
 - Lack of local and relevant Internet content that may be useful to both rural and urban population.

4. Policy themes

Nine priority target areas are identified by the policy namely:

- Strategic ICT Leadership;
- Human Capital Development;
- E-Government Services;
- ICT in Industries;
- ICT Infrastructure Development;
- ICT in the Growth Sectors;
- Responsive ICT Legal and Regulatory Framework;
- International Cooperation; and
- Universal Access and Universal Service.

5. Ethics related provisions

Though the policy does not mention ethical issues directly, concern with such aspects can be surmised from two principal provisions in the policy. One is on responsive ICT legal and regulatory environment and the other is on universal access and universal service.

5.1. Responsive ICT legal and regulatory environment

Among other issues there is provision for:

- Accountability to the public;
- Ensuring that the public and other stakeholders are protected from exploitation by ICT service providers; and

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- Ensuring that the Malawian public is protected from undesirable impacts of ICTs including the spread of undesirable materials, cyber-crimes and digital frauds.

Three of the policy strategies foreseen under this provision are especially relevant to the issue of ethics. One strategy seeks to ensure that the development, deployment and exploitation of ICTs within the economy and society and related legal provisions will balance as well as protect community and individual interests, including privacy and data protection issues.

The second strategy seeks to address ethical issues in the use of ICTs to protect the rights of children and the under-privileged.

The third strategy, divided into sub-strategies, seeks to protect the Malawian public from undesirable impacts of ICTs including the spread of pornographic materials, theft of postal materials, cyber-crimes and digital frauds. A number of ethical and social challenges referred to earlier (see Edewor 2011: 136 above) would be addressed if strategies identified here are implemented.

5.2 Universal access and universal service

As Asiedu (2012: 241) observes, there is empirical evidence which shows that ICT use is low in Sub-Saharan Africa with the few that access these technologies tending to be from a relatively small group composed of the educated, middleclass and those who live in urban areas. This observation is very relevant to Malawi where ICT penetration and use leaves a lot to be desired.

The issues covered under this provision include:

- 5.2.1. Government shall ensure that, in the short to medium term, all people in every part of the country have reasonable means of access to affordable, reliable and efficient essential ICT services in their community.
- 5.2.2. Government shall develop and implement initiatives for the creation and development of electronic local content that will inform, educate and entertain the public.
- 5.2.3. Government shall ensure the provision of financial incentives to ICT service providers for expansion of services to areas that are not economically viable and ensure that services are viable and sustainable in the long term.
- 5.2.4. ICT shall be deployed and exploited for the diversification and improvement of the quality of information; increasing accessibility to

ranges of information resources within and outside the country and creating a supportive environment for the development of the mass media and the private press.

5.2.5. Government shall encourage and promote the development of special ICT services for the disadvantaged communities and the disabled.

5.2.6. Government shall develop capacity building initiatives for women, the elderly, the disabled, the youth and the disadvantaged groups to implement ICT programmes.

5.2.7. Development partners and non-governmental organizations, as well as private sector participation shall be encouraged to facilitate the roll-out of community-based ICT initiatives and ICT capacity building initiatives.

Access has serious implications for ethical issues especially in relation to access to information. This is because access to information is a constitutional right provided for under Section 37 of the country's constitution. The provision states as follows: "Subject to any Act of Parliament, every person shall have the right of access to all information held by the state or any of its organs at any level of Government as far as such information is required for the exercise of his rights.

It would not be far-fetched to conclude that Government has both a moral and constitutional/legal obligation to ensure that the structures and services needed for the exercise of the right are in place.

The initiatives foreseen under the policy provision will entail strategies to ensure that there is access to ICT services by all people regardless of location, gender, age, literacy levels or educational levels, language or dialect, physical or mental ability. The strategies are also conceived to ensure that special efforts are made to extend services and access to all sections of the society including rural, underserved and disadvantaged communities in order to reach out to, and benefit, the majority of the Malawian population.

6. The presence of the policy

The presence of the policy should be considered an ethical issue. Firstly it demonstrates an acknowledgement that the Government has a moral obligation to create an environment conducive to the exploitation of ICTs. Secondly, it fulfils public expectation for the existence of such a policy.

7. On-going initiatives

A number of initiatives are currently being pursued in Malawi using ICTs. These include the establishment of the Department of e-Government whose primary aim is to modernize and improve the efficiency of government services through institutional and organizational reforms; development and use of ICTs to support government operations and activities; promoting e-government through government-to-government, government-to-business, and government-to-citizens initiatives; promoting the use of ICTs to facilitate the decentralization of government services and operations and support the delivery of business and government services in rural area; improving the basic skills of public officers by providing ongoing training; and developing and enforcing standards and best practice to guide the delivery of services to the public.

There is also the Computers for African schools project which has been providing training to teachers and computers to schools and has been involved in developing the ICT Curriculum for schools. Another initiative is the on-going development of telecommunications infrastructure by the Malawi Communications Regulatory Authority (MACRA) through the establishment of telecentres in several rural areas of the country. About 80% of Malawians live in rural areas where access to basic ICT services is not readily available.

8. Current obstacles

At the moment several obstacles hinder the efficient exploitation of ICTs in Malawi. Two of them stand out specifically. Firstly, for a long time civil society, among other organizations, has been calling for the passing of the Access to Information Bill. This is the enabling legislation for the right to public information which is provided for by the country's constitution. The presence of this piece of legislation is an imperative for certain sectors of the Malawian society, such as the media, to adequately harness the potential of ICTs.

Secondly, Internet services are also not as good as one would want them to be. They are characterized by frequent disruptions due to low levels of technical ability, lack of adequate resources and power interruptions among other issues. This is despite the fact that there are a number of Internet services providers.

9. Summary

Malawi is making good progress in the implementation of ICT initiatives. The presence of an ICT Policy, which will soon be adopted means that the exploitation of ICTs will be properly guided for the benefit of the country.

This paper has argued that ethical issues are adequately taken care of by some specific provisions in the policy and that the mere presence of a policy itself is an ethical issue. We wanted to show also that there are some issues that need to be addressed for the implementation of the ICT policy to be effectively and holistically beneficial.

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SECTION 2. CONTEMPORARY SOCIO-CULTURAL PROCESSES

From Cultural Consumers to Cultural Prosumers: Citizens' Co-creation of Cultural Changes in Information Society

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Introduction

The rapid changes being shaped by the information society in the spheres of production and communication have inevitably meant swift, large-scale changes in the way knowledge is transmitted, communication carried out at a distance and information used in the new media. On the one hand, culture consumers are developing new habits to access cultural goods and services: users have become prosumers (producers + consumers). On the other hand, the State at national, regional, and local level has recognized the need to formulate public policies in order to encourage and regulate such social practices.

Cultural transformations related to ICTs are visible primarily in the massive access to communication via interactive media, which has influenced cultural identities, cultural production and consumption, the notions of democracy and governance, and the degree and ways of civic participation.

This paper, based on the research carried on by the author and her team since the late 1990s, analyses the evolving processes by which Internet users increase and transform their proactive appropriation of information and communication technologies (ICTs), from ICT use to the co-creation of scientific knowledge. Four cases are studied:

1. *Citizen's appropriation of ICTs for community empowerment*: The Global Community Network Partnership, a network of community networking associations, was created in 1998 in Europe and spread rapidly to North

America, Latin America, Asia and Oceania. Its primary purpose was to enable citizens' access to ICTs as well as to enhance the production of local community contents.

2. *Political participation through ICTs*: Popular Assemblies in Argentina were generated in the midst of the 2001–2002 acute economic and social crises. These Assemblies, which combined face to face meetings with ICT-mediated communication, intended to inform citizens about the external debt's history and process, citizen's rights and the ways to socially react to a crisis of the political representative system. Assemblies accomplished a role of political and economic media and information learning for its attendants. Similar movements have been organized more than a decade later by the "indignados" (outraged) in several European countries (Spain, Russia, France), Turkey, Israel, and Brazil (the "tropical springtime").
3. *Co-creation of socio-technical knowledge*: Urban Living Labs are places where people can interact with technology, learn complex technological processes, and co-create socio-technical innovations. The paper focuses on European and Latin American Living lab experiences.
4. *Co-creation of scientific knowledge*: E-Citizen Science (eCS), also known as "cyberscience," is a relatively new term for an old practice, citizen science, which eCS has now propelled into the 21st century. What we now call Citizen Science has greatly evolved over the past two decades. Most recent advances are due to new scientific approaches plus the use of ICTs. eCS covers a wide variety of applications: from agriculture to urban planning, astrobiology to software and informatics services, health care to oceanography, social sciences to rocketry. This report focuses on a few trends in the use of ICTs for scientific purposes in relevant projects of diverse disciplines, analyzes the role of citizen scientists in eCS projects, and highlights the use of eCS for community empowering, indigenous studies and gender studies.

Through these cases, the paper analyses the social adoption and use of Knowledge Society tools in non-state initiatives, and studies the evolution of cultural changes.

The Global Community Network Partnership (GCNP)

According to Schuler (1996) community computer networks, also known as civic networks, Free-Nets, or public access networks, thrived around the world in the

1990s. These networks were frequently developed in combination with other local institutions, such as schools and universities, local government agencies, libraries, and non-profit organizations. They served a diversity of purposes, from making the Internet accessible, both physically and culturally, to communities, encouraging involvement in local decision-making, developing economic opportunities in disadvantaged communities, to empowering communities in order for them to play an active role in local as well as global political agendas.

As stated by De Cindio and Schuler (2012: 1) “...community networks – CN (...) were probably the first widespread attempt to develop networked information and communication technology (ICT) for a wide range of community affairs. <...> They gave rise to research as well as action perspectives on ICTs (and information and communication generally) in geographically delineated communities. Moreover, they provided empirical concreteness to the concept of civic intelligence, the form of collective intelligence that is directed towards civic ends” (Schuler 2001). This was promoted by providing a platform to individuals and groups for developing original ways of exploiting the possibilities offered by ICTs for developing their own projects (De Cindio 2004), thus allowing citizens to play an active role in shaping the network society.

In spite of some shortcomings, useful lessons were learned about unanticipated challenges of the community network approach. Realizing the fact that citizen participation was not just possible, but necessary, became stronger after a decade in which local governments used the Internet merely for information publishing and the delivery of a few interactive services of e-administration. However, in most locations the ideal of “citizens as partners” is still more a good intention and an electoral promise, than an actual policy implemented with concrete actions (De Cindio and Schuler 2012).

In the 1990s community networks were intensely local. As expressed by Cisler, quoted by De Cindio & Ripamonti (2010): “A community network is a locally-based, locally-driven communication and information system”. However, at the same time, these initiatives with local orientations were often perceived to be – and in reality were – part of larger (more “global”) networks which were often used to share experiences, goals, software, and answers to technical problems (Schuler 2010). They also joined together along national lines, mostly in the United States, Canada, and Europe.

Within this tendency, the administrators of BCNet, the Barcelona Community Network, promoted the Global Community Networking Partnership. Its primary purpose was to learn and to share the ICT-enabled and online practices that contribute to the formation and on-going health of communities in all

their dimensions. In keeping with this vision, GCNP members struggled to ensure that the systems used to share their experience grew ever more open and accessible. Underlying that purpose was a vital commitment to the uses of ICTs for social change. GCNP took an “Internet-based” or community online view of socio-economic development. (Graham et al. 2003). According to this authors, GCNP viewed access to open systems as the basis for open knowledge sharing, open decision making, open value creations, as the key basis for the achievement of social justice.

GCNP was a partnership open to CN organizations and individuals and also academic, public and private organizations, sharing common values and goals, open to change. Its initial values and aims were:

- Promoting innovative social change through the effective use of ICTs.
- Promoting a bottom-up approach to joint activities and events.
- Getting community networkers into policy debates and dialogues at the local, national, and global levels.
- Shifting the main focus in ICT development from people as “consumers” to citizens and active participants in the knowledge society.
- Addressing the real issues behind achieving equitable and effective access to the Internet, its tools and benefits.
- Promoting a multilingual and multicultural Internet.
- Developing new models of sustainable local development using ICTs to empower people.
- Helping to design a partnership culture among community networkers, private enterprise, public sector, universities and relevant agencies.

GCNP stated that in the digital era, innovation concerned everybody, and that every citizen was capable of participating in innovative socio-technical processes. Therefore, the movement promoted the development of information society technologies, organization and contents: new media, new schools, and new democratic participation schemes. GCNP succeeded in putting in common the best experiences on CN worldwide, put in contact CN leaders to foster personal trust and friendship, providing periodical international visibility to the movement; and mainly promoting local, regional, and national CN organizations.

GCNP organized three Global Congresses: Barcelona, 2000; Buenos Aires, 2001; and Montreal, 2002. Each of these events gathered over 500

representatives of community organizations, researchers, entrepreneurs and governmental officers from the five continents. Networked joint work among the organization's members continued actively between these Conferences. Nonetheless, internal disagreements regarding GNCP's policies and strategies both toward local community networks, and to world events, such as WSIS, led to its quiet extinction towards 2003. During its brief life, however, GCNP managed to reach significant social actors in nearly 30 countries, and to place the concept of community empowerment though the Internet in national and international agendas.

Political organization through the Internet: Citizens Assemblies in Argentina

The financial crash that destroyed Argentina's financial system in December 2001 not only generated a powerful social explosion that caused the abdication of four successive Presidents in a single week: it also created a new citizens information outburst. Hundreds of e-mail chains against the Government started circulating among the Argentine Internet users. On December 19, the President declared a State of Siege. That night thousands of indignant citizens filled the streets clattering their pots and pans, in one of the first "cacerolazos"⁹². It was the first of many citizens' public manifestations. Exhausted by four years of economic recession, by the Economy Minister's decision to block all the savings accounts, tired of the incessant political corruption, the Argentines found that the government's measure to implement the State of Siege was the drop that filled the cup: it was too evocative of past dictatorships. In anger, citizens took to the streets (Finkelievich 2002).

In the beginning, these demonstrations were prepared using telephones or hearsay, but in a few days, they were organized through the Internet⁹³. Neighbours in Buenos Aires and in the largest cities began to assemble in street corners, cafés, or neighborhood clubs. They met several evenings a week to discuss "proposals for a new Argentina", but also started electronic forums to continue their face-to-face debates, and to inform the neighbours who could not assist to the meetings. They designed websites to spread their actions and proposals. Gradually, different neighbourhood assemblies – nearly 50 in Buenos Aires only – contacted each other, through e-mails, or their websites. Two weeks later, they had inter-neighbourhoods Sunday meetings. The results

⁹² Cacerolazo is the action of protesting publicly by clattering pots and pans.

⁹³ The Internet had been introduced in Argentina in 1995.

were disseminated through websites and electronic newsletters. The new “Assembly” movement claimed for a popular-assembly-based government. Both leaders and members of these movements agreed on one point: this massive organization could not be implemented without the Internet.

In December 2001, there were nearly 3.5 million Internet users in Argentina⁹⁴. Additional 250,000 were connected from cybercafés, community technological centres, and public libraries. The Internet had become, for the middle class sectors, a fundamental organizational tool.

The most complete website was that of *Indymedia Argentina*, an international organization which informed about protest in dozens of cities in the world. *El Atico* featured analysis on the national context, and a “cacerolazos” timetable, among other items. The web site *Vaciamiento.com* analyzed national politics. Yahoo! Groups featured a number of initiatives to generate civic awareness. Some of the active sites for political deliberation were created in the days that followed the first demonstration. Others were already in cyberspace (Finkelievich 2002).

Neighbourhood groups, either already existent, or hastily implemented, organized the Assemblies. The contents of their debates were uploaded to web pages, together with useful information for the neighbours and political proposals. Neighbours could upload their own information and become journalists of the events in the local assemblies. Demands were not limited to protests against corruption or the national political measures: the new “Assembly” movement claimed for a new political agenda, for political innovation, namely a popular-assembly-based government.

Popular Assemblies in Argentina had learnt their IT-based organization from the anti-globalization international movements which had started in Seattle in 1999. In fact, “cacerolazos” as well as popular assemblies were carried out by Argentine residents in European countries, as well as in Australia, aiming to mobilize the international public opinion on the Argentine case. However, the Assemblies were ideologically unrelated with the anti-globalization movements: they were focused exclusively on the country’s problems.

The movement was not limited to middle-income groups: an e-mail call of the Workers Power Federation of the Earth, Housing and Habitat – a blue collar workers’ organization – invited the unemployed workers to dialogue with the

⁹⁴ In December 2012, there were 19,196,652 Internet users, 68% of the country’s population.

victims of the financial *corralito*⁹⁵, “so that the saucepans and the picketers may meet for the first time in May Square, as symbol of a new alliance of the workers, the unemployed, and the middle classes”. The alliance was brief, but it certainly lit an alarm red light for the politicians in power.

Popular assemblies have succeeded to enlarge the concept of public space, exceeding political parties, incorporating new topics to political agendas, and playing a fundamental part in the construction of a new public sphere, supported by electronic networks. They can be considered as socially innovative movements; they have been successful in generating social and cultural changes in the target population, and in society, in a wider sense: the creation of a new associative concept of democratization, identified with the practice of citizenship, highlighting the limitations of both the State and the market, and allowing the concept of democracy as a social practice, with citizens as direct actors in the democratization processes.

One of the most direct cultural impacts was the social appropriation and the dissemination of the Information Society tools, no longer available only to the lite. As a consequence of the Assemblies, a number of young people have joined political movements, using the increased ICTs tools (social networks, Internet radio stations) to organize diverse groups, disseminate their ideas, and combine the use of public space and cyberspace for social mobilization.

Another impact was the construction of a social, public subjectivity: the values and present actions in the civil society which frankly oppose the characteristic systemic values of the State and the market, and generate new forms of sociability, as well as the reciprocal alteration among instances of social practice, and the production of subjectivity. Yet another is the practice of operational solidarity, through which the neighbours had organized and sustained help to elderly people’s homes, street children, unemployed parents, and other vulnerable social groups.

The impacts were less perceptible in the formal political sphere, although, as Vieira (2001) outlines, the plural occupation of public space can carry an imbalance in the relationship between the actors and the political system, with prevalence of the political society, and with the insertion or participation of civil associations in the State, conferring them a semi-public status. At economic level, however, no impacts have been registered.

⁹⁵ “Corralito” (little corral) was the popular name given to the system implemented by the Government to inhibit financial outflows from the banks, in December 21, 2001. It blocked bank accounts, so that account holders could not touch their own savings.

Popular assemblies carried on until 2003. Slowly they lost their political sting to become neighbourhood associations, or to develop concrete activities such as popular soups, day care centres for street children or elderly people, and other community activities. Dr. Duhalde, from the Peronist Party, assumed the Country's Presidency. As representative political life was resumed, if not renewed, and as the "corralito" gradually liberated part of citizens' capital and savings, Assemblies turned weaker, and finally disappeared. However, empowered by the use and social appropriation of the Internet, they became for some years a school of e-democracy and online deliberation.

ICTs are and will continue to be a key part of the new social and political movements.

Urban Living Labs: a path to socio-technical innovation?

A Living Lab has been defined as a user-centred, open-innovation ecosystem (Chesbrough 2003) often operating in a territorial context (e.g. city, agglomeration, region), integrating concurrent research and innovation processes (Pallot 2009) within a public-private-people partnership (Wikipedia, Living Labs).

The concept is based on a systematic user co-creation approach integrating research and innovation processes. These are integrated through the co-creation, exploration, experimentation and evaluation of innovative ideas, scenarios, concepts and related technological artefacts in real life use cases. Such use cases involve user communities, not only as observed subjects but also as a source of creation. This approach allows all involved stakeholders to concurrently consider both the global performance of a product or service and its potential adoption by users. This consideration may be made at the earlier stage of research and development and through all elements of the product life-cycle, from design up to recycling.

A Living lab (LL) creates an experiential environment, which could be compared to the concept of experiential learning, where users are immersed in a creative social space for designing and experiencing their own future. Living labs could also be used by policy makers and users/citizens for designing, exploring, experiencing and refining new policies and regulations in real-life scenarios for evaluating their potential impacts before their implementations (Wikipedia, Living Labs).

LL could mark a change in the paradigm of innovation systems. They usually imply the participation of several social actors: the State, universities, and

citizens' organizations. Diverse authors (Arnkil et al. 2010, and Kaivo-oja 2011, in: Serra 2013) point to the model called Quadruple Helix or quartet helix model. The emergent paradigm, usually called *user-driven innovation*, facilitated by the Web 2.0, the generalization of "open innovation", the universalization of mobile telephony, and the diverse forms of social innovation expressed in spaces and activities such as *co-working*, *crowdfunding*, or *P2P economy*. One of the characteristic of the TQuadruple Helix Paradigm is the participation of users or citizens in the innovation process.

The European Network of Living Labs (ENOLL) has recognized over 320 LL in Europe. LL are also expanding in Latin America, linked to universities, NGOs, and local governments. The Latin-American research network of Living Labs gathers members from Argentina, Brazil, Colombia, and Uruguay.

Artur Serra (2013), a Catalan pioneer promoter of Living Labs, states:

"After a first wave of Living Labs, these new open innovation ecosystems seem to face a set of new problems for its evolution: What is the role of living labs/citizens labs in the overall innovation systems? Is it possible to envision its scalability and universalization? How will they adapt to different countries and cultures? Secondly: How should living labs relate to the new role played by cities in the new innovation systems? In particular, what should be the place of living labs within the context of the so-called "smart cities"? And finally: could living labs be the ground for a new area of research and innovation area? What kind of new professional opportunities will develop from this new scenario?"

Citizen Science

"Citizen Science" is basically the collection of information by general citizenry to deduce theories and determine policy. E-Citizen Science (eCS), also known as "cyberscience," is a relatively new term for centuries' old practice, citizen science, which eCS has now propelled into the 21st century. What we now call Citizen Science has greatly evolved over the past two decades. Most recent advances are due to new scientific approaches plus the use of ICTs. eCS covers a wide variety of applications: from agriculture to urban planning, astrobiology to software and informatics services, health care to oceanography, social sciences to rocketry (Finquelievich and Fischnaller 2013).

eCS differs from its historical research forms predominantly in the access to, and subsequent scale of, public participation. Citizen Science is part of what Tapscot and William (2006) have called Wikinomics: "Millions of media buffs now use blogs, wikis, chat rooms, and personal broadcasting to add their voices to a

vociferous stream of dialogue and debate called the “blogosphere”. Employees drive performance by collaborating with peers across organizational boundaries, creating what we call a “wiki workplace”. Customers become “prosumers” by co-creating goods and services rather than simply consuming the end product. *In eCS, citizens become science prosumers.* This co-creation of knowledge is a considerable leap from an earlier approach in which the scientist (amateur or professional) is “the expert” and the citizens are basically free research assistants.

E-science is part of the WSIS Action Line C7, “ICT applications: benefits in all aspects of life”. This line points to E-Science, focusing mainly on improvement of knowledge exchange between scientists, and between scientists and citizens.

There is a variety of trends regarding participation of citizens in E-Science. According to Newman et al. (2012, in: Finkelievich and Fischnaller 2013), the ways in which citizen scientists contribute to the scientific endeavor vary across projects. Some involve participants in a single step of the research process, such as free data collectors, whereas others include participants in multiple ways. In these latter projects, citizens are not just “data collectors” or research assistants; they are being trained and empowered to influence the full scientific process, facilitating their participation in the whole scientific process and empowering them as social agents.

The role of citizen in science is complex, and as such, it is being actively debated. There are an increasing number of participants in E-citizen science projects. The huge majority of these volunteers do not receive any financial incentive. The reasons which motivate this participation are manifold; the obvious ones are love for knowledge and science and social concern. A strong motivation is the utility of the eCS projects for their environment and quotidian lives.

Participation does not necessarily guarantee partaking in the projects organization. As indicated by Wiggins and Crowston (2012) (in: Finkelievich and Fischnaller 2013), citizen science does not represent peer production; the power structure of these projects is nearly always hierarchical. In addition, citizen science is not always “open science,” a term that refers to open source-like practices in formal scientific research settings. Numerous citizen science projects share data, but many do not make the full research process openly and publicly viewable for comment and discussion.

A rising number of eCS projects are oriented to heighten participants’ acquaintance with science, technology and the scientific process, as well as to modify and enlarge their views to the way science can help them to cope with their needs. eCS projects provide widely diverse degrees of citizens’ training throughout their participation in the scientific process.

A good example is the Pacific Biodiversity Institute, which conducts scientific research in the fields of ecology, conservation biology, and natural resource management in LAC countries. Its activities are focused on the conservation of biodiversity and maintenance of ecological integrity in the Pacific region. They also provide scientific and technical information for use in the public review of public land management policies. Many of the countries in Latin America are very rich in biodiversity, yet, do not have the internal resources to adequately study, catalogue and protect their incredible biological and ecological wealth. Most of the world's conservation resources are spent in the rich, first-world countries, where much of the native biodiversity has been diminished considerably by centuries of development.

eCS also works within illiterate communities. ExCiteS⁹⁶, a British eCS project, brings together scholars from varied fields to develop and contribute to the guiding theories and methodologies that will empower any given community to start an eCS project aimed to deal with their particular issues. Their project “geographic visualization for non-literate citizen scientists” emerged from needs expressed by indigenous Pygmy groups in the Congo Basin. These groups already participate in environmental data collection, including monitoring illegal activities such as poaching and deforestation, to have greater control over their local areas. EXCiteS provides a framework, tools and methodologies that allow the indigenous communities to analyze the collected information in order to better understand environmental change and thereby enable informed decision-making.

“Brasil @ Home”⁹⁷ is an initiative to promote Cyber Citizen Science in Brazil and Latin America. It is an introduction to the concepts and practice of volunteer computing, distributed intelligence and remote sensing volunteer. People can participate through various activities. Volunteer Computing: offer people the ability (idle) of their computers for scientific projects. Thus, the sum of many PCs results in the equivalent processing power of a supercomputer at low cost. Distributed Intelligence: people offer their work directly, performing activities in scientific research projects, cataloging images and/or transcribing relevant data. Thousands of volunteers contribute daily to these projects. Hackfest: multidisciplinary gathering of scientists, developers, enthusiasts Science Free (Open Science), Free Software and Free Web applications to develop pilot Cyber Citizen Science.

It is important to point out that not only are most cyberscientists and eCS projects concentrated in the most developed regions, but also the majority of the initiatives and funds regarding eCS in developing countries are generated

⁹⁶ www.ucl.ac.uk/excites.

⁹⁷ <http://www.citizencyberscience.net/brasilathome>.

in Europe and North America (Finkelievich & Fischnaller 2013). This could suggest that there is a direct correlation between explicit public policies regarding the development of science, technology and ICTs, and the number of eCS projects. However, eCS projects are emerging in Oceania, Asia, as well as in African and Latin American countries.

One of the main reasons for this concentration may be the regional scientific policies. The European Union's 2030 vision of the Digital Agenda (2011) recommends: "The public has access to and can make creative use of the huge amount of data available to them; it can also contribute to it and enrich it. Citizens can be adequately educated and prepared to benefit from this abundance of information", so that "citizens get a better awareness of and confidence in sciences, and can play an active role in evidence based decision making and can question statements made in the media".

Most national digital agendas in developing regions include Science and Technology policies as key factors to build local Knowledge Societies. Nevertheless, seldom match the investments and political engagement shown by the European Union.

Conclusions

Significant common traits can be found between the implementation of global community networks, popular assemblies based on the Internet, living labs, and E-Citizen Science initiatives: all these initiatives have innovation (social, political, and/or technological) as their common goal. All of them include citizens as main actors. All of them imply a rupture with previous ways of action, in community organization, political participation, co-creation of socio-technical innovation, and co-creation of knowledge. And all of these initiatives were generated by non-governmental social actors (community organizations, individuals, universities), even if the case of Living Labs implies the participation of local or national governments, and private enterprises.

These diverse initiatives and social movements coexist in the present, albeit with different characteristics. Geographically-based community networks have given place to interest-based networks and virtual communities, such as the free software movement. Global networks such as GCNP have disappeared, to be substituted by innovation-based networks such as ENOLL. The Argentine Assemblies have vanished, but the "indignados" organizations have flourished in the five continents. Living Labs and e-Citizen Science initiatives existed already in the 1990s, but they have attained full visibility and dissemination in the last years.

The analysis of the studied cases suggests that a process of cultural change may be detected from the late 1990s onwards. The community network social experiences enhance the social appropriation and dissemination of ICTs, with the final purpose of community empowerment. Citizens' assemblies view the Internet use not as a goal, but as a means for community political organization, and for informing citizens about their political, social and economic rights. Living Labs are meant to train citizens to participate in social and technological innovation, which ultimately could be used by smart cities. E-Citizen Science projects are basically oriented to the production of scientific knowledge, and eventually to technological innovation either derived from that knowledge or designed to better collect and process information.

Experience	Social innovation	Technical innovation	Production of Knowledge
Community networks			
Citizens' Assemblies			
Living Labs			
E-Citizen Science			

It seems probable that in the near future the initiatives of living Labs and eCS could converge, as well as contribute to the development of Smart Cities.

It is known that technological enterprises generate applications and programmes that do not necessarily respond to the community's existing needs, but that are frequently imposed in societies through monopolist control of the market, publicity, and marketing. If the innovations are citizen-driven, it is probable that they will respond more accurately to the communities' needs. Therefore, it is necessary for the WSIS to include the issue of citizen-driven innovation in its agenda.

Citizens' access, appropriation, dissemination and generation of information and knowledge for development is an issue of institutional and cultural attitude. This implies a necessary cultural change in state institutions, research centres, citizens' organization, and in the media. Public policies should be oriented to achieve this change, starting by the institutions and organizations' champions and leaders, enhancing the participation of governmental officers, civil servants and citizens, and aiming to impregnate and pervade this new culture in the institution or organization. Organizational transformations are needed to impulse citizens to a new way to access, manage, create, preserve, and disseminate information. Therefore, it would be interesting for the WSIS to consider non-governmental initiatives in the strategies and policies for 2015.

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Societal Virtualization and Glam Capitalism

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The ideas of information and knowledge society are modern-day utopias, which reproduce the logic behind all olden intellectual utopias – from the ideal polis of Plato to Marx’s communism – while ignoring the real-life logic of socio-cultural transformations that have occurred in recent decades.

That former logic may well be defined using the term “virtualization,” introduced in the 1990s to denote current expansion trends in a) simulating (image manipulations) and b) digital technology. Society itself is now becoming kind of a virtual reality, with its members operating images – or visual objects – in areas where institutional standards call for tangible objects to be produced and real actions taken. The virtualization of social institutions – as a process of replacement of objects and actions with images and communications – can be observed in every field these days. In the economy, prices tend to be determined by virtual assets, such as a brand name, rather than by production capacity. In politics, success in gaining power is increasingly dependent on a hopeful’s image rather than his or her track record as a member of a specific party. In culture and the arts, the artistic or scholarly value of a project is determined not by its actual quality, but by how effectively it has been spun in the communications media.

Increasingly relevant in social life, the logic of virtual reality leads to an ever wider expansion of computer technology. In the public mind, virtualization is largely associated with computer technology, and its being perceived as something technologically determined impedes adequate analysis and assessment. It would be more valid to define virtualization as a process determined socially and culturally, as it is society’s virtualization that propels computer technology into life, not vice versa.

In the virtualization era, the most efficient of technology tools are those providing assistance with access, image processing, and network building. Communication technology can offer all that, and so a boost has been given to the development of its many variations. Computers and computer networks have proved even more potent in replacing products and actions with images and communications. Industrial computers came into being back in the 1940s

while PCs appeared in the 1960s. Yet, the process of all-out computerization did not begin until after computers had evolved into a virtualization tool for providing access, processing images and building networks.

Transmitting information, or awareness-raising data, is a task that any communication technology can perform effectively enough, whatever its type. But in providing communication as an exchange of symbols to build communities and maintain contact, computer multimedia are by far the most efficient. (See Fig. 1)

Message/Access	«Plain»	«Multidimensional»
Whenever necessary (24/7)	Print media	Internet
According to programming	Radio	TV

Figure 1. Information and communication technology

The multimedia allow to create a multidimensional message, one that incorporates text, image, sound and video. They provide real-time interaction in the public domain online and access to a social network 24 hours a day and seven days a week. This is why computer networks have become the main tool for virtualization as well as a major virtualization environment. This is also the reason for computerization being so often used as a synonym for virtualization, although this latter is a broader phenomenon, of which computer technology is only a part.

Digital technology plays an increasingly large role in people's lives, which is evidenced by statistical data. The Russian Statistical Service reports there were 70 PCs per 100 households in Russia in 2012 and 40 computers (including 20 with Internet access) per every 100 workers. Surveys show that digital technology is now used routinely by a majority of Russia's population. According to a survey conducted by the national pollster VTsIOM in early 2012, 55% of the adult population use the Internet, with 36% doing so on a daily basis, and 82% of all Internet users holding accounts in social media (against 53% in 2010).

Having said that, among the tools instrumental in societal virtualization, television remains the most potent. A 2012 survey conducted by the Obschestvennoye Mneniye pollster nation-wide showed that 90 percent

of Russia's adult population rely on TV as an information source while 22% turn to Internet newswires and 8% read online blogs and forums. A VTsIOM survey taken in the following year provides a similar picture, with television seen as the main source of news in the country by 60% of the adult respondents whereas the Internet holds that status just for 23%.

Television and the Internet are two communication environments where a virtual reality for target audiences is formed. And sociological surveys show that in Russia, different generations dwell in different virtual realities. According to an Obschestvennoye Mneniye survey, television is an information source for 96 % of Russians aged between 46 and 60 and for 81% in the 18–30 age group. A VTsIOM survey suggests this generational gap is even wider. The Internet is the main source of news for 50% in the 18–24 age group and for a mere 11% in the 45–59 age group. Television, meanwhile, is the No. 1 information source for 34% and 72%, respectively. The nature of the images being created and transmitted and the degree of audiences' involvement in the process of replacing products and actions with images and communications are markedly different for the Internet and TV, but this difference is about the mode of virtualization, not its essence.

Virtualization has become a rational strategy for people involved in market competition, political struggle, and in the consumption of mass culture. But by the end of the 1990s, markets had become overbranded and the strategy of virtualization lost its efficiency. In that kind of circumstances, the logic of virtualization gave way to the logic of glitz-and-glamour, which nowadays sets strategies for competitiveness. Glamour was a specific lifestyle in the 1930s; in the 70s it became an aesthetic form (glam rock); and now it has become a rationale of the newest economic system. Glam capitalism comes into being when market players operating amid fierce competition turn to glamour and make their goods and services look sexy in order to attract customers. These days, the process of creating value has more to do with trends than with brands – not just in the fashion industry and showbiz, but also in high-tech industries and in the financial sector.

Glamour-intensive products provide growth rates above an economy's average in luxury industries, as well as in the hospitality sector, and businesses related to sex, fashion, beauty and the like. The logic of glam capitalism manifests itself most markedly in these trans-industries, each of which involves companies that may be far apart in terms of product and technology, but that use the same value-creating strategy. Glam capitalism is defined precisely by that shift from brands to trends in value creation. In an effort

to create trends and to turn themselves into trends, companies form units of the glamour-industrial complex (GIC), bringing together producers, fashion designers, and trendoid consumers. The GIC blurs the habitual boundaries between brands, creating trans-brand products. The GIC also blurs the border between a company and its market, and exploits creative customers rather than workers.

Copyright holders and trend-makers form a special kind of status groups: glam capitalists and glam professionals constitute the nucleus of the newest middle stratum, positioned above traditional middle strata that have dwindled, losing their social role. At the turn of centuries, the lemon-shaped stratification, with a domineering middle stratum, is being replaced with a pear-like bimodular stratification.

One other effect of glam capitalism is the wealth gap's temporality. When the level of consumption becomes defined not only by the amount of goods and services, but also by access to brands and by involvement in trends, consumers start to be divided along the having-now-or-later lines, instead of the conventional division into the have's and the have-not's.

The transition from the societal virtualization logic, focused on brands and network units, toward the logic of glam capitalism, bringing about a shift to trends and flow structures, is behind the socio-cultural transformations of the past decade as well as the technological leap from the spread of PCs and the first-generation Internet to mobile gadgetry and Web 2.0 networks. Glam capitalism's imperative to create simple, quickly replaceable images is easier to follow for those who use mobile applications. Sales figures indicate the triumph of the logic of trends and mobility over the logic of functionality. Some 140 million PCs were sold around the world in 2005, along with 60 million notebooks and 50 million smart-phones. In 2010, global sales figures changed for 145 million, 200 million (an over-threefold increase) and 300 million (a sixfold growth), respectively. A new category of mobile devices – touchpads – then came into being and their market grew rapidly, with 12 million sold globally in 2010.

The structural and technological shifts to glam capitalism do not mean we are facing an era of its problem-free domination, though. The newest form of capitalism provokes innovative forms of protest; trash appears alongside. Hackers and “pirates” violate copyright in their efforts to undermine glam capitalism. Through the purchase of counterfeit products and file sharing, consumers participate in movements that create an alternative to anti-social glamour as well as to traditional sociality. The revolt against the virtual

and the glitz & glamour is the driving force of many alternative movements generating trash in politics and culture as well as in the economy.

It is police measures that glam capitalism first resorts to as it tries to harness the growing alter-social movements; it then changes tactics in favour of takeovers and the use of those movements' creativity for its own benefit. The takeover of alter-social movements can be seen in the use by corporations of the open-source strategy, in allowing to download content to those who agree to view commercials, in commercializing torrent networks, in "stretching" luxury brands, in guerrilla marketing, and so forth.

Trend makers bringing together the models of glam capitalism and alter-social movements build a new method of value creation – one based on flow authenticity. Glam capitalism is a realm of copies that have no original (Baudrillard's simulacra). Alter-capitalism is a world of flow authenticity where the originals are flows preceding any replication. Alter-capitalism requires and generates more creativity and mobility than even glam capitalism does. This is why all sorts of ideas about creative society are now being put forward as an innovative positive social project – to replace the philosophy of consumer society, burdened with various environmental and spiritual problems, as well as that of information society, which expresses the interests of intellectuals and technocrats only.

The Internet, Global Governance, and the Surveillance State in a Post-Snowden World

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1. Introduction

Much has been made of the role that the Internet is playing in restructuring the way in which governance is executed both at the national and the global levels. The role of the Internet in supporting the rise of wide-spread autocrat challenging movements in the Arab world, the role of the Internet in enabling middle class protests against out of touch officials and political structures in democracies, the power of the Internet to sway elections and directly influence policies are all obvious and widely commented upon.

Equally significant is the role of the Internet in creating global initiatives and global consciousness in a variety of areas – in supporting global movements in civil society; in making borders largely irrelevant in the transmission of information – importantly including images and direct communications; in allowing for the extremely low cost and largely frictionless sharing of experiences, good practices and how to's in the whole range of areas of interest to civil society and the grassroots.

What we do know is that the Internet is having a truly profound effect on the modalities, instrumentalities and mechanisms of governance. By making information (and communications) much more widely available; by providing the opportunities for articulating political positions, for aggregating comments and opinions, for instant mobilization; the Internet has let a genie out of the box which it will be impossible to put back in. All of these modes of Internet use have been seen (not incorrectly) as means for empowerment – personal empowerment, group empowerment, empowerment at the margins (in some cases) and as potentialities for a very broad widening of the distribution of influence and even power in contemporary societies.

All of this experience and the attending thinking and analyses highlight the very positive contribution that the Internet was and could play in transforming opportunities for economic and social development, for dispersed and even individualized empowerment and for a radical deepening and extending of popular participation and democracy. However, many of these experiences and analyses – highly optimistic, even “pollyannaish” – were developed and articulated in a rather more naive and simpler era – the era before the revelations made by Ed Snowden concerning the pervasive surveillance by the US National Security Agency (NSA)⁹⁸ and its immediate “FiveEyes”⁹⁹ allies.

In a post-Snowden world our collective realization of what the true nature and impact of the Internet on global governance might be in a truly Internet enabled and inter-connected world appears to be radically revised.

2. Management (and governance) in and through Information Systems

Parallel to these processes of Internet enablement and long antedating them are equally significant processes of the use of Information (and Communication) Technologies (ICT) as means for the extension, elaboration, and systematization of various forms of management command and control – of industrial and production processes, of paper flow and information processing, of transaction management and record keeping. Not surprisingly much of the early research in the area of (Management) Information Systems (IS/MIS) was concerned with the management of logistics particularly for military purposes and for the acquisition and systematization of the information needed to support these systems and to make them ubiquitously available and implemented.¹⁰⁰

The role of Information systems in allowing for control at a distance and the capacity to manage and command vast resources through limited and focussed information inputs is well known but often forgotten in the recent overwhelming attention given to the Internet.

In the area of governance IS/MIS could be seen as largely an enabler of processes and functions, facilitating the range of transactions and resource management requirements rather more attuned to e-government (transaction management) than e-governance (process management).

⁹⁸ <http://www.washingtonpost.com/blogs/the-switch/wp/2013/12/31/heres-what-we-learned-about-the-nasas-spying-programs-in-2013>.

⁹⁹ <https://www.privacyinternational.org/blog/the-five-eyes-fact-sheet>.

¹⁰⁰ For an interesting historical graphic, timeline and bibliography see <http://www.manufacturing.net/articles/2012/05/history-of-logistics-and-supply-chain-management>.

3. Adding the Internet to Management Information Systems

Until the use of the Internet became widespread there were clear distinctions drawn between “consumer” electronics/Information Systems and business or management Information Systems. The former were seen as end-user and consumer oriented and were understood as being outputs or products for commercial providers/manufacturers. Consumer oriented electronics was often seen as being entertainment and content oriented while MIS was infrastructure and logistics or transaction oriented.

Two things of interest have happened in this regard. The first is that the Internet as a delivery system has become a major element in infrastructure provision for commercial/business and government applications as with other end-user oriented applications. The low cost, ubiquitous, customer/user facing equipment neutrality of the Internet has proven irresistible for many (if not most) commercial and government and even to an extent military applications.

The other development is that the Internet with its primary focus on the non-professional end-user and the development of a range of classes of applications to support the requirements and interests of the non-professional end-user has provided to commercial and government systems a user-facing front-end which is significantly more powerful and applications-rich than anything that the previous transaction oriented commercial front-ends were providing.

The linking of commercial and governmental (and now other such as military) systems into the Internet has had the additional and transformative effect of giving these latter systems a totally new and extremely powerful means for inter-facing with not only their own traditional end-users, but also with the entire range of potential end-users accessible via the open Internet. Thus the access to the Internet has led to transformations in conventional commercial marketing, transactions/sales management, customer relations and customer service and so on as well as entirely new types of commercial and governmental services/practices in such areas as “open data”, “peer-to-peer” transactions, and “open access collaborations” all based on what is generically referred to as “social” or “social networking¹⁰¹” software.

4. The impact of the merging of the Internet and Management Information Systems

The effect of this linking of the Internet with more traditional Information Systems and the extension of IS/MIS capabilities through the interactivity and

¹⁰¹ http://en.wikipedia.org/wiki/Social_software.

end-user ease of access of the Internet has led to an explosion in new end-user (and Business to Business, Government to Citizen and so on) services and even classes of service. The extremely rapid pace and scope of ICT/Internet based innovation has in turn been and continues to be transformative and the basis for the vast creations of Internet based wealth in Silicon Valley as elsewhere.

The end result of this merging has also meant that the highly developed and centralized information acquisition, storage, analysis and management capabilities of traditional Information Systems could become part of customer/end-user based systems; in practice, providing these with their basic technology infrastructure while at the same time giving those infrastructures access to vast amounts of end-user based information to which they would not otherwise have had access. The power of these infrastructures (designed for industrial/commercial strength information and transaction processing) further enabled these applications to extend their scope and attractiveness to become global and essentially ubiquitous services almost overnight and with relatively smooth technology transitions and expansions.

However, while the end-user (“social”) software was designed to facilitate peer-to-peer and horizontal information access and sharing the underlying infrastructure remained one organized to ensure traditional highly centralized, top-down, command and control management structures. These latter did not change but rather were supplemented by these new more free wheeling end-user information interfaces.

The effect of these linkages in readily and cost-effectively providing companies and governments and in this context, more particularly security agencies with vast amount of new highly individualized information was to some extent an unanticipated by-product of the dramatic roll-out of the Internet as a global infrastructure initially paralleling but increasingly displacing or at least supplementing the existing systems infrastructure. But of course, the recognition of the significance, value (including monetary), and power of this fusion and new information access was not lost on those at the core of information system development and was the primary driver of the initial DotCom boom and has since become the basis for the business models of the variety of successful Internet-fuelled corporations (Google, Amazon, eBay, Yahoo etc.).

Perhaps simultaneous with (or even in advance of) the fortune-creating corporate recognition of the power of the Internet/IS fusion was the recognition by governments and more particularly by security services of the vast power that was now coming into their hands. This was to obtain individualized information at a highly granular level including that concerning both transactions and social/communication interactions; the means to store, organize and access

this vast array of information; and, through their pre-existing capabilities, rapidly being augmented through a variety of technology advances, to deploy the outcome of the analyses of that information using the ICT infrastructure in extremely powerful and highly unobtrusive interventions.

It is thus not surprising that many of those with backgrounds in MIS or systems management and development were unsurprised by the Snowden revelations, indicating that they had known all along of the possibility of the large scale information access/surveillance that he revealed. Equally not surprising is the evident surprise and consternation with which these revelations are being responded to by those only accustomed to dealing with the end-user oriented applications and interfaces, since few if any of them has ever understood that the basic platform on which their valued Internet applications rested was highly amenable to these kinds of initiatives.

5. The Internet vs. governance

To some extent the Internet has been presented as “anti-governance”. Thus the Internet is presented as empowering individuals vis-à-vis their governments along with notions of radically altering structures of governance toward those based on highly decentralized and distributed processes. In this case the Internet is understood as the basic platform of governance and with various functionalities providing intermediary structures for coordination and facilitation for higher level or more aggregate processes as required. Of course, these notions have been only in the process of formulation and with even less instances of implementation (except in those areas where Internet-based peer-to-peer frameworks have been or are being introduced), but a great deal of leading edge thinking has been directed in this way.

As well, arguably, the libertarian political philosophy of so many, particularly US-based, technical developers and business people could be seen as a form of moving towards de-structured governance or de-legitimizing governance altogether (see the Californian Ideology¹⁰² as an example).

The underlying governance notion in this context being that with the Internet (and ICT technology over-all) individuals are sufficiently empowered to manage their own affairs in many areas where government has up to this point been required/necessary. Thus, as the Internet becomes more pervasive

¹⁰² <http://www.hrc.wmin.ac.uk/theory-californianideology-main.html>; for a more general discussion of this phenomenon see D. Golumbia, “Cyberlibertarians’ Digital Deletion of the Left”, *Jacobin* 12.4.13. <https://www.jacobinmag.com/2013/12/cyberlibertarians-digital-deletion-of-the-left/>.

and more available as the underlying infrastructure for daily life the need for government intervention and government itself diminishes apace. This process of “pushing back” government is presented as an opportunity to maximize individual “freedom” as understood within Libertarian notions.

But of course, the applications and systems which are being pointed to in these kinds of analyses are the dispersed and decentralized ones of the Internet and not the more centralized and control oriented MIS applications.

6. The Snowden revelations

Edward Snowden, a private contractor analyst working for the US National Security Agency, has been making public a series of documents giving a window into the activities (and interests) of this agency and by implication of the US Government as a whole. Without going into the details on specific items revealed, it is well to think about the overall implications of these revelations in the context of global governance and including global governance of the Internet. (Note, while the Snowden revelations are specific to the NSA/US there are clear implications that other governments as for example China are, within the limits of their own technical capabilities, undertaking similar surveillance and, where possible ICT-enabled intervention activities as well.) As the capabilities become more widely known, the technical capabilities more widely dispersed and the cost of the key technologies declines one can expect many more national governments to attempt to do what Snowden has revealed that the US and its immediate (FiveEyes) partners have been involved with.

A few observations:

- a. The NSA and security/surveillance activities historically have been highly centralized and control oriented top-down structures accustomed to dealing with similar structures in the commercial and technical spheres.
- b. Much of the information/surveillance being revealed comes through the Internet front-ends of the existing MIS infrastructures and the NSA and other security agencies have access to this through their traditional relationships and the mechanisms of surveillance of those infrastructures.
- c. The NSA and others now see the Internet as a prime means for ensuring the national security of the US.
- d. The NSA and others see the Internet as a prime means for surveillance but more importantly as a means for using the information derived from surveillance as a means to intervene so as to achieve desired real world outcomes i.e. as orienting inputs into its centralized use of MIS control mechanisms.

e. the NSA and others (or those acting within the context of Internet-enabled infrastructures) are intervening in a number of areas that are concerned with more general areas of governance and not simply areas of “security” (e.g. surveillance of the UN and the EU discussions, the actions of ecology activists, surveillance for economic advantage, etc.).

7. Implications for global governance

The implications of the above for global governance are I believe extremely significant. If, as many have argued, the Internet has become the nerve system of global communications including for commerce and for governance including the level of transactions and interactions between individuals and more importantly between individuals and governments, governments to governments, business to business and so on; and if the NSA and other security agencies’ capacities not only to acquire information via the Internet based front-ends but also to use that information in purposeful directed ways to achieve specific outcomes through its control over the Information Systems infrastructures, then the capacity for these agencies to control at whatever level they choose the direction of action in the real world is at this time unassailable.

Whether or how they choose to use those capabilities is of course, another question and of that we have, as yet, little specific information. But on current evidence it would appear unarguable that they have the capability and that capacity can only improve over time with ever more refined means of analysing the data acquired and translating that data into effective actions in the real world.

This, as well, does not mean that the technological capability under the security agencies control allows them to fully determine outcomes in the real world – there are much too many exogenous variables including individual motivations, rational actions and irrationalities at all levels to allow it to do this. However, what it does mean is that for any action, context or transaction where the overwhelming dominance of knowledge capability and capacity to manage technology interventions/outcomes is a consideration (it is in fact, rather hard to think of many real world contexts where these are not overwhelming elements), it is possible for security agencies to intervene so as to achieve their defined objectives as for example: by thwarting a communication, introducing false information, giving one of the actors (including where appropriate military, police, diplomatic, commercial actors, etc.) in the transaction foreknowledge of the anticipated actions of other actors and so on and so on.

What this does is to pose a dramatic challenge and dilemma to the rest of the world. For some, a situation where security agencies are in a position to determine the outcome of whatever specific interaction in which they choose to intervene may be seen as a relatively benign and even desirable state of affairs – potentially leading to a significant reduction in the risk of terrorist actions, the capacity to intervene where necessary through for example the “responsibility to protect”, enhanced capacity to deal with criminal behaviour and so on. However, for most, such benign outcomes are not anticipated since these agencies are an instrument at the service of the national interests of a variety of national governments and represent an enormous and even overwhelmingly powerful support for the specific localized status quo whatever that status quo might be and including whatever narrow and highly self-interested definition might currently prevail as to what constitutes these localized “national” interests.

The world is thus presented with an overwhelming challenge of how to respond to this set of circumstances. What leverage can be placed to provide oversight on the actions of these agencies? Are there technology means that can be used to thwart this overwhelming “information dominance”¹⁰³? Is establishing national Internets and thus destroying the true value of the global Internet the only answer? What mechanisms are in place at the global level to respond to what are globalized activities by these national “Surveillance States”?

These are the real challenges of global governance as we move forward in our post-Snowden world.

Post-script

The dilemma of how to respond to the Snowden revelations – the loss of innocence with respect to the Internet, the very real threat of a totalized Surveillance (and Command and Control) Society – is a real and immediate one.

Unfortunately none of the approaches so far being suggested seems capable of dealing with the realities which are being faced.

Challenges to these actions on the basis of existing laws (or constitutional guarantees) seem to be countered by processes of legalization and revision of constitutional interpretation (and very much depend on the existence of an enforceable rule of law which in some national jurisdictions at least seems questionable).

¹⁰³ <http://www.theguardian.com/commentisfree/2013/sep/15/nsa-mind-keith-alexander-star-trek>.

Arguments that current grassroots initiatives might scale sufficiently to present a form of counter-power or alternative technology/techno-social structures seem highly optimistic at best (open for example to intervention and manipulation as they might become successful and an apparent threat).

Technical solutions concerning encryption and structuring/restructuring of existing infrastructures appear dependent on the active involvement of significant technical and corporate bodies/individuals who to this point have been either complacent or even complicit in the developments noted above although current thinking and initiatives to increase the unit cost of individual acts of surveillance (e.g. making decryption more difficult and thus presumably more costly) may have some medium term potential.

The development of broad framework agreements towards governing the Internet and the broad technical and telecommunications infrastructure while seen by many as quite unrealistic, however, might provide the only realistic hope. Their significance would be not so much in the capacity to enforce these agreements (the incapacity of existing oversight and control structures in the face of political force, technology drive, personal and corporate interests and collective insecurities are not such as to lead to a great of optimism in this direction). Rather their significance would come through the process of their formulation as nations and their citizenries globally would need to be confronted with the quite stark choice of acceptance of a Surveillance (and Command and Control) State or of a rule of law enforced through transparency and democratic oversight.

Public Sector Information: Openness or Universality

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Opening up government data is a continuously growing trend. This could be analyzed in the context of socio-cultural transformations that lead to the creation of information society and knowledge-based economy. Knowledge has become a source of competitive advantage in the information economy and information is a base on which we can build innovative products. It is worth to note that public authorities store a wide range of information and content in many different domains, e.g. geographic data, tourist information, statistical and business data, weather information. Taking into account the wide availability of information and rapid development of information and communication technologies (ICT), public sector information can play a vital role in creating innovative services and goods which would benefit the entire society. Moreover technologies can also catalyze better provision of educational and cultural resources for citizens. This can lead to creation of better economical opportunities and also bring wider social benefits.

When thinking about the re-use of public sector information wider changes taking place in society should be taken into consideration as we are facing growing impact of ICT on the nature of contacts between social institutions in every sphere of life. Re-use of public information is one of the elements of these fundamental transformations. In this paper we present Polish experience in the area of re-use of public information as a vital process of transforming public authorities to better serve the needs of information society.

1. Openness, universality, accessibility of public sector information in the era of modern challenges

The starting point in the Polish model of access to public sector information is the implementation of the principle of openness. The right to public information is a personal right of political nature. It is based on the principle of transparency of governance also known as the principle of transparency of the activities of public authorities, expressed in the Constitution of the Republic of Poland. Transparency is therefore a condition for the achievement of the right

to information. It guarantees the democratic principles of the functioning of power in the state [governed by the rule] of law, and allows citizens to control public authorities.

The Act on Access to Public Information implements the constitutional principle of transparency in the Polish law. On its basis access to information is available to everyone and is not restricted to Polish citizens. Legal persons, organizations and social institutions also have full right of access.

The actual availability of public information is realized in Poland by simplifying proceedings. There are no specific requirements to request for access to public information. Information can be given by phone or in any other requested form.

Currently, the statutory catalog of public information includes particularly information about domestic and foreign policy, for example:

- drafts of normative acts, and action plans of legislature and government;
- information about public authorities or entities which are not public authorities but provide public services (the mode of operation, stored records, archives, etc.);
- public data – the content and form of official documents, the position taken in the sphere of public affairs, information about the condition of the state and local governments and their agencies;
- information about public properties.

However, in the era of information society and continuous technological development the main challenge is to provide access to a particular type of public information. In 2011 an amendment to the Act on Access to Public Information distinguished public information of particular importance for the development of innovation and development of the information society, i.e. the so called information resources. This is public information that quickly changes and has economic potential. On its basis it is possible to build interesting and useful mobile applications, websites and educational portals.

It is in the interests of users that such information is made available for re-use immediately, with use of open standards and structured and described in metadata.

2. The practice of sharing public information in Poland

The Act on Access to Public Information defines public information as any information about public affairs, regardless of the manner of its expression. This applies to the activities of central authorities and local self-government bodies. It also applies to entities that perform activities of public authorities or manage public property. The case law of administrative courts shows that the law takes a very broad interpretation of the term, assuming that everything that is in the interest of public entities becomes public information, no matter which subject it comes from. For example it was decided that the petition of students to revoke the right of an academic teacher to perform his job should be considered public information.

Access to public information in Polish law is not absolute and is subject to factual or legal restrictions. Legal restrictions exist to safeguard access to: classified information, confidential information protected by law, the secrets of entrepreneurs and privacy of individuals.

Access to public information is available in five different ways:

- announcement in the Public Information Bulletin created in order to provide access to public sector information in electronic form. The Bulletin consists of web pages on which public entities provide public sector information;
- publishing or posting information in public places or installing a device that can present the information;
- on the submission of a request in any form,
- access to the meetings of elected collective organs of public authority and sharing content, including audio-visual records, which document these meetings,
- public information in the Central Repository of Public Information (CRPI).

3. Practical problems of access to public information: Polish experience

The practice of Polish law on access to public information can cause problems for both the government and the applicants. This is apparent in the extensive case law of administrative courts. I would like to make references to several sources of these problems.

The first issue that draws attention is the definition of public information. It is agreed that the concept of public information may cause problems of interpretation, both in doctrine and case law. The Polish model – as stated above – has adopted a very broad understanding of the term. In our opinion, because of the scale of information generated and held by the administration, it is not possible to create a definition by simple taxonomy. Polish judicature assumes that public information is any message created by or referenced to a wider public authority and created by or referenced to other entities performing public functions in the name of public authority.

Second, Polish Act is not a base law that extensively regulates access to all kinds of public information. Different rules and procedures for access to specific types of information, such as information on the environment, statistical data, geodetic and cartographic data, are laid down in specific acts. That may cause difficulty in determining which provisions should be used in a particular case.

As regards the practice I would like to indicate a number of issues that may occur on the part of the administration and applicants.

On the side of public entities the problem is a lack of pro-active approach in providing public information. Some of the public entities do not fully utilize the potential of the Public Information Bulletin, do not answer the requests or provide incomplete answers. However, this problem stems from lacking proper implementation of the obligations of certain public entities, and is not a consequence of bad legislation.

Another phenomenon occurring on the administration's side is the qualification of an application not as a simple request for information that the body already has, but as a request to have information processed. This can result in restrictions in access to information. The applicant is required to demonstrate that the acquisition of such information is particularly important for the public interest.

It is assumed that processed information is qualitatively new information, non-existent in the version finally adopted, although the sources of the materials are held by the public entity. The processing of information may include compilation, interpretation or editing of information already held with some form of intellectual engagement.

Another practical problem associated with the use of the law is the question of the so-called abuse of the right to information. When the law was created the emphasis was put primarily on a system of guarantees of the right to information. The protection against the abuse of it was left outside the sphere of interest of

the legislator. There is no general clause to limit access. The right to public information is subject only to the restriction for the protection of classified information, other secrets protected by law, the privacy of an individual or a trade secret. In addition the Polish Constitution specifically allows restrictions of the right to information on the basis of the protection of freedoms and rights of other persons and entities, as well as the protection of public order, security or important economic interests of the state.

However, the Act on Access to Public Information does not allow a direct refusal to disclose information if the request is offensive, reiterated periodically or entails substantial costs, arising from the conversion or duplication of the source material (such solutions have been provided for in the regulations of other European countries).

There is no provision to protect government against manifestly excessive requests that may hamper the operation of an authority. Operating such requests may cause public administration to incur additional costs, leading to delays in the provision of public information to other applicants or other tasks.

So what can the government do? At the moment the best solution seems to be sharing as much information on the websites of the authorities by the Public Information Bulletin or the Central Repository of Public Information. The more information is freely available, the fewer requests for access.

4. Participation of NGOs in the process of government regulation of access to public information

In preparation for the amendment of the Act on Access to Public Information the Ministry of Administration and Digitization organized in 2012 a series of meetings (“round tables”) on access to public information. Those were meetings of academia (experts in the area of public information), representatives of the Office of the Ombudsman, public administration and civil society organizations. The purpose of the meetings was to identify the most important dilemmas associated with the Act on Access to Public Information and the most effective and the fastest ways to improve the system of sharing information in public administration. Participants agreed that the proposed changes should address issues such as: the definition of public information, directory of access restrictions to public information, the modes of access to public information, the abuse of the right of access to public information and the re-use of public information.

In addition, the issue of access to public information was also included as one of the important issues for cooperation between public administration and local

governments in order to build an open state. This allows IT projects to be consulted between the local authorities and the central administration at an early stage.

All draft laws and regulations are always widely consulted with stakeholders. The method of public consultation carried out by the Ministry of Administration and Digitization is defined in the so-called Code of Consultation. Draft legal measures are available in the Public Information Bulletin of the Ministry, the Government Legislation Centre and on the website <https://mamzdanie.org.pl>. All stakeholders are invited to consultation meetings and have the opportunity to submit their comments and suggestions in writing.

5. Re-use of public sector information and new models of access to public information

The Act on Access to Public Information also transposes into Polish law the Directive 2003/98/EC on the re-use of public sector information. According to the law, public entities are required to provide information that can be re-used for commercial or non-commercial purpose, in machine readable formats. Re-use is free as a matter of principal. The new mode of sharing and re-use of public information is called Central Repository of Public Information (CRPI).

In December 2011, the European Commission presented an open data package which proposes a revision of the 2003/98/EC Directive in order to allow better use of the potential of public sector information resources to increase the competitiveness and innovation of the European economy. The main changes include: extending the scope of the Directive to libraries, museums and archives, adding the obligation to share data in commonly used, machine-readable formats, more specific regulation principles for charging the public sector information for re-use.

6. New models of access to public information – a central repository of public sector information

The task of the public authorities is to create the infrastructure for the collection and provision of information resources. With ICT – as compared to traditional methods – information is delivered faster and more cheaply to a larger group of customers.

ICT also promote re-use of information (especially large data sets) in digital form that can be easily and cheaply converted. Public sector information is used in

many modern websites and mobile applications. Examples include car navigation services, traffic information delivered in real time or meteorological services.

The creation of this type of design tools in a number of European countries and in the United States (for example websites: www.data.gov, www.data.gouv.fr, and www.data.gov.uk), was an impulse for the Ministry of Administration and Digitization to begin working on the Central Repository of Public Information.

The idea of CRPI is to create a cataloged inventory used to share information resources. It will be based on a model of references to existing institutional repositories and a repository for storing and sharing information resources on the Internet. This will be public information of particular importance for the development of innovation and information society.

CRPI is planned to be a point of access to public information including, among others: spatial data, demographic data, election results, data on energy production and consumption, data connected with environment protection and information about pollution, health data, data related to education, and other data collected for ongoing projects to the various administrators of the data referred to in the Act on Access to Public Information.

In this mode information will be accessible in such a way to ensure its accuracy, wide use and machine-readability. The system will be fully searchable, and will also allow creating a variety of cross-compilations of public information online, including compilations of public bodies and their tasks.

The Act on Access to Public Information is the legal foundation for CRPI, but its implementation requires additional regulations. Consultations for creating these regulations started last year. Debates highlighted the need for a new approach to the construction of the system. At the same time we are negotiating with selected public entities to determine the details of the implementation of the above obligation (additional technical requirements for an information resource studies and timetable for sharing in CRPI). During the discussions it became clear that not all actors are sufficiently prepared both legally and technically.

CRPI is a system that will be systematically upgraded to include additional functionality and information resources. The aim of the project is to integrate as many information resources, held by the administrators of data, as possible.

Conclusions

As we have shown in this paper access to public sector information plays a crucial role in the modern information society. It is a practical method of ensuring openness of public authorities, as it is based on the principle of transparency of their activities. It is especially important when we consider changes that are taking place in our societies as ICT become an integral part of contemporary life. In this context modern technologies transform communication between authorities and citizens. Citizens expect to have a possibility to contact public authorities via the Internet and access high quality public information in a fast and convenient manner. This is a challenge for governments to adapt to rapidly changing environment where social networks set a new model for openness, interaction and communication. It also raises a question on how to open government data. The progress that ICT brings is also a big opportunity, as public sector information can be used to create innovative applications and services. In this context universality of public information is important in order to make information available for any kind of use. In reality we do not need to make an explicit difference between access and re-use of public sector information, as openness and universality can go hand in hand. Combining these two facets creates new possibilities for further development of interactions between government and citizens. Therefore practical implementation of this idea should be one of the priorities regarding government information policies.

Russia's Internet Audiences: Behavioural Patterns and Trends

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Russia has come a long way in establishing itself on the Internet. The country now has three registered domain names: .su, ascribed during the Soviet era, in 1990; .ru, given to it as a sovereign state in 1994, several years after the USSR's collapse; and .рф, offered in 2010.

According to the Domeny Rossii web site, there were 5.7 million second-tier domains registered in the Russian Internet by the beginning of September, including 4.8 million at .ru, 0.8 million at .рф and 0.1 million at .su.¹⁰⁴

Russia topped the World Bank's absolute user rankings for Europe and came 6th globally (see table below).

Table 1. Global absolute Internet user rankings¹⁰⁵

Place	Country	Number of Internet users (in millions)
1	China	571.3
2	United States	254.3
3	India	155.6
4	Japan	100.8
5	Brazil	99.0
6	Russia	76.5
7	Germany	68.8
8	Nigeria	55.5

According to surveys conducted by the national pollster Obshestvennye Mneniye among Russian residents aged above 18 in the first quarter of 2013, 55% use the Internet at least once a month, 53% do so at least once per week, and 43% go online on a daily basis.

¹⁰⁴ The online resource Domains of Russia: <http://statdom.ru/>.

¹⁰⁵ World Bank, official web page at: <http://datacatalog.worldbank.org/>.

The term “Internet audiences” did not come into use until the late 1990s, although as a phenomenon, the Internet has been here for about half a century now. At the initial stage, researchers applied the term “users” instead, with the Internet originally seen as kind of a techno-environment for interpersonal communication through activities such as teleconferencing and file sharing (primarily e-mails). Talking of a mass Internet audience would be irrelevant at the time as it was virtually non-existent, with only relatively small groups of enthusiasts involved. But the situation changed drastically following the launch in 1991 of the World Wide Web as an Internet subsystem. This was when web pages and links sites began to appear, bringing the Internet to its modern-day configuration.

As things were evolving fast, the Internet user community grew by 1994 to such a point as to make advertisers turn to the Internet as a powerful advertising vehicle. The first online commercial was arguably placed in 1994 by the U.S. company AT&T, an event that brought to life the notion “Internet audience.”

The first steps in surveying Russian-speaking Internet audiences were made in 1995, with several sociological institutes (VTsIOM, Comcon II) coming out to gauge. In 1996 Stack Inc., then a search engine market leader operating the Web site Rambler, began monitoring Web attendance with the help of special counters. In 1998 the Russian company InfoArt conducted the nation’s first Internet user census and used its findings as the basis for building an average-user profile. The average user was then described as a male university graduate aged 25 to 30 and holding a white-collar job, an IT specialist or a manager, who would go online several times per day while in office.

The growth of Internet advertising created a need for ongoing audience surveying, with the search engine-based counters providing no clue as to how the audience is structured demographically. In 1998, two sociological centres – Comcon II and Gallup Media¹⁰⁶ – each launched a monitoring project of its own to meet that need.

Surveys of the day enabled researchers to identify some macro-level behavioural trends in Russia’s Internet audience as a social community. They showed that the number of people online kept changing, and that the changes followed a cyclic pattern. Not always apparent with regard to specific sites, the trend manifested itself quite clearly on overall attendance. According to Rambler,

¹⁰⁶ The company is now known as TNS (A. Sharikov).

in 1996, Internet attendance was the lowest in the small hours (4–5 am) and would reach its peak in the daytime (noon to 6 pm), when most of the Russian Internet users were in office. Attendance would grow from 5am to noon; from midday till 6pm it remained stable, only to dwindle again toward the end of the day. This trend reflected the scarcity of home PCs in Russia in those days, along with limited Internet access for households. Most Internet users tended to go online during their working hours in office, and this was what defined the fluctuations in Russian Internet audience numbers (see Fig. 1).

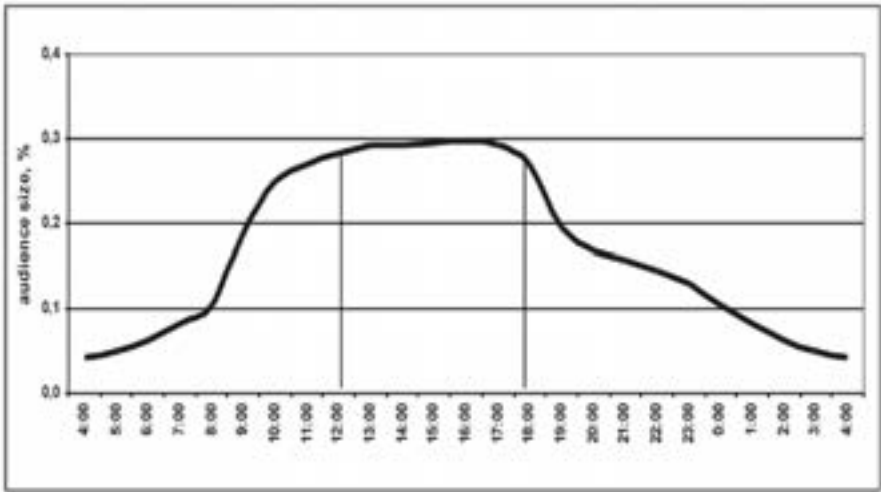


Figure 1. Russian Internet audiences: Day's-average curve (a modular reconstruction based on Rambler postings)

Now, 18 years on, we can see new trends emerging, yet the old conclusion concerning attendance peaks remains relevant to this day. Figure 2 provides a vivid illustration. It shows an Internet audience percentage curve for a half-year average, with a 15-minute, 7-day breakup. The TNS group built this graph in the latter half of 2012, based on a nation-wide survey involving a sample of 50,854 interviewees. The audience fluctuations demonstrate a high degree of repetitiveness. The differences are the most pronounced between weekdays and weekends – at weekends, the curve changes its configuration somewhat and the audience highs go down (see Fig. 3). But unlike the mid-90s, the audience numbers are currently the highest in after-work hours rather than in the daytime, this owing to a wider availability of home PCs and wider Internet access outside the office environment. Thus, we can talk of Russian Internet audience figures changing during the day in a cyclic manner. There are weekly cycles as well, with some difference between weekdays and weekends.

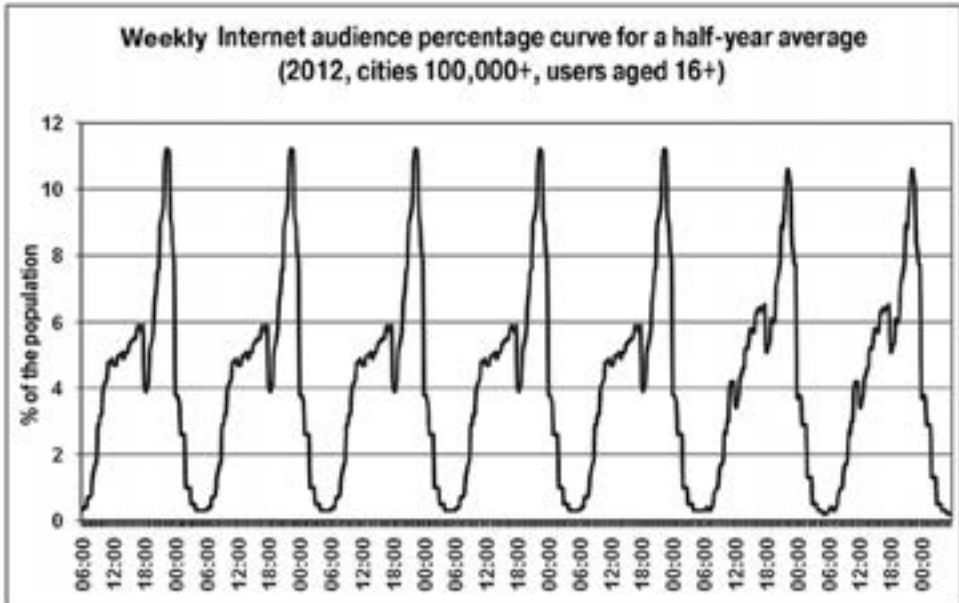


Figure 2. Sourced from TNS

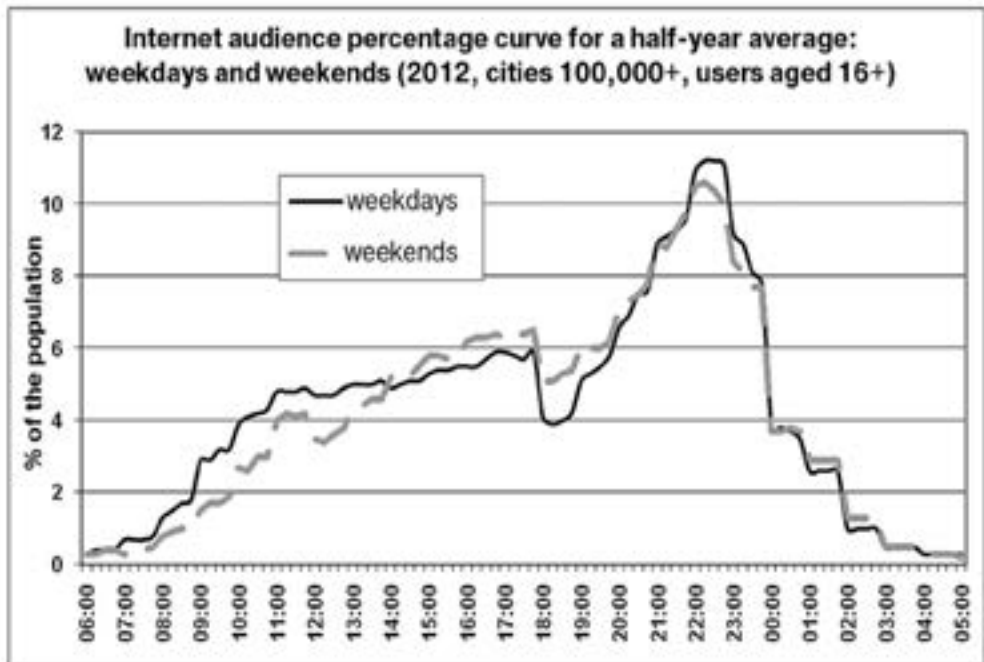


Figure 3. Sourced from TNS

If we contrast the findings of 1996 and 2013, presenting them in a graphic form for better visual explicitness, we will see the following trends in action (see Fig. 4). First of all, there has been a growth in general audience, with the most dramatic change occurring in after-work hours (7 pm to 2 am). The attendance peak has shifted to 10 pm. This indicates that Russian users now tend to go online not so much from their offices as from their homes, while on-the-job attendance keeps growing. IT specialists are no longer the only professional group to actively use the Internet while at work. Indeed, a professional area free from any computer-aided activity would be hard to find these days.

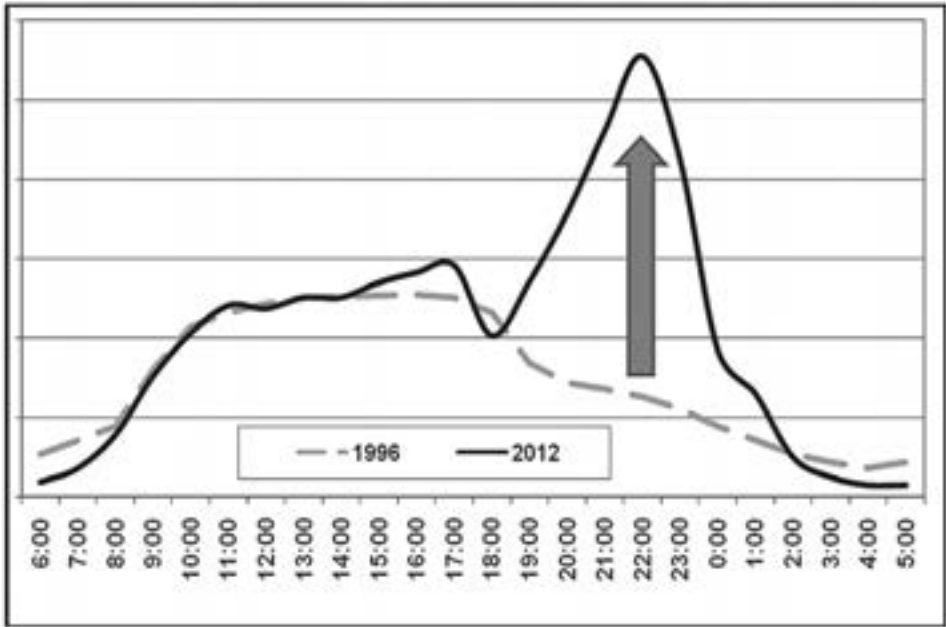


Figure 4. Fluctuations in Russia's general Internet audience during the day (weekdays): Contrasting 1996 and 2013
(The graphs have been brought to a common scale for midday, so that they could better reveal differences in the daily flow patterns.)

The increase in the after-work attendance of the Internet has triggered functional changes. While in the 1990s, professional use prevailed, with users focusing on the search of information for their professional needs, now computers have come to be employed more as an entertainment medium and a socializing tool (social networks, Skype, online forums, etc.).

The past few years have revealed yet another level of cyclic change in Russia's Internet audience, one that is not immediately apparent – seasonal cyclicality

(see Fig. 5). With the Russian Internet audience still growing – and fast – registering seasonal fluctuations may be a challenge. The seasonality of attendance manifests itself in a slowdown or even a slight decrease in July and August, with a more or less steady rise in the other months of the year.

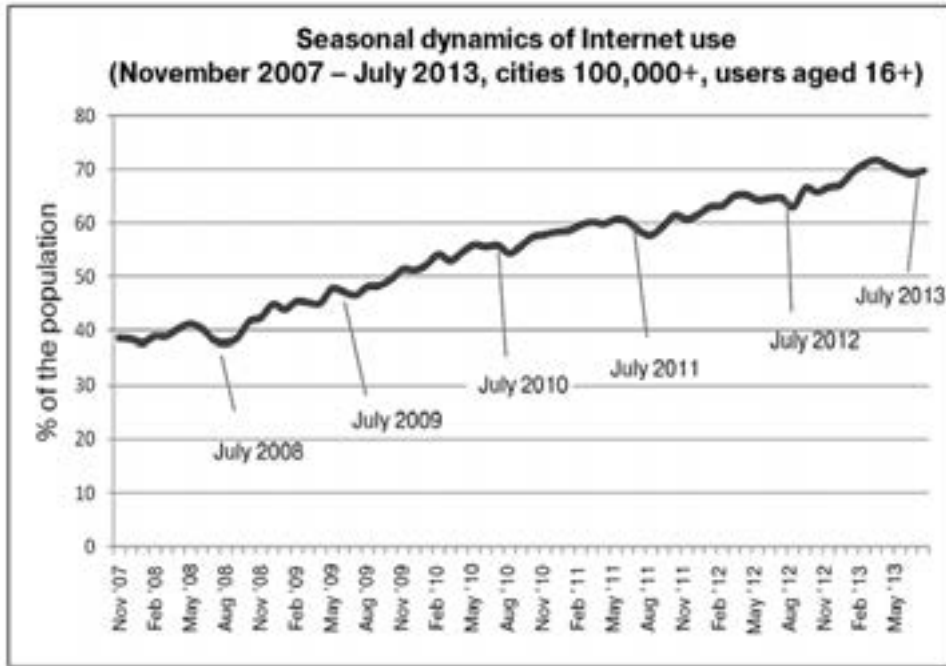


Figure 5. Sourced from TNS

There has been a lot of talk recently about competition between the Internet and the other communications media. A comparative analysis of the daily flow for Russia’s radio, television and Internet audiences suggests a number of curious conclusions on that matter (See Fig. 6). Television and Internet audiences in Russia happen to follow similar attendance patterns (growth during the day, with a peak in after-work hours and a drop after midnight). But at any given moment, the television audience still significantly outnumbers that of the Internet. Radio audiences follow a different pattern, reaching their peak in a day’s first half – a level surpassing both the Internet and the television audience. Since the number of Internet users in Russia is still smaller than the radio audience and, especially, that of TV, we can make the following conclusions. In present circumstances, the Internet cannot successfully compete with radio in the morning and afternoon. Only in evening and night hours (from 9pm to 2am) does the Internet audience begin to prevail.

On the other hand, the Internet is becoming an increasingly successful competitor to traditional television, and has already won over some of the TV audience. A massive change of heart is unlikely, though. Instead, the TV and Internet audiences will probably reach some parity, with a configuration to be defined in the coming years. In reality, no single country has 100% Internet attendance. In the U.S. Internet users account for 73% among people aged 18 and above; the percentage is 73.1% for Germany (ages 14+) and 79.7% for the UK (ages 16 and above). In Russia, as has been shown, there is still a high potential for further growth. But its Internet audience is unlikely to exceed that of Great Britain, Germany or the U.S. any time soon.

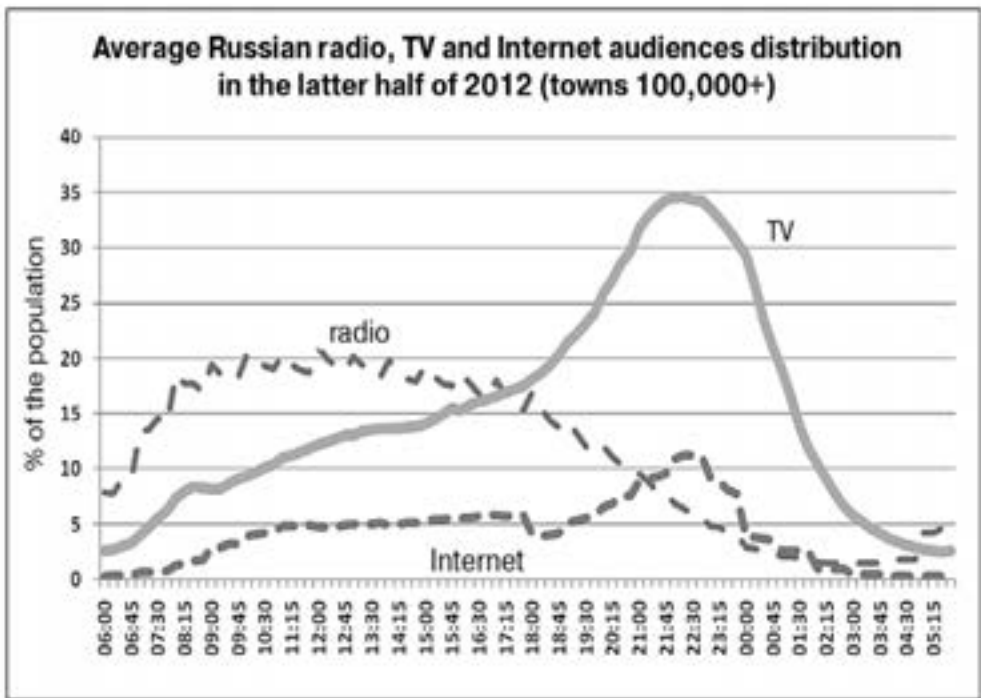


Figure 6. Sourced from TNS. Age groups: 4+ for TV, 12+ for radio and 16+ for Internet

Of much interest in this context are new findings of the Academy of Sciences' Sociology Institute, led by Mr Gorshkov. It conducted a survey in December 2012, involving a sample of 10,150 interviewees. Below is a breakup for answers to the question as to whether the Internet can effectively compete with traditional television (see table below).

Reply options	Percentage of respondents
The Internet is not, and will never be, a competitor to traditional television	23.5 %
The Internet is (will be) a competitor to commercial operators on traditional television	17.6 %
The Internet may well become a competitor to traditional television at large	18.6 %
With technology advances, on-air television and Internet television will eventually integrate into each other	14.4 %
“Don’t know”	25.9 %

A rather high proportion of those surveyed do not think the Internet will ever be able to compete with traditional television (23.5%). About the same number opt for the “Don’t know” reply (25.9%). Some of the respondents hold an opposite view, though, with 17.5% arguing that the Internet can successfully compete with commercial operators on traditional television and 18.6% claiming that the Internet can compete with traditional television at large. As few as 14.4% believe that with further technology advances, traditional television and Internet television will eventually integrate into each other, although this viewpoint looks the most sensible, on the face of it.

In conclusion, let me note some of the changes in the profile of the average Russian Internet user as compared with 1998. In 2013, the average user is, more often than not, a woman aged 25 to 34 (rather than a man aged 25–30), a white-collar worker with university background, and involved in a broad range of career fields, who also uses the Internet at home.

The structure of the audience has changed dramatically over the past 15 years.

Let us now sum up our overview of trends and behavioural patterns revealed by Internet audience surveys in Russia.

The Internet became available in Russia in the 1990s, and it started off as a communication tool for members of the ICT community, carrying a lot of information relevant to them professionally.

But as its audience grew, the Internet’s functionality expanded as well, and the initial list of functions became enriched with ones related to entertainment and socializing. These latter seem to have taken centre stage by now, although other functions continue to develop, as well.

Research has helped us reveal some specific patterns in the behaviour of Russia’s Internet audience. One of them has to do with cyclical, manifesting itself at three

levels at least – daily, weekly and seasonal. This and other patterns make the general Russian Internet audience's behaviour predictable in the short term while also opening up possibilities in building prognostic mathematical models for the purpose.

Contrasting daily audience flow curves for the Internet, television and the radio can give us a clue as to the prospects and limits of these media's competition between themselves. Here are some preliminary conclusions. The Internet presents no serious danger as a competitor neither to the radio nor to television, although there is a possibility of some of the on-air television audience swaying toward the Web. As for the radio, its competition with the Internet can never be an issue as the flow patterns shown by the radio audience within any single day are significantly different from those of the Internet audience, and the situation is unlikely to change any time soon.

A comparative analysis of the average Russian Internet user profiles for 1998 and 2013 suggests some significant socio-demographic changes in the audience. It has become predominantly female, with the average age range extended upwards. Also, going online is, more often than not, a home practice these days – not an office activity, as was the case in the late 1990s.

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SECTION 3. TOWARDS KNOWLEDGE SOCIETIES

Digital Natives, Netizens, eCommunities. Civitas Solis¹⁰⁷ or a Nightmare?

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Abstract

ICT is stimulating changes in the way most people earn their incomes; altering the balance between our roles as consumer and producers; changing the way we educate succeeding generation and train ourselves; changing the fruition of world's cultural heritage; transforming the delivery of health care; altering the way we govern ourselves; changing the way we form communities; altering the way we obtain and communicate information; contributing to bridge some cultural or physical gaps; and modifying pattern of activity among the elderly.

This is not a complete list of changes, but highlights some of the most prominent and important effects of ICT on our society. We are witnessing relevant changes due both to technological enhancements and modification of user requirements/expectations. In recent times the digital domain, once strictly populated by professional users and computer scientists, has opened up to former digitally divided. Technology is evolving toward a mature “calm” phase, “users” are overlapping more and more “citizens” and they consider technology and eServices as an everyday commodity, to buy a ticket, to meet a medical doctor, to access weather forecast even to initiate “social” relation. It is a common understanding that recent generations represent a discontinuity if compared with the past ones. How do we identify digital natives? They are the “eCitizens”.

This paper presents views of a society changing under the influence of advanced information technology. Computers have been around for about half a century and their social effects have been described under many headings.

¹⁰⁷ “Civitas Solis” (The City of the Sun) is a philosophical utopian work written in 1602 by the Italian philosopher Tommaso Campanella.

Introduction

“In conducting research four years ago online to determine people’s uses for the global computer communications network, I became aware that there was a new social institution, an electronic commons, developing. It was exciting to explore this new social institution. Others online shared this excitement. I discovered from those who wrote me that the people I was writing about were citizens of the Net, or Netizens.” (Michael and Ronda Hauben’s “Netizens: On the History and Impact of Usenet and the Internet”, 1995).

Computers have been around for about half a century and their social effects have been described under many headings. Society is changing under the influence of advanced information technology; we face fundamental transformations in social organization and structure, as it will be outlined in the next paragraphs. Such a change is much more evident in the recent period of time. This is because young citizens are changing and the change is not smooth it’s a real discontinuity, young think different!

ICT as a driver of change

We are witnessing relevant changes due both to technological enhancements and modification of user requirements/expectations. ICT is stimulating changes in the way most people earn their incomes; altering the balance between our roles as consumer and producers; changing the way we educate succeeding generation and train ourselves; changing the fruition of world’s cultural heritage; transforming the delivery of health care; altering the way we govern ourselves; changing the way we activate social relations, form and manage communities; altering the way we obtain and communicate information; contributing to bridge some cultural or physical gaps; and modifying pattern of activity among the elderly, last but not least potentially contributing to a green world.

Moreover, the Internet has incredibly facilitated access to mass communication, the role of users changed from passive to active. It combines a worldwide bi-directional broadcasting capability with a mechanism for information dissemination, which offers us the opportunity to reach a wide audience with minimal effort. This is not a complete list of changes, but highlights some of the most prominent and important effects of ICT on our society.

No one of previous inventions, such as the telegraph, the telephone, the radio, the television and the computer itself, set the stage for this unprecedented integration of capabilities.

The social impact of ICT was significant and it was very clear that the information society was going to lead a significant re-shaping of the panorama. If on the one side, as usual, this technology cancelled entire branches of workers such as typists and assistants, on the other side it created a rich set of new working opportunities not only for system managers and programmes but experts in desktop publishing, web publisher, on line traders; the so called “digital opportunities¹⁰⁸”.

Everyone experienced in “ICT based innovation” knows that “it is not only a matter of technology”. Different parameters are actively influencing Information Society success or failure: cultural aspects, organizational issues, bureaucracy and workflow, infrastructure and technology in general, user’s habits, literacy, capacity, market models or merely interaction design.

From “vision” to reality

Thirty years ago information scientist and computer users witnessed the unprecedented revolution due to personal computing. They came from the bottom and started to “eat” the computer market piece by piece. From the “professional” Charlie Chaplin promoting the first generation of IBM PCs to the APPLE Macintosh revolution against the Big Brother in 1984 and later on again the soft rebellion of *Think different!*

In the middle of the 90s it was the time to break the walls of the professional market and try the assault to households. It was the time of “*Where to you want to go today?*” and “*Information at your fingertips*”. Starting from ’95 the focus of advertisement was enlarged to families and household customers. After the discontinuity due to the enlarged market focus we experienced a quite long period of time without major announcements, performance improvements, price reduction nothing more. Now some major trends are recognizable. Such trends are affecting technology, users and the market.

In the last twenty years we witnessed the progressive change of the audience attending major events. Traditional highly scientifically skilled ACM Siggraph attendees left the arena to artists, special effects supervisors, architects, and video clip and promo producers. The European twin, IMAGINA, is now domain

¹⁰⁸ On the occasion of the G8 Summit in Kyushu-Okinawa (2000), the Charter on Global Information Society was adopted. In the Okinawa Charter, the G8 leaders agreed to establish a Digital Opportunity Task Force (DOT Force) aimed at integrating efforts to bridge the digital divide into a broader international approach. DOT Force subsequently evolved into GAID (Global Alliance for ICT and Development).

of architects and dentists¹⁰⁹. The World Wide Web conferences did the same in favour of philosophers, writers, art historians, and civil servants.

The other side of the coin of such a renewed audience is the evolution from content consumer to content prosumer. Users are no more simply “consuming” content; they are even creating and sharing their own content many times facing drawbacks in a short time.

There is another significant trend directly addressing users: from *information provision* to *service provision*; this means in general a bidirectional flux of information and a higher level of interaction. As a tangible result a number of eServices appeared in already known or completely new sectors increasing the added value provided by technology.

One last comment on the evolution of technology: as it happens in the maturity phase of many sectors “performances are good by definition... users’ choice is about appeal and perceived utility.”

The human capital: the digital native generation

All these considerations are related to technologies and devices. What about the “human capital”? Of course even users are evolving, there are a number of capacity building initiatives, their own requirements and expectations are changing. New opportunities offered by emerging technologies generate new behaviours and new services – simply think about mobile phones and emails. It is evident that a new way to use or “consume” services, information & news is coming to the fore.

Technology is evolving toward a mature “calm”¹¹⁰ phase, “users” are overlapping more and more “citizens” and they consider technology and eServices as an everyday commodity, to buy a ticket, to meet a medical doctor, to pay taxes, to access weather forecast. The gap between *eCitizens* and *digitally divided citizens* has not disappeared yet but is becoming smaller every day. In the near future young generations will not figure out how their parents used to fulfil some tasks in the past. Museums will exhibit phone booths, travel agencies, yellow pages, geographical maps, and fax machines and may be even laptops as “relics” from the pre-digital age.

¹⁰⁹ Dentistry entering the 3d digital world, an international conference exploring 3D digital technologies in dentistry. www.imagina.mc.

¹¹⁰ Mark D. Weiser (July 23, 1952 – April 27, 1999) was a chief scientist at Xerox PARC.

It is a common understanding that recent generations represent a discontinuity if compared with the past ones. Such discontinuity or if preferred singularity is recognised both by adults complaining because their children do not pay attention or are getting bored by learning and by adults that discovered new skills and capabilities in young generations.

As a result of this environmental change, the combined action of long term exposure to TV programmes, video games, Internet browsing and more we face now a completely new generation, the digital natives¹¹¹. They are the eCitizens. How do we identify a digital native? Digital natives are used to receiving information really fast. Their brain seems to be able to work in parallel to receive multiple inputs and react in real time even using different “channels”. This of course applies from pupils to university students and more. So they prefer direct/random access to information and content. Graphic and video content are longer preferred than text. They use instant messaging and do not print email. They are used to looking for support on line and belong to one or more communities (users, supporters, owners). This is a side effect of their special skills acquired in hours and hours of digital tasks.

Is it really so evident a different mind-set? Some experts¹¹² call this “neuroplasticity”, the ability of our brain to re-shape accordingly with specific input patterns and reaction required. In addition to neuroplasticity, social psychology offers compelling proof that thinking patterns change depending on an individual’s experiences. A sufficiently long training may activate this phenomenon¹¹³. In fact, some researchers believe multi-sensory input helps kids learn, retain and use information better. Digital natives engage in this type of brain plasticity every day, they have acquired special skills thanks to the “involuntary” massive training due to TV, games and other digital devices. They have grown up paying close attention to the sensory input of MP3-players, smart phones, video games, tablets and computers. It is a common understanding that people who grow up in different cultures do not just think about different things, they actually think differently. The environment and culture in which people are raised affects and even determines many of their thought processes. So the Apple motto “Think different!” is much more than a motto.

¹¹¹ Marc Prensky, *Digital Natives, Digital Immigrants, On the Horizon* (NCB University Press, Vol. 9 No. 5, October 2001).

¹¹² Cathleen Richardson, *21st Century Learners: Research*, Hotchalk, <http://www.hotchalk.com/mydesk/index.php/editorial/54-students/66-21st-century-learners-research>; Marc Prensky, *Do They Really Think Differently? On the Horizon* (NCB University Press, Vol. 9 No. 6, December 2001), *The Partnership for 21st Century Skills* – <http://www.p21.org/>.

¹¹³ This period of time and the quality of the result depend on another factor termed “malleability”.

Young and kids are constantly feeding their own Facebook profiles or posting their own video clips on YouTube. Sometimes Facebook and YouTube seem to be much more “(Social)life-mediators” than Internet commodities. Young and kids are part of the digital community, they have a specific sense of belonging to the online community.

Is it true that pupils refer to the Web as their own memory and basic knowledge? We may say basically “Yes” even if this represents for many reasons a concern. Is information available online quality proof? And more and more they really think: why do I need to memorize when Napoleon surrendered at Waterloo if I can click on Wikipedia or “google” it?

If we refer to the educational system, a similar situation might lead to a somewhat different way to communicate and interact with new generations, the so-called “digital natives”; so curricula, formats and pedagogical approach must be reshaped. Humans have already faced similar revolutions even in the field of education and training. Simply think about the “classic” way to educate thanks to mentors and masters looking after single pupils or refer to training in workshops widely used to introduce newcomers in art and crafts learning by doing.

The potential “uniformity” and consistence of digital interfaces enabled by the virtualisation of physical interfaces unleashed incredible potentials; the magic feature of “undo” empowered users. In the digital domain “undo” and “redo” are the pillars of learning by doing. Virtual and enriched reality through different types of simulators strengthened the “historical” approach of learning by doing.

These two pillars together with the de facto standardisation of interfaces and interaction enabled rapid application training and use. Nowadays digital devices, and not only them¹¹⁴, do not include users manuals, people use to learn by doing¹¹⁵. Only if they require special safety instructions there is an instruction sheet within the box. Digital natives prefer games to “serious” work; they prefer edutainment applications or serious games.

¹¹⁴ E.g. IKEA furniture kits use to provide a very basic instruction sheet.

¹¹⁵ In his work *The Design of Everyday Things*, Donald H. Norman defines mapping as “the self-explicative shape or behaviour of an object”. Mapping implies that “...you always know which control does what (in the book, I call this a ‘natural mapping’). When the designers fail to provide a conceptual model, we will be forced to make up our own...” Furthermore: “A good conceptual model can make the difference between successful and erroneous operation of the many devices in our lives.” See Norman (1998).

Lost something, any concern and drawbacks?

Did we lose anything in the process? What about potential drawbacks and risks?

The idea, but it is more than a feeling, is that in such a process digital natives have lost some basic assets. Their own “culture” seems to be much more a set of bi-dimensional “tiles”, sometimes interconnected. Direct access to information or even knowledge atoms may cause the lack of understanding of the whole rationale beyond including logical relations and links. So it becomes very difficult to build up a mental model or to activate reflection in order to evaluate and criticise what they learn. They miss the opportunity to elaborate what they learn by doing, their experience.

Learning and working at “warp speed” does not provide them the opportunity to “pause” and assimilate, reconsider, amend or criticise what they are learning or doing. This is many times one of the basic drawbacks due to technological enhancements. Since the introduction of fax messages the expectation for an immediate response was the rule, emails, mobile phones, sms and instant messaging did the rest. So the evolution of a romantic fountain pen hand-writer nowadays is playing a video game and at the same time Twitting and posting some content on Facebook while chatting on the smart phone thanks to WhatsApp.

All the above does not mean that young generation are skilled in digital technology; they are self-trained to use digital technology. This is to outline that they do not necessarily know and understand technology itself; sometimes people presume that a perfect ability to use digital media involves a deep knowledge in computer science and electronic engineering, that’s not true.

Recent generations were left alone to face the “eruption” of digital technologies – no educators, no mentors, basically no critical analysis about the use, abuse or misuse of these new appealing instruments. As a consequence, as pupils dropped in the sea by parents, they developed their own “how to deal with” and “take advantage from”, many times ignoring future effects and potential drawbacks of their actions.

Do they need to learn more about what was before the digital native generation? I think that it is embedded in the humankind to investigate and know from where we come and where are we going to. Unfortunately part of this knowledge lies in the gap between traditional “knowledge” and “innovation”. One of the key roles of educators, we can term them “cultural mediators”, is to bridge this gap trying to provide the best and most successful mix of the two “knowledge”, on the one side taking advantage from the digital native innovative skills, on the other – stimulating the rise of relevant missing skills. This topic is relevant enough to deserve another full paper.

Social media: opportunities and threats

The idea to share something with someone else, a group of people, sometimes generates a sense of belonging to a “community”. Memetics use to consider this “something” as the “meme”. A meme is a cognitive or behavioural pattern that can be transmitted from one individual to another. Consider young people that wear clothes in an unconventional way or use signs and gestures that show that they belong to a particular community¹¹⁶.

Communities are integral part of the history of technology; in the specific field of communication we find “amateur radio” also called *ham radio* or OM (old man) and later on the citizens’ band (CB) community. Of course technical communities are not limited to the field of communications, we have computer graphics, video games, and more such as the Manga Fandom¹¹⁷ but communication is the key player in the creation of communities and due to this communities directly dealing with communication means are facilitated.

As already outlined social media are one of the milestones recently introduced in the digital domain. Social media is the key of success of the digital domain, the reply to the Win ’95 promo “Where do you want to go today?” The real mass use of digital resources, the one creating “addiction” is the social side. Since the creation of the first blogs opening the opportunity to share opinions and beliefs with a significant number of users the number of “social” applications grew up very quickly: Blogs (‘90), Wikis (‘95), Semantic Web (‘97), Wikipedia (‘01), Picasa (‘02), My Space (‘03), Facebook (‘04), YouTube (‘05), Twitter (‘06), Social newspaper (e.g. YouReporter).

In the early stage of the Internet communication was based on the so-called “netiquette”, a kind of Galateo or Bon Ton of Internet users. The advent of Web X.0 and the social web requires the will to share more specific rules addressing first of all the field of ethics. Of course freedom of expression is one of the most appreciated opportunities offered by the network and it is already evident that any kind of top down censorship or control does not succeed.

Anyway on the reverse there is a real risk of misuse and misinformation thanks to these technologies both due to the lack of up to date global regulations and the potential anonymity of authors. The movie “Citizen Kane¹¹⁸” directed and

¹¹⁶ Refer to Dawkins 1976; Moritz 1990.

¹¹⁷ Manga fandom is a worldwide community of fans of Japanese cartoons manga.

¹¹⁸ Citizen Kane directed by Orson Welles (RKO Pictures, 1941).

interpreted by Orson Welles in 1941 outlined the relevant “power” of journalism¹¹⁹, the movie “Network”¹²⁰ directed by Sydney Lumet outlined the power of television in 1996 and perhaps “The Net”¹²¹ and “S.Y.N.A.P.S.E.”¹²² together with “The Social Network”¹²³ started to outline the power of the Internet.

News and Media are key elements in the global society. CNN, BBC, Al Jazeera¹²⁴, Al Arabiya¹²⁵ are writing the history of the planet 24x7, and on the grassroots side YouReporter¹²⁶, YouTube and Tweeter are complementing this effort. The risk of misuse of such technologies and misinformation today is probably higher than in the past. So it might happen that we will watch an updated version of the movie “Wag the dog”¹²⁷ in the near future.

In June 1993 The New Yorker published a cartoon by Peter Steiner. The cartoon features two dogs: one sitting on a chair in front of a computer, speaking the caption to a second dog sitting on the floor: “On the Internet, nobody knows you’re a dog”. Right or wrong, that’s one of the features of the Internet. That’s the story of the Syrian “lady” blogging in 2011, the starting point for the “dark power” of the Internet, the realm of hackers and cheaters. The key point is: what is written or anyway appears on the Internet is news by itself. There is no more time in order to check everything, the Internet provides real time news.

The evolution of online news due to the social web and the birth of “prosumers” did the rest. Twitter, YouTube, Facebook and blogs represent a real revolution in the domain of news.

As already stated the Internet is much more a counter-power than a power, the common idea about the Internet is the network as a powerful tool of freedom and direct democracy. This is probably true but the opposite is even more true – a misuse of the network and misinformation disseminated and empowered by the Internet and its powerful mechanism.

¹¹⁹ The Italian title of the movie was “The Forth Power” in analogy with the third “The workers” depicted in the extraordinary paint by Pellizza da Volpedo.

¹²⁰ “Network”, directed by Sydney Lumet (Metro-Goldwyn-Mayer United Artists, 1976).

¹²¹ “The Net” directed by Irwin Winkler (Columbia Pictures Industries Inc., 1995).

¹²² “S.Y.N.A.P.S.E. (Antitrust)” directed by Peter Howitt (Metro-Goldwyn-Mayer, 2001).

¹²³ “The Social Network” directed by David Fincher (Columbia Pictures, 2010).

¹²⁴ www.aljazeera.com/.

¹²⁵ www.alarabiya.net.

¹²⁶ A recent event in the field of newspapers is the birth of The Huffington Post, inventing a completely new approach to newspapers. Bambuser (<http://bambuser.com>), Tackler (<http://www.teckler.com/it/home>) and other news services are now part of the scenario.

¹²⁷ “Wag the Dog” (1997) with Dustin Hoffman, Robert De Niro and Anne Heche, directed by Barry Levinson.

Cyber IDs allow multiple identities and, potentially, Dr Jekyll and Mr Hide. We are flooded¹²⁸ by user-generated content (UGC) largely without any qualification and certification of the source. Many times the drawback attributed to the amanuenses is affecting even web publishers: information and content is re-used and re-published adding or replicating errors and bugs. The short content production chain, sometimes even limited to a one-stop shop, does not include an editor-in-chief or a supervisor; so far the overall quality of prosumer content and information is quite low.

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Addressing the Ethical Challenges of Information Society

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Introduction

“Long before Nagasaki and the public awareness of the atomic bomb, it had occurred to me that we were here in the presence of another social potentiality of unheard-of importance for good and for evil,” wrote the originator of cybernetics Norbert Wiener more than six decades ago (Wiener 1948). Even as the very first computers were still being constructed, Wiener had already begun to realize the huge ethical implications brought forth by these new devices.

Today, any mobile phone is much more powerful than the first computers. The Internet connects more devices than people living on our planet. The ever increasing development of the Internet and other information and communication technologies (ICTs) has had a profound effect on almost all areas of life. Such transformational changes not only bring tremendous opportunities, but also pose critical societal and ethical challenges.

The free flow of information and freedom of speech versus the digital divide; technical and linguistic barriers; the rapid proliferation and also obsolescence of information on the Web versus data preservation; free access to information versus intellectual property rights and personal data protection – these are just some examples of the ethical discussion.

Every day we learn about new devices, new possibilities, and new achievements brought by technological development. And almost every day we learn about the ethically questionable use of ICTs. Mobbing on social networks, mass-scale surveillance of Internet communications, and theft of identity are just some examples of the abuse of technologies.

How to deal with these abuses? The last thing to do would be to turn against technologies, as it is the people who use them who are responsible for ethical conduct. ICTs, like other tools, are ethically neutral. It is not a tool but its usage that creates ethical consequences. A hammer can be used to hammer nails, to break objects (breaking nuts vs. breaking a storefront for stealing), to keep a pile of paper in place, to conduct electricity, or to kill someone.

According to Moor, a typical problem in computer ethics arises because there is a policy vacuum about how computer technology should be used (Moor 1985). Like traditional tools, ICTs provide new capabilities that were not possible before. These capabilities open new choices for action which are not guided or are inadequately provisioned by the previous policies of conduct. As existing policies are inadequate to deal with the new challenges brought by new technologies, a central task of computer ethics is to determine what we should do in such cases, that is, to formulate policies to guide our actions.

As advocated by Floridi and other ethics scholars (Floridi 2010), policy creation should be based on in-depth analysis leading to a conceptual understanding of the societal processes triggered by ICTs and their ethical implications.

Floridi presents a vivid metaphor to illustrate our comprehension about the ethical and social implications of technologies. He compares current developments to three runners on a running track. One of these runners is well ahead – this is technology and its applications. The second runner represents the national and international legislation, and regulative environment, that are trying to follow but are inevitably behind the technological development.

The last in this race is the third runner, which represents our conceptual understanding. “Technological development comes first, then we try to regulate it while still struggling to understand what is actually happening,” concludes Floridi.

How to foster our understanding on the ethical implications of technological development? How to establish principles of ethical conduct based on a broader conceptualization, instead of failing to catch up with ever advancing technologies? This paper provides an overview about the ongoing debate on these issues, particularly focusing on the role of UNESCO and its Information for All Programme setting a platform for a truly global reflection on the ethical dimension of information society¹²⁹.

Key ethical issues of information society

Although most people do not think in ethical categories in their everyday use of technologies, individuals, companies, and governments are faced with

¹²⁹ In the UNESCO context the term knowledge society is often used to emphasize that knowledge is more important than just information. For simplicity in this paper we will stick to the more traditional term information society that is broader used in the public discourse.

ethical questions every so often. Brey presents some examples of the typical ethical questions (Brey 2010):

- Is it wrong for a system operator to disclose the content of system users' email to third parties?
- Should individuals have the freedom to post discriminatory, degrading, and defamatory messages on the Internet?
- Is it wrong for companies to use data-mining techniques to generate consumer profiles based on purchasing behavior, and should they be allowed to do so?
- Should governments design policies to overcome the digital divide between skilled and unskilled computer users?

Mason generalizes ethical questions of information society into four key issues, which are given the acronym PAPA (Mason 1986):

- **Privacy** – what information about one one's self or one's associations must a person reveal to others, under what conditions, and with what safeguards? What things can people keep to themselves and not be forced to reveal to others?
- **Accuracy** – who is responsible for the authenticity, fidelity, and accuracy of information? Similarly, who is to be held accountable for errors in information and how is the injured party to be made whole?
- **Property** – who owns information? What are the just and fair prices for its exchange? Who owns the channels, especially the airways, through which information is transmitted? How should access to this scarce resource be allocated?
- **Accessibility** – What information does a person or an organization have a right or a privilege to obtain, under what conditions, and with what safeguards?

Privacy and protection of personal data in cyberspace has recently become a particularly hot issue. In the last couple of decades, people enjoyed the ever increasing possibilities offered by the Internet, without being sufficiently sensitized to the privacy aspects.

Information leakages about monitoring and surveillance techniques opened the eyes of many people – including the highest ranking politicians – to how exposed everything we do on our computing and communication devices is to technically equipped snitchers.

Mass-scale surveillance programmes are in operation in several countries, like PRISM in the United States or SORM in Russia. There is no doubt that advanced online surveillance techniques have helped governments to prevent numerous criminal and terrorist activities, helping to save many lives. At the same time, leaked information about the massive scale of Internet monitoring has raised growing concerns about the proportionality and accountability of these operations.

Pamela Jones, founder of the technology and law blog Groklaw, compared her feelings about mass-scale online surveillance with the deep disturbance after learning that burglar has pawed through everything at her apartment: *“I feel like that now, knowing that persons I don’t know can paw through all my thoughts and hopes and plans. [...] What I do know is it’s not possible to be fully human if you are being surveilled 24/7,”* wrote Jones in an emotional letter on her decision to close the popular blog due to concerns of her private communications becoming a subject to public scrutiny (Jones 2013). “They’ve been tapping my phone all my life,” thinks Boris Nemtsov, an opposition leader in Russia, “they’ve been eavesdropping on my conversations and leaking everything on the Internet” (Soldatov and Borogan 2013).

Public outcry has forced governments to react. “The idea that government will pass a law which means that there’d be a record kept of every website you visit, who you communicate with on social media sites, that’s not going to happen,” commented UK Deputy PM Nick Clegg on the proposal to legitimate mass-scale online monitoring (BBC 2013). US President Obama has also initiated legislative changes and reforms at the National Security Agency to address the concerns of people about the privacy of their online activities.

Surveillance methods are also used by oppressive powers to limit freedom of speech and suppress democratic activities. “My computer was arrested before I was,” was the comment by a Syrian activist Karim Taymour, who had been caught and arrested by means of online surveillance. During interrogation, Taymour was shown a stack of hundreds of pages of printouts of his Skype chats and files downloaded remotely from his computer’s hard drive. His torturers clearly knew as much as if they had been with him in his room, in his computer (Faris 2012).

Many policy makers as well as citizens are not sensitized enough to what is at stake in the area of online privacy, freedom of speech and data protection. A policy and legal framework as well as other mechanisms are needed to ensure that law protection and data processing operations fully respect human rights.

Among other ethical concerns are abuses of free speech, hate speech, online harassment; digital divide; cyber-attacks and cyber-wars; intellectual property, copyright, plagiarism, fair sharing and use, voluntary collaboration; virtual realities, artificial agents, etc.

Core values in computer ethics

For Wiener “the answer [...] is to have a society based on human values other than buying and selling. To arrive at this society, we need a good deal of planning and a good deal of struggle” (Wiener 1948).

He proposes the following basic values, which he formulates as four principles (Wiener 1954):

- *The Principle of Freedom* – Justice requires “the liberty of each human being to develop in his freedom the full measure of the human possibilities embodied in him.”
- *The Principle of Equality* – Justice requires “the equality by which what is just for A and B remains just when the positions of A and B are interchanged.”
- *The Principle of Benevolence* – Justice requires “a good will between man and man that knows no limits short of those of humanity itself.”
- *The Principle of Minimum Infringement of Freedom* – “What compulsion the very existence of the community and the state may demand must be exercised in such a way as to produce no unnecessary infringement of freedom.”

Moor believes that there is a set of core values shared by most, if not all, humans: life, health, happiness, security, resources, opportunities, knowledge (Moor 1998).

The World Summit on Information Society extends the set of fundamental ethical values to freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature.

There is a growing recognition that the open nature of the Internet is not diminishing these basic values and freedoms. “The same rights that people have offline must also be protected online, in particular freedom of expression, regardless of frontiers and through any media”, is affirmed by the Resolution of the Human Rights Council of the United Nations on “Promotion, Protection and Enjoyment of Human Rights on the Internet” adopted on 5 July 2012 (UN HRC 2012).

The role of UNESCO and IFAP

Ethical debate received a high profile at the World Summit on Information Society (WSIS). In two phases of the summit (Geneva, 2003, and Tunis, 2005), world leaders and representatives from all stakeholders discussed the most urging issues related to the use of ICTs and set the goals for building a truly inclusive information society. At the summits, there was a strong drive to hurry with introducing regulations and control mechanisms for Internet usage and governance – resembling Floridi’s metaphor presented in the introduction of this paper. The open nature of the Internet has been a key enabler of its rapid development and proliferation, opening tremendous opportunities for people to execute their human rights. But the side effects of ICT misuse, and the natural instincts of political powers to extend their influence, create the risk of trapping Internet development in a tight political control.

Tense discussions have resulted in a WSIS Action Line C10 *Ethical dimensions of the Information Society*. This postulates the basic principle that information society should be subject to universally held values, promote the common good, and prevent the abusive use of ICTs. The basic tasks are to promote respect for peace, to uphold fundamental values (see section on Key Values), and to increase the awareness of all stakeholders about the ethical aspects of using ICTs.

WSIS addresses all actors in the information society to promote the common good, protect privacy and personal data, and take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs. These abusive uses include illegal and other acts motivated by racism, racial discrimination, xenophobia and related intolerance, hatred, violence, all forms of child abuse including paedophilia and child pornography, and the trafficking and exploitation of human beings. Implicit recognition of the lacking conceptual understanding of the broader ethical implications of ICTs has led to the WSIS call for continuing research in this area.

Responsibility for the implementation of the WSIS Action Line is entrusted to UNESCO, which is among the key drivers of the WSIS process. UNESCO is the only organization assessing the ethical implications of the Internet and ICTs on a truly global scale, involving all regions of the world in a multi-stakeholder discussion.

In the area of infoethics, UNESCO sees its mission in developing a basis for informing action that is grounded in respect and observance of human rights (UNESCO 2012). This should be achieved by identifying areas where current policies are insufficient or inadequate, then elaborating these policies or creating

new policies in respect to the abovementioned rights. UNESCO provides assistance to policy makers in anticipating the longer-term impacts of current trends, as well as the inevitable rapid arrival of technological breakthroughs and innovations. By raising awareness and collectively discussing possible future outcomes and responses, UNESCO empowers policy makers and society to both prepare for, and better cope with, technological challenges.

Work on ethical aspects is part of the UNESCO regular programme and one of the major areas of its Information for All Programme (IFAP). IFAP is set up by governments of the world to enable everybody to harness the opportunities of the Internet and ICTs, and to create equitable societies through better access to information. IFAP helps UNESCO Member States to develop and implement national information policies and knowledge strategies. Among other aspects, the ethical dimension should become an integral part of information society policies at all levels.

IFAP has set up a working group dedicated to ethical issues, which involves experts from all regions of the world.

UNESCO regional debates

Infoethics was already on the UNESCO agenda long before the WSIS. Ethical, legal, and societal aspects of the information society were discussed at several INFOethics Congresses, organized by UNESCO in 1997, 1998, and 2000.

To fulfill the mandate given by the WSIS Action Plan, UNESCO and its Information for All Programme have led a comprehensive discussion with large regional conferences in all regions of the world – Latin America and Small Island States, Europe, Africa, Asia, and the Pacific (Capurro, Britz 2010).

The UNESCO Regional Latin American Conference on Information Ethics was held in December 2006 in Santo Domingo, Dominican Republic (UNESCO 2006). At the conference, the *Declaration on the Ethical Dimensions of the Information Society* (Declaración de Santo Domingo) was adopted. The declaration stressed the fundamental values to be respected, such as liberty, equality, solidarity, tolerance, and shared responsibility. It further urges that information society promote an awareness of the ethical dimension of ICTs; avoid abusive use of ICTs; promote respect for privacy and personal data; promote equal access to information and knowledge; promote responsible use of ICTs; and take all measures to allow for equitable access to ICTs. The declaration particularly emphasizes the need to improve the access and responsible autonomous use of ICTs by younger generations.

The Africa Information Ethics Conference, held in February 2007 in Tshwane, South Africa, contributed to the implementation of the WSIS Action Line C10 by creating the Africa Network for Information Ethics (ANIE) and adopting the *Tshwane Declaration on Information Ethics in Africa*. The E-Government and Ethics Workshop for African government officials in February 2009 in Magaliesburg, South Africa, further contributed to raising awareness of the ethical aspects of ICT usage (IRIE 2007).

The Regional Conference for Asia and the Pacific on the Ethical Dimensions of the Information Society was held in March 2008 in Hanoi, Vietnam (UNESCO 2008). At the conference, a statement was adopted on information ethics as a contribution to the UNESCO's *Draft Code of Ethics*.

A major European meeting on ethics and human rights in the information society was held in Strasbourg in September 2007. The meeting analyzed both the opportunities offered by ICTs and their side effects, negative impacts, and possible conflicts of interest. Recommendations of the meeting proposed an Internet governance model founded on the involvement of all stakeholders and the sharing of responsibilities (UNESCO 2007).

Toward the Code of Ethics for Information Society

Regional infoethics meetings set the ground for taking the next step and initiating work on a *Code of Ethics for Information Society*. During its 15th Meeting in February 2009, the IFAP Bureau adopted a decision to prepare a draft for this document. The work was led by Mr. Karol Jakubowicz, Chair of the IFAP Council.

The general framework of human rights was applied with appropriate articles from the *Universal Declaration of Human Rights* serving as points of departure for the formulation of ethical norms and standards relevant to the information society context. The draft code had three main sections: "Information: Ethical Requirements," "Rights and Freedoms," and "Responsibilities." The section headings of this draft document illustrate the broad scope of the topics covered. Under "Rights and Freedoms" are subsections on "Equality" ("Access to networks and services," "Access to creation and use of information and content," "Capacity to use information hardware and software"), "Freedom of Expression," "Privacy," "Freedom of Assembly and Association," "Freedom of Creative Use of Technology," and "Democracy." The "Responsibilities" section includes subsections on "Security," "Protection of the Law," "Intellectual Property Rights," and "Responsibilities of Service Providers" (UNESCO 2010).

The proposed draft code was extensively debated at the 6th Session of the IFAP Council held in March 2010 – not only by the 24 members of the IFAP Council but also by Member States present as observers. The extremely ambitious attempt of this broad, 14-page draft document to cover so many aspects at such a level of detail was probably a reason why the IFAP Council asked the Bureau to further its elaboration and to present a revised version. The Bureau entrusted this work to the representatives of Latvia and Venezuela.

This extensive consultative cycle, with an ongoing review and feedback process, enabled a condensing of the draft into a succinct 2.5-page code summarizing the key values, principles, and actions of the ethical conduct. The *Code of Ethics for Information Society* was adopted at the 18th Meeting of the IFAP Bureau, submitted to the members of the IFAP Council, and received a tacit agreement, with the exception of suggestions provided by France, which helped in preparation of the final version of the document.

The code balances the concerns of different Member States and is not of binding nature. It is addressed to all stakeholders of the information society and outlines a number of universal values and principles that seek to inform behavior and decision-making in the information society. The code does not provide detailed guidelines for concrete actions. Rather, it postulates a set of basic ethical principles and values regarding information society, with an aim to guide behavior and decision making of all the members of information society.

Code of Ethics for the Information Society was submitted by the IFAP Council to the 36th Session of the UNESCO General Conference for endorsement. A number of Member States expressed their unreserved support for the General Conference's endorsement of the code, commending it for its contribution toward addressing critical challenges, the flexibility allowed for by its nonbinding nature, and the significant consultative work that was put into developing the document.

At the same time, some Member States raised concerns relating to the code's dispersed target group. They underscored the relevance of ensuring sufficiently inclusive discussions, noting that an intergovernmental forum might not be the most appropriate context for endorsement of the code. Some found that certain aspects were sensitive and could conflict with national legal interpretations and policies. They therefore believed it would be difficult to reach a consensus. There were recommendations to refer to "guidelines" or a "set of principles" rather than to a code.

After extensive discussions, it was clear that the positions and interests of the Member States are too contradictory to reach a consensus. It seems that the Internet and ICTs are such a powerful instrument that some parties do not want to be restricted by the ethical norms in its usage, while other parties are concerned about the possible use of ethical pretext to limit such basic human rights as freedom of speech. Heated discussion resulted in a decision to take note of the code and invite the Director-General to suggest possible ways in which UNESCO could address ethical issues linked to information society.

Building on this work, the IFAP led a series of consultation with Member States and other stakeholders, which resulted in the document entitled *UNESCO and the Ethical Dimensions of the Information Society*. The document and proposals were adopted by UNESCO's Executive Board during its 190th Session in October 2012, calling for actions in the following areas:

- Building multi-stakeholder partnerships to raise awareness of the ethical dimensions of the Information Society and strengthen action in this area;
- Contribute to the international debate on the ethical dimensions of access to, and use of, information;
- Supporting capacity-building at national level;
- Foster research and studies in the field of infoethics.

Responding to this decision, these areas were set as the priorities for the ongoing work of the IFAP InfoEthics Working Group.

As part of the WSIS+10 Review process, a study entitled *Ethical and Societal Challenges of the Information Society* has been prepared (Mukherjee 2013). This study builds on the 2007 IFAP report *Ethical Implications of Emerging Technologies: A Survey* (Rundle and Conley 2007). The new study does the following: adopts a similar forward-looking perspective of emerging technologies, trends in technology usage, and their societal and ethical implications; conducts a retrospective exploration of how the technologies identified in the earlier study have evolved over the past five years; and seeks to raise awareness of the role of technology and technology-mediated processes in social transformation and to explore whether/how possible longer term outcomes could be managed.

Conclusions

Information ethics is about understanding the difference between *right* and *wrong* and applying this understanding in the activities and decisions, thus creating the future of information society. It is critical to ensure that information society is based upon mutual respect and observance of human rights. The building of a fair and just multicultural information society for all is raising pressing and unprecedented ethical challenges in the 21st century.

It is also evident that many ethical issues can and will be understood differently according to different cultural and political frameworks (Capurro, Britz 2010). We need to continue the global debate to advance our understanding of what effect the Internet, ICTs, and related regulation have on basic human values like freedom of expression, universal access to information, and the right to privacy, to name just a few.

Awareness of ethical issues should be promoted to all participants and stakeholders in the global online community. We must seek to establish common, universally respected grounds to ensure that basic human values are fully respected and advanced in making ethical choices, practices, and decisions related to the use of the Internet, ICTs, and the development of information societies.

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ROUNDTABLE “LINGUISTIC DIVERSITY IN THE DIGITAL WORLD”

Towards a Multilingual Cyberspace

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The exponential demographic growth that we experience nowadays is in sharp contrast with the drastic decrease in the number of speakers of most languages in the world and therefore, with their constant disappearance. We are alerted daily about the alarming number of languages in danger of extinction, between 50% and 80% of the total before the end of the century.

The outlook is especially worrying if we consider the inhomogeneous repartition, as there are 70 tongues spoken by 94% of mankind, while a mere 6% of the globe speak one of the almost 7,000 remaining languages. Even more disturbing is the fact that a greater part of these languages are spoken in countries or regions less favoured economically, making support for survival all the more complicated.

Their use, restricted to a family or local scope, takes away all visibility that would invoke *macropolicies* of preservation and promotion of these languages. In fact, languages not used in education, health, administration, media and, fundamentally, the Internet, do not possess the prestige that other more visible tongues might have for the community, thus augmenting the risk of being abandoned by their speakers.

In this way, two opposing pyramids allow for comparison between the number of speakers and the number of spoken tongues. In the highest portion of the language pyramid we see only 10 languages that are spoken by more than 100 million people. On a second plane, only about 75 are spoken by a number between 10 and 100 million speakers. On a third level, 270 tongues are spoken by a number of one to 10 million speakers. Finally, 900 languages count between 100 thousand and one million speakers, and 5,700 languages are spoken by less than 100 thousand speakers.

Up to the beginnings of the last century many languages that are now considered endangered showed a great deal of vitality. It's enough to look at the situation of Europe's regional languages (from which we have better demolinguistic statistics). Even without an official presence, they had an enormous dynamism and were used mainly in their territories of origin. Today, almost all of them have lost up to 90% of their speakers and many of them are considered in danger of extinction.

Policies of alphabetization in official or state tongues, universal access to media (written press, radio, television, etc.) mostly edited in high-dissemination languages and after that wars, displacements, immigration, urbanization and aspects tied to the progression of globalization, have led to a reduction in the number of speakers of most of the planet's languages and, above all, a reduction in their scope of use, relegated to an affective and local usage that favours a small handful of vehicular languages. The almost hegemonic role of the English language in the West (and some parts of the East) has noticeably aggravated the situation, not only for regional languages, but also for languages of greater dissemination.

The world editorial market marks the predominance of a small handful of tongues over the rest, which is even more manifest in sectors of specialized communication such as scientific and technical information, industrial patents, diplomacy and the role of international organizations, translation of literary or specialized works, as well as multiple other sectors where not only the great majority of the world's tongues are absent from statistics, but also a constant evolution is shown in favour of – almost exclusively – the English language. The final consequence of such predominance is manifested in one of the most vigorous commercial sectors, the teaching of foreign languages, with a net benefit that favours a handful of actors.

The Internet, in its beginnings, has amplified this situation, especially in its most visible *façade*, the Web. After a near hegemony of the English language in the Internet in the 1990's, we've witnessed a significant evolution of the western languages written in Latin characters, as well as Japanese (due to the active participation of Japan in the manufacture of new technologies), noting, for example, that languages such as Danish, Dutch, or even Icelandic had a much bigger presence than most of the tongues that originated in other continents (America, Africa, Asia, Oceania), even if these are much more significant demographically speaking – again, with the exception of the aforementioned Japanese.

It's in the beginning of the 21st century that we observe that other tongues, both regional European and American or African, and even more Asian, take

on a larger relevance, leading to a percentile decline of English and, since 2005, of the main European languages and Japanese. In fact, after a constant growth and once the retardation with respect to English had been regained, the mentioned languages see a fall back on a percentile basis due to the growth of Asian languages such as Chinese, Korean, Arabic, and other not less significant ones.

Nowadays, we can say that no single tongue has a hegemonic position in the Web. The Internet universe seems to reflect even the demographic dimension of the populations with access to it, at least for those languages that have an official role. English and Mandarin Chinese are the languages with the biggest presence, the first with about 30% of penetration, the second, with a 15% of the total, according to statistics based on different sectors of cyberspace developed by Daniel Pimienta and the author of these lines, results that have been confirmed by the recent studies commissioned by the *Organisation internationale de la Francophonie* to MAAYA.

It should be noted, among the many spaces studied, the marvellous linguistic showcase that Wikipedia represents. Even though it cannot be interpreted as a faithful reflection of the complex reality of cyberspace, it shows a revivalist tendency of languages in specialized communication, with a few more than 300 tongues present in the famous encyclopaedia, symbol not of top-to-bottom planning, but of a base necessity, as Wikipedia is a tool that is used and edited by common folk.

However, even though we mentioned a few statistics on which we have based our prospecting work, we must remember that most of this data is now subject to important reservations, as we cannot count any longer, as we did in the past, on trustworthy global statistics on the real presence of languages in cyberspace. In fact, the rare initiatives in the field of language *webometrics* that could give a faithful reflection of reality are faced today with limits in their prospecting work due to several causes, but especially due to the disproportionate expansion of cyberspace, a problem equally faced by search engines (Google, Bing, Yahoo, Baidu, etc.), that allegedly index no more than 5% of the visible Web.

Of the 625 million domain names registered in November 2012, of which we know only a third correspond to active and original sites, trustworthy statistics about their content can only be obtained of 5–10% of the total. Furthermore, those few linguistic studies that can be trusted to a high degree of reliability don't include more than one million of the most visited sites, which would return false results because of commercial issues and would not reflect the contents of the whole universe of sites.

So, to obtain approximate and not precise figures, but for a larger universe, services and spaces based on numerous specific commercial and academic studies must be examined not by systematic crawling like in the past, but sector by sector.

It was in this way that we proved that in 2013, and particularly by the emergence of the Web 2.0 (that is, with more informal content), we approach a cyberspace that is more representative of the populations that have access to the Internet – even if this means that half of the planet does not find representation in it.

The last statistics about the growth in Internet access gives us some hope about the future of languages in cyberspace, given that many languages almost absent in the past (Tagalog, Hindi, Swahili, Polish, Persian, Indonesian, etc.) are more and more visible, due to larger Internet penetration.

It is also encouraging to see that the regions with the largest growth in the Internet today are in Africa, Latin America and Asia, continents where linguistic diversity is much greater than in Europe and North America, even if this just follows a logic of a slow balancing in the access to the world network.

Another encouraging fact is that international public policies and even commerce, after many decades of preference of a *universal language* of communication, or *lingua franca*, have understood that the best way of approaching the public is doing it in their own tongue, stimulating in this way a high production of pages in multiple languages.

But even if this data is encouraging, there is still a long way to go to achieve a cyberspace that truly reflects the ensemble of languages of the planet. Analysing the use of the Internet in a deeper way, we understand that no more than 300–400 languages enjoy an active presence and that for many of these, it constitutes a very partial presence.

Internet penetration is inversely proportional to the world's linguistic diversity. In fact, in regions where there are more languages there is less access to the Internet, and vice versa. To this we should add a mayor cultural trait of the modern societies, that is, the predominance of written culture and the marginalization of societies based on oral traditions. The audio-visual is constantly gaining ground on the Internet, but still not enough to favour the expansion of presence of cultures with an absence of writing.

In this way, we can refer again to a pyramidal situation in whose summit we find the languages most present in the different spheres of cyberspace, and an ample base (90–95%) totally relegated from digital culture, present only in a referential

way (that is, by means of notes on demographic aspects or characteristics) in a small handful of specialized sites. Furthermore, it can be said that only 10 languages enjoy a satisfactory presence in cyberspace (which means that its speakers may find all necessary information in their own tongue), speakers of about 60–80 languages manifest a partial satisfaction, and, at last, the other 400 visible languages have an unsatisfactory presence in cyberspace for their speakers.

Summarizing, we may indicate that the tendency at the end of the 20th century, oriented towards favouring the use of a lingua franca, and thanks to the democratic usage of the Internet, has been vanquished, progressively replaced by a tendency to a multilingual usage of the Internet, even though this only concerns languages that already boast a rooted usage in society and have a dominant position in it. The great majority of the planet's languages, the least spoken in terms of numbers, are practically absent from the Internet, a fact that may favour, due to the issue of visibility, their rapid disappearance. In this way the Internet constitutes a challenge; but also an advantage, because of its ease of access, if speakers use it to promote and drive their languages.

MAAYA gives absolute priority to clarification of statistics on the real use of languages in the Internet, as well as to their promotion through the mentioned channel. In this spirit it has edited the book *Net.Lang. Towards a multilingual cyberspace* in two languages (and soon in four), carried out three international symposiums about multilingualism in cyberspace, organized the First Bamako International Forum on Multilingualism, the first World Congress on specialized translation, and contributed to the 1st and 2nd International Conferences on Linguistic and Cultural Diversity in Cyberspace in Yakutsk held by IFAP and the Commission of the Russian Federation for UNESCO.

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Redefining Digital Divide Around Information Literacy and Linguistic Diversity in a Future Context of Access Provision

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Abstract

The average percentage of the world population connected to the Internet has risen, in the period 2005–2013, from 18% to 34%; it is expected that the exponential growth will keep the pace in the coming years allowing to connect the next billion users and to reach 50% of the world population.

While the digital divide in terms of access remains a high priority challenge in some parts of the world (such as Africa) and in some segments of the population (in most of the countries, even with good penetration average), those figures shall permit a switch of priority towards a more qualitative view of the digital divide and a new consideration towards the content divide and hence the linguistic divide, as they are closely correlated.

Content providing has often been considered as a natural priority in development for the information society but the policies, orphan of precise indicators, has always been very generic and lacking systematization.

This paper develops the thesis that information (including digital) literacy is the key to both a qualitative view of the Internet usages, and policies for content providing, susceptible to permit a representation of languages in the digital world which would be comparable to what exists in the real world.

The digital divide

The concept of *digital divide* was elaborated in the mid 1990s to express the huge differences of Internet access penetration between countries (“the global digital divide”) or, within a given country, between socio-economic groups.

Much literature has been devoted to the digital divide since then; the large majority of it apprehends the situation in terms of access to infrastructure while others discuss the validity of that approach and prefer expressing in terms of

access to knowledge or in terms of capacity to use the technology and hence lead to the other concept of *digital and/or information literacy*.

The following is a schematic description of the situation.

The access focused vision of the Internet, which belongs primarily to computer and networks specialists, perceives the actual challenge as “*connecting the next billion users*” (and also generalizing the use of broadband). Internet Society’s (which well represents this professional group) slogan is “*Internet is for everyone*”. The challenge of the digital divide is logically understood as the one to give access to all human beings and to get this access wide enough in terms of capacity (broadband) to allow fast response time even for video management. This vision stands in the belief that once the access is granted the users will be able, by themselves, to make meaningful use, transform into content providers and change their socio-economic reality with the use.

In the recent years, the huge penetration of mobile telephony together with the transformation of phones into smartphones (Internet processing capable) has represented a tremendous boost to the access challenge, opening new avenues of access in segments of population which were on the wrong side of the digital divide.

On the other hand, educators, librarians, and other professional groups, oriented more towards usages and applications than computing, tend to see the coming challenge as a question of education. Those groups, while acknowledging the coming into the picture of smartphones, are warning of additional education (and usage) challenges as a consequence of the low quality of the interface of smartphones (compared to large screen/keyboard of PCs) and also as a consequence of a change of communication habit from asynchronous communication (like in email) into parallel synchronous (like in multiple chat sessions), with the implied lost of concentration and focus.

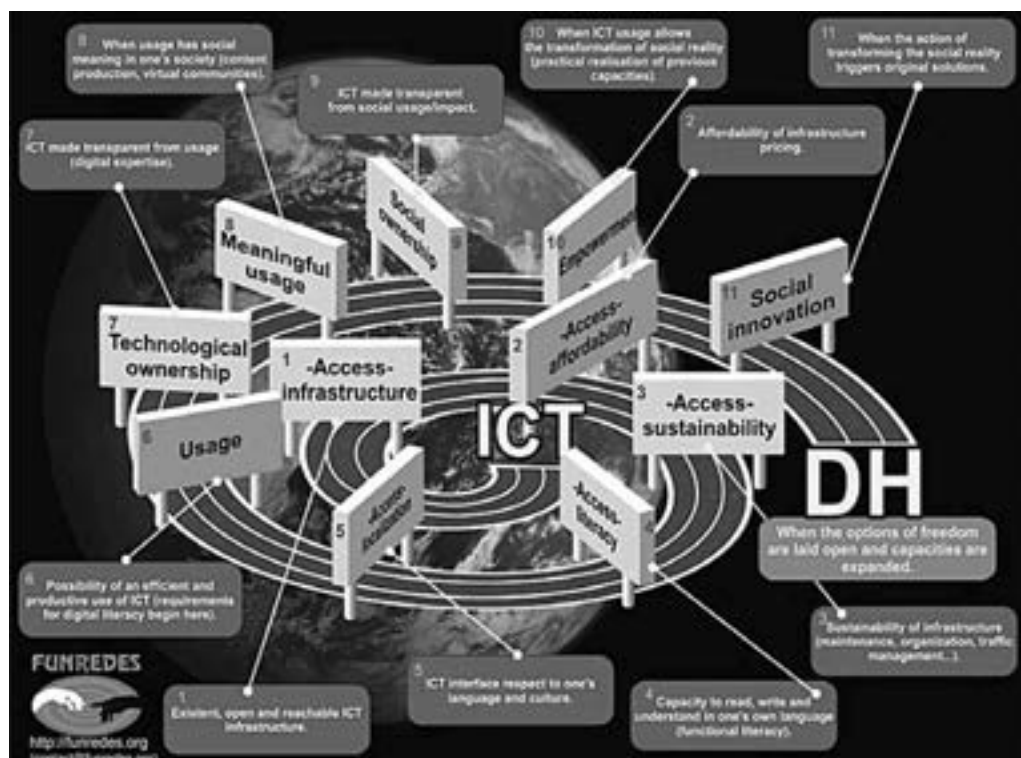
The objective of this paper is to support and enhance the second vision of the digital divide by adding the content divide in the picture and offering elements of context to support that vision.

A vision of digital divide from human development

The objective of this paper is not to discuss previously elaborated schemes concerning the digital divide but rather to extend the existing ones towards the concepts of *content divide* and *linguistic divide* and demonstrate the growing validity of such concepts to understand the coming era in the Internet development. We will then refer to existing papers and actualize and complete the arguments.

An early paper (Pimienta 1993) gathered the element to demonstrate that the liberal vision of “it is enough to give access to see the users take control”, which was born from the first experiences of networks in industrialized countries does not perform the same way in the South. The elements of context which were present in the industrialized world and allow, bottom up, together the first growth of networks and of the learning curve of the users are not present in the South. The paper analyzes systematically those elements to draw the conclusion that the same process will not happen without appropriate public policies.

We will use a scheme which was elaborated from the field experience of FUNREDES, in the 1996–2007 period, and was first documented in 2007. The following scheme is taken from (Pimienta 2009) where more precise definitions and more elaborated discussions can be retrieved.



The idea is to show the process of getting from no access into the use of ICT for Human Development as a series of sequential obstacles to overcome which together represent the individual (or community) process of getting rid of the digital divide. The sequence of presentation of the obstacles is not necessarily ordered in the real life the same way but it shows clearly that the issue of access is just the first 3 of a series of 11 steps to go through.

A thorough analysis put in evidence that the inputs required to overcome the hurdles, from 6 to 11, are related to digital and information literacy. And it shows also that the accommodation of language in the digital world (localization) is the key of hurdle number 5.

An analysis of the relation between language and the digital divide was first conducted, prior to the final elaboration of this scheme in (Paolillo, Pimienta, Prado 2005).

Internet evolution and implications for the digital divide

The question to reassess, seven years after (a very long time in the Internet clock), if this scheme have resisted the main changes is certainly valid. What are the main changes between the Internet of 2006 and of 2013 which could affect the vision of the digital divide?

1) The triumph of mobile communication and the exponential emergence of smartphones as a natural terminal to access the Internet (together with wide wireless technology). This implies a decline of the telecentres as one of the main solutions to face the digital divide and represents a certain form of democratization of access (although it may have been often accompanied with a lost of quality of physical communication).

2) The emergence of Web 2.0 and popular social networks applications gathering hundreds of millions of users (Facebook, Twitter, etc.). This implies new and higher interfaces to the Internet functionality, decreasing the access level in terms of education while reducing the importance of email (an asynchronous way of communication) in favor of chat and multiple parallel synchronous communication (which poses tremendous challenges for educators). At the same time it raises tremendous risks for privacy and sets it as one of the major challenge of the today Internet (challenge which Mr. Snowden has recently allowed a larger public to acknowledge by revealing the extent of spying done on the Internet and the complicity of the largest private sector players).

3) The evolution of the economical model of the Internet towards a model mainly based in advertisements (Google being the dominant factor), with, again, terrible consequences on our private data¹³⁰ and, less known, the increased difficulty in the objective use of search engines (as the search results are now personally tailored to advertisement purposes and the

¹³⁰ The public has gotten stoned by Snowden's revelation about the PRISM programme accessing all our communication data (with the argument that the government needed it to struggle against terrorism) without having paid prior attention to the fact that companies like Google are doing much more in terms of retaining information about users with the argument to personalize the advertisement proposals.

percentage of the indexed web has dramatically decreased from more than 80% to less than 5%). The processing of huge quantity of recorded data (“big data”) in order to recover some meaning (opinion mining, sentiment analysis) very often explicitly oriented towards the advertisement market is one of the main lines of today research.

4) The drastic changes of the Internet demographics with the huge presence of Asian countries, the rise of Arabic countries and implications not well known and understood on the language topology of the Net. This point will be developed further.

In any case, this evolution does not make obsolete the “hurdle track”, but, at the contrary, by releasing the tension in the first access parts, it upgrades the importance of hurdles number 5 and above, with increased challenges due to the massive use of smartphones.

Internet demographics

In the mid and late 1990’s the Internet demographics had the typical characteristic of a transition stage from a huge dominance of the United States together with the English language into a more diverse Internet. The data of the evolution of the Internet in the last 13 years can give light to that phenomenon and allow some prospective data which would help understand the trends in this new stage.

Table 1. Some penetration data about the Internet

	2001	2013	2025 ¹³¹
Number of persons connected worldwide (millions of people)	452 ¹³²	2400 ¹³³	5000
US penetration	not available	245 ¹³⁴ /316	300/335
English speakers penetration (Sources: GlobalReach and InternetWorldStats)	216	565	700
Countries with less than 10% Internet penetration (Source: ITU)		57	0
Countries with more than 50% Internet penetration, % (Source: ITU)	0	85	99

¹³¹ Personal prospective data.

¹³² Source: GlobalReach, March 2001.

¹³³ Source: InternetWorldStats, June 2012.

¹³⁴ Source: InternetWorldStats, December 2011.

Those figures argue for a paradigm switch in the coming years and the trend is clearly to see all countries with an Internet penetration rate crossing the 50% (except few possible exceptions). It shows also that with the percentage of English speakers connected to the Internet being already very high the trend will be for other languages to grow more.

Content divide

More and more people are getting access to the Internet; in the last years most of those people were not English speakers (the main growth came from Asian and Arabic countries in the last 5 years).

Two key questions need to be asked:

1. Do those people have the access organized in their mother tongue?
2. If so do they find the density and variety of contents in their mother tongue comparable to English?

If only one of the two answers is negative then the risk of acculturation by using the Internet is very high (Ess 2006). The scarce data which are available on languages and the Internet tends to offer a negative answer for many languages to the first question and a negative answer for most of them to the second question.

A very important message has been established by the first studies measuring languages on the Web (from FUNREDES/Union Latina¹³⁵ as well as from the Language Observatory Project – LOP¹³⁶) about the digital divide in the South. It showed that the content divide was one order of magnitude higher than the access divide for international languages and several orders of magnitude for local languages, as shown in the following figures:

- 4% of global Internet access comes from Africa (Source: InternetWordStats 2007¹³⁷).
- 0.6% of web pages in French are based in Africa (Source: FUNREDES/Union Latine 2007¹³⁸).

¹³⁵ <http://funredes.org/lc>.

¹³⁶ <http://gii2.nagaokaut.ac.jp/gii/blog/lopdiary.php>.

¹³⁷ This figure has hopefully jumped to 11.4% in 2011 but the odds are high that the content divide has not evolved much.

¹³⁸ See Pimienta, Prado, Blanco (2009) for more details on indicators about languages on the Internet.

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- 0.6% of web pages in English are based in Africa (Source: FUNREDES/ Union Latine 2007).
 - The percentage of web pages in African local languages vary from 0.06% to 0.0006% depending on the language (Source: LOP 2007¹³⁹).

The first question is linked to the process of localization of languages, which means giving them a digital existence. The first condition for full localization is the existence of a written form of the language. The second part of the process is to create a codification of the full alphabet. In the last years much effort has been devoted to this task and the number of different codification schemes which have been agreed upon in UNICODE is around 500. This means that some 500 of the 6,000 existing languages are localized. Unfortunately it is not sufficient to have a potential digital existence, thanks to codification, to have an effective existence with diverse and accessible contents. The data about this situation are difficult to obtain; however the last indicators which were showing that the content divide was at least one order of magnitude higher than the access divide have probably not evolve much.

Fostering content is an expression which is often found in international organizations' programmes. The need for having contents produced has been acknowledged indeed; however the how to obtain this result has not be given enough thoughts. Specific and/or localized content production can be obtained by means of a contest, for example. But massive content production is a macroeconomic phenomenon which is very hard to trigger. What makes the difference between consuming-oriented users and producing-oriented ones? Can the push of the Web 2.0 be accounted as a massive content production driven by users? Is the majority of those user generated content useful for other users (besides the network of friends and companies interested in marketing products online)? Can we discuss content production without addressing the question of quality of contents?

Those are difficult questions to answer but the bottom line is that information literacy, which we have shown to be the engine to move on in the hurdle spiral above, is also the best common answer for positive outcomes in content production (it requires educated users to have content producers). Unfortunately it does not receive enough of the attention it deserves in public policies.

¹³⁹ See Nandasara S.T. et al. (2008).

The linguistic divide

Languages are the real frontiers of the Internet and multilingualism is the best skill to cross them. Translation and inter-comprehension are useful tools but it is an illusion to believe they will cancel the need for multilingualism.

What do the data which can be collected at this stage tell us about the range and proportional presence of languages on the Internet?

Before answering that question, it will be helpful to review some facts about languages and set the stage for assessing what is at stake. There are an estimate 30,000 languages which have existed in the world since human beings were capable of speech. From this figure, many languages have become extinct and in modern times, it is estimated that somewhere between 6,000 and 9,000 remain in active use. Bearing in mind the requirements for all languages to have a digital existence¹⁴⁰, let us consider the following facts concerning languages (Sources: Ethnologue¹⁴¹ and Crystal (2001)):

- 6 languages (English, Arabic, French, Spanish, Portuguese and Russian) are the official languages in 60% of the world countries.
- 85 (1.3%) languages are spoken by more than 10 million persons each and together represent 78% of world population.
- 50% of all languages are spoken by less than 10,000 persons.
- 25% of all languages are spoken by less than 1,000 persons.
- One language disappears every 2 months, on average.
- Less than 10% of languages have a written form¹⁴².

The question about the presence of languages on the Internet may be addressed by crossing the Ethnologue data on languages¹⁴³ with the ITU data on Internet access¹⁴⁴. It appears that there is a statistical correlation between countries with high linguistic diversity and countries with low Internet penetration¹⁴⁵.

¹⁴⁰ Having a digital existence starts by the localization of a language, this concept referring to the encoding of its alphabet and it then implies a series of requirements from the existence of a set of software associated to this language (such as syntax correctors or dictionaries) into the existence of meaningful contents. See Diki-Kidiri (2007).

¹⁴¹ <http://www.ethnologue.com/>.

¹⁴² http://www15.gencat.cat/pres_casa_llengues/AppJava/frontend/sabiesque_detall.jsp?id=18&idioma=5.

¹⁴³ <http://www.ethnologue.com/web.asp>.

¹⁴⁴ <http://www.itu.int/ITU-D/ict/statistics/>.

¹⁴⁵ Other two correlations which are striking matters for thoughts are between high biodiversity and high linguistic diversity and any one of the previous and... poverty. In other words the rich part of the planet is info-rich but linguistically poor.

Some approximate data has been maintained about the proportion of Internet users by language during the period 2002–2005, by Global Reach¹⁴⁶, and after and until 2011, partial ones for the 10 top languages, by InternetWorldStats¹⁴⁷. It shows the high initial percentage of English speakers and the steady decline of this percentage which has been changing from around 80% in 1996 to 27% as of 2011 (as a logical result of the increase of Internet penetration in this segment of the population). It also shows that the more spoken languages logically take the first 10 positions, although with very different percentages compared to the respective total of speakers of the languages. As those differences will tend to level up it could be used as a tool for prospective.

Concerning the data about the proportion of languages in the content universe (especially the Web) FUNREDES/Union Latine have maintained an observation with documented results from 1998 to 2007 but were obliged to make a stop due to the evolution of search engines¹⁴⁸. Since then there is no reliable data available. An approximate data is proposed by W3Tech¹⁴⁹ and very interestingly maintained in almost a daily basis. The clever method is to use for sampling the one million web sites considered the most visited by the service Alexa.com and apply a language recognition algorithm. The method has obvious drawbacks¹⁵⁰ which tend to favor English, which is quoted here at 55% while we estimate its weight way below 50%, from the trends in studies from the previous years.

There are diverse recent findings which show several possible trends, albeit in the absence of stable indicator production:

- The recent evolution on the Web has shown the total number of Chinese Internet users crossing over the line of the total number of US users in July 2008¹⁵¹.

¹⁴⁶ For example <http://web.archive.org/web/20041019013615/www.global-reach.biz/globstats/index.php3>.

¹⁴⁷ <http://www.internetworldstats.com/stats7.htm>.

¹⁴⁸ The method was based on the number of occurrence of a set of words submitted to search engines which were indexing a large proportion of the web universe. Those occurrence counters are no more reliable and the sampled universe is now too small to be meaningful.

¹⁴⁹ http://w3techs.com/technologies/overview/content_language/all.

¹⁵⁰ The fact that the sample is made only by one million most visited web sites according to Alexa.com (e.g. 0.27% of the total web sites according to figures of December 2011) will tend to favour English and in any case unfavour languages with low outreach. Additionally, the fact that language is identified using only the home page, which tends to include English in many sites the rest of which is other language, is another strong bias in favour of English.

¹⁵¹ <http://www.nytimes.com/2008/07/26/business/worldbusiness/26internet.html>.

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- After the revolutionary movement in North Africa and Middle East, the space of Arabic in Facebook is growing rapidly and if the trend continues, it will overcome English by 2012¹⁵² within those regions.
 - Wikipedia is the Internet space with the higher linguistic diversity, supporting approximately 271 different languages in contributing articles¹⁵³.
 - The maximum figure of 271 for Wikipedia is to be compared with the figures of 70 languages supported by Mozilla, 67 by Facebook, 63 by Internet Explorer, 51 by Google Translate, 50 by Blogger, 19 by YouTube, 6 by Flickr and 4 by LinkedIn¹⁵⁴.

The point that the digital divide may be much more an issue of content and language than of access is an extremely powerful argument in favour of digital inclusiveness policies which do not stop at access but, together with access, focus on local content (and indirectly on the education to nurture new content producers, a process which starts by encouraging digital literacy)¹⁵⁵.

Conclusion

On the Internet, the only frontiers are languages¹⁵⁶ and there are hundreds of them, more than countries in the world map. Only multilingual people can attempt to cross a few of those frontiers and as tools are developing to tackle the linguistic challenge, the use of automatic translators is starting to offer a somewhat blurry illusion to those seeking to cross foreign territories.

The “*language territoriality*” of the Internet and how it relates to content has been often underestimated in the analysis because people naturally tend to think within their own linguistic boundaries. Yet it is important to discover and then analyze the *hidden dimension of inclusiveness* of the Internet in order to tackle the coming challenges of its latest stage of evolution, and especially the so much mentioned *Digital Divide*.

¹⁵² <http://www.slateafrique.com/17731/sur-facebook-arabe-depasse-anglais>.

¹⁵³ See interesting data at <http://stats.wikimedia.org/wikimedia/squids/SquidReportPageViewsPerLanguageBreakdown.htm>.

¹⁵⁴ All those figures are from 2010 and refer to the interface (not the content).

¹⁵⁵ What is at stake is the concept of “ownership” of technology which does not come for granted with the access. See Pimienta (2009).

¹⁵⁶ See for instance: <http://googleresearch.blogspot.com/2011/07/languages-of-world-wide-web.html> to sense how much the language territories tend to be impervious!

Language matters, perhaps more than ever before. In making the wide world smaller, the Internet increases the probability of encounters of people with different languages and the real question is what meaningful use would anyone make of his or her Internet access if their mother tongue was not recognized, or if there was no content in that language? Such issues were not obvious in the early stages of network development, when the majority of users were IT professionals, researchers and academics or sometimes international technology activists. These were highly educated people, for whom English was probably understood at least as a second or third language by a very significant percentage. However, the Net has spread widely and linguistic issues become paramount when the objective is to give access to everyone on the planet. Amongst the 7 billion human beings, less than 20%¹⁵⁷ are able to use English at all, and probably less than 15% – to use it efficiently! This statistics alone is a powerful indicator that the belief that English will be maintained as the *lingua franca* of the Net is shortsighted.

Today, the strategic advantage in the virtual world goes to *multilingualism*. The issue of language choice and diversity on the Internet is one of the keys to unlocking the doors to *digital inclusiveness* in a more direct and comprehensive manner; especially once the tight and complex link between *languages*, *the substrate of knowledge*, and *content*, one of the two key facets of the fabric of the network¹⁵⁸ is better understood.

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¹⁵⁷ As usual in demo-linguistics, there is no accorded figure for the total population of the world in capacity to understand English as a second language. The population using English as a first language is estimated at less than 375 millions (less than 6% of the world population). The figure for English as a second language holds huge variations, depending in particular of the definition of the threshold for the level of literacy, from 470 million to one billion (which makes the total English speakers in the world within the window 10% – 20%). Graddol (2006) offered the figure of 508 million for English speakers as second language (citing a 2005 reference from Ostler, N. 'Empires of the Word: a language history of the world.' London, HarperCollins) but he estimated it could be as much as 1 billion. In 'The future of English' (British Council, 2000) Graddol offered estimates (in millions) for the following 3 categories: English as the first language (375), English as a second language (375) and English as a foreign language (750). The issue remains the threshold to qualify persons from the last category as efficient speakers.

¹⁵⁸ The other one being communication which is also sustained by languages.

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Web-Based Vulnerable Peoples – Focusing on Language

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1. Introduction

These days, human communication is very active in the Internet. Various types of human communication on the Internet have been evolving day by day, including uni-directional distribution of information by means of Web contents such as blogs and bi-directional exchange of information via social media.

Since “language” is the primary media for representing information on the Internet, and “language” is manipulated both by people and the computer systems that control information on the Internet, some types of “divide” should result due to the discrepancy between the languages respective peoples want to speak and read for distributing and acquiring information, and those that computer systems are using for transmitting and receiving digital signals that convey the information.

This communication focuses on this discrepancy and the digital divide it should cause, which ultimately yield “linguistic originated vulnerable peoples.” This paper addresses the linguistic originated vulnerable peoples issue by introducing a human-centered perspective, which provides a basis for considering the mechanism under which the linguistic originated vulnerable peoples are produced and observing how these peoples exist on the Internet.

There are several types of communications; for example, asynchronous communication via blog or web pages, bi-directional human communication with social media. These communications are regarded as the result of peoples’ activities of converting one’s thoughts, which originate mainly from their primary languages, into information on the Web expressed by the coded characters.

We discuss the ecology of linguistic originated vulnerable peoples¹⁵⁹ and present new dataset of LOP (Language Observatory Project, (Mikami et al. 2005)).

¹⁵⁹ Note that the word “people” is used in this paper as a singular noun meaning the people who belong to a particular country, race, or area.

2. Two types of language

An *ordinary language* that a people uses daily can be classified into two types; the first type, Language 1, is the one that the people wants to use, and the second type, Language 2, is the one that the people is forced to use. Language 1 is associated with the people's identity and used with the people's intention.

On the other hand, Language 2, otherwise called "official language", is associated with politics that govern over peoples. It is often used among multiple peoples having their respective own Language 1 for the purpose of establishing mutual communication. However, since Language 2 should not be an ideal communication medium for those peoples who use different Language 1 than the Language 2 as their ordinary language, they tend to have a limited ability to express what they want to say in the Language 2.

Non-professionals, or ordinary computer users, have increasing opportunities to express their ideas produced by their creative activities via their own language, Language 1, on the Web. The Web may or may not be Language 1 friendly. In other words, the computer systems that reside underneath the Web would either:

- take care of Language 1 without any problem, or
- manage to handle it with some inconvenience on the part of the users, or
- will not accept it at all.

By focusing on Language 1, we can gain important insights into how various types of digital divide might occur on the Web; the Web however must be perceived as an ideal arena for those who want to make full use of it via their language. We call this approach "human-centered perspective on digital divide." In the following sections, we show the main elements of human-centered perspective on digital divide. It turns out that they are very effective to identify the kinds of *potential* digital divide that should occur irrespective of the size of the population of Language 1 people.

3. Definition of linguistic originated vulnerable peoples

Continuing on the above-mentioned argument, we define "linguistic originated vulnerable peoples." Suppose that there is a *language* which has a script, like Arabic script, or it is represented by transcription, in other words, it is associated with a symbol system, and it is spoken or written by a specific people characterized by the country it belongs to, the race, or the area where it lives. This defines the *ordinary language* that a specific people uses.

Then we can define two types of vulnerable peoples on the Web as follows. The first includes language speakers who cannot represent their Language 1 in the symbols on the computer systems underlying the Web, or language readers who cannot convert the symbols on the computer systems to their Language 1.

The second type are language speakers who can represent their Language 1 as symbols on computers without any problem, can make easy access to the Internet, but cannot have a free press due to political, social, and the other reasons. It means that the Language 1 speakers cannot create contents faithfully representing their intention.

4. A novel approach for dealing with linguistic digital divide

For Web users, such a situation as mentioned above has influence on the flexibility in creating Web contents. On the Web, any person who wants to send their messages as the Web contents is supposed to be a creator regardless of their computer skills. It means that the richness of the contents in a certain language can crucially depend on whether the creators of contents can easily manage that language, i.e., Language 1, in computer systems or not.

This issue is directly related to linguistic diversity in cyberspace (Web). However, when we discuss the linguistic originated vulnerable peoples in connection to the digital divide and Web contents, its difficulty and sociality prevent us from treating the relation as engineering. Web contents, which are objective observables on the Web, may be influenced by a certain degree of digital divide, if there is any. Therefore, revealing what is happening in the back of the Web contents has been relying on inductive reasoning techniques or questionnaire surveys worked out by social organizations. We believe these approaches have potential limitations; inductive reasonings could generate some hypothesis to be proved and it is difficult to distribute questionnaires to a wide range of peoples on the Web. We think that this limitation of the approach to this issue is one reason why the discussion does not reach the depth that clarifies the mechanism of yielding linguistic originated vulnerable peoples. To understand this mechanism, we introduced the framework of e-Network, which was presented last November (Nakahira 2012). The framework suggests that the most important component for describing *digital divide* is media – in this case, **language**: connecting all components of framework, human factor, substratum factor, and product.

Based on the framework, we can easy understand the relation of linguistic originated vulnerable peoples and digital divide. To indicate the phenomenon, the first step is to collect languages used on the Web. The purpose of LOP fits for the study, and we already have presented the language diversity in cyberspace at 2006 for Asia (Nandasara et al. 2008). In this communication, we would like to introduce the *preliminary* data at 2012 Asia.

5. The survey

Our survey in 2012 is based on Nandasara's paper (Nandasara et al. 2008), except for the choice of the seed URL. We treated 51 country domains in Asia, including CJK. The crawling was initiated from a seed file containing 825 URLs which were selected from portal sites. The list of ccTLDs contains ae, af, am, az, bd, bh, bn, bt, cn, cy, eg, ge, hk, id, il, in, iq, ir, jo, jp, kg, kh, kp, kr, kw, kz, la, lb, lk, mm, mn, mo, my, mv, np, om, ph, pk, qa, sa, sg, sy, th, tj, tl, tm, tr, tw, uz, vn, and ye. The crawling was operated from mid September 2011 to early January 2012. We downloaded about 3.2×10^7 pages without duplication.

There are two differences between the two crawling conditions. The first one is in the collected seed URLs. The seed URLs in 2006 are collected from special sites. The seed URLs in 2012 are mainly collected from portal sites: only 5 seed URLs are collected from each ccTLD, and hence the total number of seeds is less than in the 2006 crawling. The second difference is in whether CJK ccTLD is included or not. The crawling in 2006 does *NOT* include it, while the crawling in 2012 *DOES*.

Figures 1–3 show some preliminary results.

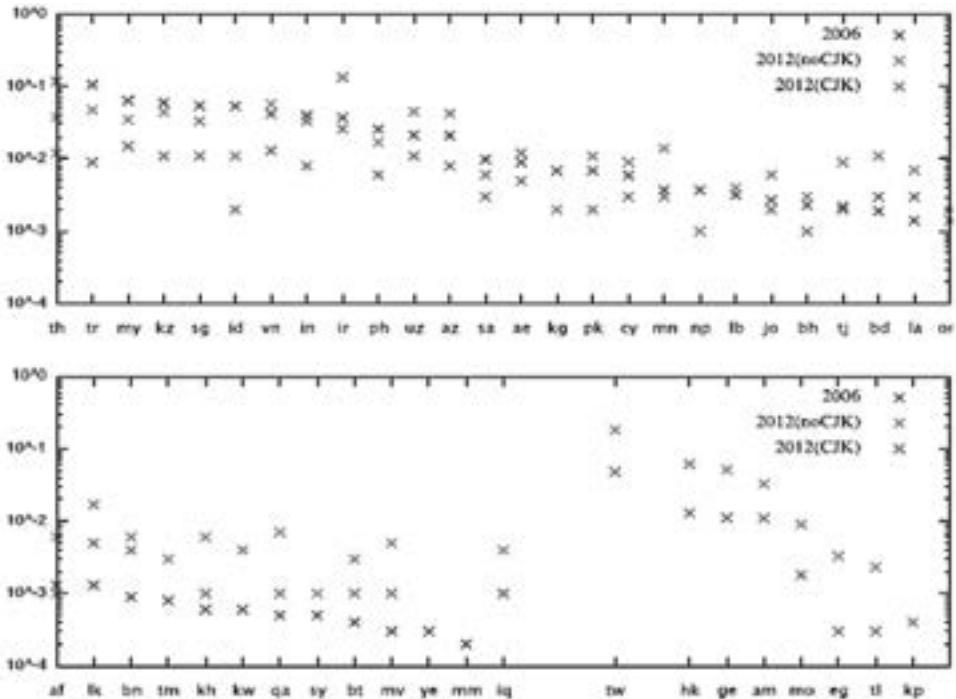


Figure 1. Distribution of percentile of web pages, compared with 2006 and 2012 Asian crawling

Figure 1 shows the percentages of ccTLDs in the number of collected pages on the Internet: the Asian crawling results in 2006 and in 2012 are compared. The crawling in 2012 shows almost the same trend as that in 2006. However, there are also several differences. The percentages of **id** and **th** in the number of collected web pages in 2012 are less than those in 2006. On the other hand, the percentages of **ir**, **mn**, **tj**, **bd**, **la**, **af**, **lk**, **bn**, **tm**, **kh**, **kw**, **qa**, **bt**, **mv** have increased by up to factor 4 compared to the crawling in 2006.

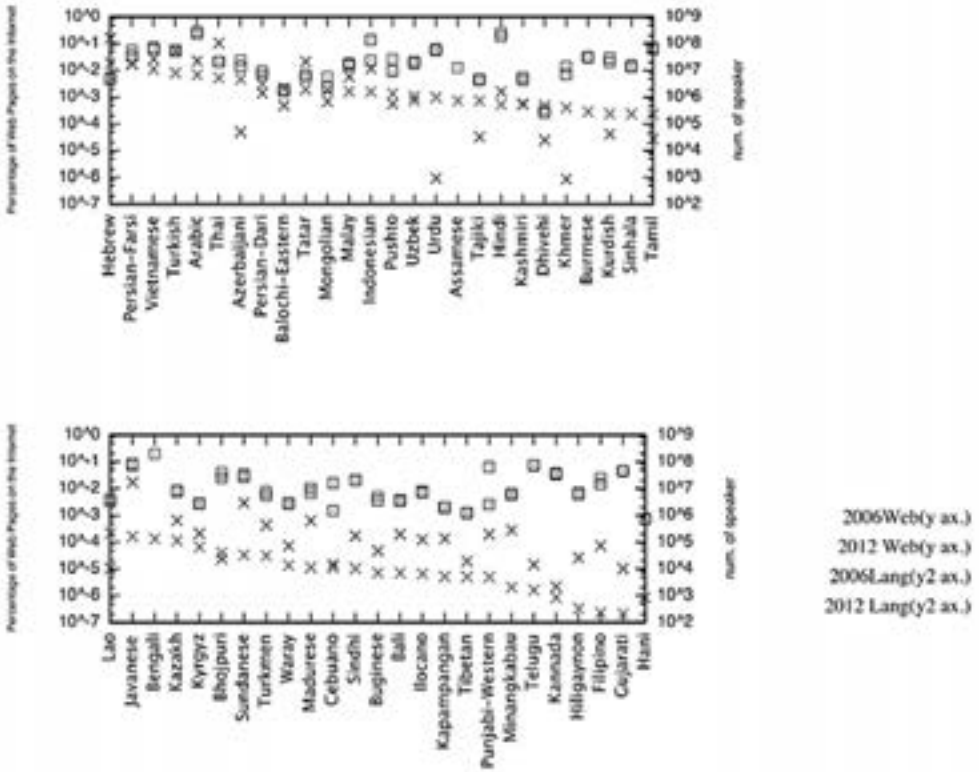


Figure 2. Distribution of percentile of languages in web pages, compared with 2006 and 2012 Asian crawling

Figure 2 shows the percentages of languages used in the number of collected pages on the Internet, again the results in 2006 and in 2012 are compared. They are represented by \times , and the ticks on the left side are to be referred for the vertical axis. The figure also displays the populations of speakers of the languages used for the respective years. They are represented by square, and the ticks on the right side are to be referred for the vertical axis. The results of 2006 are presented in blue, while those of 2012 are in red. The dataset was sorted by the percentages of web pages in 2012. From the figure, the percentages of web

pages for the languages shown in the lower panel seem to be increasing. There are several possible reasons for this increase, e.g., true increase, the difference in the crawling target, and so on.

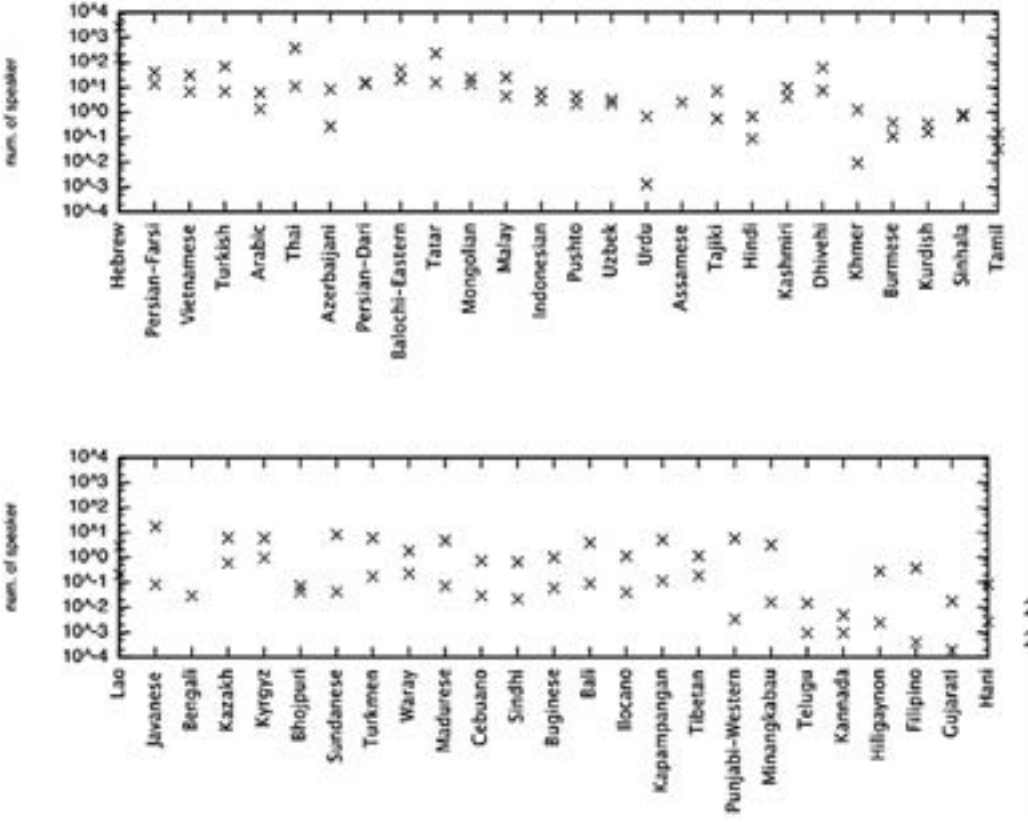


Figure 3. The number of web pages per speaker, compared with 2006 and 2012 Asian crawling

Figure 3 shows the number of the collected web pages divided by the population of the language speakers. The results in 2012 show almost the same trend as those in 2006, except for the increase of Urdu and the decrease of Punjabi-Western.

The author thinks that the above exceptions are caused by the focused crawling, i.e., by collecting seed URLs mainly from portal sites, but we need more research to confirm it. In case special seed URLs are selected, web authors may have a tendency to aim at archiving or preserving some specific language.

But in the case of portal site seed URLs, web authors are expected to be unbiased in the sense that the language used in their web pages is their native language, namely Language 1. As the cyberspace world grows, accessing and generating

contents for Internet users are getting easier. If we would like to know human's natural behavior as to the usage of language, crawling with portal site seed might be an appropriate way.

6. From observation to understanding the phenomena

In this paper, the author introduced the concept of “linguistic originated vulnerable people.” To establish the concept, we need to understand two basic features: how the linguistic originated vulnerable people are *produced* and *observed*.

As for the first issue, i.e., how they are *produced*, we already have some frameworks such as the e-Network (Nakahira 2012) and MHP/RT simulation with human mind (Kitajima and Toyota 2013). As for the second issue, i.e., how they are *observed*, we already have tools such as the LOP (Mikami et al. 2005) and indexes such as Country Domain Governance (Nakahira et al. 2011).

With these frameworks, tools, and indexes, we need to move our research target from observing/analysing the Internet phenomena to understanding them.

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ParaType Web Fonts for Multilingual Information Community

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There live in Russia now more than 180 peoples using more than one hundred languages. Most ethnic languages in Russia are based upon the Cyrillic alphabet but there are languages which use Latin or other alphabets while some languages have no writing at all.

Russia became multi-ethnic a long time ago and this fact allowed the country to accumulate quite a rich experience of collective living “as a friendly family of different peoples.”

So the most obvious uniting element for the population in this country is not the territory, and, of course, not a language. All of us residents of Russia are united by the common Cyrillic system of writing!

It is the system of writing which is the unifying and identifying factor enabling us to feel as a wholesome people of a wholesome country.

In Russia adopted and operative are laws which guarantee to all its peoples the right to preserving the native tongue, the right to create conditions for the study and development of the language. Provisions to this effect are contained in a number of federal legislative acts whose object is culture, education, ethnic and cultural autonomy, etc., as well as in constitutions (charters), special laws and other standard-setting acts of the constituent subjects of the Russian Federation.

It is regretful that time which is allotted for TV and radio broadcasts in ethnic languages is often limited and may be in some cases only several hours per week. Books that are published in ethnic languages are also comparatively few. Living under such conditions, many individuals belonging to ethnic peoples of our country come to see their language as one of low prestige, of poor prospects, and do not feel like studying it. Students in the ethnic republics would rather devote more time to the study of Russian or English, than to studying their native tongue, that because a considerable volume of information which they need for receiving education and for their future occupational activity does exist in precisely these two languages.

The above factors result in a situation where the number of competent native speakers is diminishing, which may result in disappearance of the languages as such.

This is why we are working to build the requisite tool for upkeeping ethnic languages in various spheres of visual communication – multilingual fonts. Their use in the Internet is particularly important, because, in order to create a stimulus with young people to study their ethnic tongue, we must use the newest, the most advanced technologies!

In view of the above, the ParaType company set itself the following tasks when it decided in 2012 to engage in carrying out its own project of developing fonts in web formats for all the fonts of the ParaType library, including those with multi-language ethnic support:

- Creation of web fonts with expanded support of languages spoken by the peoples of Russia.
- Replacement of commercial web fonts with open-license fonts of general access.
- Replacing the Cyrillic fonts of western design with Russian fonts.
- Creating a set of fonts for wide use.

So what are the web fonts and how do they differ from the conventional fonts which I have described to you more than once?

One: they must be loaded each time to every site visitor together with the content, and hence they must have:

- a protected format,
- an optimal file size.

Two: they must operate in all Internet browsers and operational systems, i.e.:

- the font format must be supported by the browser,
- the makeup must be reflected identically in various browsers and operation environments.

Three: they must have improved screen legibility, that is, they must be specially prepared for various rendering regimes.

In order to create web fonts professionally for supporting ethnic symbols, it is necessary not only to know the sets of signs in the ethnic alphabets and the

presentation forms for the signs (their overwhelming majority is determined by the Unicode standard), but it is also necessary to provide for presenting the fonts in formats that are “understood” by various browser types. Web fonts are supplied in sets of four formats: EOT, WOFF, SVG and TTF. Figure 1 shows web formats and their compatibility with most popular Internet browsers.

Format	Meaning of abbreviation	Description	Browser
WOFF	Web Open Font Format	Open compressed format of OpenType or True Type fonts, supporting additional meta data	IE, FF, Chr, O
TTF	TrueType	Ordinary TrueType	IE, FF, Chr, O
SVG	Scalable Vector Graphics	Vector image format	Chr, O, S
EOT	Embedded OpenType	Compact format of Open Type	IE

Figure 1. Web formats and their compatibility with Internet browsers

And now we shall speak about use of web fonts.

Types of web licenses

There exist now two modes of using web fonts. According to the first one, the buyer pays once and receives a perpetual license. This resembles the traditional scheme for selling ordinary fonts, but rather than indicating the number of computers to which fonts can be installed, they indicate the traffic of the sites on which it is allowed to use the font. The higher is the indicated traffic, the higher is the cost of the license. By purchasing the font by such license, the buyer receives the above set of fonts of the four web formats in order to put them to his web server together with the other site materials. The cost of the web license is determined by the total traffic on the sites for which the font is purchased, the traffic being measured in “viewings” per one month. The sites must, naturally, be registered in the name of the license holder.

The second licensing version provides for the buyer subscribing for web fonts after some periodic scheme. This means that the license has limitations as to the time limit or to the traffic, which provision allows the seller not to supply the fonts as such, but to provide the font hosting.

It is our opinion that the second option is more correct from the point of view of the buyer because it makes it possible to charge for the actual use of the font rather than charging for a declared use. Someone who wants to have a personal site for communicating with friends, will pay a small price for using the font, whereas a large corporation whose site is visited by millions of users will pay hundreds of times more. In all appearance, an overwhelming majority of suppliers will adopt this method in the final account, but for the time being, we are working according to the first version.

Technical requirements for web fonts

It should be noted that showing correctly the letters on the screen is not technically quite a simple task. The font characters are used in curves whereas the computer screen is a raster-scan device. If we choose a small primer, the entire letter may do with fewer than ten points in the vertical, but it contains, not infrequently, quite minute features like hair-strokes, paraphs and scrolls. So there appear mistakes of rounding: characters loose symmetry, elegant letters become uneven, there appear blots, throats come to be closed, so, pixel after pixel, the beauty of the text type turns into ugliness.

In order to receive on the screen a text of high quality, we must use fonts that are optimal for the web. Such fonts must be well hinted and their metrics must be designed correctly.

Hints

In our context “hint” is understood as special instructions which are inscribed into the font and which govern the process of rasterization. The standard font supporting European languages and Cyrillic includes no less than 400 symbols. Hints are normally used for point sizes measuring 6 to 50 points. By multiplying these figures we find that for processing one font unit hints must be seen and allocated in about 20 thousand signs. All this work is done by hand! Ideally a fully processed font has several groups of hints for several regimes of visualizing (rendering). This is important because in many cases it is unknown as to which combination “system – browser” is used by the site user.

Features

“Feature” is “functional probability.” The creation of the Open Type format allows us to attribute to a font rules of its use under various circumstances.

For example, to substitute ligatures for some sign combinations, or to use various forms of the glyph depending on the position of the letter in the word. Not all the browsers support features, and those that do they do it thus far to a limited degree only.

PT Sans – PT Serif Font system

The above considerations were employed in 2009 to develop and provide to users the first font family of the project, named PT Sans, and in 2010 the Antiqua PT Serif was developed with the same proportions.

PT Sans is a Sans Serif font of the class of Humanist Sans Serif without clear stylistic features, designed for wide use. The font of quiet composition, it has, nevertheless, a number of typical features which make it not dull, sinking in one's memory and quite conspicuous in large headline primers. The clear features of the contemporary Humanist Sans Serifs provide for the functional use and for meeting the aesthetic demands of our times.

The PT Serif font family has been designed in the same proportions as the grotesque PT Sans, as a family of wide use.

PT Serif is an up-to-date easy-to-read text antiqua fitting to typeset books, magazines and newspapers. This font combines modest conservatism of the letter shapes (originating from the text on the Trajan's Column) with the contemporary trends of the Humanist Antiqua, and has a higher level of comfortable reading and distinguishing.

Font characters for PT Sans – Serif – Mono

Each of the 16 faces of the PT Sans – PT Serif font system contains about seven hundred characters. Besides the standard set of characters for the languages of Western Europe and Eastern Europe, and the set of the standard Cyrillic, the fonts include also the characters of all the alphabets of the state titular languages of the Russian Federation, and are therefore a unique and an extremely important tool for the development and preservation of the written culture of the peoples in our country. The availability of the easily accessible and free font for a complete support of the ethnic writings makes it possible not only to provide for the needs of education, culture, press, government offices, businesses, but also, which is more important, provides the possibility of everyday native-tongue communication through e-mail for people in the ethnic republics, and the possibility of developing ethnic resources on the

Internet. The existence of a common font for all the ethnic languages of the country is an important prerequisite for inter-ethnic communication on the basis of a common standard, both from the point of view of coding, and from the point of view of the design of common signs of languages and dialects that are close to one another due to their nature. This will make it possible to avoid isolation in the development of the neighboring cultures because of difference in the tradition of writing the common letters.

According to the list of indigenous smaller peoples living in the North, in Siberia and in the Far East of the Russian Federation, approved by the Government of the Russian Federation, and according to the RF census, there live in Sakhalin people of the stock of the indigenous population of the North, mostly Nivkhs and Oroks. They have languages and writings of their own, but until recently there were no conditions for publishing literature in these languages, or for mass media, let alone Internet sites. But now thanks to the PT Sans – PT Serif system, such opportunity is available. This is not sufficient though for a professional operation of an ethnic printing house or a publishing house. There is also the need for developing commercial fonts and expanding their character stocks by adding ethnic symbols of the indigenous peoples of the North. This is a most important task to be faced, among others, by the administrative authorities of those regions!

Good examples are provided by corporations in other countries. In 2012 the Google company, seeing the absolute popularity of the fonts PT Sans – PT Serif, ordered with the Para Type company manufacture of a fixed-pitch font of the system, called PT Mono.

Use of fonts in ethnic sites

System fonts Arial, Times and Tahoma are used in virtually all the ethnic sites created in tongues of peoples living in Russia, although there are hundreds of ethnic Cyrillic fonts in the ParaType library. But the government of Great Britain has found a way to offer an example of the opposite approach. The British Prime Minister decided the same year to reconstruct the site of his government in order to use for it the fonts of PT Sans – PT Serif. The well-known British site www.puffbox.com wrote, not without a certain sarcasm, that the head of the British government is using a project funded by the Kremlin for its own needs!

Multilingualism and Cyberspace as a Matter of Learning

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In this paper the role that education plays in the development of multilingualism in cyberspace will be discussed, based on the experience, accumulated in Yakutia.

By its territory, Yakutia is the largest region of the Russian Federation. It covers 20% of the territory of Russia. The population is 0.67% of the total Russian population. The average temperature in winter is -40°C . Like other regions, it is very polyethnic. Of the hundred nationalities six are indigenous. The Yakuts are the only Turkic people, which, more than 10 centuries ago, migrated from Central Asia to the North, not to the West, unlike the other Turks. There are five indigenous peoples in Yakutia besides the Yakuts: Evenkis (21,000 pers.), Evens (15,000 pers.) Dolgans (2,000 pers.), Yukagirs (1,200 pers.), and Chukchis (670 pers.). Not all of them speak their native language.

Most of the people in the Republic of Sakha (Yakutia) speak Yakut and Russian. These two languages are recognized by the Constitution of the Republic as state languages. The remaining five indigenous languages are recognized as official ones.

The Yakut language spoken by about 400,000 people is a minority language across Russia, but on the scale of the republic it is a major one. Due to the remoteness of the region Yakut was preserved for nearly a thousand years in its pristine purity till the early 18th century. After the Russians came there appeared borrowings from Russian. Writing in our language originated about 300 years ago. The creation and development of writing in the period of the Russian Empire was initiated by opposition politicians exiled to Yakutia by Empress Catherine the Great, and by Yakuts themselves.

In the 20th century, the Soviet communistic period was a time of intense urbanization and industrialization. Population received secondary and professional education in Russian. In fact, the 20th century was the century of enlightenment.

Yakut language lacked the necessary terms to translate the entire amount of incoming information. Thus Yakut language became the language of rural population. Languages of minor peoples were almost forgotten.

Only recently, in the end of the 20th century, we focused on the future of our native languages. Today the Republican government includes many ministries and departments that are directly related to the preservation of languages and culture of the peoples of Yakutia. The Council on Language Policy under the President of the Republic was established. There are television and radio programmes, books, newspapers, magazines coming out in state and official languages.

In the capital of the Republic, Yakutsk, there are theaters of Russian and Yakut drama, theater for children and the Opera and Ballet Theatre, where works by local authors are staged alongside with the world's masterpieces. Almost all of our theaters are very well known and are in great demand in Russia.

In elementary school, one can get entire education either in Yakut or in Russian. It is also possible to get mixed education. To study high school subjects – physics, biology, geography – books in Yakut are available. However, they are used only in the Yakut-language ethnic schools and in nomadic schools.

Despite the fact that the Yakut language today is the language of the older generation and mastering it is not obligatory, the interest for it is growing. For example, when entering public service knowledge of the Yakut language is welcomed. This would be an advantage. Government paperwork is both in Russian, and Yakut language.

Minority languages are also used mainly by the older generation. Several institutions are making studies of the languages of the minority peoples of the North.

Our University – North-Eastern Federal University – is the largest one in a big region of the country. This is a multi-field university with an enrollment of 20,000 students. We are taking measures to preserve and develop the Yakut language and languages of the indigenous peoples of the North. We believe that education plays an important role in the preservation of minority languages. Everyone can attend courses of the official languages of the country. In our university, one can get higher historical-philological education in Yakut. For this, the university has an institution of the languages and cultures of the peoples of the North-East of the Russian Federation.

Two International Conferences “Linguistic and Cultural Diversity in Cyberspace” were held in Yakutia in 2008 and 2011. These conferences were initiated by Evgeny Kuzmin, Chairman of the Intergovernmental Council of the UNESCO Information for All Programme. The first conference was a big challenge for Russia and Yakutia. Yakut organizers did not believe that there will be more than 5 countries, but representatives of 15 countries took part in the event. The second conference, organized jointly by the Russian Committee of the UNESCO Information for All Programme, UNESCO, the Ministry

of Culture of Russia, the World Network for Linguistic Diversity MAAVA, was attended by representatives of 30 countries. The North-Eastern Federal University co-organized the 2nd conference.

After the first conference, it became clear for us that languages should be developed in cyberspace as well. The outcome of the first conference – the Lena resolution – contained the idea of creating in Yakutia an expert centre on multilingualism in cyberspace. In September 2010, as a result of cooperation between the North-Eastern Federal University and the Russian IFAP Committee, a new structural unit – the Centre to Advance Multilingualism in Cyberspace was established at the University. In 2011 the president of our University Evgenia Mikhailova gave the Centre a task to work on the organization of the second conference.

On July 12–14, 2011 in the city of Yakutsk in the frames of the Russian Presidency of the Intergovernmental Council of the UNESCO Information for All Programme the 2nd International Conference “Linguistic and Cultural Diversity in Cyberspace” was held. More than 100 representatives from over 30 countries and all continents took part in the forum. The conference programme included several sections and plenary sessions, which have actively involved leaders and experts of intergovernmental and international non-governmental organizations, government agencies, institutions, culture, education, science organizations, information and communications, businesses, civil society and the media. The conference focused on three key areas: tools for preservation and development of languages in cyberspace; institutions of development of linguistic and cultural diversity; and creation of a favorable environment for the maintenance of linguistic and cultural diversity. The conference final document – Yakut Call for Action – included a plan of actions to prepare for the World Summit on Multilingualism in 2017.

In the Yakut Call for Action” establishment of our Centre in the North-Eastern Federal University was listed among the main achievements and results of the implementation of the Lena Resolution.

After the conference was held successfully, I became the Centre’s director, and today I have three more staff members.

We at the University understand how important it is to explain to the younger generation the necessity of languages’ development in cyberspace. The University creates Internet portals with educational materials on language and culture of minority peoples for local schools.

Our Centre holds seminars on the importance of multilingualism preservation for students. We ask them to use their own language on the Internet. This year together

with the National Library of Yakutia we organized a conference on problems of the development of indigenous languages in cyberspace. We also run contests for students in using their native language in the translation, in making films and dictionaries. Thus we are mostly artificially raising interest in minority languages.

Our efforts do not always receive support. Many children are passive to the idea of preserving their language. Almost every day we have to explain the importance of developing languages in cyberspace. And it doesn't always work. We face problems that are not easy to solve.

One problem is that minority languages today still remain languages of the older generation. And the younger generation has a small chance to inherit their native language from parents. A way out could be contacting their grandparents, but it does not happen that often. To solve this problem the Centre is now developing a project of establishing terminological councils. Council of Terminology is a governmental body which revives old forgotten words, and approves their new modern meaning in law for each language. Such a Council would help to prevent borrowings of most modern words from other more developed languages, and strengthen the position of indigenous terms at the state level. This project requires deep research and work of many willing people. But we believe that this is the way to renew minority languages so that they become modern enough for the younger generation.

Another problem is that, despite the fact that languages are technically equipped, they are not strongly required for and do not give serious advantages, including economic. Today, there are websites in the native languages of Yakutia, keyboard fonts for languages of the North. CyberSakha community is functioning in cyberspace dealing with the development of not only the Yakut language, but also the five minority languages. A Yakut-language Wikipedia page is constantly updated. On-line dictionaries are created for all 5 minority languages. But when we deal with children and students who daily use Russian, Latin and Greek terms, study biology, economics, English and Chinese, but do not speak their native language, it is difficult to explain to them that it depends on them, whether their native language will exist or not. They should make an effort to preserve their language and culture. Unfortunately today they do not have enough motivation to learn their native languages.

We believe that preservation of these languages is possible. We are looking for ways to solve these problems. We want students to know their language. But we do not wish the young generation of future professionals to study and use their own language only. We want them to realize that for an effective communication with the whole world, knowing more than one language is as important as preserving their own language and culture.

ROUNDTABLE

“LIBRARIES IN THE DIGITAL WORLD”

Academic Libraries as Facilitators of Digital Scholarship: Defining and Designing Online Research Support

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1. Introduction

This paper addresses how academic libraries can face up to the challenges posed by the digital age and how they can add value to digital scholarship. More specifically, we will focus on how the academic library can make a difference to one specific group, namely PhD candidates, thus enhancing the library's legitimacy as a partner in education and scholarly activity.

In order to set the scene, some of the changes and challenges that the digital transition has brought about are discussed. Secondly, the findings of a study of PhD candidates' information needs and practices are presented (Gullbekk, Rullestad and Torras 2013). The study is based on a literature review and a series of focus group interviews of PhD candidates and supervisors in Norway and Denmark. The study was conducted as an attempt to gain a better understanding of PhD candidates' research and information practices in order to develop relevant online research support for this group. Subsequently, the open educational resource (OER) *PhD on Track* (<http://www.phdontrack.net/>) is presented. Underpinned by the findings of the study mentioned above, this OER aims at supporting PhD candidates in the scholarly communication process by focusing on the following thematic areas: reviewing and discovering scholarly information, sharing and publishing it, and evaluating and ranking it. These thematic areas address specific issues in which PhD candidates have revealed a need for support. Examples of such issues are gaining an overview of the body of literature to write a literature review, copyright, collaborative

authorship and Open Access publishing. Finally, the main ideas presented here are summed up and discussed in the broader context of redefining library research support services in the digital space.

2. The digital transition: changes and challenges

The Internet has brought about significant changes in the way researchers discover, access, read, produce and disseminate scientific information. Changes in researcher information behaviour and in the publishing world are in turn calling for a major transformation of the role and tasks of the academic library. The academic library cannot succeed in being a relevant and efficient partner in core scholarly activities unless it aims at services that add value to digital scholarship and address the needs of specific groups. E-books, e-journals, mobile platforms and social media (see, for instance, Weller 2011) have changed and are still transforming scholars' everyday life. Researchers are no longer to be found at the physical library. As a result, provision of library services and outreach must happen beyond library walls, that is, "on the go and in the [digital] social space" (Nicholas 2012). It is thus necessary for academic libraries to strengthen their digital presence.

Weller (2011) discusses how technology has transformed scholarly practice. In short, he characterises scholarship as being *digital*, *networked* and *open*. He defines the digital scholar as "someone who employs digital, networked and open approaches to demonstrate specialism in a field" (p. 4). He further notes that as a result of the democratisation of the online space, a digital scholar does not longer need to be a recognised academic affiliated to an institution. A digital scholar is also defined by his or her online identity and network. In addition to the Internet, Weller singles out the advent of social networks as having a significant impact on scholarly practice. Online social networks make it possible for researchers to build up peer networks through the use of free or inexpensive user-friendly technology, no longer being dependent on face-to-face interactions. He further singles out openness as having an impact on scholarly practice in the digital age. By openness Weller means both open technology (e.g. open source software, open standards) and "the practice of sharing content as a default" (p.7). Knowledge dissemination is no longer restricted to costly print journals. Ideas can flow and be shared instantly through a variety of free or inexpensive tools. In addition, readership is greatly increased when access to content is open.

The digital transition has led to *disintermediation* and *decoupling* of academic libraries from scholarly information communication and provision (Rowlands

et al. 2008; Rowlands et al. 2011; Nicholas et al. 2011). Academic libraries struggle with weak and little visible presence in the existing digital scholarly space and are not good enough at promoting their resources there (Rowlands and Nicholas 2006; Nicholas et al. 2011). Academic libraries are no longer the main gatekeepers and providers of quality scholarly information. In the overflow of digital information that surrounds scholars, Google Scholar and Google Books are examples of shortcuts to discover and access the scholarly information they need, thus bypassing the library. Incompleteness of library digital collections, which is only partly due to financial hardships and ill-suited acquisition business models, also weakens the perceived value of the library. As compared to other key stakeholders at the mother institution, the library in general lacks *academic capital* (Whitworth 2012), which calls into question its legitimacy as a partner in education and research. Media and information literacy has become a clear strategic development area at many academic libraries. This area, when explored in the context of research support and digital scholarship, lends academic libraries an excellent opportunity to prove their relevance and articulate their active participation in the mother institution's core activities. Media and information literacy encompass competencies, knowledge and behaviour which are essential to the discovery, access, production and dissemination of scholarly activity. Academic libraries have embraced the role of media and information literacy educators by bringing together information expertise and educational and research competencies, the latter enhanced through professional development and new recruitment.

Increasing the library's academic capital requires a definition of its role in digital scholarship. In turn, this role definition requires a deep understanding of the digital scholar's information practices, preferences and needs. Such an understanding is essential to the design of effective and relevant support services which add value to digital scholarship, thus increasing the library's academic capital.

Digital scholars are however a heterogeneous group. There are obvious differences between the information needs and behaviour of a senior professor and a new PhD candidate. For this reason, the library cannot aim at "one size fits all" research support services. Services must be sensitive to the stage at which scholars find themselves in their career. In this sense, PhD candidates can be regarded as a distinct group of novice digital scholars to whom library services should make a difference. In the next section, the information needs and practices of this group are briefly presented.

3. PhD candidates' information needs and practices

Gullbekk, Rullestad and Torras (2013) report on the findings of a study of PhD candidates' information needs and practices. The study was conducted as an attempt to gain a better understanding of PhD candidates' research and information practices with the ultimate aim of developing relevant library research support in the digital space for this group. The study is based on both a scoping literature review, consisting of 55 unique references, and a series of focus group interviews of PhD candidates and supervisors. A total number of 21 PhD candidates and 15 supervisors were interviewed in Norway and Denmark. The study reveals a number of library research support areas related to reviewing and discovering scholarly information, publishing and disseminating it, as well as evaluating and ranking it. In what follows, the main findings of the focus group interviews are presented. The main findings are confirmed by the main findings of the literature review. The reader is referred to Attinger *et al.* (2013) for more detailed findings of the literature review which was conducted in the study.

In terms of discovering scholarly information, the interviewed PhD candidates stress the need to be efficient in their research work given the scarcity of time they experience. Information discovery is time consuming and the candidates' focus on time saving leads to a preference for easily available online literature. While they seem to be confident as to how to get hold of specific references, they do express concerns in terms of knowing how to gain a good overview of the literature in their research field. Gaining such an overview is regarded as a core activity in their research work, for example when writing their thesis literature review. They express uncertainty about being able to discover all the relevant literature and to keep completely updated in their field. They acknowledge that better searching skills and better familiarity with relevant information resources would result in more effective work.

As regards publishing scholarly information, whether as part of a formal requirement or a strategy to promote their academic profile, PhD candidates report challenges when engaging in collaborative authorship. They also experience difficulties in trying to understand the complexities of copyright. Supervisors in the focus group interviews express concerns about academic integrity on account of the PhD candidate diversity they encounter. Being novice researchers with very different academic and cultural backgrounds, PhD candidates may have different perceptions, knowledge, skills and attitudes in the way they use and refer to other researchers' work in their own research production. Further, the study reveals that PhD candidates'

knowledge about open access publishing seems to be limited and to a certain extent inaccurate. Candidates point out the advantages of fast publishing in Open Access journals as compared to slow publishing processes in more traditional journals. However, candidates raise concerns about the quality of Open Access journal publications and peer reviewing in these journals.

In terms of evaluating and ranking scholarly information, the focus group interviews reveal that impact factor is regarded as a quality indicator. It does not play a major role in the candidates' selection of publishing channel or literature to read. Nevertheless, there are clear discipline differences. Impact factor is more relevant to candidates in the natural sciences and medicine than to those in the social sciences and the humanities.

When asked about the library services PhD candidates need, they single out information discovery, copyright, reference management systems and research information systems as relevant research support areas. In their opinion, library research support in the digital space should focus on showcasing the complexity of information searching and management processes. Candidates ask for discipline-specific tailoring of services as well as services supporting multidisciplinary research. Further, candidates stress the value of networking with peers and other resource people like library staff. Digital research support should focus on facilitating online communities and contact between candidates as well as between candidates and other resource people. In this respect, some studies in the literature review (Attinger *et al.* 2013) report that candidates increasingly value the role of library staff as they turn to them for help over time. Finally, candidates urge the library to promote research support services better. Many are not aware of existing services or do not manage to see their relevance because of poor communication.

The study presented here provides a knowledge base on which online research support for PhD candidates can be designed, both in terms of content and functionality. In the next section, the OER *PhD on Track* is presented as an example of online research support developed on the basis of the findings presented in this section.

4. *PhD on Track*: supporting digital scholarship from its early stages

PhD on Track (<http://www.phdontrack.net/>) is the product of the Scandinavian collaborative project *Information Management for Knowledge Creation* ([246](http://</p></div><div data-bbox=)

inma.b.uib.no/)¹⁶⁰. The project was funded by the National Library of Norway. *PhD on Track* has been developed on the basis of the study presented in Section 3. The aim of this OER is to empower PhD candidates at the early stages of their career by enhancing their media and information literacy in the context of scholarly communication. It is a contribution to the overall PhD programme training in transferable skills.

An attempt has been made to design the support offered by *PhD on Track* in line with Weller's (2011) definition of scholarship as digital, networked and open. *PhD on Track* is an open educational resource licensed under Creative Commons (CC BY-NC-SA). It has been designed on an open source publishing platform, namely WordPress. The resource has been produced in English. Although this is a Scandinavian resource, English was chosen in order to reach out to an increasingly international target group in Scandinavian Higher Education.

Content which cannot be accessed on mobile devices is not digitally visible. Tablets, smart phones and other digital devices have become part and parcel of the digital scholar's daily life. For this reason, *PhD on Track* is design-responsive.

An important aspect in the actual production of this resource has been user involvement to ensure relevance to the target group both in terms of content, design and functionality. In addition to the focus group interviews mentioned in Section 3, usability tests and a focus group interview were carried out at different stages of the production process, for instance when wireframes were produced. The design and functionality choices made aim at supporting the main objectives of *PhD on Track*: illustrating challenges in the scholarly communication process, explaining processes, demonstrating techniques and strategies, and encouraging reflection and critical perspectives on scholarly practices (Gullbekk, Rullestad and Torras 2013).

As Figure 1 shows, *PhD on Track* is divided up into three modules: reviewing and discovering scholarly information, sharing and publishing it, and evaluating and ranking it.

¹⁶⁰ PhD on Track has been developed jointly by the libraries at Bergen University College, the Norwegian School of Economics, the University of Bergen, the University of Oslo and the University of Aalborg.

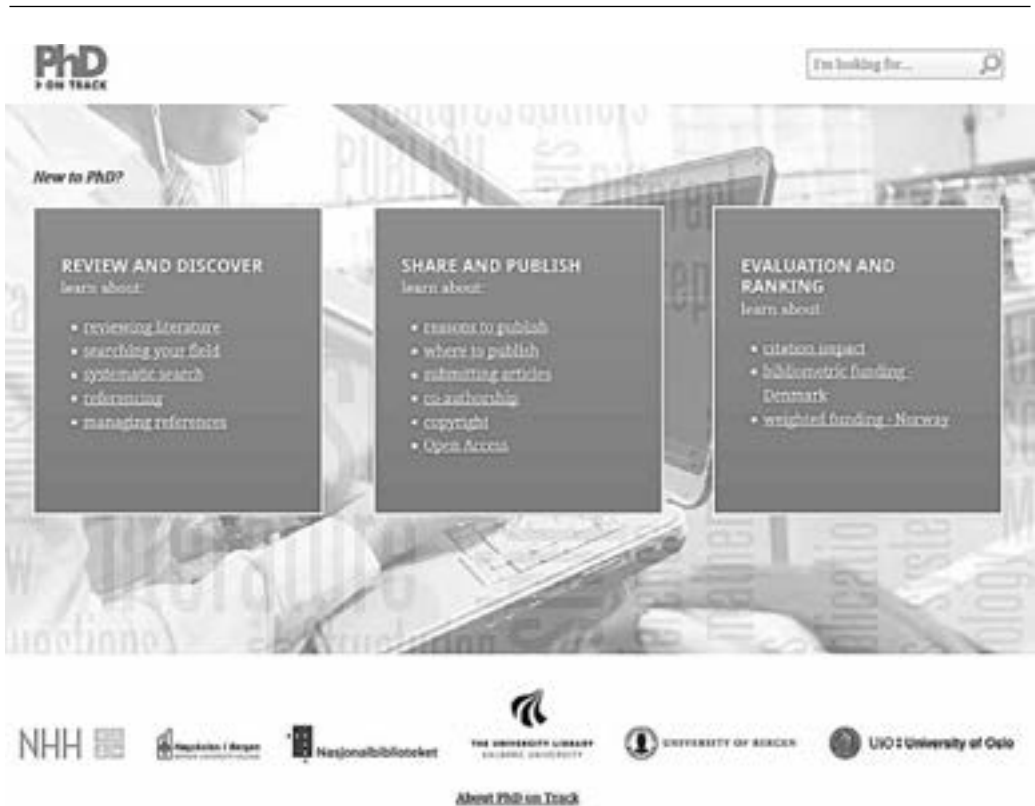


Figure 1. Homepage of the open educational resource *PhD on Track* (<http://www.phdontrack.net/>)

The module **Review and Discover** focuses on discovery techniques, methods and tools to map the literature in the field, as well as referencing and the use of referencing management systems. The module aims at improving the efficiency and quality of the candidate's workflow. The module **Share and Publish** helps a PhD candidate to make informed decisions about where and how to publish so as to increase the chances of publishing and disseminating her or his scholarly work. Article submission and peer-reviewing processes as well as copyright issues are explained. Online venues for peer networking and principles of collaborative authorship are discussed. Further, open access publishing is presented. As a publishing scholar, the candidate must be aware of how funding bodies rank publications. In the module **Evaluation and Ranking**, a PhD candidate learns about how research is evaluated for funding purposes. The module focuses on how research impact is measured by citation frequencies and how publishing activities are ranked through bibliometric and weighted funded models.

In the preliminary evaluations conducted in the production process (Gasparini and Cutler 2013), PhD candidates describe *PhD on Track* as a relevant resource for new PhD candidates in terms of the choice of thematic areas. They are also positive to the design and navigation. They especially like that all information is available on one single site as this helps them meet their information needs in a more efficient way (see the discussion of efficiency in the research process in Section 3).

5. Concluding remarks: redefining library research support in the digital space

This paper has addressed some of the challenges that PhD candidates, as novice digital scholars, and academic libraries face up in the digital transition. By adopting an evidence-based approach to developing online research support for this specific group of scholars, the library can contribute to both increasing its digital presence and academic capital in Higher Education, as well as helping PhD candidates enhance their own digital presence as scholars. The OER *PhD on Track* has been presented as an example of online research support which addresses specific information challenges experienced by PhD candidates in their scholarly activity, as revealed by the study presented here.

PhD on Track was launched in May 2013 and has been conceived as a dynamic OER. There are plans to pursue further evidence-based work in order to develop it and ensure its quality and relevance in the future. The first task ahead is to ensure good dissemination of this OER and its implementation and evaluation in actual PhD programmes. In the further development of this resource, at least two issues need to be addressed. The first one concerns further enhancing PhD candidates' digital presence by facilitating online networking which includes both peers and other stakeholders such as information specialists. The second issue concerns language diversity in the digital space. Because of financial and time constraints amongst other reasons, *PhD on Track* was developed in English only, even though it was produced in a Scandinavian context. A contribution to language diversity in the digital space should be made here by making the OER available in other languages, Norwegian or Danish being the most obvious choices.

In the digital age, the academic library's added value lies in offering support beyond the traditional areas of literature discovery and provision and venturing into other areas of scholarly activity such as publishing and

disseminating scholarly production, as well as increasing its impact and readership for instance through the use of social media. Further, the academic library's value lies in its ability to meet digital scholars in their natural habitat, be it their desktop or the mobile device of their choice. Venturing into these less traditional research support areas raises concerns as to to what extent academic libraries have the necessary digital and technological competencies to fully seize the opportunities that the digital space offers and to meet the needs of the digital scholar. Professional development, learning at the workplace and new recruitment at academic libraries need to be better understood in the context of the digital transition to ensure that academic libraries possess the academic capital they should have in the years to come.

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Joint Catalogue of Russian Libraries and Prospects of Its Use for Control of Access to Library Digital Content

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An overview of the Joint Catalogue of Russian Libraries

The library department of the Ministry of Culture of the Russian Federation initiated in 1993 (under its then department head Evgeny Kuzmin) the task of a large-scale modernization of the national library system on the basis of information technologies. With this purpose in view, the ministry formed an expert council for library informatization and started a system of research of the experience gained by the leaders of library maintenance (USA, Great Britain, France, Germany, the Netherlands, and Finland, among others).

In the second half of the 1990s the most topical problems included the following: development of machine-readable cataloguing on the basis of the national MARC formats, building corporate networks mostly for university libraries, creation of a joint MARC-format UNIMARC under the aegis of IFLA and an iMARC format by the USA, Canada, Britain and Germany (that attempt failed). The one project that turned out to be the most successful and the most efficient was the OCLC (Online Computer Library Centre). It was launched more than 40 years ago by seven universities of the state of Ohio in order to do away with duplicating the costly machine-readable cataloguing of the incoming documents. Next, when use was made of corporate cataloguing and separate catalogues were unified, they started to create the joint world catalogue WorldCat which included more than 60 thousand libraries in various countries all over the world. In addition to borrowing bibliographic entries, the catalogue is used for organizing the centralized interlibrary loan service (ILL). The catalogue stores information on more than 2 billion units of storage. The success of the project is largely attributed to the strict observance of the common cataloguing rules – AACR-2 in the USMARC format, followed by MARC 21. A similar catalogue in Europe was the PICA integrated catalogue

(the Netherlands). The attempts of Russian libraries to join the project were without success because our formats and cataloguing rules differ essentially from the British-American ones.

It has become evident that integration of the libraries in Russia on the basis of IT must begin with the creation of a national system of MARC formats, with organizing a system of corporate cataloguing and a joint catalogue. A draft was prepared and discussed at library director meetings in Omsk in 1995 and in Rostov-on-the-Don in 1996. In order to implement the project, it became necessary to resolve a great number of systemic theoretical, technical and organizational problems transforming the functioning of libraries of all levels and departments.

Thus in 1998 the first programme was adopted "Setting up of LIBNET, all-Russia information library computer network." Its primary tasks were seen as development of the RUSMARC national formats system based on the UNIMARC system of international formats (created under the aegis of the IFLA), machine-readable rules of cataloguing, development of national automated library systems suited to the national formats, compiling electronic catalogues, and connecting libraries to the Internet.

The methodological and technical problems were resolved in the country's largest libraries by the year 2000. Next it was necessary to set up the organizational-technological centre for all-Russia corporate cataloguing and for a joint catalogue of libraries in Russia. Several attempts were made to set up a Russian Centre of Corporate Cataloguing on the basis of the Russian National Public Library for Science and Technology, and another Centre on the basis of the Russian Book Chamber with participation of the Soros Foundation. Proposals were studied to organize the centre on the basis of the Russian State Library and the National Library of Russia. All these attempts failed chiefly due to the fact that they tried to set up the center under a state organization which was unable to combine performance of the complex technical and organizational task while continuing to perform its main functions. A similar situation was seen in the USA when the Library of Congress tried, in parallel with the OCLC, to create a national system of corporate cataloguing and a Unified Catalogue. It took good 15 years for all to see that such tasks can be successfully solved by a specialized independent non-commercial company with a strict observance of the library standards established by the national library.

This is why it was decided in 2001, with support from the Ministry of Culture of the RF, to create on the basis of the National Library of Russia and of the Russian State Library an autonomous non-commercial organization to be named “LIBNET National Information and Library Centre,” the cooperative participants’ motives being quite clear – to join efforts to create in national formats bibliographic entries, standardized for all the libraries of the country, and to provide them through a centralized procedure so that they can be borrowed and entered into electronic library catalogues.

There began to operate in 2003 a national system of corporate cataloguing, known as the Joint Catalogue of Russian Libraries, using Russian software OPAC-Global (Online Public Access Collection) and the electronic catalogues of the National Library of Russia and of the Russian State Library. A national school of machine-readable cataloguing in the RUSMARC format was created, in which more than 1.5 thousand cataloguers and more than 200 certified specialists have been trained. Cataloging text-books, monographs and theses have been published. Every year a national scholarly-practical conference is held for those working for the Russian National Library Catalogue, during which activity results are summarized, and plans are discussed, both operating and prospective. New tasks are set to meet the trends in the development of the world library system. The topical tasks include full authoritative control, introduction of the FRBR and FRAD principles (functional requirements regarding bibliographic and authoritative entries), research of new international rules for RDA cataloguing, and integration of library, archives and museum catalogues.

Starting in 2011, the LIBNET network was actively joined by the Yeltsin Presidential Library which was created as a purely electronic library. A new task has emerged – to make a joint catalogue of electronic resources (SKER). The project is headed by the Presidential Library with active support by national, federal, and central libraries in the regions. LIBNET has become the technological executive coordinator of the project.

The next stage in the development of the Joint Catalogue of Russian Libraries and of the SKER was the establishment since 2010 of navigation to holders through Internet. It is possible now, after search in the Joint Catalogue of Russian Libraries or in the SKER, to follow a link to receive the documents at the library, or to do it through the interlibrary loan.

Prospective technology of use of the Joint Catalogue of Russian Libraries

It has become clear over the past few years that the above-described traditional library services are not sufficient because a majority of the former readers began “to switch over” to the Web where they obtain at once the document content in electronic form.

Libraries began to lose their meaning – to be the main free sources of information. The problem was met by the libraries all over the world. It was the copyright legislation which became the main obstacle for taking out the rich funds accumulated over many decades, or even centuries. The legislation prohibits, as a matter of principle, digitizing of materials containing results of intellectual activity, or providing free access to them via Internet. It was for the first time in the human history that the library interests came to contradict the interests of the rightholders. Free distribution by libraries of works under copyright law came to be viewed as unlawful action.

The library community started to search for a solution to the conflict along two lines.

At the legislative level international and national library associations began to lobby “exceptions” in legislative acts, which would make it possible for libraries to provide their readers with materials in electronic form, for free or almost for free. It is my opinion however, that even the efforts of such an authoritative organization as the IFLA have not been successful to date, and would hardly be successful in the foreseeable future.

The second line of solution consists in developing special software and hardware, which would protect the copyright. Wide recognition among such software and hardware versions (although not uncontested) has been won by technologies of Adobe, some publishers and aggregators.

Libraries have no such reproducible technologies except for Adobe Content Server (ADS) with Adobe Digital Editions (ADE). But use of that technology is quite complicated.

We can offer as a solution to the problem a mechanism of restricted access to digitized library materials, based on the technology known as “Temporary Digitized Reproduction of a Work Copy.”

The idea is to provide for temporary free use a copy of any work that is available at the library, by way of protected viewing on the screen of a user’s PC, or on a mobile unit to be used via Internet.

The legality of this technology, from the viewpoint of the Russian legislation, which is as rigid as it is in other countries, is provided for by the following measures:

- Rightful inclusion into the civic usage of works that are kept in library stocks, and provision of all their copies for free temporary use.
- In order to transmit the image to the screen of a remote device, created in the library server memory is a temporary technological recording of a replica of the piece that is loaned to the user, that with the only task of its lawful use for temporary lending. The creation of such a temporary replica on computer media represents an admissible reproduction of the piece, not requiring permission or payment of a remuneration to the rightholders.
- Access to the temporary digital copy on the computer screen is provided to one reader only, for the predetermined time and without any payment (full analogy to use of a piece of literary work in a hard copy).
- The transfer and viewing of the copies must be provided with the technical means for ensuring the copyright, which fact limits considerably the actions with regard to the literary piece, prohibited either by the authors or by other rightholders.
- For the time during which the temporary digital copy of the ordered piece is viewed, the hard copy of the piece must be excluded from library service and must be considered as in use by other readers. We preclude in this way unsanctioned reproduction of the piece by the library, reproduction being an exclusive right of the author or of another rightholder. Upon the return into circulation of the hard copy, the temporary digital copy should be removed.
- When a library piece is claimed by a number of readers which exceeds the number of available copies, and readers start to wait in a queue which can be avoided if an additional number of electronic or hard copies is acquired.

It is the opinion of the author that this idea resembles the Adobe technology, but it can be operated independently in any library and can be built into the replicated integrated library systems (ILS).

The technique of securing the interests of publishers and authors consists in limiting the access by the number of the copies purchased by the library.

This technique can be used in corporate library systems with a unified catalogue since the entire mechanism of access control uses specially organized data in traditional library catalogues and does not require a centralized storage of the digital resources. Use of the technique of a Digital Work Copy as a supplementary service in the Joint Catalogue of Russian Libraries and in the SKER may create a realistic alternative to the illegal content in the Internet and will allow libraries to rise again to a high level in the information society.

A brief description of the technique was submitted to the IFLA experts for their consideration. They replied to us that the suggested approach was interesting, but its use at the international level will meet with the need of having approved a great number of special amendments. Hence it was recommended for use at the national level, which fact can also be viewed as a positive result.

As things now stand, the technique has been used in the replicated programme product OPAC-Global by the DIT-M company, and it was discussed in November 2013 at the conference of the LIBNET National Centre by librarians, publishers and aggregators. During the discussion most participants voiced their positive opinion of the “Electronic Loan Service” and publishers said the conditions made it possible for them to sell the electronic copies of the publications by license.

From Information Society to Knowledge Society: Searching for New Priorities and Modes of Interaction

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Development of information society is a national priority in the Republic of Belarus (RB) and is viewed as a common national task, the solution of which is seen as one of the conditions for stable socio-economic, political and cultural development of the country and for raising the quality of life of its citizens, for creation of ample opportunities for satisfaction of their requirements and for free personal development. In August 2010 the Council of Ministers of the RB adopted a decision to approve the “Strategy of Information Society Development until the Year 2015,” which was prepared on the basis of international principles established by the Charter of the United Nations and by the decisions of the World Summit on the Information Society in Geneva in 2003 and in Tunis in 2005. The Strategy defines the main lines for creating an information society in Belarus, and shows the structure of a consolidated system of indicators for developing an information society for the purpose of monitoring, analysis and evaluation of the strategy implementation progress, as well as the mechanisms of its implementation.

The organization and management mechanism for the implementation of the Strategy is ensured by the system of state bodies that are in charge of planning and carrying out the state information policy. The overall coordination of the activities of various branches of the state power in the field of the Strategy implementation is performed by the Interdepartmental Commission for Information System Development in the Republic of Belarus (the MVKI), which was created by the Decree of the President of the RB of December 7, 1999. The President set up by his Decree of November 8, 2011 the Presidential Council for Development of Information Society for the purpose of providing for a stable development of information society in the country and for steady improvement of the state information policy, as well as for the regulatory management of the telecommunications services market. The President of the Republic is the Chairman of the Council.

The decisive role in the implementation of the Strategy is accorded to the National Programme for Accelerated Development of Services in the Field of Information and Communication Technologies (ICT) for 2011–2015. The Customer-Coordinator of the National Programme is the Ministry of Communications and Information System Development, as represented by the Department of Information System Development. The main task of the National Programme consists of creating the conditions for accelerated development of services in the field of ICT, contributing to the development of information society on the basis of innovations and helping to raise the quality and efficiency of informational relations among population, in businesses and in the state sphere, to include creation of a state system of rendering electronic services. The main indicator of successful implementation of the National Programme will be seen in the higher positions of the Republic of Belarus in the ratings of European states according to the evaluation systems adopted by the International Telecommunications Union (ITU) and by the UN, which fact is to be reflected in Belarus entering the list of the thirty leading countries of the world.

Structurally, the National Programme consists of nine subprogrammes according to the priority areas of the Strategy which are as follows: National Information and Communication Infrastructure; Development of Export-Oriented IT Industry; Electronic Government; Electronic Health Service; Electronic Employment and Social Protection of Population; Electronic Teaching and Development of Human Capital; Formation of the National Content; Electronic Customs Service; Security of Information and Communication Technologies and Digital Trust.

As a result of implementation within the frameworks of the National Programme of ideas inscribed in the Strategy of Development of Information Society in the Republic of Belarus, there have been reached certain results in the task of creating a single information space in the country and offering to the population quite a wide range of electronic information resources and services in various fields of daily living activities.

At the same time, as information society develops in Belarus, the task of transition from information society to knowledge society is becoming ever more topical and ever more important. While the concept of information society is considered in the context of ideas of technological innovation, the concept of knowledge society implies social, cultural, economic, political and institutional transformations. Increasing in this context is the significance of intersectoral (state, business, public organizations) and international

(UNESCO programmes in the first place) cooperation; growing is the role of social and public sciences and of research in the field of information society problems. There also arises the need for developing and implementing new patterns for interaction by all sides interested in successful and sustainable transition from information society to knowledge society.

The process of such transition calls for profound and comprehensive theoretical exploration and preparation. Over the past few years a number of scholarly conferences and seminars have taken place in Belarus, mostly under the UNESCO aegis, which discussed the problem to a greater or lesser degree. When reading the proceedings of these scholarly events and the conclusions contained in scholars' presentations and recommendations, one can identify four levels of providing for transition from information society to knowledge society.

The lowest level is the personal level of an individual, of a citizen, from whom the life in knowledge society demands certain competences, the totality of which is described as personal information culture. Information culture is seen in its turn as an integral part of the entire personal culture, which is considered as the main factor in providing for harmony of relations in the system "man–nature–society." Under conditions of a technology-related civilization, due to fast acceleration of changes in technological development and in the conditions of human existence, technological progress begins to proceed faster than its humanitarian awareness, which phenomenon brings about an anthropological crisis, the latter causing in its turn a global ecological crisis. In order to solve the contradictions of the technology-related civilization, it is necessary to form in human beings certain spiritual values which, as it is well known, predetermine the life orientation and fill one's life with certain content, that is, shape one's system of orientation, convictions, and preferences – all of which find their expression in the corresponding type of behavior. This factor has caused a growing role of culture in society, culture becoming called upon to preserve and to reproduce the totality of the humankind's spiritual experience, to enrich it and to transfer it from generation to generation, and to use it in order to produce, to preserve and to translate spiritual values of various forms and types.

In knowledge society knowledge will only be requested by man when desire to be associated with knowledge becomes one of his spiritual needs, and society must form and encourage this gnostic need.

The second level is the level of organizations which provide for education, upbringing and communications in knowledge society.

Here we should pay attention to the fact that, since modern society cannot exist without frequent novelties, innovations policy must become one of the most important components of scientific-technological and socio-economic policies in the system of university education. Besides, characteristic of the modern sciences are interdisciplinary strategies. These are manifested in the interaction among natural, technical and humanitarian types of knowledge, they influence the training of specialists in the system of university education through emergence of new, “synthetic” fields in science, such as synergetics, biophylosophy, biopolitics, bioethics, etc., and thus bring us to making university education more humanitarian. Moreover, it is necessary to shape public ideas of the transdisciplinary science, one not only transcending the frameworks of various disciplines, but entering also the broad public medium, because, if divorced from science, many problems of social life, due to their complexity, cannot even be formulated by the contemporary political practice. Taking account of the above, we deem it important to link the standard-setting ideas of politics to scientific substantiation, and to increase the public participation in the adoption of decisions in the field of scientific-technical projects outside the frameworks of scientific community. The paradigm of transdisciplinarity, as different from the paradigm of interdisciplinarity, is based upon types of approach which integrate sometimes economic, political, ecological, socio-cultural, technical, socio-psychological and ethical aspects. Necessary in university training are new aims of civilizational development, relating to world outlook values and to morality, a new understanding of scientific rationality as transcending the frameworks of disciplinary rationality and including the political, social, humanitarian and philosophical dimensions and system of values, an ethical attitude towards science and technology.

In view of informational processes which are intensive and global in character there is a need for adapting the entire system of culture and education to the global informational space which has emerged.

The third level is the national (the state) level. On November 1–2, 2007, President of Belarus Alexander Lukashenko outlined in his “Strategy for the Future”, addressed to the First Congress of Scientists and Scholars of the Republic of Belarus, the principal tasks faced today by scientists and scholars. The way these tasks are tackled will determine largely the shaping of the new look of the country ten or more years later. The accent was put on the plans according to which the management of the processes of social and economic transformations in the country, and the participation in them, will only be entrusted to highly educated people. It was pointed out that in order to prepare the strategy of the country’s scientific and technological

development for the next ten years or longer it was necessary to admit the importance of such humanities as history, philology, philosophy, pedagogy and culture sciences. It was pointed out that “they are particularly topical for our young state in which many things are in the process of only being formed and are going through the stage of their consolidation.” Specialists of the humanities must pay more attention to unbiased study of the national history, to elaborating the philosophical premises for the Belorussian model of social and economic development, which has met with recognition in the whole world, to the study of its political component, which task demands that the humanitarian knowledge should include a critical overview of the old fundamental methodological principles, and that new such principles be developed to provide the basis for the work and decisions at various levels of social organization. To meet these needs, the socio-humanitarian science must initiate systemic work in order to solve problems of methodology for state building, social management, education and attitude development, communication, intercultural cooperation and integration. It is necessary to create a complex of modern means of humanitarian learning, which would disclose the nature of such a complex, stratified and dynamic social phenomenon as the modern Belorussian society, and it is necessary to make studies of the characteristic features of the national Belorussian culture, not only as a system of material and spiritual values, but also as activities aimed at preservation, renovation and translation of the principles and standards of thinking, of the bases of the philosophy and the “live” ideology, all of which make up the foundation of the socially responsible personality and citizen.

The forth is the interstate level. At this level attention is paid in the first place in the Republic of Belarus to improvement of the mechanisms of integration in the post-Soviet space, to the construction of the Union State of Belarus and Russia, and research is being carried out of the special features in the functioning of the national state in the architectures of global security and of the interethnic, intercultural and interconfessional dialogues. One of the most important areas of humanitarian research is seen in the field of consolidation of the Belorussian and the transnational humanitarian communities in search for ways of exit from the economic and social crisis, from the crisis of spirituality and of the traditional culture.

As things now stand, the tasks of each level are being tackled within the frameworks of departmental approaches or of state-wide programmes and projects, having variously directed purposes, but focused upon receiving a synergetic effect from the results of their performance with the aim of successful transition from information society to knowledge society. As an example, we

can take the task of the formation of personal information culture, which presupposes participation of various agents, such as educational and research institutions, public organizations, and state structures. At the present time this task is being performed mainly by the library network of the university education institutions, which process is reflected in such documents issued by these institutions as “The Mission of Library” and “The Tasks in the Field of Quality of the Quality Management System,” as well as in the decisions adopted by the Republican Council of Higher Education Establishment Rectors (December 2011).

It is necessary to build a special infrastructure which would provide for the coordination, monitoring and the functional activities for tackling the tasks involved in the transformation from information society to knowledge society in Belarus. The central component in this infrastructure is seen in the National Commission for UNESCO in which a voluntary committee may function with specific subcommittees for each area of the transition from information society to knowledge society. In order to make use of the existing international infrastructure of the national UNESCO committees, the task of such committee may be performed by the National Committee of the UNESCO Information for All Programme (IFAP) at the National Commission for UNESCO in the Republic of Belarus, since various parts of the Programme cover in their totality the entire problem area of information society (within IFAP the document entitled “National Information Society Policy: A Template.” Being a UNESCO programme, IFAP provides opportunities for securing operative communication for cooperation at the interstate, national and institutional levels. The conceptual provisions and documents of the Programme may be used as a platform for uniting various social institutions inside the country for the purpose of solving problems related to transition from information society to knowledge society.

The subcommittees at the National IFAP Committee will include representatives from educational and research institutions, public organizations, commercial and state structures. The UNESCO World Report “Towards Knowledge Societies” (2005) can be taken as an example for developing the standards and methodology basis for the committees activities.

We see as appropriate the preparation of a state strategy and a national programme for transition from information society to knowledge society, as well as a review of the membership of the Presidential Council for Development of Information Society so that it should include humanities scholars.

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Library as a Way of Life: New Standards of Library Behavior of Russian Youth

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Every country has its own standards, norms and special features of public behavior of young people, the library being one of the public places. It is common knowledge that, as transformations take place in the outside medium, the behavior of young people suffers certain transformations. These transformations, being widely spread, become eventually normal behavior that is habitual to many, and in some cases they are becoming standards which the majority starts to follow.

Let us try to analyze the process of change taking place in the “library” behavior of young people, which we have been witnessing over the past 3 to 4 years at the Russian State Library for Young Adults. That is a specialized federal library designed to cater to young people aged 14 to 30, which, in addition to serving young library users, is an information and coordination centre for public libraries in their work with young readers. It has a stock of 900 thousand of printed, electronic and multimedia publications, a complete cycle of reader self-service based on RFID technologies; its reading rooms are designed according to the needs of the specific reader groups, and it is running about 20 reader clubs and creative groups including a Cartoon Club and a Classical Greek Language Club. The library features master classes, subject lessons, art exhibitions, table game tournaments, etc.

It should be noted that Russian libraries are learning to work in the “youth space” in a way that differs from the methods employed by our colleagues in other countries. In our country there has been existing for already more than 45 years a network of regional and specialized city libraries for adolescents and young people (the example of Russia in the field of special libraries for young people has been followed by other republics of the former USSR, where such libraries are being successfully developed, particularly in the Ukraine, in Belarus, and in Kazakhstan). Over the past few years we have been actively working to turn the attention of public libraries in Russia to the need for arranging on their premises special space areas for young readers (youth zones).

Observation and communication with readers at the Russian State Library for Young Adults allow us to state that their behavior conforms fully to the motto of the “youth area” seen at an American library: “Respect yourself, respect people around you, respect the place you are in.” But this has not been this way always...

A convenient place

At the beginning they were senior high school students and aged people living not far from the library who made the majority of the readers. Now, as the library stocks are improving in quality and as they are becoming more accessible – the school students are being outnumbered by college students: the latter find in the library what they cannot find at their college library (which facts they would report from time to time in the Internet), and they like the reading conditions here. Elderly people do not always feel comfortable in the interior settings for young people, but they are being fast substituted by young people aged 30 to 35.

The readers like the fact that here they do not have to figure out where they can feel free to behave, and where they should keep silence. After you enter the library, it is divided into two sections: the section to the left is for rooms to pore over your information, the right section being at the service of those liking freer behavior, with cafes and strip cartoons, a room for young children, a TV-set bay, a room for rare books, and a room for “noisy” group studies. Just no bans anywhere, everything being understood intuitively.

Despite the fact that most books can be borrowed for home reading, the readers prefer to work at the library. This is not only with reference to textbooks and preparation for one’s lessons. A fact that calls for a serious analysis: young people read at the library classic writers – from Shakespeare, Marquez and Remarque to Tolstoy, Dostoyevsky and Chekhov – not because the books cannot be borrowed (and they can often be found in the home libraries) but because reading them here is pleasant and convenient.

A feature that is new to the older generation but is quite natural for the younger people – more than 70 percent of readers come here carrying their own gadgets: notebooks, readers, iPads and iPhones. They mix reading “paper” books with communication in social networks. They like to spend an hour at a library computer while waiting for a date, or to hide from rain at the library.

Freedom but not all-permissiveness

Three years ago when we scattered in the library ottomans that were coming into fashion, young people asked: “Can we really sit on them?” They were accustomed to all the people in the libraries sitting at desks on chairs. But just some time passed and they half-lie quietly with their books in armchairs, almost under the feet of other readers.

However, they show respect to people around them. If they want to use their mobile telephone, they go into the specially styled booth, and they speak loudly only in rooms where the doors can be shut. Young readers would never put feet in shoes upon the ottoman, let alone put their feet onto the desk, something that we saw in some European and American libraries. No one has told them not to, it is just not a tradition in Russia.

When entering a children’s room, shoes are being taken off without any request, not only by children, but by their parents as well (despite the fact that parents can use shoe covers); one can so often guess if there is someone in the room – judging by the shoes at the door.

They like to watch a TV movie in company of other people, or to play a musical instrument, but they would not think of increasing the TV sound volume, or of speaking loudly.

They do not object to leaving the overcoat in the cloak-room, they are accustomed to doing this, because it is more convenient and cleaner this way.

Do it yourself

They dream of doing things themselves, but they have gained this opportunity just recently. They have been provided the opportunity of borrowing or giving-in books as a self-service procedure, the opportunity to Xerox, to order books, or, even, to rummage the books on the shelves. They even move ottomans, armchairs or mobile desks from one room to another – to suit themselves. Librarians comment that readers keeping books for too long would rather prefer to return them to the round-the-clock book-return receptacle located outside the library façade – just to spare themselves a reproachful look from the librarian.

Public loneliness

They are not afraid of rehearsing in a glass-wall room, not afraid of looking clumsy or uncouth. They snatch at an opportunity to lie on a podium with a book or with a computer, falling asleep sometimes in the process.

Young people enjoy, while sitting at the library, informing over Twitter their friends, and the world at large, about what they are doing at the library at the moment, sending, not infrequently, their selfies to the Internet.

Public solitude is a normal condition for them.

Two is better than one

Quite often young people, two of them, would come to the library and spend some time looking for a space for two, preferably separated from other visitors. They like to prepare here their theses, to write reports by a group, working at a blackboard in a separate room, to draw and to discuss something. Freelancers use the library for their work. They would come in at the same time and would sit at the same desk.

Young private teachers found their way to the library and now they teach in half-whisper their students, who are even younger.

Communicating

Young people are more relaxed than mature adults (which is natural), but they are also more independent. Some time ago, when librarians would insistently offer their help to young readers, being convinced that they not only have the right, but also that they are duty bound to monitor the reading of young people, the readers tried to avoid discussions with them. Now, when librarians offer their assistance only to those who really need it, readers fill in questionnaires and survey sheets quite willingly and give their recommendations to their friends seeking to choose books.

To sum up – as soon as librarians stopped to pest readers with their recommendations, the latter came to like talking to the librarians, as equals.

Security

It is important for young people to feel that library is a safe space where they and their property are protected against encroachment. At times this attitude borders on light-heartedness. It is noteworthy that if something gets lost however, young people would rather blame themselves, not the library, which they continue to trust.

New is well-forgotten old

Things that are for us adults a part of our past experience, history, may become for younger people an object of heightened interest.

They enjoy putting on a record-player vinyl records and listen to 1950s – 1980s popular songs, while leafing through some book. Or they would find a cosy corner and listen to radio plays or poems recited by great poets. All these things can be found on audio-books, but listening to the hissing stylus tip scratching the record is a pleasure of itself.

They go past closed shop-windows of old books. This is because what is important to them is not seeing, but feeling with fingers the book cover, leafing through the book and breathing “the dust of olden times.”

The ones most thankful

It happens sometimes that an ordinary library has to make special efforts in order to know what readers think of it: interviews, questionnaire surveys, press analysis. Younger people who feel quite at home in the blogosphere, present their opinions, comments and suggestions in their own pages in blogs and social networks.

The Russian State Library for Young Adults is cited by Internet users several times every day. Some praise it, others invite people to visit it. Someone feels terrified because he missed his lecture and ran into his course monitor here. Someone feels pleased with himself because he is a paragon of a student, a clever cookie sitting in the library and reading. Someone else has to decide where to go tonight – to a school party or to the library..

So this positive, friendly and perchance delighted attitude to the library makes one a great optimist: contemporary Russian youth, faced with a huge range of possibilities for intellectual pastime, chooses the library ever more often. If young people do not go to the library today, they will not take their children there tomorrow. So what's the purpose of a library?

FINAL DOCUMENT

The Sakhalin Declaration on Internet and Socio-Cultural Transformations

The International Conference “Internet and Socio-Cultural Transformations in the Information Society” was convened under UNESCO’s Information for All Programme (IFAP) auspices in Yuzhno-Sakhalinsk, Russian Federation, from September 8 to September 12, 2013. This Conference is part of the activities of the Information for All Programme in the framework of the Russian Federation Chairmanship of the IFAP Intergovernmental Council and is an important contribution to the implementation of the decisions of the World Summit on the Information Society (Geneva, 2003, and Tunis, 2005). The Conference also contributes to the international review of this implementation (WSIS + 10 process), which was initiated at the beginning of 2013, in Paris.

The Conference was organized in cooperation with UNESCO by the Russian Committee of the UNESCO Information for All Programme, the Interregional Library Cooperation Centre and the Government of the Sakhalin Region with the support of the Ministry of Culture of the Russian Federation, the Federal Agency for Press and Mass Communications of the Russian Federation and the Commission of the Russian Federation for UNESCO.

The interdisciplinary Conference was attended by leading experts from 46 countries covering the fields of science, culture, education, communication and information, from international and national governmental and nongovernmental organizations, researchers on philosophical, sociological and anthropological issues emerging from the growing use of Internet and other ICTs, governmental policy makers in the development of knowledge societies, managers of ICTs and media programmes from the private sector and civil society institutions, as well as executives from the Sakhalin political administration.

To accomplish their work the participants held four plenary sessions, five sessions of three specific thematic sections:

Section 1. Internet as a Socio-Cultural Phenomenon

Section 2. Contemporary Socio-Cultural Processes

Section 3. On the Road to Knowledge Societies

as well as two roundtables – on Multilingualism in the Digital World and on Libraries in the Digital World.

The participants focused their debates on the worldwide socio-cultural changes in their educational, linguistic, legal and ethical aspects, within a nation as well as between nations, emerging from the rapidly spreading use of ICTs, Internet and communication services such as social networks and their impact and implications on individuals, communities and the society as a whole.

In conclusion of its work, the Conference adopted the following Declaration:

During the last decades humanity has experienced a true revolution in the ways and means of communication unknown before. Internet and other information and communication technologies are evolving and penetrating all realms of our life ever more intensely. These advances generate new skills, ways of thinking and behavioural attitudes among individuals, especially among the young generations, which are leading to constantly deeper, beneficial or disruptive, changes in society. However, research on these socio-cultural phenomena and their possible impact on societies in the future is lagging behind this rapid technological development.

Internet has become a global, system-wide self-developing phenomenon, rather than a narrow functional technology, breeding a broad range of socio-cultural effects.

Discourses related to concepts and policies of information and knowledge societies should take into account: ICTs are but one of the components of converging nano-, bio-, cognitive and other emerging technologies, which determine contemporary technological development and have an impact on global socio-cultural processes.

Internet and other contemporary information and communication platforms determine more and more the process and forms in which culture is mediatized, and are increasingly becoming the most important media for group-based and individual interactions of an ever-growing number of people, especially among the young generations.

This has a deep effect, not only on the ways to create, use, consume and share information/content but also on citizens, especially on youth education and social life as well, offering new opportunities but widening the cultural gap

and increasing an apparent loss of interconnection with traditional lines of conduct, moral and cultural values and ethical principles between generations.

Access to and use of ICTs, Internet and communication services among generations and countries are also challenging the value orientations and behaviour of individuals, the social fabric of societies and even national integrity in much of the world, particularly in developing countries, with far reaching, not yet fully understood impacts and consequences, which will increasingly require deeper interdisciplinary and inter-institutional public debates, research and studies.

The absence of full and conceptual understanding of the specificities of the virtual world, leading to a direct transfer of organizational models of interaction and governance established in the pre-digital era into a virtual environment, creates a constantly widening range of problems. Ethical and legal bases for existence in cyberspace are not sufficiently analyzed and studied, thus, creating room for abuses of technological capacities, which threaten the existing systems of social relations, in particular basic human rights and universal values.

The described above situation steadily increases the importance of promoting competencies (skills, knowledge and attitudes), encompassed by the term “media and information literacy”, which guarantee safe and responsible use of networks, based on critical thinking, for free access to, production and exchange of information and knowledge across all linguistic, cultural and social groups. The necessity of developing these competencies becomes even more significant in today’s environment of information networks polluted with unreliable, unsafe and sometimes harmful content.

The traditionally established institutions and existing copyright laws guaranteed by the Universal Declaration of Human Rights require major reappraisal with consideration for the specifics of using, consuming, sharing and creating works and services in the digital environment in order to provide free access to information essential for survival, quality education, social participation and the development of research.

The conference agrees on the following recommendations:

1. All stakeholders should seek to facilitate the emergence of knowledge societies respecting human values and in line with the terms of the UNESCO Constitution based on four principles: promoting freedom

of expression in traditional and new forms of media, including the Internet; access to quality education for all; respect of cultural and linguistic diversity; and universal access to information and knowledge, especially in the public domain;

2. UNESCO, especially through the Information for All Programme (IFAP), should pursue in cooperation with relevant UN agencies, IGOs and NGOs the efforts for the elaboration and promotion of ethical, legal and societal principles and norms of conduct;
3. Member States and international organizations should follow up to this end on the implementation and monitoring of the recommendations of all international and regional meetings of the post-WSIS period related to the ethical and socio-cultural changes and transformations in the emerging Global Information Society;
4. All stakeholders should encourage governments to enact and implement more effective national information society policies in support to inclusive social development and promotion of intercultural dialogue, especially by reinforcing the rights to use information and new means of communication (hardware and software) and by empowering citizens through the development of knowledge, skills and attitudes that would allow them to fully exercise those rights;
5. Member States should consider, and concerned international organizations should advocate for, updating national and international copyright and related rights legislation to operate better within the digital environment, adequately taking into account new ways to create, use, re-use and share contents and works. Amendments to copyright laws should facilitate non-commercial use of works; guarantee reasonable copyright terms; ensure the right to fully participate in culture; take into account new forms of expression; provide exceptions for libraries, museums, educational institutions and other public non-profit organizations to facilitate access to and preservation of works in the public interest. Member States should also adopt policies mandating the availability of works created with the support of public funding in the public domain;
6. UNESCO and its Member States should continue to develop with the relevant IGOs and NGOs policies to enhance the presence (localization and content) of all languages in cyberspace, based on digital literacy,

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- access to resources and promotion of participation, developing programmes of inclusion of knowledge from languages unrepresented on the Internet, creating a comprehensive and sustainable set of indicators, and promoting a comprehensive view of the digital divide which encompasses the content and linguistic divide;
7. All stakeholders in cooperation with relevant IGOs, NGOs and UN agencies should undertake the creation of a global framework agreement of Internet principles (including mechanisms for ensuring transparency and democratic accountability in the governance of the Internet in the multi-stakeholder approach) as the basis for rebuilding the trust on which the Internet necessarily rests;
 8. All concerned stakeholders should engage with relevant information service providers in the development of decentralized, distributed socio-cultural network infrastructure and communication services which will respect the authenticity and reliability of the content, guarantee citizens' privacy, better quality/cost offers and provide alternative solutions to current centralized and controlled services;
 9. Member States should strengthen existing discussion platforms involving all concerned stakeholders in a continuous interdisciplinary debate on socio-cultural transformations in knowledge societies. In particular, UNESCO/IFAP should examine the possibility of creating an open forum to facilitate this global public discussion;
 10. UNESCO and its Member States, in cooperation with relevant IGOs, NGOs, sister UN agencies and other stakeholders, should endorse the establishment of a permanent observatory on socio-cultural transformations due to the implementation of new technologies in order to monitor them and provide a picture of future changes and developments;
 11. All stakeholders, especially in academia, and including students, should continue, starting from the full awareness of the state of the art, to engage in the development of interdisciplinary research and comprehensive study on the various socio-cultural challenges especially in education that are currently arising from technological progress and the development of a global information society, its new institutions and social processes at local, national and international levels;

12. All stakeholders, especially governments, scholars and experts in academia, should strengthen the initiation of educational and awareness-raising programmes, especially among the youth, on the socio-cultural transformations (ethical, legal, cultural and societal aspects of digital communication and media) caused by the use of ICTs and the Internet and on the definition of new terms linked to the emergence of information society and knowledge societies, in order to raise citizens' capacities and competences in areas such as media and information literacy for using ICTs and the Internet effectively, safely and responsibly.

Internet and Socio-Cultural Transformations in Information Society
Proceedings of the international conference
(Yuzhno-Sakhalinsk, Russian Federation, 8–12 September 2013)

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Mikhail SESLAVINSKY, Head of the Federal Agency for Press and Mass Communications of the Russian Federation



Left to right: Grigory ORDZHONIKIDZE, Secretary-General of the Commission of the Russian Federation for UNESCO, Sinikka SIPILÄ, President of The International Federation of Library Associations and Institutions, and Indrajit BANERJEE, Director of the UNESCO Knowledge Societies Division



Conference Opening Gala



Alfredo RONCHI, Secretary of the European Commission – MEDICI Framework of Cooperation, Professor of the Polytechnic University of Milan (Italy)



First plenary meeting



Irina TRUTNEVA, Deputy Head of Government of the Sakhalin Region



Aharon AVIRAM, Chairman of the Israeli Committee for the UNESCO Information for All Programme, Professor of the Ben-Gurion University (Israel)



*Aleksei VOLIN, Deputy Minister of Communications and Mass Media
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Irina REVA, Councillor of the Libraries & Archives Division, Ministry of Culture of the Russian Federation



Jarosław LIPSZYC, President of the Modern Poland Foundation (Poland)



Mohammed SHEYA, Deputy Permanent Delegate of the United Republic of Tanzania to UNESCO, Member of the Bureau, International Council for the UNESCO Information for All Programme (left), and Dietrich SCHÜLLER, Vice-President of the Intergovernmental Council for the UNESCO Information for All Programme (Austria)



Verena METZE-MANGOLD, Vice President of the German National Commission for UNESCO (Germany)



Evgeny Kuzmin at the press-conference



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Left to right: Tatiana MANILOVA, Head of Artistic Organizations and Library Work Division of the Department of Culture, Ministry of Defence of the Russian Federation, Sinikka SIPILÄ and Rosa BERDIGALIEVA, President of the Kazakhstan Library Association; Director of the Library of the Kurmangazy Kazakh National Conservatory



Victor MONTVILOFF, International Consultant, Former UNESCO Staff Member (France)



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Left to right: Sergey BOBRY SHEV, Commercial Director of the ParaType Ltd (Russian Federation), and Nikolay KHAUSTOV, Second Secretary of the Commission of the Russian Federation for UNESCO, Ministry of Foreign Affairs of the Russian Federation



Valentina MALYSHEVA, Director of the Sakhalin Regional Research Library (Russian Federation)



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Left to right: Svetlana DOLNIKOVA, Head of ICT Department of the Academy of Public Administration under the President of the Kyrgyz Republic, Solmaz AMANOVA, Director of the Multimedia Section of the Baku Municipal Department of Education (Azerbaijan), Constantin RUSNAC, Secretary General of the National Commission of the Republic of Moldova for UNESCO, Vladimir NOSOV, Representative of the Ministry of Foreign Affairs of the Russian Federation in Yuzhno-Sakhalinsk, and Meldra USENKO, Director of the Museum of the Popular Front of Latvia



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*Vladimir KHARITONOV, Executive Director of the Online Publishers Association
(Russian Federation)*



Irina MIKHNOVA, Director of the Russian State Youth Library



Lyubov KAZACHENKOVA, Editor-in-Chief of the Sovremennaya Biblioteka (Modern Library) Magazine (left), and Elena BEILINA, Editor-in-Chief of the Universitetskaya Kniga (University Book) Magazine



*Conference participants
at the Anton Chekhov Sakhalin International Theatre Centre*



At the excursion



Boat trip along she shore of the Sea of Okhotsk



Hibla Gerzmava (soprano)



Mohammed SHEYA, Paul MPUTU and Adolf KNOLL, Secretary for Science, Research and International Cooperation of the National Library of Czech Republic, among the dancers of the folk dance ensemble