MAPPING
Managing Alternatives for Privacy, Property and Internet Governance

"This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 612345".

FP7-SCIENCE-IN-SOCIETY-2013-1

Grant Agreement Number 612345

Supporting Action

MAPPING

WP2 Dialogue and Participation
WP leader: LSC

D2.3 Road Map – First Draft

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Version 0.5	Reviewed by:	Bettina Zijlstra	on Sept 21 2015
Version 0.6	Reviewed by:	Pedro J. Gómez, Ana V. Pérez	on Oct 29 2015
Version 0.7	Reviewed by:	Alfonso Alfonsi	on Nov 30 2015
Version 0.8	Revised by:	Aukje Snijders	on Dec 18 2015
Version 0.9	Reviewed by:	Joe Cannataci	on Feb 01 2016

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"This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 612345".

A. INTRODUCTION

MAPPING (Managing Alternatives for Privacy, Property and INternet Governance) is a Mobilisation and Mutual Learning Action Plan on Societal Challenges project that is funded by the European Union's Seventh Framework Programme for Research and Technological Developments. It is carried out by a consortium of 12 European organisations and 1 International organisation, coordinated by the University of Groningen. The goals of MAPPING are:

- to explore paths for a responsible adaptive and integrated approach to Internet-enabled innovation; and
- to elaborate a responsive action plan along with concise policy guidelines, to improve the societal relevance of the digital transition.

At the core of MAPPING's approach is the planned mobilisation of and dialogue with a wide spectrum of ICT-related stakeholders and social actors. According to the Description of Work (DoW), a fundamental output of this dialogue platform as well as one of its basic organising criteria is the **formulation of a Road Map,** with an action plan and a set of policy guidelines, to provide a solid basis for law and policy making in the years to come and for research to be conducted on the next generations of Internet services.

This Road Map will be communicated to decision makers both in the public and the private sector and will form a solid contribution to new and emerging EU policy on the digital transition that will steer Europe to a safe, productive and intellectually stimulating digital future. As stated above, our Road Map is being formulated in the framework of a project funded by the EU, hence its point of view and primary responsibility takes into account European perceptions and concerns. The MAPPING team, however is well aware that the governance of the internet is a global, polycentric issue and that no digital future can be shaped outside a global environment. For this reason, as better articulated in Parts C and D of this document, the formulation process we envisage is already reaching out to involve state and non state actors from outside Europe, so that also non European interests and perspectives can be brought in.

The Road Map exercise, which has been initiated under WP2 "Dialogue and Participation", will continue throughout the project under WP7 "Heritage" and will be one of the major instruments to ensure that the MAPPING process will outlast the natural lifespan of the

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project. This of course will involve also finding among the project's interlocutors those who are willing to take responsibility in the dissemination of the road map and dealing with the issues of the sustainability of the exercise.

The purpose of this document is to provide some preliminary indications on how to launch the process for the formulation of the final MAPPING Road Map. Besides this introduction, it is composed of four more parts in which we present respectively: some elements about the concept and methodology of Roadmapping; the thematic background of MAPPING's Road Map; its coordinates and the steps for its formulation.

The present text has been drafted by Alfonso Alfonsi and Maresa Berliri with the support of other researchers of LSC. It includes also the feedback from various consortium members and other stakeholders who were consulted during MAPPING's First General Assembly that was held in Hanover on 22-23 September 2015.

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B. SOME ELEMENTS ON ROADMAPPING METHODOLOGY

What is a Road Map

According to the definition of the recognised initiator of 'roadmapping', the Motorola company, Road Maps can be defined as:

> *"an extended look at the future of a chosen field of inquiry composed from the collective knowledge and imagination of the brightest drivers of change in that field"* (Galvin, 1970).

More recent definitions from the major researchers on the subject include:

> *"simple, adaptable strategic lenses through which the evolution of complex systems can be viewed, supporting dialogue, alignment and consensus"* (Phaal and Robert, 2009) or *"a sequence of measures designed to bring about a desirable future"* (McDowell and Eames, 2006).

Originated in the 1970s within technology intensive companies to plan for system innovation, this approach has been extended to chart sector level innovation in various technological domains. Over time, the concept has gained more and more currency, being adopted world-wide by a plurality of actors (including public bodies) in very diverse areas of concern, most notably after the formulation and promotion of the "Road Map for peace in the Middle East". After that we have witnessed a proliferation of Road Maps (a survey counted more than 2,000 at a given time[1]), not always in line with the original approach and methodology.

How to formulate a Road Map

Road Maps have proven to be effective and flexible instruments to provide, by means of a **robust dialogue** with relevant stakeholders, a **conceptual framework** of major socio-technical **system changes** in order to articulate **forward looking strategies**.

Furthermore, the generation of a Road Map is not a stand-alone result. In fact a Road Map

[1] R. Phaal, *Public Domain Roadmaps*, 2011, ifM and Cambridge University.

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is meant to be not only widely disseminated, but also updated and reformulated, functioning as a reference point for an ongoing action-oriented dialogue.

Studies on Road Maps have in fact pointed out the importance to focus on the **process** as much as on the **outcome** of this exercise. A robust process in fact can yield better results and also help in forming the "constituency" that will assure its continuity over time in a sustainable way.

In this regard the most frequently cited benefits of the Road Map approach is the opportunity that it offers to communicate across functional and organisational boundaries with a process that brings together diverse key stakeholders and view-points building consensus as it progresses.

According to the authors quoted above, any Road Map should answer to the following questions: "**Where** do we want to go?"; "**Where** are we now?"; "**How** do we go there?"; "**Why** do we need to act?"; "**What** should we do?"; "**How** should we do it?"; "By **when**?" (Phaal 2005); and we may also add "**With whom**?"

According to Ho, Featherston and O' Sullivan (2014), who conducted an empirical study on successful Road Maps, the process can be structured in several steps.

STEP 0: **Preliminary activities** – Includes preparatory activities to facilitate the kick-start of the roadmapping process, such as gathering existing information, define the scope and boundaries of the Road Map, identify and engage key participants, devise its architecture and its process.

STEP 1: **Identifying Vision and Goals** – A first formulation of the goals of the Road Map and its overarching vision, should be agreed among participants at the beginning of the process to provide a common sense of direction.

STEP 2: **Appraisal of current status** – A subsequent step involves an evaluation of the relevant information to appraise the current landscape of the problem area(s) addressed, as well as of the external realities that could affect the process. Current trends and significant milestones should be identified for each of the topics addressed. At this stage also key terminology and concepts should be clarified to reach a common understanding and reduce ambiguity.

STEP 3: **Identifying opportunities and challenges** – In this step significant inputs are collected from the participants. The goals and vision can be revised in order to further detail the needs and objectives. Taking into account also the work done in Step 2, opportunities as well as challenges and obstacles are identified.

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STEP 4: **Generation of strategic options** – Practical solutions to the challenges identified as well as approaches to make the most of the opportunities are considered and agreed upon. It is advisable to narrow the field of the deliberations in order to generate detailed and realistic work plans.

STEP 5A: **Post analysis and publication** – Once the deliberations have reached their conclusion, a post-analysis stage is necessary in order to package the results in a format adapt to dissemination, making use of graphical representation, time based flow-charts, etc.

STEP 5B: **Implementation** – The results of the roadmapping exercise are meant to be implemented at different levels by a plurality of stakeholders. The process for the Road Map formulation should create also the basis for its adoption by relevant actors, by engaging them throughout all the steps of the exercise.

STEP 6: **Review and follow up** – Since roadmapping is an ongoing learning process, its review and updating is an integral part of its process. In some cases measures to ensure the maintaining and updating of the Road Map can be taken, or a Road Map "champion" institution can be identified.

On the basis of what we have seen so far, the instrument of a Road Map seems to fit well in MAPPING's design to serve as a platform for informed dialogue to produce intelligence that is superior to the mechanical sum of the knowledge accumulated by the consortium members and the relevant stakeholders, as the result of an open and public discourse on the issues central to the digital transition.

In the following parts of this document we present how the roadmapping exercise could be carried out. In part C we present what could be considered the thematic background of the MAPPING Road Map, while in part D and especially in part E we propose how the roadmapping methodology presented above can contribute to design the process for its formulation.

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C. THEMATIC BACKGROUND FOR MAPPING'S ROAD MAP

In this part we provide some elements of context useful to set the scope and boundaries of MAPPING's Road Map, which, as stated in the DoW, should contain a description of the main **open questions about the relationship between the Internet and society** (relative to the three main foci of the project: Privacy, Internet Governance and Intellectual Property Rights - IPRs).

For the purpose of this document, we have chosen to utilise, albeit in a synthetic form, two bodies of knowledge gathered in the course of MAPPING's first-year activities and that can help to provide the background for future elaboration. The first is the **ongoing public debate and related literature** on the notion of **digital transition**; the second is represented by the first results of MAPPING's many streams of informed dialogue with various communities of stakeholders that are indicative of **real-life concerns and viewpoints** of **people** with **hands-on experience** in the many connections which tie digital technologies with society[2].

The debate on digital transition

In the literature on the impact of digital technologies on society we found many instances of the notion that the present is a period of profound transformations that affect many fundamental structures of contemporary societies.

This widespread feeling was captured in various EU documents in recent years, including the Work Program Science in Society 2013, where the notion of **digital transition** is used to indicate that

> *"the continuous and transformative changes in ICT, and especially the next generation Internet services, have significant and multifaceted economic, social, and ethical consequences for both individuals and society as such. The perceptions and practices of social actors in the face of these, sometimes pervasive, changes influence the uptake by society of ICTs and shape the context in which the Digital Agenda for Europe, and its successor, is to be implemented"*.

[2] For more information on MAPPING's principles and approach see also the web site http://www.mappingtheinternet.eu and MAPPING deliverable D2.1 "Dialogue and Participation Plan", June 2014.

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Floridi and Dewandre (2012), further argument that

> *"The deployment of ICTs and their uptake by society affect radically the human condition, insofar as it modifies our relationships to ourselves, to others and to the world. This digital transition shakes established reference frameworks, which impact the public space, politics itself, and societal expectations toward policy making"*.

Albeit other uses of the term digital transition point to specific, often technical, system changes, such as the passage from analogue to digital broadcasting or mobile technologies, in MAPPING we are using the term, in the wake of the EU documents, to mean the overall process of change of which the "specific" technical transitions are but a component. In fact in our work we have further progressed in conceptualising the notion of "digital transition". By using the term "**transition**", we wish to signify that innovation in digital technologies are **marking the passage from a set of social, cultural, technological and economic conditions to a new configuration of such conditions**. In our understanding the term "transition" points both to changes that, like in a **drift**, are brought about by an accumulation of factors, independently of the agency and intention of the actors involved, and to the kind of **guidance** that the concerned actors try to provide to these on-going processes[3].

It must be noted that the perception of the momentous changes, which human societies are facing world-wide in relation with the ubiquitousness of digital technologies and their pervasiveness on ever more aspects of daily life, is generalised also among those, who do not make use of the term "digital transition". In fact many formulations are in place, such as digital revolution, networked society, knowledge or information society, digital economy (as fourth industrial revolution), digital risk society, surveillance society, cognitive revolution and so on.

In spite of the different terminologies employed, it is possible to find a certain convergence, even among rather diverse theoretical approaches, on the fact that the massive deployment of ITCs and notably digital technologies are bringing about a systemic, paradigmatic, change in the social, cultural, economic fabric of societies. Changes that require not just a few fixes, but a radical rethinking and reshaping of conceptual, legal and policy instruments to cope with them.

The MAPPING Road Map should provide some direction on how to navigate among the different options by exploring the two "movements" of the digital transition that we have previously called "drift" and "guidance". In terms of the "**drift**", it will allow the collection, documentation and analysis of new constituent factors of the transition and try to understand towards which direction they are pointing. For the "**guidance**" element, it will offer

[3] See MAPPING, (2014), D2.1 "*Dialogue and Participation Plan*".

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the opportunity to observe and evaluate the policy options with which different actors are trying to provide guidance towards a new configuration.

Some hints from real-life experience of stakeholders

As we pointed out, in its first year of activity MAPPING has started to chart this complex and contradictory reality through its different **clusters of dialogue**, with a focus on the substantive areas of concern of the project: Internet Governance, Privacy and Intellectual Property Rights. These clusters of dialogue are currently progressing in parallel, with the active participation of all partners and the engagement of significant groups of stakeholders.

The cluster of dialogue on "**Internet Governance**", using mainly the instrument of "working parties" revolves around the technical and legal realities underlying the notions and options of "parallel universes" on the Internet, as well as on the feasibility of new internationally agreed legal instruments, which might be developed to improve Internet Governance, in order to provide a better protection of citizens' rights in the cyberspace.

The "**Privacy**" itinerary is marked by the exploration of the many and complex interconnections between privacy, economy and security, focusing on issues such as technical and legal aspects of cryptography, anti-virus standards, IT security legislation and news business models.

In the cluster of dialogue on **IPR**, a debate is being conducted on the impact of the current IPR protection regime and its possible evolution, integration and impact on innovation and business development, as well as on the future of Open innovation in this framework.

Besides these specific streams of dialogue that are currently in progress, in the first year of MAPPING a **focus groups consultation** has been carried out, which represented a unique opportunity for collecting the views of a wide spectrum of relevant stakeholders throughout Europe on the all of the three areas of concern of the project.

Thanks to the consultation of about 150 experts, practitioners and decision-makers, from 11 countries, several **areas of concern** and **contentious points** in the three domains of Internet Governance, Privacy and Intellectual Property Rights emerged. Far from being an exhaustive taxonomy, such foci of dialogue provide an initial cross-cutting view of the feelings and concerns of a meaningful, if not statistically representative, panel of relevant stakeholders.

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Before providing a synoptic view of the "**foci of dialogue**" (see next box below), taken from the document reporting in full the results of the Focus Groups consultation[4], we would like to point out to a few of the overall findings of the exercise, which seem to corroborate our previous remarks about the digital transition.

First of all, most of the participants to the Focus Groups have shown, in one way or another, an **awareness** of **living** a **transition** towards a new socio-technical system on the making, whose drives and risks need to be fully appraised. Such process was seen by the majority of the discussants as a complex and multi-layered one, driven by fast paced technological developments, which challenge current legal and policy instruments, business models and economic structures as well as social practices and behaviours.

A second point that emerged from the discussions was that most of the participants considered almost **all current practices** on the Internet by users, industry or the public administration, including new business models and surveillance activities, **as potentially risky**, and presenting a certain degree of **opaqueness**, such as to pose significant problems in terms of adequateness of legal frameworks as well as of social norms.

A third general consideration concerns the fact that the need of **providing guidance** to this process and **finding remedies** for the many problems encountered in the present use of the Internet occurred again and again in the discussion. In this regard the current governance system was seen as the product of choices, negotiations, conflicts, and power relations between numerous and diverse actors, with often different or even opposed interests. It is also to be noted that, while most of the discussants expressed their views on several issues and problems needing overall guidance, not all were familiar with the concept of Internet governance as such and manifested much more **divergent opinions** than in other areas. In fact, the various Focus Groups expressed contrasting views on what one should mean by Internet governance, its constituent elements, its fields of application and its very benefits and effectiveness. Different opinions were expressed also on governance actors, their interests, their respective roles and their democratic legitimacy.

These tensions seem to suggest a sort of **disconnect between the present situation and** what can be considered **the future, desired, outcomes of the ongoing transition**. These brief considerations reinforce the need for MAPPING's Road Map (including action plan and guidelines). In fact, the ultimate driver of this multi-layered process of dialogue, with the engagement of an increasing number of actors, should be to unravel the **nexus** between **Internet and society** in order to **put in sync** the accumulation of **factors of change** with their possible **guidance**.

[4] MAPPING, Deliverable D2.2 "Guidelines on management of dialogue and participation", September 2015,

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FOCI OF DIALOGUE CHART

Area A - **Privacy and integrity**	
Focus A1 - Risky User Behaviours	**Focus A7** - Personal identity management
Focus A2 - Security problems of enterprises in protecting digital data assets	**Focus A8** - Informational self-determination/data sovereignty
Focus A3 - Security risks concerning personal data legitimately managed by public or private organizations	**Focus A9** - Gap in the regulatory and enforcement system
Focus A4 - Education and awareness raising	**Focus A10** - Responsibility of providers and system developers
Focus A5 - Legitimacy/Opaqueness of Current Business Models Based on Personal Data	**Focus A11** - Surveillance, security and democracy
Focus A6 - Emerging "privacy friendly" business models	**Focus A12** - Safeguards, Encryption and Anonymity
Area B - **Internet Governance**	
Focus B1 - Divergences on how to understand Internet governance	**Focus B4** - Pros and Cons of a multilateral legal instrument or declaration of principles for the internet
Focus B2 - Different views on the current performance of Internet governance and the areas to be governed	**Focus B5** - Divergent views on "parallel internets" and their feasibility/sustainability
Focus B3 - Divergence concerning the governance models and the legitimate actors	
Area C - **Intellectual Property Rights**	
Focus C1 - Common practices putting at risks authors and creative industries	**Focus C4** - Harmonising IPRs in Europe and world-wide
Focus C2 - Rethinking IPRs vis-à-vis technology, social behaviour and legal rules	**Focus C5** - Evolution of the current IPR regimes and their effects on innovation
Focus C3 - New business models for creative industries	

Source: MAPPING, Del. 2.2 "Guidelines on management of dialogue and participation", 2015.

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D. THE COORDINATES OF THE ROAD MAP

As we mentioned above, the MAPPING project as a whole is geared at providing inputs for the formulation of the Road Map addressing the main **open questions about the relationship between the Internet and society** and including an **action plan** and **policy guidelines**, as a truly participative process foreseeing the engagement of an ever increasing number of actors. In this sense, the process we have initiated is not one with a pre-ordained result, but at present it is open to all options that can appear logically and empirically sustained.

From the point of view of the Road Map methodology (presented above in part B), we can say that the first year of MAPPING corresponded to what is indicated as the **preliminary step** (Step 0), in that it was geared at collecting existing knowledge and engage relevant stakeholders.

As we mentioned in part C, the activities conducted so far have included gathering **relevant information** from a plurality of sources (through assemblies, focus groups, workshops, working parties and meetings by the thematic WPs), all the while initiating the mobilisation and engagement of a **plurality** of **stakeholders**, starting by integrating the diverse expertise possessed by the various partners and further reaching out to selecting and engaging relevant actors (i.e. international organizations, universities and research organisations, enterprises, public bodies, NGOs, associations of professionals, LEAs, media, etc.).

This process has also provided the opportunity to start to reflect on the **scope** and **aims** of the Road Map process and its **architecture**.

In this sense it is understood that in this document all content should not be considered as conclusive, rather as a **first indicative presentation** of the **range** of **issues** that the Road Map exercise is going to tackle and of the kind of **aims** around which we plan to **coalesce a community of thought and practice**, in order to provide that **plan of action** and set of **policy guidelines** to European interlocutors, which is the final outcome of the process.

On the basis of the considerations discussed in the previous parts, the Road Map formulation will have to answer to the fundamental questions: "Where are we?"; "Where we want to go?"; "How to go there?"; "By when?"; "With whom?".

A proper answer to these questions will be the result of the deliberations and negotiations

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of the MAPPING process as a whole. As we noted in the previous part, the end results of the exercise as well as the process to achieve them are of crucial importance in the light of the **disconnect** that at present seems to exist between the current situation of the Internet Governance framework and the foreseeable or desired future developments. As a matter of fact, as our preliminary work has documented, most of the issues and challenges that are going to be addressed in the roadmapping process are characterised by an high degree of uncertainty, not only for what concerns desirable solutions, but also as far as the very formulation of the problems is involved. In this perspective in the different steps of the process, from the assessment of the current situation (Step 2) to the formulation of strategic options, (Step 4) a useful instrument could be the drawing of scenarios or the collection and comparison of alternative scenarios drawn by different analysts and stakeholders.

As a starting point, the Road Map can be drawn as a number of distinctive **pathways** (legal, technological, etc.), involving specific **key players**, moving along a **time-line** and oriented towards possible **goals.** The Road Map will also have to take into account those **external realities** that can influence its direction (changes of governments, new pieces of legislation soon to be enforced, etc.). We reiterate that the process of formulation, open to the contribution of a large number of diverse actors within and outside Europe, serves also the purpose of forming a "constituency" of Road Map advocates, who will be willing to take responsibility of bringing the process forward after the conclusion of the project.

Time Line

The Time Line of the Road Map will need to consider a span of time of at least 15 years. In fact its formulation will go on during all the duration of the project and it will be finalised and presented at its end in 2018. The purpose of the Road Map is that of extending MAPPING effects beyond its life-span (hence its collocation in the "Heritage" Work Package, WP7 of the MAPPING Project). Such lapse of time is the minimum in view of some of the possible outcomes of the exercise (like a new international treaty or legal instrument). It is also such as to call for giving full consideration to the many changes that are likely to occur both in the technological and the governance environment of the Internet that the Map will have to deal with.

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Key Players and Stakeholders

The Road Map addresses at a first level the EU institutions and EU governments, as well as private and societal actors, many of which have already been mobilised and variously involved in MAPPING's activities[5]. However, MAPPING is also already reaching out to involve concerned actors outside the European Union precinct, in order to cope with the inherently global scope of the issues addressed. Thus, the participation in the roadmapping process is open to all the stakeholders concerned, coming from Europe as well as from other continents. At the same time it stands to reason that for each individual "pathway" (see below) some "key players" could be singled out. An important International player, with significant achievements in Internet Governance, which has already been engaged is the Council of Europe, while in the United Nations family, UNESCO is also involved in the process. It is expected that other bodies of the United Nations, such as the UN Human Rights Council, the UN General Assembly, the UN Special Rapporteur on Freedom of Expression, the UN Special Rapporteur on Privacy or the International Telecommunication Union will be drawn in the MAPPING process in the appropriate manner. Very importantly, Civil Society Organisations[6] plus technological and economical players[7] are being involved. Significant connections have been established with the USA at both governmental and private level. But the Road Map exercise will also extend to other key players in diverse geopolitical areas, such as China, Russia, India, Brazil, Arab countries and others, which are going to play an ever more significant role in years to come.

External Realities

As mentioned above, the Road Map will be formulated in a context, whose changing features can affect its content and directionality. Furthermore the pace of some changes

[5] For a complete picture of MAPPING relevant stakeholders, that will be involved in the roadmapping process, see the Deliverable D9.1 "Map of Actors", in which the relevant actors have been grouped in the following broad categories: general public, civil society organisations, public sector, private sector, academia, mixed bodies (international organisations and fora, technical communities, etc.), media.

[6] Contacts have been established or are being established with: EPIC; Electronic Frontier Foundation; ACCESS; Africa Platform for Social Protection, Kenya; Asociación por los Derechos Civiles, Argentina; Association des droits numeriques, Morocco; Bytes for All, Pakistan; Centre for Cyber Law Studies, Indonesia; Center for Internet and Society, India; Coding Rights, Brazil; Dejusticia, Colombia; Derechos Digitales, Chile; Digital Rights Foundation, Pakistan; Foundation for Media Alternatives, Philippines; Fundación Karisma, Colombia; Institute for Policy Research and Advocacy (ELSAM), Indonesia; The Law and Technology Centre, Faculty of Law, the University of Hong Kong, Special Administrative Region of the People's Republic of China; Kelin, Kenya; Jonction, Senegal; Nawaat, Tunisia; Privacy International, United Kingdom; R3D, Mexico; Right2Know, South Africa; Voice, Bangladesh; Unwanted Witness, Uganda; Zimbabwe Human Rights NGOs Forum, Zimbabwe; World Wide Web Foundation.

[7] Contacts have been established or are being established with: AOL, Apple, Facebook, Google, LinkedIn, Microsoft, Twitter, Yahoo.

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is such that the global context is already different from what was at the start of the MAPPING Project and would further change by its conclusion. This requires that the roadmapping is able to register and to take stock of such developments as they unfold. We can name as a purely indicative example a few of these "realities"[8] that at this given moment of time appear significant.

- Implementation of the **eIDAS** regulation of 2014 on e-Identification and trusted services for electronic transactions in the internal market.
- **Changes in government** due to elections in EU countries or in other key countries: e.g. UK in March 2015, Spain in November 2015, USA in November 2016, Italy in 2018, etc.
- Uncertainty on the **Governance of the EU and its member states**: e.g. Greek crisis and its outcomes, the debate on how to confront the new terrorist threats; the "Brexit" referendum in UK, refugees crisis, etc.
- Approval of the Network and Information Security (NIS) Directive by 2016.
- Approval of the European **Data Protection Package** and review of the **e-Privacy Directive** 2016/2017.
- **IANA** transition, 2015/2016.
- The implementation of the **European Agenda on Security**, 2015/2020 and other similar instruments at the global level.
- New **US legislation** on technology, cybersecurity, etc.
- Revision of **European legislation on IPR,** 2016.
- Adoption of measures for the creation of a **European Single Digital Market** 2015/2016.
- **Internet Governance:** WSIS+10 and IGF process, NetMundial, etc., 2015 onward.
- The Reports and Recommendations of the **UN Special Rapporteur on Freedom of expression**.
- United Nations nominated a **Special Rapporteur on Privacy** as human right, 2015.
- Full implementation of **Digital Agenda for EU**, including measures and investments for guaranteeing fast and ultra-fast access to all European citizens by 2020.

[8] The list, purely indicative, is limited to some of the events impacting specifically on MAPPING's areas of concern. For this reason, the list does not include global processes or threats, such as global warming, etc.

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Pathways

The Road Map process could follow at least five distinctive **pathways**, each one engaging specific groups of actors.

We use the term pathway to signify a stream of activities and negotiations that (like in a map) tends to a certain direction, but requires also the willingness of the concerned actors to "go there".

It is to be noted that such pathways do not coincide with the three main domains of MAPPING (Privacy, Internet Governance and Intellectual Property Rights), but indicate clusters of problems and opportunities as they are emerging from the activities of MAPPING in its first year and over which interest and actions could converge.

In fact each pathway can be considered **cross-sectoral** for what concerns the three domains and each of them at some point can intersect one or more of the others (for instance the Legal pathway could lead to treatises concerning Privacy or Intellectual Property Rights).

On the basis of the evidence collected and the results of transformative dialogue, **each pathway** should identify and tackle a set of **specific problems** and point to some **goals** that will be formulated and refined as the dialogue will progress.

At present, **as a result of the preliminary activities** and the **discussion** held among the partners on the Geneva Steering Committee of last March (see Part C above) the following **5 pathways** can be singled out. However their denomination, content and delimitation must be considered **purely indicative**. In fact, their denomination, number and delimitation is **subject to be corrected and integrated** as new inputs arrive from the substantive work packages and new players enter the process bringing their concerns and viewpoints.

- **Legal Pathway**. The first pathway will have a legal focus and could deal at least with two emerging, interrelated, issues of European as well as global importance: **privacy** and **surveillance** (including contrast to terrorism). It might conceivably involve a strong interaction, and possibly a coming near of European and American positions (especially after the unblocking of the EU Data Protection Package). At the basis there are the concerns of European countries (including key players such as Germany and France) after the Snowden revelations and the subsequent openings of the American Presidency. Also other key actors such as Russia, China, India or Brazil as well as International organisations and civil society actors are starting to be engaged (see above on key players and stakeholders). Other issues concern

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the law enforcement agencies and their instruments in combating cybercrime and cyber terrorism. Also cyber warfare can be regarded as a threat that needs to become the object of a serious international negotiation. Another area of concern has to do with freedom of expression and defamation, and in general with the issues of human rights in the Internet, also in the form of Charters of Rights on the Internet, brought about by citizens organisations and by International organisations such as the UN Human Right Council, OECD, APEC and UNESCO.

A possible **goal** could be **one or more internationally agreed legal instruments** on some of the emerging issues, like privacy and/or surveillance and/or cyber terrorism and/or cyber warfare. The discussion on such instruments and their feasibility is gaining saliency in the global arena, however the positions are yet divided and many players, most notably states and global actors, are out-off sync with each other. Thus any progress in the direction of international agreements would be difficult to achieve and the Road Map should help in evaluating constraints and opportunities to facilitate such itinerary. In this framework also non binding instruments, including soft law, could be considered.

- **Technological Pathway.** The technological pathway at a substantive level will deal with technical possibilities for reforming the **architecture of the Internet** and its implications for overall Internet Governance. It will also take into account the ongoing changes in the **Internet infrastructure**, including the completion of the passage from IPV-4 to IPV-6 and how the EU can enter such context. It will be especially crucial to discuss how to keep the pace of the **foreseeable technological developments** and **innovations** that in the coming years are going to **deeply change** the **digital environment** and whose drives are still mostly outside Europe. Substantive innovation or systemic change is expected in the areas of Cloud computing, Analytics, Identity management and Mobile technologies, with the underpinning issue of security. Other important innovations are expected in connection with payment technologies, cryptography, privacy enhancing technologies, Internet of Things, drones, 3D printers, as well as in quantum computing, artificial intelligence and intelligent computing, robotics, sensors, network function virtualisation and biotechnologies. Each **driver of change** comes with its own **challenges** from a legal, economic and social point of view. At the same time its development and impacts are partially independent from the capacity to provide appropriate guidance. A fact that points to another instance of **disconnect** between present and future.

  Possible **goals** would be the feasibility of a **new architecture of the net** that, while remaining interoperable, would admit different layers of access, regulated according specific safeguards to citizens' rights. Another possible outcome is the capacity

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of an EU solution in the **field of Internet infrastructure**, and, if so, with what resources and following what model?

- **Business Pathway.** One important pathway is the one that should tackle the main trends in the diverse and effervescent business community in the context of the digital economy and their pull effects towards the technology. In MAPPING a first entry point has been so far **the new business models** that are grounded on the collection, storage and treatment of personal data as well as on new data abundance and powerful data analytics (big data). On the other hand, new business models that **make of the protection of personal data an integral part of their service** are also emerging and gaining ground. Also the issue of **cybersecurity** and **protection of digital data as key assets** for the enterprises is gaining saliency, as well as **IPR policies** and their role in fostering creativity and innovation. Again there are trends that progress also in the absence of a consistent guidance and at the same time pose serious governance problems, such as **how to regulate geo-economic disputes** and how to reach **harmonisation of standards** or agree on **reciprocity compacts** in global commercial practices. In this regard a factor to be considered is the Digital Single Market strategy of the European Union and its policies, including the emerging trend of investigating potential abuses of dominant market positions. MAPPING has already started to engage important players of the business community and we expect to make further steps in this regard once the discussion gets more focused on specific issues. The dialogue will have to find a balance between the different interests present, from the major corporations to the small enterprise to the consumers.

  Possible **goals** would be **typifying new business models** that could harmonise privacy protection, innovation and economic development, including the establishment of trust federations and networks; define forms of **self-regulation** and **co-regulation** (for example on the areas of software development, product liability, risk management approach, etc.); negotiating the **reciprocity principle** between the different IPR systems internationally.

- **Governance pathway**. Another pathway to be pursued can concern how the actual governance of Internet is being shaped and reformed and the possible role (or lack of it) of the EU in such process. In fact, in connection with some significant reforms, such as the IANA transition, with the, at least partial, redistribution of governing powers that it entails, the global debate on the guidance of the Internet infrastructure is intensified, including the alternative options of multi-stakeholder/multi-lateral models. Of course the EU position must be negotiated in the context of the changing ways in which the USA are going to exercise their role, but also engaging with other key players, such as Brazil, China, India, Russia and other

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countries, whose citizens are going to massively access the Internet in the years to come. Issues of contention include **roles and legitimacy** of the various **players**, **net neutrality**, **freedom in the Internet**, citizens' **participation**.

Possible **goals** can include achieving a consistent European approach to **governance** sufficiently flexible to evolve over time according to the foreseeable changes and the emerging challenges in the Internet ecosystem, together with a **strategy** to advance it in the global governance arena.

- **Societal pathway**. One distinctive focus of attention of MAPPING has been the recognition that one crucial aspect of the digital transition is the opportunities it offers **to new forms of human subjectivity**, producing a "surplus" of human energy, so that individuals and groups are more and more "capable" of generating new ideas, innovating and overcoming everyday life constraints, while their field of action is broader and less limited by territorial boundaries. Such phenomenon is no longer limited to highly industrialised countries and increasingly concerns other areas of the world, where a huge number of people are going to be on-line in the near future. This might require policies for an inclusive and multilingual approach. A special attention is deserved to the so called "**Netizens**", i.e. habitual users of the net, who might not be affiliated to any group or organisation, but have familiarity with the medium and manifest their own perspectives, concerns and demands.

  Possible **goals** should be sought in how to **support and foster the active role of netizens** in freely and safely express themselves in cyberspace, to protect their fundamental rights and to enable them to participate in the governance of those aspects of the Internet that have a strong impact on their lives. To this purpose the whole educational issue needs to be rethought in view of building more awareness and capability of the users. At the same time **on-line bottom up mechanisms** need to be devised for increasing citizen participation including participation via novel and "smart" approaches to capacity-building and confidence-building.

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E. STEPS IN MAPPING'S ROAD MAP FORMULATION PROCESS

To summarise what we said in the previous part, the Road Map exercise could proceed along a certain number of **pathways,** in which relevant **stakeholders** and **key players** will be engaged, oriented towards certain **goals**, within a defined **time line** and influenced by some **external realities**.

With this outline we are approaching the completion of what in Part C we have defined as the **Step 0** of a roadmapping process, geared to organise existing information, define the scope, objectives, and boundaries of the Road Map, identify key participants and devise its structure and process.

In fact, as mentioned in the Introduction, the sketch outlined in Part D was presented at the MAPPING's First General Assembly in Hanover on 22 September 2015 and subsequently integrated and amended with the contribution of all partners and other stakeholders, in order to be used as a basis to launch the full Road Map formulation process.

Thus amended, this sketch can be used to introduce and properly launch the roadmapping exercise that will proceed during the full duration of MAPPING and will be a substantive part of the projects' Heritage.

From that moment onward we propose to follow an itinerary based on the steps of the Road Map formulation as a participatory exercise, described in Part B, making use of all the instruments indicated in the Dialogue and Participation Plan, further refined with the Guidelines about Management of Dialogue and Participation. The possible steps are indicated below and visualised in the figure on page 23. Of course the actions mentioned in Step 0 have already been performed, while the others are to be implemented under the Heritage Work Package.

End of Step 0, Preliminary activities – up to the First General Assembly

- Amendment of the Road Map sketch.
- Presentation of the idea of Road Map at the First General Assembly in Hanover 22 September 2015.
- Launch a call for participation with stakeholders.
- Decision on the structure of the core group for the Road Map under WP 7 "Heritage" and its plan and calendar at the Hanover Steering Committee.

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Launch of Steps 1, 2, 3, 4 – from First General Assembly to the Second General Assembly

- As for the DoW, all substantive WPs contribute inputs to identifying vision and goals (Step 1), appraise the current status (Step 2), identifying opportunities and challenges (Step 3), generate strategic options (Step 4).
- Key actors are effectively involved in the exercise.
- Inputs are collected by the Core Group during the cross-fertilisation and self-monitoring activities foreseen in the Guidelines about Management of Dialogue and Participation activities.
- A special participatory session on the Road Map is held at the Second General Assembly in autumn 2016.

Step 5, Post analysis and publication – from the Second General Assembly to the Final General Assembly

- On the basis of the results of the session in the Second General Assembly and the final outputs of the Substantive WPs, the Core Group and the involved actors prepare a full draft of the Road Map, including graphical representations, etc.
- One or more ad-hoc workshops could be envisaged, aimed also at discussing on policy guidelines, actions to be implemented and methodological aspects.
- The Road Map is presented at the Final General Assembly in 2017.

Step 6, Review and follow up – from the Final General Assembly to the end of the project and beyond

- The Road Map is discussed with key players and the MAPPING community at large.
- Feedback and amendments are collected and incorporated.
- Provisions are taken (within WP7) for ownership and use of the Road Map after the end of the Project.
- The final version of the Road Map is published and operational.

The Road Map process of MAPPING might be represented as follows:

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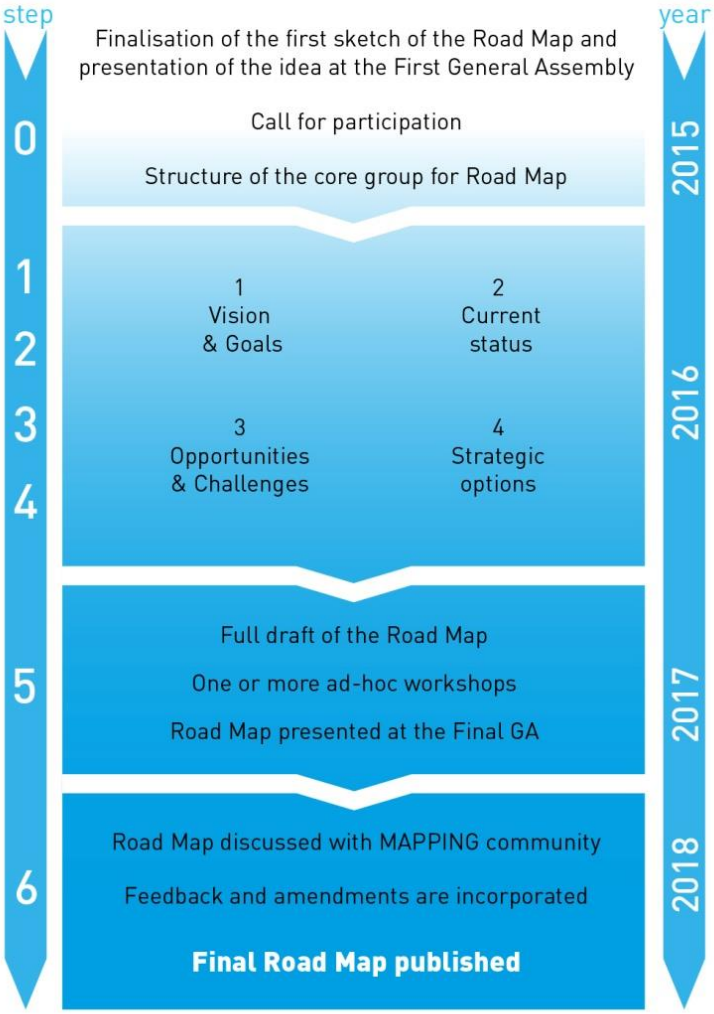
The Road Map process



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REFERENCES

Alfonsi, A. and Declich, A. (2002), "Città e transizione epidemiologica: una fenomenologia contraddittoria", in *Salute e società*, Volume 1, Issue 2.

Cannataci, J.A. and Mifsud-Bonnici, J. (2007), "Weaving the Mesh: Finding Remedies in Cyberspace", in *International Review of Law, Computers & Technology*, 21:1.

Cannataci, J.A. (2008), "Lex Personalitatis & Technology-driven Law", in *Scripted*, Volume 5, Issue 1.

Cannataci, J.A. (2014), "Parallel Internets, another Internet treaty or both? The next pieces of the internet governance jigsaw puzzle – Part 1", available at: http://www.mappingtheinternet.eu/node/41

d'Andrea, L. (2013), "Understanding Internet Privacy: Overall Dynamics and Socio-Cultural Differences", paper presented at CONSENT Project Final Conference, Malta, 20-21 March.

European Commission (2013), "Work Program Science in Society", available at: https://ec.europa.eu/research/participants/portal/doc/call/fp7/common/1537552-update_sis_wp2013_en.pdf

European Commission (2010), "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Digital Agenda for Europe", Brussels, 19.5.2010, available at: http://europa.eu/legislation_summaries/information_society/strategies/si0016_it.htm

Floridi, L. and Dewandre, N. (2012), "The Onlife Initiative. Concept Reengineering Exercise: rethinking public spaces in the digital transition", available at: https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/Concept_Reengineering_Background_Paper_04112012.pdf

Floridi, L. (Ed.) (2015), *The Onlife Manifesto – Being Human in a Hyperconnected Era*, Berlin, Springer.

Galvin, R. (1998), "Science roadmaps", in *Science,* Volume 280, Issue 5365.

Ho, J.Y., Featherston, C., O' Sullivan, E. (2014), "A systematic Process for Structuring Successive Roadmapping Exercises for Emerging Technologies: Lessons from Additive Manufacturing in the US", paper presented at the 5th International Conference on Future-Oriented Technology Analysis (FTA), Engage Today to shape tomorrow, Brussels, 27-28 November.

MAPPING, (2014), D2.1 "Dialogue and Participation Plan".

MAPPING, (2015), D.2.2 "Guidelines on management of dialogue and participation".

McDowall, W. and Eames, M. (2006), "Forecast scenarios, visions, backcasts and roadmaps to hydrogen economy. A review of the hydrogen future literature", in *Energy Policy*, Volume 34, Issue 11.

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Mezzana, D. and Krlic, M. (2013), "The current context of surveillance: An overview of some emerging phenomena and policies", in *European Journal of Law and Technology*, Volume 4, Issue 2.

Phaal, R. (2011), *Public domain Road Maps*, available at: http://www.ifm.eng.cam.ac.uk/uploads/Research/CTM/Roadmapping/public_domain_roadmaps.pdf

Phaal, R. (2015), *Roadmapping for strategy and Innovation*, available at: http://www.ifm.eng.cam.ac.uk/uploads/Research/CTM/Roadmapping/roadmapping_overview.pdf

Phaal, R., Farrukh, C.J.P., Probert, D. (2010), *Roadmapping for strategy innovation: Aligning Technology and Markets in a Dynamic World*, Cambridge, Institute for Manufacturing, University of Cambridge.

Phaal, R. and Muller, G. (2009), "An architectural framework for roadmapping: Toward visual strategy", in *Elsevier, Technological Forecasting & Social Change Journa*l, Volume 76, Issue 1.

Poole, D. (2011), "Digital Transitions and the impact of new technology on the arts", Discussion paper presented at a meeting of Executive Directors of the 14 members of CPAF, Gatineau, Québec, March 10th.

Quaranta, G. (1986), *L'Era dello Sviluppo*, Rome, Franco Angeli.