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DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT D
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"MEP 2025": Preparing the Future Work Environment for Members of the European Parliament

STUDY

EN

2012

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"MEP 2025": Preparing the Future Work Environment for Members of the European Parliament

Identifying Future Trends in Technology which may Impact on Society and therefore on EP work Structures and Processes

STUDY

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CONTENTS

EXECUTIVE SUMMARY

The European Parliament is confronted by a number of challenging questions with regard to the future organisation of its work, and the ways in which this can be facilitated by Information and Communication Technology (ICT).

This study is largely literature review-based. While the study is part of a broader exercise ambitiously entitled "MEP 2025", this investigation shows that the speed of change in both technology and democratic developments means that looking as far as a decade and a half ahead poses substantial challenges. In fact, more different forms of foresight analysis and study, conducted more regularly, might ultimately serve the European Parliament more effectively. Regular reviews of the future of "democratic innovation" are therefore proposed by the study.

Conclusions and options for three elements of democratic innovation

The European Parliament is already moving ahead in terms of digital democracy and its own use of ICT. However, there are huge opportunities for further change, both immediately and also steadily over the 15-year period. Regular reviews, both of the changing political/social environment and of technological progress, should take place at least every two years. The next two-year period will be crucial, given the current situation of the European Union and the potential political and organisational changes.

The three key action areas in the options defined for the European Parliament are:

- communication around the democratic process: including virtualisation, being mobile and eVoting.
- information management: including visualisation and the cloud.
- innovative structure: developing an ICT platform or community to collect, share and develop information and experiences.

The study has identified twenty clear areas of decision-making that can be broadly classified into these three domains. Generally, the options outlined flow from the more strategic to the more easily applicable or explorable.

Communication around the democratic process: virtualisation, being mobile and eVoting

- Experiment with virtual meetings.
- Experiment with e-Consultation.
- Involve stakeholders online on matters of implementation and especially evaluation.
- Be mobile.
- Encourage use of portable devices.
- Enhance website(s).
- Enhance cyber security.
- Reinforce transparency.
- Exploit the potential of technology for multilingualism.

Information management: visualisation and the cloud

- Investigate the possibilities offered by information management.
- Invest in data visualisation techniques.
- Explore and invest in the cloud.

- Update and extend the online availability of archives for the use of the public.

Innovation - an ICT platform or community

- Invest in an infrastructural backbone.
- Expand and enhance collaboration.
- Encourage the approach of working from anywhere.

A set of more organisational approaches, including a focus on evaluation and assessment are also included.

SYNTHÈSE

Le Parlement européen est confronté à certaines difficultés en ce qui concerne l'organisation à venir de son travail et la manière dont les technologies de l'information et de la communication (TIC) pourraient le faciliter.

Cette étude repose en grande partie sur une analyse documentaire. Alors que l'étude fait partie d'un projet plus large portant le titre ambitieux de «Député au PE 2025», cette enquête montre que, en raison de la rapidité du changement dans les développements technologique et démocratique, des obstacles substantiels se dressent lorsque l'on se projette dix ans et demi plus tard. En fait, des analyses et des études prospectives plus différentes, effectuées sur une base plus régulière, pourraient finalement s'avérer plus utile pour le Parlement européen. Cette étude propose dès lors des examens réguliers de l'avenir de «l'innovation démocratique».

Conclusions et options relatives à trois éléments de l'innovation démocratique

Le Parlement européen évolue déjà en ce qui concerne la démocratie numérique et sa propre utilisation des TIC. Cependant, il existe d'immenses possibilités pour poursuivre le changement, qu'il soit immédiat ou progressif sur la période des quinze prochaines années. Des examens réguliers de l'environnement politique/social en évolution et des progrès technologiques devraient avoir lieu au moins tous les deux ans. La prochaine période de deux ans sera importante au vu de la situation actuelle de l'Union européenne et des changements politiques et organisationnels éventuels.

Les trois domaines d'action clés compris dans les options définies par le Parlement européen sont:

- la communication dans le processus démocratique: la virtualisation, la mobilité et le vote internet;
- la gestion de l'information: la visualisation et l'informatique dématérialisée;
- une structure innovante: développer une plateforme ou une communauté TIC afin de rassembler, de partager et d'élaborer des informations et des expériences.

Cette étude a clairement repéré vingt sphères décisionnelles qui, globalement, peuvent être classées dans ces trois domaines clés. En général, les options présentaient les points dans un ordre particulier: du plus stratégique au plus facile à appliquer ou à exploiter.

Communication dans le processus démocratique: virtualisation, mobilité et vote internet

- Tenter l'expérience des réunions virtuelles
- Tenter l'expérience des consultations par internet
- Associer les parties prenantes, en ligne, aux questions de mise en œuvre, et en particulier d'évaluation
- Être mobile
- Encourager l'utilisation de dispositifs portables
- Améliorer le(s) site(s) Web
- Améliorer la cybersécurité
- Renforcer la transparence
- Exploiter le potentiel de la technologie pour favoriser le multilinguisme

Gestion de l'information: visualisation et informatique dématérialisée

- Étudier les possibilités offertes par la gestion de l'information
- Investir dans les techniques de visualisation de données
- Étudier et investir dans l'informatique dématérialisée
- Mettre à jour et élargir l'accès en ligne aux archives en vue de leur utilisation par le public

Innovation - Une plateforme ou une communauté TIC

- Investir dans une infrastructure centrale
- Étendre et améliorer la coopération
- Encourager l'approche du «travail à partir de n'importe où»

L'étude comprend également un ensemble d'approches plus organisationnelles, parmi lesquelles figure un intérêt particulier porté à l'évaluation et au contrôle.

ZUSAMMENFASSUNG

Das Europäische Parlament befasst sich derzeit mit einer Reihe von anspruchsvollen Fragen hinsichtlich der künftigen Organisation seiner Arbeit und sucht nach Wegen, wie die Informations- und Kommunikationstechnologie (IKT) diese unterstützen kann.

Diese Studie basiert weitgehend auf der Analyse von Fachliteratur. Während die Studie Teil einer umfassenderen Arbeit ist, die den ehrgeizigen Titel „MdEP 2025" trägt, zeigt die vorliegende Untersuchung, dass die rasanten Veränderungen sowohl in der Technologie als auch der demokratischen Entwicklung uns vor enorme Herausforderungen stellen, will man anderthalb Jahrzehnte in die Zukunft blicken. In der Tat könnten differenziertere Formen der prospektiven Analyse und Studie, in regelmäßigen Zeitabständen durchgeführt, dem Europäischen Parlament letztendlich von größerer Hilfe sein. Daher wird in der Studie vorgeschlagen, die Zukunft der „demokratischen Innovation" regelmäßig zu analysieren.

Schlussfolgerungen und drei mögliche Elemente der demokratischen Innovation

Das Europäische Parlament ist bereits sehr fortschrittlich, was die digitale Demokratie und den Einsatz der IKT anbelangt. Es bieten sich jedoch noch viel größere Möglichkeiten für den weiteren Fortschritt – sowohl kurzfristig als auch langfristig über einen Zeitraum von 15 Jahren betrachtet. Mindestens alle zwei Jahre sollte das sich verändernde politische/soziale Umfeld und der technologische Fortschritt analysiert werden. Der nächste Zweijahreszeitraum wird in Anbetracht der Situation, in der sich die Europäische Union derzeit befindet, und der potenziellen politischen und organisatorischen Veränderungen entscheidend sein.

Die drei wesentlichen Aktionsbereiche der Optionen für das Europäische Parlament sind Folgende:

- Kommunikation im demokratischen Prozess: Einbeziehung von Virtualisierung, Mobilität und eVoting
- Informationsmanagement: Einbeziehung von Visualisierung und der Cloud
- Innovative Strukturen: Entwicklung einer IKT-Plattform oder -Gemeinschaft zur Erfassung, Weitergabe und Entwicklung von Informationen und Know-how

In der Studie wurden zwanzig Bereiche von Entscheidungsfindungen ermittelt, die diesen drei Schwerpunkten weitgehend zugeordnet werden können. Grundsätzlich werden zunächst die strategischeren Optionen und in der Folge die einfacher anzuwendenden bzw. zu realisierenden Optionen angegeben.

Kommunikation im demokratischen Prozess: Virtualisierung, Mobilität und eVoting

- Versuchsweise Durchführung virtueller Meetings
- Versuchsweise Durchführung von eConsultation
- Einbeziehung der Hauptakteure über das Internet bei Themen der Umsetzung und insbesondere der Evaluierung
- Mobilität
- Förderung der Verwendung tragbarer Geräte
- Verbesserung von Websites
- Verbesserung der Sicherheit im Internet
- Verstärkung der Transparenz
- Nutzung des technologischen Potenzials für die Mehrsprachigkeit

Informationsmanagement: Visualisierung und die Cloud

- Prüfung der Möglichkeiten, die durch das Informationsmanagement geboten werden
- Investition in die Techniken der Datenvisualisierung
- Nutzung der Cloud und entsprechende Investitionen
- Aktualisierung und Ausweitung der Online-Verfügbarkeit von Archiven zur Nutzung durch die Öffentlichkeit

Innovation – eine IKT-Plattform oder -Gemeinschaft

- Investition in die grundlegende Infrastruktur
- Ausbau und Verbesserung der Zusammenarbeit
- Förderung des ortsunabhängigen Arbeitens

Eine Reihe organisatorischer Ansätze mit Fokus auf Evaluierung und Bewertung sind ebenfalls einbezogen.

1. INTRODUCTION

This study is intended to provide insight into a new decade of activity and work for the European Parliament. Through the MEP2025 exercise, the European Parliament is examining how it might look and work in 2025. The study starts from a base in developments in contemporary democracy. It then reviews trends in technology (or "ICT") which have an impact on society and politics – and therefore on the European Parliament's structures and work processes – and identifies specific areas for consideration by the European Parliament. Lastly, it lists more than twenty possible options on which the European Parliament could concentrate. The three options for what we call "democratic innovation" are:

- ***communication around the democratic process***: virtualisation, being mobile and eVoting;
- ***information management***: including visualisation and the cloud; and
- ***enabling structures:*** developing an ICT platform or community to collect, share and develop information and experiences.

1.1. CONTEXT

Technological and democratic changes characterise this early phase of the twenty-first century. Looking forward to the mid-2020s, it is crucial to understand how ICT influences the political process, and is likely to do so in future, by modifying how public opinion originates and develops and how interests are represented. The specific challenge is to identify the impact that these changes may have on the role and functions of the European Parliament and its individual members, and the potential for change that they bring.

The increasingly legislative-oriented, future role of the European Parliament needs to rely on more advanced, sophisticated, efficient and effective tools and methods. The institution and its members need to perform their democratic tasks in a rapidly changing environment. Technology is changing how information gathering, consultation, decision-making and evaluation occur. In addition, Parliament and its members will have to face both the effects of social mobilisation and the popular expression of dissatisfaction with the functioning of representative democracy.

1.2. KEY QUESTIONS

The three guiding questions of this study were:

- how the development of ICT might affect the political process;
- the consequences of these changes for the European Parliament and MEPs' work; and
- how the European Parliament could seek to harness these changes to maximum effect.

1.3. STUDY METHOD

Three sources of information were used to build the study's insight into the potential world of "MEP 2025". The team performed in-depth desk research, an extensive literature review[1] and interviewed key individuals in the European Parliament. Four real-life examples of digital democracy were also investigated – case studies on contemporary developments in social and democratic movements in which technology has played a pivotal role.

1.4. REPORT STRUCTURE

Chapter 1 introduces briefly the context of this study, its method, and the report structure**.** Chapter 2 presents a range of technology trends that will have a significant impact on future society, including cloud computing, social media and the miniaturisation of devices. In particular, the Internet will act as an enabler of increasingly diverse social and societal activities. Chapter 3 first describes the new trends taking place in democratic activity and then focuses on the implications for tomorrow's more "horizontal society", in which increased access to information and new ways of processing data both offer an opportunity for citizens to play a more active and involved political role than in the past and, ultimately, could lead to additional changes in the democratic process. Potential shifts in and impacts on the European Parliament's legislative and representative functions; political groups; committees; MEPs; and the character of communication between MEPs and society are all described in Chapter 4. Chapter 5 presents a set of conclusions and possible options for the European Parliament to consider, and Chapter 6 lays these ideas out in a brief, systematic manner, which could eventually become the basis of a roadmap for future action. As well as any big decisions regarding changes in functioning, choices with regard to appropriate milestones or decision-points will naturally need to be decided on by the Parliament.

[1] This report includes a references section that outlines the almost 200 sources of literature reviewed by the study team.

2. TECHNOLOGY – CHANGING THE WAY THINGS WORK

This chapter lays out a number of technology trends that are having an impact on society and democracy, and speculates on the consequences for the European Parliament and MEPs.

2.1. MOST RELEVANT TECHNOLOGY CHANGES

Developments in network architectures, devices and software are fostering a trend towards increasingly interactive communication. Trends in cloud computing and information management are emerging, alongside a tendency towards "always on"[2] and ubiquitous access to the web[3]. Large volumes of users are contributing to a constant flow of digital content and information that is widely shared. Computing architecture is moving in the direction of the out- and crowd sourcing of work and processes (seeking to capitalise on the "wisdom of the crowd"). Devices are getting smaller. Social computing[4], social media and the semantic web[5] are driven by the needs of people and the creation of services. These trends are present both in commerce and in the provision of public services. E-consultation, e-deliberation, e-petitions and e-polling are examples of techniques that increasingly facilitate the incorporation of people's views. On the other hand, threats to cyber security, privacy and identity are all emerging – and technological solutions are being developed to counter them. These technological advances are briefly described in the following sub-sections.

Typical of the ways in which the technological trends interact with society are:

- Always online
- The cloud
- Connected mobility
- Triple play convergence
- Outsourcing and crowd sourcing.

2.1.1. Always online

The Internet environment is tending towards an always online ("always on") connection. Devices and services will become available only through web navigation, and will become more and more interactive. Interconnectivity of devices will be essential for the business development of new services. There are already some examples of computers moving in this direction, such as the Google Chromebook.[6] Future devices will not physically store data but focus on connectivity and virtual memory than on the physical storage of data.

2.1.2. The cloud

The cloud is the next stage in the evolution of the Internet. Clouds are formed due to the ease-of-access to remote computing sites provided by the Internet. Cloud computing providers deliver applications via the Internet cloud, which are accessed from web browsers and desktop and mobile apps, while the business software and data clouds are stored on

[2] This implies that users are "always online".
[3] Ubiquitous implies that web access is available everywhere.
[4] Social computing is the use of social media and social networks in computing.
[5] The semantic web is the next version of the Web (Web 3.0). In it, text analytics, natural language processing, ontologies and semantics will play a considerable role.
[6] http://www.telegraph.co.uk/technology/google/8508033/Google-Chromebook-the-computer-for-people-who-hate-computers.html

servers at a remote location. Through the cloud, everything will be delivered as a service, from computing power to business processes to personal interactions.

This bundling **frees up end-users from complex system architectures**. Systems will become even more **tailored to clients' needs**. The increase in basic applications available will increase the number of actions that it is possible for end-users to undertake. As this trend influences end-users' day-to-day activities, it will also **increase system productivity and information management capacity**. It allows information and service packages to be opened up and be made available to all. However, this shift risks being stalled if privacy, reliability, and security of information management are not guaranteed.

2.1.3. Connected mobility

The future for end-users is likely to be inclined towards **being entirely mobile and always online –** or **connected mobility**. Ever smaller, more portable devices, such as tablets and smart phones with increasing functionalities and greater user-centricity, are progressively replacing more traditional devices such as desktop computers and laptops. Instant access to digital content, regardless of location, will drive the growing importance of connection speed and the diminishing relevance of features such as storage capacity.

A number of different factors influence these trends: miniaturisation and mobility; so-called "triple-play convergence" (see below) and a new Internet Protocol.

There will be a clear trend towards mobility. Desktop computer sales will continue to lose ground to laptops, net books and tablets. The increase in net book and tablet sales will take place almost entirely to the detriment of desktop computers. The added functionalities available on tablets (such as calendars, format processing software[7], and video games) will attract end-users who require more than a purely web browsing device. However, web browsing will continue to be the main functionality provided by these devices, given their character as a gateway to digital content and varied services.

Similarly, smart phone penetration has already increased significantly. It rose by 9.5% from December 2009 to December 2010 in the five most populous EU Member States (France, Germany, Italy, Spain and the United Kingdom) to reach a 31.1% penetration rate (4.1 percentage points higher than in the US) (Comscore 2011).

2.1.4. Triple play convergence

A second factor **contributing to the trend in mobility is the notion of "triple play convergence"**, i.e., the convergence of multimedia services. Triple play convergence refers to the concept of one connection allowing customers to access broadband, make voice calls through Internet (VoIP) and watch videos (digital cable TV). This trend entails the provision of three types of services by the same provider but, more importantly, access to all of these services from the very same device. Today's state-of-the-art equipment already enables access to these three services through three more "traditional" devices such as phones, televisions and computers. It is **the Internet which offers the means for the access and delivery of all three of these services**: it provides the common denominator.

At the core of this multimedia development (which is called the Internet Protocol Multimedia Subsystem) is the use of a standardised Internet Protocol, so that services and

[7] Format processing software is a component of word processing software.

complementary applications for all types of devices will be carried via a single standardised signal. There will be additional incentives for a convergence of technologies and for competition between networks: companies will not only compete on their own market, but they will also enter into new businesses. Smart phones already allow video calls, television and other video content (with specific channels and programmes designed for portable devices), and web browsing. Access to call services and video content (including television channels) is done through the web.

This advanced connected mobility will require the gradual introduction of Internet Protocol IPv6, designed to supplement, and eventually replace the current IPv4, and to provide almost-limitless Internet Protocol addresses.

2.1.5. Outsourcing and crowd sourcing

The emergence of interactive new media offers the potential to tap into a virtually unlimited pool of human resources. It will become increasingly possible to share and gather information in a process referred to as "distributed intelligence". While the reliability of the content produced will need to be vetted and organised, the **success stories of media applications, such as Wikipedia, show the potential for exchange of information, collaboration, and acceptable information reliability among a large number of users**. A flexible but still hierarchical organisational structure can enable supervision of peer contributions in order to ensure their coherence and quality.

This trend is already visible in business organisations. It consists of a process composed of two parts: outsourcing, in which defined tasks or responsibilities are delegated to other users, and crowd sourcing, sourcing tasks traditionally performed by specific individuals to a group of people or community (a crowd) through an open call. For example, the public may be invited to develop a new technology, carry out a design task (also known as community-based design), refine or carry out the steps of an algorithm (see human-based computation), or help capture, systematise or analyse large amounts of data.

2.2. FUTURE TRENDS

Several main future trends are triggered by this new wave of technological innovation. **More than ten different trends can be identified**.

They are:

- User-oriented innovation
- Vertical integration
- Technologically-closed systems
- Cyber security and privacy
- Information as a valuable good
- Data visualisation
- Data filtering and data analytics
- Web 3.0.
- Semi-open networks
- Mass collaboration
- Transparency.

2.2.1. User-oriented innovation

On the software side, the *first trend* is that the variety of platforms and applications available over the Internet which cover an ever-larger domain of human activities will continue to increase. In recent years, online services have evolved to include online shopping, online methods of payments, search engines and entertainment. Generating new products is a demand-driven process. Innovative products are developed industrially only if they are economically viable: this implies that they must receive some level of confirmation of their interest and usefulness to end-users. In the field of information and communication technologies, **there is a growing interest in innovation that is user-oriented**: this trend ranges from services with extremely large potential, such as health and well-being, to those in more specialised fields.

2.2.2. Vertical integration

Second, there is a consolidation of the market structure**: more vertically integrated platforms will compete**. The creation of platform covers many domains of the online business. Examples include broadcasting, electronic modes of payment, search engines, shopping platforms, social networks and Voice-over-Internet Protocol (VoIP).[8]

2.2.3. Technologically-closed systems

Third there is a battle ongoing between technology-open and -closed systems. **Technologically-closed systems** are systems in which all complementary components are produced by a single firm which delivers a whole system to end-users without allowing any other firm to produce any layer of its system. Applications are likely to be developed in a framework of different "walled gardens" that compete among themselves. There is, however, the possibility that consumers might get "locked in" to specific products once they have made their choice of operating system technology.

2.2.4. Cyber security and privacy

In a *fourth trend*, as a result of the rising amount of information disclosed online, **cyber security and privacy issues are coming to the fore**. The number of threats to which end-users are subject has increased (including data theft, denial of service, intrusion, malware, site hijacking and spyware). The latest indications are that these threats are taking place not only through computers but also through mobile telephony. One solution may be through the movement of proprietary data to the cloud. This shift will occur gradually. As experience is gained on both the users' and the providers' side, more sensitive data will be transferred in ever-larger amounts into the cloud. **Both individuals and technology have roles to play in enhancing security and privacy**. Individuals' active protection of themselves from potential malicious attacks and misuse of disclosed information will be crucial (e.g., they will tend to make use of the increasingly customisable security features of software applications). The current general lack of awareness and control over the information circulating online (Gelman 2009) will demand the development of a sound regulatory system for users' protection. On the technological side, a trend towards the design of specialised software that addresses specific dangers can be observed (e.g., spyware requires special, targeted applications, since antivirus applications are not effective against it). These kinds of

[8] Voice over Internet protocol involves voice over broadband, digital subscriber lines, the Internet, local area networks and Internet telephony. See e.g., ITU (2007).

specialised applications will be incorporated into comprehensive, all-protective software programs.

2.2.5. Information as a valuable good

A *fifth trend* is likely to develop further: **information as a valuable good in its own right**. The rise of digital technology, and the consequent creation of an information society, already shows that information has a market value like goods and services, both tangible and intangible. The importance of this realisation has been fully understood by industry. In the last five years, industries have been building up value chains that have the economic exploitation of data as their target. Both search engines and social networks gather, manage and make use of consumers' indicated preferences in order to emphasise market visibility and advertising. **Public sector information can be re-used or integrated into new products and services**, which is used on a daily basis, such as car navigation systems, weather forecasts, financial and insurance services. Re-use of public sector information means using it in new ways by adding value to it, combining information from different sources and creating new applications, both for commercial and non-commercial purposes. Public sector information has great economic potential, but **opening up public information[9] will also foster the participation of citizens in political and social life and contribute to advancing policy objectives in areas such as the environment**.

Information management can be defined as "the process of managing information as a resource that is valuable to an organization or business"[10], something that is of growing importance. **Companies and organisations have become aware of the value embedded in data, and are looking for ways to extract and maximise that value. Knowledge management has become a massive trend, and will continue to be developed**.

2.2.6. Data visualisation

In parallel, *sixth*, as information volumes continue to explode, data visualisation – which is **the innovative use of images and interactive technology to explore large, high-density datasets – is becoming increasingly relevant**. Visualisation permits the viewing and navigation of complex data structures, including the use of both unstructured and abstract data. Patterns in information can be more easily uncovered and new insights into information gained in new ways. The techniques that will be used to handle visualisation include multi-touch interfaces, "intuitive touch"[11], gesture-based drill-downs and on-the-fly relationship mapping. The spatial and temporal aspects of the information will also be analysed over time.

2.2.7. Data filtering and data analytics

Seventh, **data filtering and data analytics are growing disciplines**. Data filtering implies selecting and classifying *relevant* data while data analytics involves making inferences and extracting the *meaning* of data. Within data analytics, social analytics (or "social computing") is on the rise. As more of people's personal and professional lives are conducted through the use of technology, users leave "behind them" rich trails of evidence about their behaviours,

[9] In December 2011, the European Commission presented an Open Data Package (http://ec.europa.eu/information_society/policy/psi/index_en.htm)
[10] http://www.tech-faq.com/data-management.html
[11] Intuitive touch refers to sensitive touch screens.

opinions and preferences. By applying pattern-matching, searches and sophisticated analysis to these reservoirs of social data, social analytics allows data analysts' insight into users' experiences, perceptions and problems. Social analytics can be used for commercial, social and service-oriented purposes. Beneficial examples include the early detection of influenza trends throughout countries. In such a context, it will become important to understand how to locate information in its appropriate context and combine different and dispersed pieces of information.

Tools that analyse quantitative data are well developed, and **the focus is shifting towards the gathering, processing and analysis of *qualitative* data**. In this context, social networks and search engines are already becoming more sophisticated in their integration and use of qualitative and social data. Thus, socio-demographic features (such as age, sector of occupation, location and leisure activities of individuals) are used to target and tailor commercial, application and public service offers. Search engine results add to these data through the consideration of information provided by other people with whom the individuals interact.

2.2.8. Web 3.0

Eighth, the main topic that is having an impact on information management is the transition towards "Web 3.0" or the "semantic web", which can put information in context. It **will have the capacity to process all the information available online in order to answer almost any question**, and will allow people to exploit the biggest database on the planet: the Internet. "While Web 2.0 uses the Internet to make connections between people, Web 3.0 will use the Internet to make connections with information."[12] To achieve this ambitious goal, text analytics and natural language processing will play a considerable role. Metadata[13] and "ontologies"[14] will turn the information on the Internet into materials that are easily readable by computers. If this target is achieved, "structured, semi-structured, and unstructured information will all be able to be extracted, transformed, loaded, and queried by ubiquitous information management platforms by leveraging the capabilities of that continue to grow in importance and combining them with data virtualization capabilities"[15]. In addition, this attention to semantics, natural language processing and speech recognition and processing implies considerable leaps forward in the availability of multi-language applications.

2.2.9. Semi-open networks

Ninth, the technological architecture of social networks has been shifting away from its basis on closed platforms to **semi-open networks** and this has a crucial influence on the way we communicate: it is **leading more and more towards mass collaboration**. In the past, closed platforms focused mostly on one-to-one communication, like instant messaging. Instant messaging is a form of real-time, direct, text-based communication between two – or more – people. On the other hand, semi-open networks are social structures that enable one-to-many communications – a form of broadcasting: their nodes are individuals or organisations

[12] http://computer.howstuffworks.com/web-302.htm
[13] Metadata is contextual data about data, data about the containers of data.
[14] "An ontology is a description (like a formal specification of a program) of the concepts and relationships that can formally exist for an agent or a community of agents. This definition is consistent with the usage of ontology as set of concept definitions, but more general. And it is a different sense of the word than its use in philosophy." See Gruber 1993.
[15] http://www.enterpriseirregulars.com/5706/the-top-10-trends-for-2010-in-analytics-business-intelligence-and-performance-management/

connected by specific types of interests. Different tools have been developed in order to share such information.

Social networking platforms can be classified into two main categories. These are general social networks and specialised (or business-oriented) social networks. The social networking approach is particularly bottom-up: the value of the network relies on the functionality of the actual platform but also on the degree of connectivity and on users' interactions. For the past decade, both the number and the impact of social networks have increased enormously. The landscape of available social networks is not yet uniform but some platforms have consolidated their presence worldwide.[16] However, for most of these social networking platforms, the level or stage of diffusion is not yet mature. Their rate of development is driven by different factors, such as users' interests, preferences and available alternatives to serve similar purposes or meet similar needs. Nevertheless, from a democratic perspective, considerable parts of the population do not (yet) have the interest or the digital skills to use or to manage more than a few digital networks.

Social networks such as Facebook or Twitter make it easier for people to communicate with others whom they would have otherwise been unable to contact. **Voters can get in contact with politicians, fans with professional sports players and students with renowned professors or experts in other universities or research institutions**. Mass communication is occurring over a greater range of the population.

Two patterns are emerging. They are likely to result in an **explosion of the volume of information flows and shared content**. First, there are communication flows between individuals who were not previously in contact; second, there are different – and multiple – communication patterns between individuals who were already in contact or people who did not know each other before. On the one hand, there is likely to be more constant communication that is not mediated by "gatekeepers" (informally, on social networks). On the other hand, for information that has a degree of complexity, **a mechanism by which gatekeepers ("infomediaries") can operate must be created**.

While multiple and complex interactions between users will increasingly shape the flow of information, some sort of hierarchic structure will still be maintained. Interactions between actors could mean that they are classified into three classes: "leaders", "propagators" and "disseminators". Leaders are people who generate content, while propagators help to spread information already generated by others – in some cases rephrasing text before posting it again. Disseminators or followers will only receive the information: they play a more passive role. The identity of the players who fulfil these roles will not be fixed: the same person is likely to play different roles according to the different issues discussed. **Among the leaders may be politicians, sports players or artists.** However, they may also be previously unknown people who gain visibility simply because they (or some other person) shared information or content on the net (through uploading a video, a blog or a petition).

[16] For comparative analysis of the evolution of social media platforms worldwide, see http://www.vincos.it/wp-content/uploads/2009/06/wmsn_animated_1024.gif

2.2.10. Mass collaboration

The *tenth* trend is mass collaboration. Users will play a more and more active role in communication, sharing an increasing amount of content that is generated by themselves or by others. This rise in active, initially one-way, communication will develop into a continuous interaction among users: the receivers or viewers of the content will often respond to the source or originator of the content. In real-life examples, tweets or status updates are already commented on by users who were not the original addressees of the content. Individuals have the opportunity to decide whatever information they want to share with others and if they want to receive feedback on it. While some posts have a purely informative character, others are deliberately intended to generate discussion. The trend is towards the **pivotal role of interactive and targeted communication**.

There are new mechanisms for content dissemination. Users want to make others aware of particular issues: tags in pictures or comments allow the sharing of content. They provide a way to personalise and customise communication. Features such as the use of keywords, or hash tags (as on Twitter) help users to follow the main current issues ("trending topics") that are commented on the web platform (Asur et al. 2011). Hash tags' similarity to the headlines of traditional media can help to encourage a convergence or homogeneity in the content and topics discussed among digital users. The use of the appropriate keywords can exponentially increase a subject's visibility on the net. Even more than today, links will play a key role in the dissemination and gathering of information. Given the increase of the information flow that users will face, keywords and links will help them point towards content. **A bi-directional trend is evident, known as "co-shaping", whereby both Internet and society influence each other**: certain terms are searched for more often on the Internet because they are more used in society, while certain terms are more used or take root in society because they are more present or visible on the Internet. In either case, users who want to maximise the reach of their publications must be conscious of the importance of using the right words in the right places. While users will consciously design information to be visible to other people, semantic data will also enable information to be targeted at others spontaneously.

The form and structure of messages is altering. The trend towards continuous communication will affect, on one side, the form and structure of messages and, on the other side, the language used. The trend is towards shorter text-lengths that are increasingly informal: long texts are already being replaced by shorter pieces, including the use of short sentences. Users try to maximise the amount of information they share while minimising the number of words used. In a fast-moving environment, the goal is to convey only the essential elements of a message. The attention of the potential audience could be lost if the content is too long (or the message is not specific enough). Similarly, the style of communication is becoming less formal. **Information exchange is likely to become briefer and more immediate, and increasingly informal**.

The rise of an information era will influence people's behaviour. **People are likely to adapt. They will get even more used to search for information over the net**. Any lack of available information would signal a degree of incompleteness, and would be likely to create a negative perception. It will become completely normal to disclose an increasing set of

features over the net: although the information levels will alter according to users' preferences and desire for privacy.

2.2.11. Transparency

Eleventh, and, last but not least, **transparency** – which can have several different functions – **is turning into an unavoidable must for public figures**. Information in any format – whether text, pictures or videos – can now be easily "leaked", released or shared. The information deliberately shared by a person, as well as the way and speed with which he or she reacts to the disclosure of certain information or the occurrence of certain events, exerts a considerable influence over his or her image (examples include employees offering opinions on the company hierarchy or managers releasing particular information about a specific project). In an environment of greater disclosure and information sharing, transparency about institutional or organisational events and activities will become a tool to help companies and organisations avoid "reputational hits" that may stem from public doubts about their perceived secrecy about facts or events. These reputational effects will become more and more significant: the blurring between public and private life which is already present offline is likely to become more dramatic. As the trend is towards a greater disclosure of personal information as a result of default settings, **more complicated actions will need to be undertaken to protect the level of privacy preferred by each individual**. The concept of privacy will also change: it will be segmented into at least two levels. The first will be a strict level, which is kept personal. The second level (which may contain different sub-levels) will be shared with other, interconnected contacts.

2.3. TWO EXAMPLES OF SOCIAL NETWORK ADOPTION

Different social networks are growing in influence while others are losing users' favour. The scene is inherently unstable and unpredictable. Nevertheless, certain platforms are consolidating leading positions. Some clear trends can be observed. In particular, differences in platform adoption can be seen between countries. Two specific examples are examined here: Facebook and Twitter.

Facebook had around 750 million worldwide users at the beginning of August 2011. It enjoys widespread adoption in Europe. Given its high rate of diffusion, its growth levels have inevitably slowed down, but they are still positive. Its diffusion in absolute terms (in terms of millions of users) is remarkable, particularly in Italy, where about half the country's population are users. The adoption rates among Internet users are similarly substantial, varying from 58.1% of the German population to 81.7% in the United Kingdom. It is currently troubled by questions, however, about its attitude as a corporation to the privacy of its users, and **anecdotal evidence is beginning to suggest that younger users are less susceptible to the attraction it once represented to** previous generations of youth.

The expansion of Twitter is, so far, significantly lower in Europe. In the five most populous European Union countries, its adoption ranged by the end of 2010 between fewer than 1 million users in Italy to around 5 million users in the United Kingdom. Between November 2009 and November 2010, its penetration grew in France, Italy, Germany, Spain and the United Kingdom (by 28% in the United Kingdom, 31% in France, 49% in Germany, 50% in Italy and 151% in Spain). Its characteristics could help to explain its lower diffusion. Public figures and a relatively small number of particularly active users tend to generate the vast majority of its content, while most users remain considerably passive. Out of a total of about

200 million worldwide users, only twenty thousand people (or one-tenth of one per cent) generate half of its tweets. Forty-one per cent of its users have never tweeted. Since it is often public figures who release news via Twitter, other media quickly echo the content published on the network and thus reduce the need to belong it.

Belonging to certain networks could become a *de facto* obligation in particular social fields. Social networks build up their user base thanks to a first set of "voluntary" users. Quick expansion and current widespread adoption "pulls" a rising number of people into the network.

A certain concentration in the number of networks will occur. Time and other constraints, such as comfort, impede users from being constantly active on a wide number of social network platforms. This tendency enhances the role of the leading platforms which gather a higher number of users. **A small number of platforms will likely prevail in certain areas or domains** (such as a geographic area or a specific profession or occupational field) and information will spread more quickly among its users and, consequently, among outsiders.

3. MAKING THE WORLD AND DEMOCRACY MORE HORIZONTAL

Society is moving away from its traditional vertical or hierarchical axis. Increasing numbers of horizontal interactions are occurring. Groups of people are interacting more and more on specific political issues, enabled by their access to social networks and digital tools. This combination of complex factors is facilitated in many cases by ICT.

This chapter first briefly explores changes to democracy and democratic society. It then looks at the shift that is occurring towards a more horizontal society. The implications of expanded use of social networks and networking are addressed, as is the rise in activism on the part of "digital natives". Finally, the implications of digital democracy, and the meaning and potential effects of a trend towards more participatory democracy are discussed.

3.1 DEMOCRACY AND DEMOCRATIC SOCIETY ARE CHANGING

Democracy and democratic society are changing. Whereas politicians used to be mandated for a specific period of time to take decisions on behalf of citizens who delegated authority to them, this is less evident in the 21st century.

Politics have become ever more multi-dimensional: local, regional, national, transnational, supranational, and international. World politics is at the same time local politics: developments in the oil supply, pollution and population growth, for example, all impact on people's everyday lives. As a consequence, effective problem-solving requires more complex and time-consuming decision-making. These developments pose challenges to existing representative democracies, often in relation to their organisation and working methods.

In parallel, the individual citizen is growing considerably more critical of politicians and has a tendency to withdraw into a personal sphere that is typified by privacy and individuality. This phenomenon is accompanied by the decrease in affiliation to groups like family, religious communities, village life, sports club, and political party. These trends are minimising the sense of affiliation and responsibility of the individual vis-à-vis society and the tangible political system, so it will take more and more effort to create cross-social engagement.

Political participation is increasingly not associated with participation in one permanent group (such as a political party) that covers a variety of political positions. Political engagement is more and more ad hoc – people are only linked by one single goal, and far less by organisations like political parties.

The influence of political parties has diminished. In democratic systems with representative forms (that range from elections to parliaments) one can observe the ebbing of the traditional voter base of political parties. Voters who vote for a single party their whole life long (as in the last decades) are decreasing in numbers. Political actions are often single issue-oriented and associated directly with a person's immediate living environment.

Perhaps **the largest challenge of all, for democracy, is how to manage the phenomenon of continuous change and the growing interconnectivity of many things.**

These developments pose challenges to existing representative democracies, often in relation to their organisation and working methods. State actors, at different levels of multi-level political systems, are likely to work together in varying formations. A new set of policy-making conditions will emerge that will lead to a transformation of all stakeholders and

institutions. Together with non-state actors of many different kinds, parliamentarians will work on the agenda-setting, decision-making, implementation, and control of political decisions.

The European Parliament could be said to be the first real post-modern political system. It is the only directly elected supra-national parliament. Throughout the past decades, it has increased substantially its influence in all of the five parliamentary functions[17], and more changes will stem from the Lisbon Treaty.[18] With the Treaty, the European Union introduced elements of direct and participatory democracy, e.g., through citizen-initiated ballots.[19] Direct communication (the articulation function) between the European Parliament and the individual citizen is to be strengthened.

There is, however, no common "European people", and the European Union is not "one nation". A general lack of interest in society with regard to what the European Parliament does has been demonstrated by low voter participation in parliamentary elections. Some questions therefore remain with regard to the extent to which the European Parliament can modify, and enhance, its representation function in such a new democratic order. Direct democratic elements will become more important for the Parliament. Its members should reflect on strategies with regard to how to act in accordance with these trends towards participatory democracy.

In particular, MEPs and the parliamentary committees are likely to need to find ways to communicate intensively with the individuals in society in a more horizontal manner. To strengthen parliaments, and therefore democracy and its legitimation, the EU is pursuing a general strategy vis-à-vis parliamentarism throughout the EU multi-level system. Certainly, the European Parliament does not aspire to "replace" traditional parliamentary structures at either the national or the sub-national levels.

Over the past decade, a model for European multi-level governance has emerged in the Union (e.g., European Commission 2001; Committee of the Regions 2009). Multi-level governance means that state and non-state actors of all political levels are working together in policy-specific networks to create EU policy. The Treaty of Lisbon (in 2009) asks explicitly for a cooperation between the European Parliament and national Parliaments – a phenomenon that is called "multi-level parliamentarism" (e.g., Abels and Eppler 2011; Crum and Fossum 2009; Maurer 2002).

As is typical in all multi-level systems, and in the EU system also, executives are gaining in advantage vis-à-vis parliaments (which are losing competencies towards the upper levels).

Now, not only the European Parliament but also the national parliaments are strengthened, and have become active parts in the EU decision-making process step-by-step since the Treaty of Maastricht (in 1993).

If national and sub-national parliaments want to achieve a multi-level parliamentarism within the EU system, they have to become active and conscious players in the political system of the EU. As a result, parliaments at all levels should invest the necessary capacities and resources in playing a positive, creative role in this process (Wieland 2011). To "Build Europe in Partnership" (Committee of the Regions 2009, p4), with the aim of drawing up and

[17] Elections, representation and consultation, legislation, governance and control, and internal procedures.
[18] http://www.europarl.europa.eu/aboutparliament/en/0042423726/Parliament-and-the-Lisbon-Treaty.html
[19] The Citizens' Initiative is to be put in place by 1 April 2012.

implementing EU policies, will imply a considerable commitment to coordinated action on the part of the European Union, the Member States and local and regional authorities alike.

3.2 TOWARDS A MORE HORIZONTAL SOCIETY

Technological trends tend to facilitate a shift towards a more horizontal society. Traditionally more vertical, hierarchical, one-dimensional structures used to define relationships and flows of communication. However, **technological developments, and the parallel societal evolutions that they bring about, are leading to flatter, less formal and more complex structures.**

The current developments in technologies are already changing society and the underlying democratic process. **As the Internet enables society to conceive new activities and achieve different aims and goals, and helps to modify citizens' behaviours, participation and awareness of their role in society, the character of democracy will be affected**.

More "vertical", authoritarian or hierarchical relationships based on differences in information, knowledge or expertise between parties are relaxing as a result of the lessening asymmetry of information between different parties. Arguments and assertions are easier to verify and confront: the playing field is levelling as a result.

All this is leading towards a more horizontal society. Any person can reach any other person virtually and communicate with him/her in a simpler and more direct manner. The Internet provides the frame for an ever-rising number of activities and interactions and is becoming an increasingly important element in society. The result is increased interaction between members of an ever-wider community.

3.3 THE RISE OF "DIGITAL NATIVES"

There is a wide and ever-growing diffusion of access to the Internet and to digital devices in the European Union. In 2008, 60% of households already had access to the Internet, compared to 49% two years before[20]. An increasingly high share of the population is growing accustomed to the use of a range of media including desktop computers, laptops, smart phones and tablets. **A transition towards fuller digital literacy is taking place in European society**. The younger generations have grown up making use of digital devices and media on a daily basis, and have developed considerable familiarity with their use.

This trend towards greater awareness and experience of the use of social media and high-tech products is increasingly common. However, it is clearly accentuated in the younger part of the population – who are called "digital natives". For this reason, the **trends in social interaction – mass collaboration and mobile connectivity – that are enabled by the new technologies are expected to be reinforced when these digital natives become older adults** and take on personal and professional roles in society.

This increased online activity is also changing the way people think, and the abilities they develop. **There is a transition towards less mnemonic knowledge**. This may imply a number of inter-generational tensions between younger and older generations in terms of the kinds of information they require in different circumstances. On the one hand, digital natives are less accustomed to and less adept at memorising concepts and absorbing ready-

[20] http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/08/169

made material. On the other hand, they are more skilled at finding and locating information, selecting a relevant piece of information, and creating and elaborating their own vision and content. Psychologist Betsy Sparrow, from Columbia University, claims, "*we remember less through knowing information itself than by knowing where the information can be found*"[21]. **The ability to grasp concepts and relate to them is becoming more important than simple memorisation of facts. However, the availability of information sources could lead – if overload is avoided – to greater opportunities to think about, analyse, ponder and experience this information**. Information consumers and users are increasingly constructing their own visions and interpretations rather than accepting external ones.

3.4 ON DIGITAL DEMOCRACY

Social media have the potential to move democratic governance and politics from a top-down, opaque, hierarchical system **towards a more bottom-up, transparent, lateral system**. Two paradigms are defined. In the first, citizens were involved actively mainly during elections and were mere recipients of political measures. In the second, citizens can instead interact with and influence final public decisions (Spencer 2009). This new horizontal approach does not necessarily imply that successful activism through the use of social media does not require a strategic hierarchy or a degree of organisation with a precise allocation of tasks. On the one hand, citizens or users still need to manage the increased amount of information available online in order to elaborate their ideas carefully and participate consciously in the political process. On the other hand, social media activists who act as active nodes in this new democratic process need to address the flow of information towards their users.

The **introduction of social networks into the democratic process leads to the creation of a** "**transversal space" where users can communicate and share experiences**. Users' communities are diffused and widely segmented. Social networks will not necessarily create petitions themselves, but they can surely accelerate them, helping to mobilise fragmented forces that otherwise would not have the possibility to interact. Any single person is then likely to become both a user (of a technology) and a node in a bigger, intangible, network. The first paradigm is related to a micro-level of analysis, whereby the user/citizen acquires skills to gather, process and elaborate correctly information, thereby making it possible to participate properly in the decision-making process; the second definition, however, is at macro level, where the role of the user/citizen is to be a "node", part of an integrated network of fellows, where the participation of any node is active and leads to a final decision that is the consequence of the common consultation among and participation of all stakeholders (De Martí and Zenou 2009).

The tendency towards mass collaboration and interactivity is more likely in societies that are always connected, where it is possible to be informed and to take action ubiquitously. Mass collaboration leads to **collective communities, where arrangements are made to consult all interested parties**. In a political structure on which the decision-making process is shared between both its legislative and executive powers, the orientation will be towards an interactive environment. The multiplication of actors and layers in the system will increase the importance of that part of the democratic process where decisions are discussed.

[21] http://www.kurzweilai.net/google-is-destroying-your-memory

Elements of participatory democracy are already on the rise. Users or citizens, who are connected to the new media, are asked to support institutions through an interaction of ideas and information with the public authority. There are several examples. For example, the police may request citizens' collaboration to solve a criminal case, or politicians may request citizens' input and opinions in consultations and referenda. Such participation is already increasing citizens' awareness of public life. In particular, it affects those who would otherwise not have found it feasible to join in with such activities.

Tension is likely to appear inside that segment of population – the **"digital migrants"** – who are used to the classic type of democratic process where decisions were taken at higher level and then implemented. They **may adapt with difficulty to today's changing process and concept of democracy**.

Some backwards shifts are, however, forecast (Newton, 2006) in the possible evolution of actors' behaviours. Several possible outcomes include that:

- *Presentation will be favoured over substance*: the need to get straight to the point will focus politicians' behaviours towards on the presentation of information rather than on policy content;
- *Systemic failure due to actors' inability or exclusion – or to abuse:* in the new horizontal system, some actors will be more able than others to gather, choose and elaborate information. However, challenges to the functionality of the system may occur as a result of the potential misuse of the system by a significant number of actors involved;
- *Policy instability and short-termism*: as social media covers the flow of political events increasingly rapidly, politicians are encouraged to take short-term action without consideration of long-term outcomes.

3.5 FOUR EXAMPLES OF DIGITAL DEMOCRACY

Four case studies were explored during the course of this study. They are those of the so-called Arab spring, the Spanish *Indignados*, the call for referenda in Italy in spring 2011, and the Stuttgart S21 demonstrations in Germany. The Arab spring grabbed the attention of many individuals, media and politicians throughout 2011. The *Indignados* are a social movement born in Spain in May 2011 as a protest movement chiefly about levels of unemployment. In June 2011 in Italy, there were protests about the way in which a number of political referenda were being held. The Stuttgart S21 demonstrations against the re-routing of long-distance train connections and a new underground station, while dismantling the old station, also came to a peak in summer 2011. Brief details on each of these initiatives are included in the annex to this study.

More recently, in late November 2011, the Occupy Wall Street movement has spread to over 2,700 "Occupy" occupations in Europe, the United States of America and worldwide.[22] It is even being investigated under the banner of "Occupy Research".[23]

All of these social movements have to a greater or lesser extent involved the use of different forms of social media. While in some cases the spark did not involve social media, the spread of information about the social movements, and attendance at them, resulted from its use. The interest of traditional journalism and broadcasting media in this use of

[22] Public lecture by Professor Manuel Castells entitled "Social Movements in the Age of the Internet", Thursday November 24 2011. London School of Economics. See http://www2.lse.ac.uk/publicEvents/events/2011/20111124t1830vSZT.aspx
[23] http://occupyresearch.wikispaces.com/

social media has also been considerable. The spread of these social movements and political protests has had varying levels of impact and international interest.

While some protests have shown their success in overthrowing regimes, the ability of the social movements to build up consensus and lead to the actual installation of democratic regimes through enhanced participation and transparency, remains to be seen. Events continue to unfold in multiple countries (in particular, the Arab spring) and researchers assess and investigate the implications of the occurrences.[24]

These examples can also illustrate that a trend towards a transparent form of bottom-up political participation is already occurring in everyday life. Former decision-making processes were challenged by mobilisation that was called for over the Internet (such as the cases of the *Indignados* and the Stuttgart S21 movements). The influence of both elites and traditional media is shrinking in terms of the way in which it can create public opinion (see the appeal to a proportion of the population to vote in a referendum, as was the case in Italy). Certainly, the ways in which traditional democratic groups and organisations are reacting to such social movements can be observed (as in the S21 case). **There are also tangible impacts on the ways that both the public sector and the private sector have responded and are continuing to respond to the birth and growth of these social movements**.[25]

Current methods of creating consensus and organisational and policy solutions will, more and more, be replaced by these new forms of communication. **Both political actors and structures need to cope with these kinds of changes in due time**.

[24] See e.g., the ICTs and Society Network that is due to meet in May 2012 http://www.icts-and-society.net/events/uppsala2012/

[25] See e.g., "Profile: Egypt's Wael Ghonim" http://www.bbc.co.uk/news/world-middle-east-12400529 referred to by Professor Manuel Castells. See http://www2.lse.ac.uk/publicEvents/events/2011/20111124t1830vSZT.aspx

4. WHAT ALL THIS MEANS FOR THE EUROPEAN PARLIAMENT

This chapter focuses on what the various technology trends could mean for the European Parliament and for the work of the MEPs, based on a review of current European Parliament activities that involve the use of technological tools.

The actors, activities and relationships taken into account are:

- **Actors**:
  - individuals (such as MEPs) and relevant bodies of the European Parliament (e.g. political groups and parliamentary committees);
  - the administration of the European Parliament.
- **Activities**:
  - information management including archiving;
  - decision-making in the European Union: consultation, evaluation and implementation processes.
- **Stakeholder relations**:
  - relations with other institutions;
  - relationship between the Parliament and Europe's citizens and/or voters;
  - connection with "non-state" actors in civic society, industry and science.

4.1. INTRODUCTION

Clearly, MEPs are becoming more and more familiar with digital media such as social platforms (Fleishmann Hilliard 2011) and an expansion of these capacities can be assumed. These social media platforms enable MEPs to interact more directly with the people they represent (in their constituencies).

The European Parliament evidences a clear desire to take advantage of technology to improve its numerous activities. It has a willingness to raise awareness about external developments, and use that knowledge to its advantage. This is shown, for example, by visits to different national parliaments to investigate their uses of technology. Examples of these visits include the Estonian Parliament, the German Bundestag, the Italian Parliament (which offers a commendable example of the use of ICT (including remote access to the Parliament's network, remote voting, strong information management systems and the training of staff)) and the British lower house which in spring 2011 undertook pilots to assess the use of tablet computers in committee meetings (Sparrow 2011).

4.2. OPPORTUNITIES FOR PROGRESS

Both MEPs and the Parliament as a whole can see that there are opportunities in which they can gain benefits from the use of ICT in their work as it develops over the next 15 years. This study therefore examined, first, the activities involved in what we have called the "Parliamentary life cycle" as it currently exists today ("as is"). These current activities are then contrasted to various possibilities emergent in the near, mid- and longer-term future ("as it could be").

4.2.1. The Parliamentary Lifecycle ('AS IS')

The lifecycle of MEPs in the European Parliament has several different aspects that range across the process of getting elected, representing the constituents who elect the MEP, adopting legislation, being involved in the governance process and liaising with the other European institutions such as the Council and the Commission, as well as the in-house relationships and activities within the Parliament (what can be termed the "articulation process").

The activities are, without doubt, intense, requiring considerable judgement, and extremely time-demanding. MEPs' professional lives can be typified by considerable demands, in particular, on their time, availability, and decision-making and information-processing capacities.

Three elements of their professional lifecycle are particularly demanding and have implications with regard to time availability, space (and its potential redundancy); and the environment:

- **the heavy "parallelism" of meetings especially e.g. when in Strasbourg**: support for the kind of multi-tasking whereby MEPs need to be involved in individual dialogue and debate; group meetings; committee meetings; and plenary meetings.
- **the amount of time spent travelling**: there is regular travel not only between Brussels and Strasbourg but also the MEPs' own constituencies[26] and the locations which they may have to visit e.g., study visits or public meetings. This clearly has effects on the ability to meet people, hold meetings, work actively, think, read, write, reflect carefully, absorb materials, and make decisions given the often "public" character of travel, "lost" or "down" times during journeys; the incapacity to use particular support technologies during journeys; and the effect it can have on the well-being of the human being.
- **general timetabling**: this has traditionally been squeezed into three working days and has recently been expanded into four.

4.2.2. Elections

By the end of 2011 the European Parliament, which is elected every five years, was composed of 754 MEPs. MEPs seeking re-election and new candidates are involved in the run-ups and campaigns that precede the elections. Successful candidates take up their positions in Parliament shortly after the elections. In 2009, efforts were made to "make the election more interesting and cosmetically appealing for television viewers."[27] Election posters in the 23 European languages were produced, and Internet banners were used on websites. European political party organisations also have the potential to play an increasing role in the European election campaigns. Currently, the European Parliament could be considered to be "somewhere halfway between an 'Obama-style' approach and the classic 'campaigning using billboards'"[28] in its approach to election campaigns.

[26] MEPs represent regions from all parts of the European Union, including their most distant: it has been suggested that e.g., an MEP from either northern Finland or southern Greece may have to travel for up to 20 hours between his or her constituency and Brussels/Strasbourg..

[27] Helena Spondenberg (2007) EU wants to dress up 2009 elections on TV. 26 February 2007. http://euobserver.com/9/23566

[28] The view proffered by a European Parliament-related interviewee to the study team members.

MEPs are often also involved in the ongoing electoral campaigns in their own Member States, and – more locally – in relation to regional or municipal elections, for example.

4.2.3. Representation and consultation

MEPs spend time physically each week in their constituencies and with their constituents and/or local parties. Representing their constituents involves them in running a local constituency office, and the challenge of co-ordinating the work of both this "home" office and their Brussels office. While most MEPs benefit from having some 2-3 staff members to assist them in their work, the actual staffing levels of their "home" or "local" offices may vary substantially.[29]

Membership of political parties has already been in decline for some years, quite independent of the influence of technologies. Developments in social media may undermine membership of political parties even further, especially if the parties fail to play a more direct role in communicating actively and directly with citizens. The challenge will be for MEPs to represent the people at large and their views in a particular constituency, as well as to continue to liaise with their particular political party and help it maintain its line.

The European Parliament still maintains a largely one-way communication style which is, nevertheless, aiming to move in a more two-way direction. As an example, the European Parliament's Facebook page does not allow users to write their own posts, only to comment and to 'like'. Committees now have their own websites: however, this is a largely one-way interaction and essentially a form of information space available on the Parliament's website. There are no real thematic, issue-oriented web platforms with interaction possibilities in place.

Large-scale e-Consultations, such as those launched by the Commission and which have considerably enhanced the participation of Europe's people in expressing their views on policy-related developments (including numbers as high as several hundreds of response),[30] are not yet a part of the European Parliament's activity.

To date, no central or specific form of advice service is offered to MEPs on how to manage their online presence. In fact, some MEPs currently hire ICT and media experts themselves for these kinds of purposes.

Last but not least, in its current work, the European Parliament has considerable commitment to providing multi-language materials and interpretation.

4.2.4. Legislation

With regard to legislation and how MEPs vote, voting must take place on site. While information on attendance and voting data regarding MEPs is available, it is not particularly visible or easily accessible, i.e., a visitor to the Parliament's site really needs to know very precisely where to look. Independent websites, such as www.votewatch.eu, offer a clearer overview of voting records and statistics and are due to be expanded in terms of their coverage in 2012. Hence, regarding transparency and disclosure of information, the

[29] It is said, for example, that German MEPs tend to organise their 2-3 staff in the various offices very similarly, if not identically. Some Eastern European MEPs may benefit from being able to employ up to 10-12 researchers.

[30] The first online consultation run by the European Commission was that related to the "post i2010" initiative in autumn 2009, which was since named the Digital Agenda for Europe. It was successful in generating the submission of 843 public response and 123 position papers:http://ec.europa.eu/information_society/digital-agenda/documents/consultationresponses.pdf

European Parliament is already making a solid effort. However, some shortcomings can be observed (including, for example, the fact that information on some topics is limited to the time-period of 2004-2009).[31] The work of Committees and Delegations can generally only be searched for the five-year time span of 2004-2009 and in the time-period until today.[32]

4.2.5. Governance and control

The Conference of Presidents is responsible for business and legislative planning; the responsibilities of committees and delegations; and the relations with other EU institutions.[33] The Parliament works in close liaison with the European Commission, the guardian of the Treaties and the Union's executive arm: the Commission presents, explains and defends its legislative proposals to the parliamentary committees, and must take note of the changes called for by Parliament and attend the requisite meetings. The Commission may be called to give account of its policies by MEPs and is required to answer MEPs' written and oral questions: candidate Commissioners undergo questioning in the respective committees before they are sworn in and, in some cases, have been refused. The Council of the European Union, represented by its President, can contribute to any of the debates in plenary. Regular interactions and presentations occur during the six-month period of each presidency. Guiding the work of the European Parliament's internal functioning; the Bureau is involved in treating budget estimates; administrative and financial organisation; and the work of the secretariat and its sub-departments.[34]

4.2.6. Internal processes ("articulation")

MEPs do have remote access to the systems of the Parliament. They are also supported while they are in either Brussels or Strasbourg. Twenty committee websites are regularly updated, and committee meetings are web-streamed. However, the desktop computers offered to the MEPs do not currently support mobility. No individualised "apps" are available for MEPs in terms of interesting events and activities that they would like to follow. No personal space in the cloud is allocated to MEPs, nor does the European Parliament itself use the cloud to store and organise information or to outsource certain of its services. Hence, this does not especially favour the work of MEPs who are constantly "on the go".

The European Parliament has made use of technology to improve its relations with other institutions and foster the exchange of information. The aim of the European Centre for Parliamentary Research and Documentation is laudable. However, online support of cooperation initiatives other than IPEX, such as the Conference of Parliamentary Committees of Union Affairs of Parliaments of the European Union (COSAC),[35] is not particularly strong at this point.

Notwithstanding all the technological developments currently provided and also being explored by the European Parliament, the ICT-related services offered to the MEPs, committees and other parliamentary bodies by the European Parliament remain limited.

[31] See, for example, the press archives: http://www.europarl.europa.eu/parlArchives/pressArch/search.do?language=EN
[32] See, for example: http://www.europarl.europa.eu/parlArchives/comArch/comDocSearch.do?language=EN
[33] http://www.europarl.europa.eu/parliament/expert/staticDisplay.do?id=53&pageRank=2
[34] http://www.europarl.europa.eu/parliament/expert/staticDisplay.do?id=53&pageRank
[35] http://www.cosac.eu/en/

4.3. THE PARLIAMENTARY LIFECYCLE ('AS IT COULD BE')

This sub-section explores a number of the developments that could take place in the Parliament in the short-, medium-, and longer-term. Underpinning many of these ideas is the European Parliament's keen commitment to the provisions of the Lisbon Treaty (e.g., European Parliament 2010).

Implicit in many of the potential directions that could be taken will be considerations for the particular model of Parliament to be selected for implementation[36] (its level of staffing and its commitment to physical buildings)[37]; the identification of those aspects of parliamentary life which are the most cost-consuming and yet which could become much more cost-effective;[38] and the degree of complementarity or synergy with other European institutions.

4.3.1. Elections

The next European elections will take place in June 2014. Clearly, classic print and broadcasting media no longer have quite the leadership role they held in 2009. Over the past two-year period, the use of social media has grown substantially. And the triple-play convergence of media is likely to influence the ways in which messages can be combined and coordinated across different platforms and applications. The run-up to the 2014 elections is likely to see an enlarged role for a wider diversity of media working together to promote awareness of the elections and increase voter turnout. For younger voters, in particular, this is likely to be seen through the lens of social media.

In this respect, the experiences of the US Presidential elections of both 2008 and 2012, and the UK parliamentary elections of 2010, need to be borne in mind. Similarly, the use of social media in the national elections of major European countries should also be followed in an evidence-gathering manner. For older voters, the challenge is which media is best used to communicate with them about their involvement in the elections (Madden 2010). Evidence also tends to show that older adults take up some of the forms of social media (e.g., Twitter) when topics of concern to them are raised in traditional broadcasting media (for example, discussions around the role of privacy in the press and private life generated such a rise in interest). With the baby-boom bulge that is anticipated to peak in the 2020-2030 time period, capturing the interest of this part of the voting public will be crucial to the European Parliament.

Last but not least, by 2019 and 2024, respectively, there will also be considerable implications for the role that could be played by eVoting.

[36] For example, whether there might be some kind of shift towards a more American model of parliamentary democracy that would require even larger numbers of staff, more specialist committee secretariats, and specialist librarians and archivists such as is the case of the US Library of Congress.

[37] Careful consideration needs to be given to decisions with regard to buildings and infrastructure, and especially in a social context in which Europe's peoples are becoming more conscious and concerned about issues of ecology, environmentalism and energy consumption.

[38] Examples might include the degree of multi-lingual applications and interpretation available.

4.3.2. Representation and consultation

Greater accountability is likely to be required of parliamentarians. Citizens will experience greater possibilities to intervene more easily in discussions and in the processes of decision-taking established by the political institution. As increasing amounts of information are available over the net, citizens will place ever more importance on the transparency and coherence of the political decisions that are taken by their representatives. The involvement of citizens and stakeholders is made easier by technological developments, especially thanks to mobile devices. The barriers to participation are lowered.

Greater interaction with citizens and other stakeholders could be developed. One example might include the design of applications ("apps") for smart phones that would make it easier for citizens to follow parliamentarians' activities (and vice-versa, also, for the following of citizens' views by MEPs). Social computing, for instance, can enhance the awareness or identification of the links and relationships between stakeholders, helping to determine more accurately precisely who can bring added-value into any discussion process.

Greater attention may also be paid to the presence of well-known political leaders or personalities who are willing to take on public leadership roles. This could strengthen a shift towards presidential, single-personality, styles of politics, a move which is already strongly underway.

A variety of other actors (who choose to act as "information intermediaries") will become more involved in linking elected representatives to the institutional framework. In both of these latter cases, MEPs may want there to be clear distinctions between the views of "ordinary" citizens and those of lobbyists and other stakeholders (or even the differences in expressions of views when acting as a lobbyist as opposed to acting as an individual citizen; e.g., when acting as a representative of a [health-related] interest group or as an individual patient). Hence, in parallel to a growing attention to stakeholder engagement in decision-making, this is likely to place importance on methods of appropriate eIdentification and eAuthentication of individuals and groups, as well as on "transparency registers" for the various (often myriad) interests and affiliations of people.

Thanks to a new step introduced by the Treaty of Lisbon, it is feasible for citizens to initiate a legislative proposal, although there has not yet been an example of this since the launch of the initiative will not take place until spring 2012. One million signatures will be needed to request the Commission to propose legislation in an area of direct interest in an area of European Union competence. The use of this European Citizens Initiative[39] will be greatly facilitated by ICT (including social networks, eIdentification and eSignatures). Given the relative ease with which this instrument of direct democracy can be organised, it could be used often in the future. At least approaches can immediately be envisaged: its use by political parties in different nations; its use by international industry in different nations; and its use by already existing pan-European initiatives e.g., research[40] and applied studies/investigations ("large-scale pilots"). This is highly likely to be a mechanism due to spread rapidly over the next 15-year period. Clear preparation by the Parliament will be needed for these implications, as well as the experience of "learning-by-doing".

[39] http://ec.europa.eu/dgs/secretariat_general/citizens_initiative/
[40] http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1226&lang=1

eVoting is dealt with in the sub-section on legislation. However, there may also be opportunities for citizens, in debates with MEPs, to indicate how they react or respond to particular positions, opinions and trends, akin to the kind of "red button" voting that takes place in some broadcasting and electronic media.

Once proposals move into legislation, other mechanisms may enhance the meaning of that legislation to ordinary citizens.

4.3.3. Legislation

Judicial cooperation is on the rise in the European Union. IT democratisation can help to involve citizens, and provide more efficient ways to exploit their collaboration. Participatory websites for selecting and monitoring the development of initiatives and projects (e.g., in wider international terms, the US Recovery Programme[41]) would offer a number of opportunities to the European Parliament. In Europe, not only potential revision of the Lisbon Treaty, but the shift towards higher-profile legislative developments (the purpose of which is to advocate European integration, sustainability, progress and well-being) will place much more emphasis on the need for citizen involvement. Citizens following, monitoring and getting involved in the practical application of these forms of legislation is likely to increase greatly over the next 15-year period.

MEPs remaining abreast of developments in eGovernment-related developments, particularly around e-Voting and e-Polling – undertaken experimentally or in practice, whether by individual Member States and supported or not by European Commission co-financing (and other forms of financing mechanisms) – would be invaluable.

Different associations and civic society organisations will find their ability to check information about individual MEPs and their activities in committees is made easier. They will be able to follow the legislative process with much greater immediacy. Straightforward examples include accessing agendas, reports, motions and resolutions: demand for this access is likely to increase.

e-Voting by MEPs could increase their own participation in voting, and hence probably raise the legitimacy of votes as more MEPs would vote on every initiative and every amendment.

Given the large number of policy and legislative initiatives launched by the Commission, adequate information management could help users to spot similarities and differences in topics so that MEPs are not overburdened with information. With, for example, the number of Impact Assessments increasing, an enormous repository of information is likely to be created.

Recommendations and soft governance instruments are often later turned into binding regulation. Given the increasing use of these kinds of governance instruments, facilitated by technological trends, the inclusion of all stakeholders starts to be of higher importance. Social computing, information management, and connected mobility should all help here.

Both ex ante and ex post information-gathering take place for various purposes. These kinds of procedures cause large volumes of information to be gathered. As far as possible, Impact Assessments include a form of quantification of qualitative issues (they attempt to translate issues into figures that can facilitate decision-making). In terms of evaluation, the ex post accuracy of proxies used in earlier impact assessments could be monitored and new models

[41] http://www.recovery.gov/Pages/default.aspx

adjusted respectively. Technological advances, such as the cloud, would improve the availability of data, if the assessments were prepared for this purpose (and, hence, knowledge and information management techniques were used appropriately).

Ultimately, however, decision-taking remains political. However, technology can help to ensure the accuracy of the facts, take into account all the relevant information, check that there are no "holes", and ensure that the information provided is of good quality and precise.

The European Court of Justice is in charge of interpreting European legislation. During the preparation of legislative measures, if discussion records are maintained electronically, it could be easier to determine the *ratio legis:* one could understand more completely the reason why a legislator decided to act and, more importantly, what was the underlying intention. The legislator's intention is the main interpretation criterion the Courts must follow. Cloud computing will enhance unlimited storage capacity which might facilitate such storage of pre-legislative discussions.

4.3.4. Governance and control

Huge opportunities are opened up for the degree of interaction between the European Parliament and the European Commission and also the Council.

The European Union has a number of agencies and decentralised bodies that endow it with specific technical expertise. Ideally, the European Parliament could also call on the expertise of these agencies to clarify a number of technical aspects when working in legislative issues. The combination of cloud computing, information management, the semantic web and social computing, could facilitate the establishment of large, well-structured, databases, complete with information summaries, contact persons and institutions with regard to any given topic.

Clearly, the development and enforcement of cyber security standards across Europe will be a crucial component of a comprehensive information management infrastructure. Developments in cyber security will help to encourage stakeholders' and citizens' participation in the decision-making processes. Without a degree of certainty that contributors to the discussions who raise an issue are indeed who they say they are (i.e., that their identity is guaranteed and that there is no risk of politicians being influenced by fabricated "Potemkin villages"), there will be limitations to wider citizen participation.[42] The European Parliament and the other European institutions must be confident that opinions expressed on issues of debate or consultation are genuine. The Parliament will certainly wish to ensure that any opinions expressed are not the result of 'hacking' attacks intended to make any issue look more important than it is (for example, if thousands of fake profiles were to be created so as to reinforce the appearance of citizens sharing the same opinion).

[42] The ways in which even one-day forms of social action undertaken by non-for-profit organisations such as Wikipedia can influence citizens' reactivity and political decision-making (cf. United States' proposed legislation called the Stop the Online Piracy Act (SOPA)) is already sobering.

4.3.5. Internal processes ("articulation")

With enhanced user engagement, and more user-friendly technologies, each individual will be able to increase his/her working efficiency in Parliamentary activities and the in-house relationships among MEPs and "communities". Communication systems, alerts and improved reporting methods will all come to the fore. The European Parliament can reap the benefits of this trend either by becoming more aware of "outside" developments and/or by explicitly requesting citizens' collaboration in different exercises, campaigns and initiatives. Open source or highly customisable proprietary applications can be improved and designed to satisfy the European Parliament's requirements and the needs of individual MEPs. With a reduced need to be "tech-savvy", MEPs will be able, with some basic training, to customise their systems and applications to better meet their own organisational needs.

An enhanced "openness" towards external people and organisations, including collaboration that is requested explicitly, will undoubtedly streamline many parliamentary processes. As the barriers to developing expertise to undertake IT developments decrease, higher user involvement will lead to a significant source of beneficial improvements in-house. Some training might, of course, be needed for the staff and also for MEPs.

4.4. COMMUNICATION AND INFORMATION MANAGEMENT

This section presents some pointers to the kinds of communication and information management that could be explored in a more systematic way by the European Parliament. Each of the following sub-sections refers to the different actors, activities, and stakeholder relations already introduced.

4.4.1. Individual MEPs and the "sub-groups" of the European Parliament

For practical reasons, MEPs currently conduct their work, and address different individuals and communities, in a very targeted manner. Social computing will take this targeting and tailoring of contacts to a new level. Traces of everybody's life – and not only the lives of "digital natives" – will increasingly be available on the Internet. It will become feasible to examine different, relevant variables with regard to different people. Basic information such as a person's location, age, sex, occupational sector, educational track record, type and frequency of services used online, income or turnover could become available. Hence, MEPs will be able to address specific sectors of their constituencies in different, and more targeted, ways. Committees will similarly find it easier to locate and reach out to the appropriate stakeholders in their respective sectors of action. Communication may also expand outside the realm of the individual constituencies to other regions and countries that experience similar situations and trends. Iteration will improve the efficiency of the targeting and tailoring.

Insofar as the outcomes of any measures taken as a result of this better understanding of their needs is satisfying, citizens and stakeholders will become more receptive to disclosing pieces of information that can be used by the public authorities. Nevertheless, Europe's citizens are clearly currently very concerned with regard to data protection and data privacy. It remains to be seen how possible regulatory and legal directions in these matters to be proposed by the Commission in 2013 will be reassuring to them.

As a result of improved information management, MEPs and the Parliament's sub-groups will be able to exploit to the fullest the in-house experience existing in the Parliament. The body of work carried out within the institution will stop being an 'abstract' resource for citizens: instead, it will become available through accessible, easily navigable databases. Information will be easily searched for, classified and presented in the most convenient manner. Combined with state-of-the-art visualisation technologies, information will be exploited to an ever-increasing degree. Information management can be applied to such activities as working on amendments to documents, locating information or possible contacts, or finding templates or examples of any type of documents or resources. Time will be saved and wasteful repetition of efforts avoided. Visualisation, touch-sensitive and gesture-based devices will enable data to be navigated in a more intuitive and natural manner, so that relationships and patterns among information and pieces of information are spotted more easily. Information management will ease presentation-giving in meetings (whether these are plenary sessions or smaller committee meetings). It will enable the use of more visual data and less textual data and make it easier to point colleagues to sources of information. More practical organisational tasks, such as setting the agenda of plenary sessions and allocating time to different topics for discussion, will become easier as parliamentarians examine the records of previous meetings and build on their past experience.

4.4.2. The administration of the European Parliament

There are more than 4,500 officials working for the Secretariat. Hence, it would be useful to harness the in-house potential of social computing to serve this large number of personnel. As a result, the administration services of the European Parliament could find it easier to target their actions more appropriately. The potential for more effective allocation of personnel according to personal and professional skills and interests offers an appealing perspective. Any possible links and relationships between tasks and activities would be easier to appreciate. Through social networking, it would be possible to identify the most influential variables relating to the pursuit of certain tasks, and to take action accordingly.

Developments in information management systems will help to render the use of internal and shared data among the different Directorate-Generals and Secretariat services more efficient. Workflows should become more effective. Any avoidable overlapping of tasks and responsibilities will ultimately be reduced. Improvements in data quality and data filtering will be crucial; they will help to avoid an "information overflow". As more and more information is stored and made available, the need to select and use the relevant piece of information will be paramount. The use of visualisation software and techniques will contribute to simplifying and making day-to-day work more efficient.

4.4.3. Relationship of the European Parliament with other institutions

It would be advantageous if a new way of interacting between direct democratic channels and representative bodies could be found. The European Parliament is the appropriate body to find and apply such a method – as it is the directly elected supra-national institution within the European Union's political system. This new form of democracy will become a management instrument for reforms. There could be a permanent dynamic, quasi-symbiotic exchange of governance forms and reciprocal adaption between the national (and in case of the European Union, supra-national) democracies and global exchanges. The transformation processes will be ongoing.

The use of visualisation software and eVoting will increase institutions' awareness of topics that can act as the basis of their cooperation. Digital platforms (such as blogs and websites) at committee level or the use of social networks at other layers of the political system will make feasible the spread of information and content (such as the minutes of meetings, for example). The material will need to be easily accessible from other institutions. Translation software will play a considerable role in addressing any language problems.

4.4.4. Relationship between the European Parliament and Europe's citizens and/or voters

The European Parliament should ensure that communication is user-friendly and that media coverage is the widest possible. Citizens' involvement with new technological tools will provide them with a greater opportunity to interact. In this regard, the European Parliament should address this discussion in a positive and pragmatic way. The risk of non-constructive engagement should be defused through a proactive strategy of listening to citizens' complaints and, as a consequence, acting on them immediately. Prompt and easy-to-understand responses will be necessary to ensure that the actions of the European Parliament will not be affected by users' frustration or perhaps a sense that their opinion is not taken into consideration. The risks inherent in inaction are high. A lack of attention to this trend might prejudice the whole transformation process.

Thanks to social computing, it will be possible to identify the most influential variables affecting certain activities, and take action accordingly. This will increase the effectiveness of the messages that the European Parliament will provide when it uses the Internet. Guidance to MEPs will be necessary on this specific issue to ensure consistency of European parliamentary action. Citizens will benefit from this and their participation will be therefore incentivised and addressed positively. It could be feasible to offer support or coaching or facilitation of social networking for MEPs.

Improvements in data quality, data filtering, and the control of information reliability will all become crucial. This shift will ensure that the formation of public opinion remains unbiased and that frustration on the part of people does not overtake positive and constructive discussion. The use of visualisation software and techniques will contribute to simplifying the messages that the European Parliament will need to send out, diminishing any risk of citizens' digital exclusion from media strategy.

Forms of crowd sourcing ("wisdom of the crowd") could be encouraged, so that citizens and end-users at large can assist with the evaluation and analysis of different materials or activities and their progress.

4.4.5. Connection with "non-state" actors in civic society, industry and science

Technology will enhance the capacity of individuals to organise themselves into complex structures, increase their participation in decision-making, and enhance the democracy of decision-making processes. Institutions will need to make the processes that are at the basis of public decisions even more accountable. It will be possible to create (and re-create permanently) different phases of engagement between stakeholders and institutions. The forms and process of public decisions will change according to different trends. Trends that favour both atomisation[43] and assembly could occur. Outsourcing or crowd sourcing processes are likely to be highlighted. This will increase people's interest in the work of the European Parliament (both in terms of the quantity of users concerned and the quality of their involvement). It will help to bring stakeholders' and people's engagement in the work of the European Parliament to a level that is more developed. One example demonstrates the way in which commercial corporations, civil society organisations and academic institutions became involved in designing and developing potential applications for the future of the British parliament (Hansard Society 2007).

Developments in information management systems will help to make the use of internal and shared data among the European Parliament and different stakeholders more efficient. Especially for stakeholders, improvements in data quality and filtering will be essential in order that they can search, elaborate and propagate information and media content. The work of different actors will be facilitated both in relation to the institution of the Parliament and individual MEPs.

[43] I.e., greater individualisation and fragmentation of society.

5. CONCLUSIONS AND FUTURE OPTIONS

This chapter presents an overview of the study's conclusions and a set of longer- and shorter-term options for Parliament to consider.

5.1. CONCLUSIONS

Currently, change is swift and will remain so. A large number of developments are occurring rapidly both in terms of ICT and society. Looking ahead over a ten- or fifteen-year period is an extremely difficult challenge, if not impossible. The 1970s and 1980s futurists were able to examine the future over at least a period of a quarter century (e.g., Toffler 1970; Toffler 1980; Naisbitt 1982). Today, a more informed predictive view of the future would be facilitated by frequent, regular reviews of technological change.

The European Parliament has a unique opportunity ahead. It is both the first and the primary representative of European democracy and democratic procedures. Today's debate on European governance and legitimacy is seeking more popular accessibility and tangible democracy in the EU system. This is a golden opportunity for the European Parliament to take a brave step forward as a leader in the world of digital democracy.

The Parliament is already moving ahead in terms of both digital democracy and its own use of ICT: from undertaking study visits to examining where good practice might be adopted to several noteworthy technological developments that are already in place.

The Parliament needs to continue to keep its eyes open to developments in technology, particularly those that can help support democracy, and to dare to experiment. It will be a major plus for MEPs and the European Parliament to become more acquainted with these technological developments, to feel comfortable with what they have to offer and to harness them to the benefit of European politics.

Given the unpredictability of technological change, an approach of careful experimentation is advised. Regular investigation of the usefulness and appropriateness of different types of ICT is appropriate, as a means to select ways of moving forward. Small-scale steps rather than a "big bang" approach make sense in this area.

Further investigatory steps could be taken in three precise domains which the European Parliament has not yet explored in any great depth. These three elements of "democratic innovation" are:

- **communication around the democratic process**: virtualisation, being mobile and eVoting.
- **information management**: including visualisation and the cloud
- **innovative structure**: developing an ICT platform or community to collect, share and develop information and experiences.

5.2. OPTIONS

While the Parliament's review exercise is ambitiously entitled "MEP 2025", this study shows that the speed of both technological and democratic developments means that looking a decade and a half ahead poses substantial challenges.

In contrast, more different forms of foresight analysis and study, conducted more regularly, might ultimately serve the European Parliament more effectively. Shorter- and mid-term reviews of the future of democratic innovation are therefore proposed. Ultimately, the findings of this study and its proposals could be tested out, reviewed and adapted appropriately on a regular basis, say every two years.

In each case below, the most ambitious or strategic concepts are given priority, since they require more care and preparation. The potentially easier to achieve "low hanging fruit" are cited lower in each list.

Decisions with regard to the content, directions, method of decision-making, and other choices to be made in all of the options that are put forward here are, of course, entirely in the hands of the European Parliament.

Three main categories of option emerge from the study.

5.2.1. Democratic process and communication

- **Experiment with virtual meetings and eVoting**: Increasingly, talk is about bridging time and space, and experience in this arena needs to be built up. High-quality videoconferencing is already available. It is commonly used contemporarily in many corporations.[44] However, virtual meetings need to be managed in different ways than do physical meetings. Experience needs to be acquired on how to make such meetings work in the best possible way. While tips and guidelines are available, nothing substitutes for experience. Remote participation options could be considered for the different types of meetings in which MEPs are involved, including person-to-person, committees and even plenary sessions. Public debates (whether real-time or electronic, such as webinars) could also be organised with MEPs, incorporating eVoting to capture citizens' views.
- **Develop e-Consultation**: The European Commission has made online consultations a regular component of its policy-oriented activities.[45][46] Organising such consultations makes it easier for stakeholders to provide input. As text analytics and pattern recognition software improve, it should be easier to launch consultations with more open-ended (and fewer pre-defined) questions. When the Semantic Web materialises, it will offer a concrete possibility to pose many more totally open-ended questions.[47]

[44] The local authorities in several countries are also experimenting with videoconferencing technologies e.g., in such domains as health, care or language interpretation. Examples include Denmark and the United Kingdom (Scotland).

[45] An example is the actions of the Digital Agenda for Europe http://ec.europa.eu/information_society/digital-agenda/index_en.htm

[46] Many organisations are moving towards the use of questionnaires and surveys in terms of assessing trends as evaluated by users of their services. It might be appropriate to use various (contracted) analytical services to assist and support the assessment of such data.

[47] Due to the way the Semantic Web is being constructed , computers are being 'taught' the meaning of words in different contexts. Simple statements establish links and relationships between concepts. Eventually, computers should be able to understand the meaning of words in their own contexts, summarise and aggregate ideas, and provide related information.

- **Involve stakeholders online on matters of implementation and especially evaluation**: e-Consultations can have different stages: an area where there seems to be a clear role for input from citizens and stakeholders is that of implementation and evaluation. The scope for improving stakeholders' participation is significant in all phases of the decision-making process. One example of participation in decision-making is evident e.g., in north America.[48] Citizens could help to check whether the implementation of certain policy measures is going well or express their views on whether the outcomes of particular decisions are indeed beneficial for people, through participatory websites set up with this intention in mind. Citizens might also be willing to get involved in "wisdom of the crowd" style analyses of reports and policy issues, contributing to the formulation of policy.[49]
- **Be mobile**: First, electronic voting by MEPs themselves at a distance, in committees and in plenary session should be considered. Second, electronic voting by the people at large in European elections for MEPs ought to be a serious possibility. A rising number of European citizens now reside outside their original country of birth or citizenship. Conventional postal voting procedures are slow and time-consuming. Although such an approach does not depend on the European Parliament but, on the Member States, it is clearly in the interest of the European Parliament to advocate the widest possible participation in the European elections. Numerous jurisdictions are introducing eVoting.[50]
- **Encourage use of portable devices**: Provide portable devices (such as laptops, smart phones and tablets) to MEPs so that they can work more effectively from anywhere and at any time they need (with certain exceptions). MEPs need to be able to make an effort to go where people are, and not just make information available when people come to them.
- **Enhance website(s)**: Simplify and make more user-friendly the European Parliament website, related websites and their associated search engines. While the Parliament's website includes a large amount of information, data with regard to attendance and voting records is not always easy to find. As possibilities for developing a new model, design or approach, the Parliament might wish to consider the work undertaken by http://www.votewatch.eu.
- **Enhance cyber security**: Particularly if stakeholders are more involved in sharing their ideas and views, privacy protection and cyber security will become very important. The European Parliament must be sure that those people and institutions that offer it input are indeed who they claim to be. However, at the same time, it must ensure that the identity of citizens and stakeholders remains confidential when appropriate. If there is no such confidentiality and privacy offered, many people will not be willing to participate in consultation processes that are vital to an expansion of the democratic process.[51] There generally needs to be increased attention to such threats as data theft, denial of service, intrusion, malware, site hijacking and spyware.
- **Reinforcing transparency**: Transparency registers would allow stakeholders to declare their affiliations and involvements in particular associations and corporations.

[48] http://www.recovery.gov/Pages/default.aspx

[49] How citizens can get involved in scientific innovation, and their willingness to do so (encouraged by public promotion of these challenges) is already clear in the field of astronomy: see, for example http://www.bbc.co.uk/tv/features/stargazing/

[50] Examples include Spain and Switzerland.

[51] It is highly likely that there are generational differences in terms of these concepts. Hence, piloting of initiatives should be accompanied by appropriate public relations, awareness-raising campaigns, and training.

Transparency would acquire increased importance as a condition for allocation of public investments and democratic accountability.

- **Ensuring multilingual translation and interpretation**: Within the context of the debate about the degree of multilingualism which is appropriate for the Parliament, technologies such as videoconferencing, search engines (e.g. Google) and smart phones are already on the verge of making substantial progress in this direction. Semantic technologies, speech recognition and automated translation facilities may well offer greater quality and more effective and efficient facilities than today in more comprehensive, wide-ranging and also cost-effective ways.

5.2.2. Information management

- **Investigate the possibilities offered by data and information management techniques**. Information is a valuable resource, but managing the risk of information overload on MEPs is a major challenge. Guidance with regard to how to find the appropriate piece of information is crucial for parliamentarians. Key immediate difficulties include: receiving massive volumes of email and texts; handling large volumes of responses to e-Consultations; having to process large volumes of reports and policy analyses; and understanding trends in opinion emerging from countless social media channels.
- **Invest in data visualisation techniques**: With the explosion in the quantity of information increasingly available, there is a risk that the European Parliament could experience a complete information overflow, and MEPs would be lost in the ensuing data deluge. The huge quantities of textual data that are the backbone of the work of the European Parliament pose challenges for data navigation. The European Parliament could invest in data visualisation techniques. They would enable the discovery of data patterns more easily by either MEPs themselves or their research staff, and offer interesting visual images of the data.
- **Explore and invest in the cloud**: A wide range of cloud-based options are possible which the European Parliament might explore:
    - Put data progressively into a private cloud, to gain experience with a "safe option".
    - Use the cloud for the storage of information, and offer each and every MEP his or her own space in the cloud so that MEPs are increasingly able to work from anywhere.
    - To enhance transparency, build up a public cloud where public documents would be placed.
    - Data sharing could become more common, and could be based on appropriate guidelines.[52]
    - Use the cloud to outsource and delegate (where appropriate) various work and organisational processes. Examples involve statistical analysis of data, and the creation, maintenance and updating of e-rooms (these are shared electronic workspaces where MEPs and their staff could collaborate).
    - Information exchange with other institutions (such as the Commission, Council and national parliaments) can also take place through the cloud. Eventually, the notion of a "Eurocloud" could be considered.

[52] http://www.ico.gov.uk/for_organisations/data_protection/topic_guides/data_sharing.aspx

- **Update and extend the online availability of archives for the use of the public**: for example, these could include archives that pre-date 1994 to be made available on the European Parliament's website. The digitisation of diverse types of archives is of immense historical value to researchers and historians. This could be the European Parliament's contribution to the push to create a more open digital cultural heritage in Europe[53], and illustrate a positive approach to leadership in the use of public sector information.[54]

5.2.3. Innovative structure - an ICT platform or community

Setting up an ICT platform or community is an innovative approach that would be relatively easy to undertake. It could involve collaboration with other European institutions as well as with MEPs, staff and wider communities.

- **Invest in an infrastructural backbone:** a systems' backbone which could join together not only all the various actors inside the European Parliament but also the other geographically distributed institutions of the European Union (and national parliaments), would require appropriate levels of financing. This would logically be done as a by exploiting broadband infrastructure and evidencing a greater commitment to the cloud.
- **Expand and enhance collaboration**: Upgrade collaboration with the other institutions, national parliaments and governments. As simply one institution, the European Commission, for example, possesses a considerable amount of internal expertise and commissions a vast number of studies, the content of which could be shared much more pro-actively with the European Parliament. More contact with the expanding number of European Agencies could also be helpful to the European Parliament. More widely, forms of competition or games could be created that would permit interested parties to submit potential technological designs that could be of interest and use for the work of future parliamentarians (as was the case in the United Kingdom described in Hansard Society 2007).
- **Encourage the approach of working from anywhere**: Take advantage of the cloud to enable working from anywhere, eliminate the paper trace of parliamentary documentation as much as possible, and outsource services. Thematic spaces in the cloud could easily be created. These could include lists of useful contacts and sources both internal and external to the Parliament. It is recommended to begin to do this as soon as possible in order to gain experience steadily in terms of applications and approaches. MEPs and, their staff can advise on the procedures or tasks which can be most appropriately outsourced or carried out through the cloud.

[53] http://ec.europa.eu/information_society/activities/digital_libraries/cultural/index_en.htm

[54] See, for examples, proposals for a revision of the Directive on the Re-Use of Public Sector Information: http://ec.europa.eu/information_society/policy/psi/index_en.htm

5.2.4. Possible organisational approaches

A number of organisational approaches should be borne in mind:

- **Evaluation, assessment and ranking**: An assessment exercise should review the technological achievements and progress made by the European Parliament in relation both to its own aims and goals and relative to comparable international actors. In the first context (own programme), the Parliament might consider a self-assessment exercise that takes place at least every two years, culminating in 2025: it could examine, for example, whether it is achieving results against the critical success factors for technological progress that it has set itself (European Parliament, 2010). With regard to the second concept, national parliaments and the European Parliament might wish to share information on how they currently use ICT and the main lessons to be learned.[55] Different forms of piloting of innovative ideas could be developed. This might take place alongside – or within – a wider international exercise that could incorporate e.g. Organisation for Economic Co-operation and Development (OECD) countries and/or the Union's partners in global development.
- **Expand the ICT service**: Invest more heavily in and expand the activities of the ICT service of the European Parliament, the Directorate-General for Innovation and Technological Support. This service could begin to provide additional centralised services for MEPs, such as pre-defined applications ("apps") for websites or for smart phones – these could ultimately be highly personalised apps intended for the use of each MEP that are intended to meet with his/her individual, professional needs, providing the information that s/he desires on specific topics, trends, policy developments or committee or group areas of investigation. Thus, the ICT service could become a really state-of-the-art unit: offering information pro-actively to MEPs and parliamentary groups. At the same time, MEPs could turn to the service with questions, requests, and suggestions.
- **Provide training**: Offer training to MEPs on how to develop their online presence, use of social networks (such as support, coaching or facilitation in this domain), and on basic use of free software (for example, customisable applications such as RSS aggregators that facilitate end-users' follow-up of multiple sources of information from different websites). A service of this sort might offer advice on a number of organisational and public relations issues, as well as technological. It could form part of the European Parliament's Communication service.
- **Take a clear policy decision on specific platforms**: Either make further progress with the European Centre for Parliamentary Research and Documentation (ECPRD) or withdraw from it. Both the IPEX programme, whose website has recently been upgraded, and the ECPRD programme appear to offer a good starting-point for the sharing of information with other parliaments. However, particularly with regard to the ECPRD, unless its activity is boosted, its added-value can be questioned.

[55] An example cited during the course of the study was the data sharing that is taking place between the two British houses of parliament.

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7. ANNEXES

FOUR CASE STUDIES

These are the four case studies that the study team selected as examples to illustrate changes in democracy that have been enhanced and in some ways facilitated by ICT. These case studies were investigated in summer 2011.

The "Indignados"

The origin: The *Indignados* (the indignant ones) are a social, protest movement born in Spain in May 2011. Also known as the "15-M movement" or "Spanish revolution", the movement is considered to have its origins in the demonstrations called online (www.democraciarealya.es) by the civic digital platform "Democracia real YA" (real democracy NOW) for 15 May 2011, one week before the municipal and regional elections were held in Spain. Protestors expressed their discontent with, among other issues, the high unemployment rates (over 20%, and above 30% among young people), the exorbitant housing prices, the banking sector excesses, a political class described as incompetent that was claimed to be completely disconnected from its electorate and social demands, and a bipartisan political system that discourages reforms and prevents the effective participation of smaller parties. The composition of the body of protestors was highly diverse, and included young students, unemployed workers and retired people.

Protests spread with the help of new media: The movement spread rapidly online. On 16 May, 2011 #spanishrevolution was a trending topic in Twitter, while others emerged such as #democraciarealya, #acampadasol, #nonosvamos, #notenemosmiedo, #juntaelectoralfacts, #esunaopcion, #tomalaplaza. Similarly, diffusion increased via numerous Facebook groups ("Democracial real YA", "Spanish revolution", "INDIGNADOS", "Los "Indignados" – 15-M Movement", etc.). By 18 May 2011, there were camps (marches turned into permanent camps) reported in more than 50 cities. The "take the square" website http://tomalaplaza.net/ was created, and gathered together 50 city blogs. A viral supporting video on YouTube, uploaded on 20 May, 2011, had 300,000 visits in less than 3 days. The sit-in at Plaza del Sol (Madrid) had its own online TV channel that topped 11 million visits by 25 May, 2011. Traditional media also covered the protest.

Public support and cross-border effects: The nonviolent protest movement gained wide support in Spain (81% according to *El Pais*, Spain's top-selling newspaper) and inspired similar protests in other European countries such as France, Greece and Portugal.

The movement evolved: While initially the movement was limited to protests, the need to propose alternatives to gain credibility and promote actual change was promptly understood; as a result, a short manifesto was quickly agreed (17 May, 2011). Thematic committees were set up in each camp, and popular assemblies were held in order to try to come up with agreed proposals; a voice was given to everyone and decision-making was consensus-based (votes too place through a show of hands). However, the intended lack of any hierarchical structure or centralised body complicated the approval of widely-supported proposals, with no significant agreement reached as of mid-August 2011.

Tangible impact: The influence of the *Indignados* movement could be felt both in the public and the private sector. Thus, in response to the demands of the movement, the Spanish Congress approved measures to raise mortgage-holders' protection. Meanwhile, Bank Santander offered a three-year waiting period to mortgage-holders who lost their jobs or saw their income decrease by 25%, and Bankinter introduced a deed of assignment in payment (the possibility to liquidate a mortgage by handing in the keys of one's house) into its new mortgages

The Italian Referenda 2011

A call for referenda: Following some decisions taken by the Italian Government that were contested, an opposition party and a committee of citizens set up for this purpose presented a request for the approval of four referenda (one against nuclear energy). In order to be valid, Italian law prescribes that abrogative referenda are valid only if they are voted on by a quorum of 50% + 1 of the voters: in the last 15 years, this target has been achieved only once, in 1995, when a set of 12 questions was presented.

Italian distinctiveness: In Italy, the population which uses the Internet is mostly registered on a single social network, Facebook. Compared to its main competitor, Twitter, over 18 million users use this platform. A little more than 1.3 million Italians use Twitter, a difference that is statistically much larger than in other countries. Traditional media (especially television channels, including the state-owned RAI) did not pay much attention to these referenda that were called for in June 2011: as television is still the main channel of information for the adult population in Italy (in particular, for people aged over 45 years old), many thought that the aim of reaching the necessary quorum would prove to be an impossible target.

Mobilisation: supporters take over Facebook: For this reason, and given the presence of Facebook as such a single dominant platform, a series of initiatives was set up by private citizens in order to encourage the population to vote: some people became involved in the creation of events with the intention of spreading information on the questions presented (and organising car-pooling services to support those individuals who did not have the possibility to travel to voting stations on their own) and publicising the precise date of the vote; others organised digital material that was posted on supporters' profiles in the form of a head image (or "profile", BattiQuorum). This wording emphasised the similarity between democracy and human hearts.

This pragmatic bottom-up mobilisation with a message, propagated over a single social network, that can be summarised as "vote whatever you want, but vote", together with the neutral character of the message communicated, was supported by people who were generally otherwise not actively involved in politics. It therefore increased user participation and the number of posts that focused on the referenda. Furthermore, the timing of the Japanese Fukushima nuclear accident around the same time-period fostered arguments over the nuclear question and increased citizens' awareness of the referenda.

The final result: At the end of the first day, over 40% of the population had voted, a figure that was 15 percentage points higher than in previous similar elections. The news was then immediately reported in the traditional media. This again increased the mobilisation of online supporters, which continued until the polls were closed at 15:00, on 12 June, 2011. The protesters' intention – to obtain a quorum – was ultimately achieved, given that 56.9% of the population voted in favour of the referenda, with a clear majority for the arguments made on social media.

The Arab Spring

In brief: The "Arab Spring" or "Arab Uprisings" define a series of demonstrations and social protests of varying intensity that took place during the first months of 2011 in several Arab countries.

The spark and the spread: The catalyst for the revolution was the self-immolation of Mohammed Bouazizi, a 26-year old unemployed Tunisian graduate who set himself alight when police confiscated the vegetables he sold for a living because he did not have the necessary vendor permit. This event gave birth to the first set of protests on 18 December, 2010. Since that date, a flurry of social protests and mobilisations has shaken a wide number of Arab countries (including, among others, Egypt, Jordan, Libya, Saudi Arabia, Syria, and Yemen). The underlying causes of the popular discontent includes perceived corruption, high unemployment, a lack of political empowerment, high inflation and food prices, poor living conditions and repression.

A "digital" revolution: The use of social media to call for protests, report on the situation and spread information, was a distinctive feature of the movement. Twitter and Twitpic, Facebook and YouTube were the main channels used. Though not responsible for their origin of the protests, they were key elements in their diffusion.

Social media in the spotlight: The authorities' fight against the protests on the social media front also characterised developments. Thus, the Egyptian government blocked temporarily Facebook, Twitter, some e-mail services and even deactivated certain cell phone towers. Contrary to their intentions, these activities on the part of the government are considered to have spurred public support of the protests and encouraged social media users to take any opportunity to report on the issue. Since access to the physical locations of the protests was difficult for traditional media, social media became the main source of information on the topic (although traditional media also eventually covered the phenomenon extensively).

S 21

Background: A lengthy but lawful policy-making process had decided on the construction of a new underground train station in Stuttgart, the capital city of the southwest German region called Baden-Wuerttemberg. The station is referred to as the S 21. In 2010, the whole process became increasingly controversial. The cause brought together thousands of people from a wide variety of social backgrounds.

Ever since the early summer of 2010, demonstrations by opponents of the S 21 train station became more frequent. Later in the summer, S 21 supporters came together repeatedly to undertake street protests. At the end of September, 2010, a police operation that used water cannons caused several injuries to demonstrators. It made knowledge of the S 21 cause even more public.

S 21 in the Social Media: News about the anti-S 21 movement spread rapidly online. # S 21 became a main topic on Twitter. Twitter was used to coordinate support for the demonstrations. Carpools were organised for people to attend the demonstrations. Attendees came from as far away as the north of Germany. Blogs offered up information on speeches, actions and photos all about S 21. On Twitter, it was possible to follow each step in the police operation, as seen from the view of the opponents. Similarly, numerous Facebook groups both for and against S 21 were started up. Facebook discussions highlighted the advantages and disadvantages of S 21, and photos from both sides of the cause were uploaded onto websites. Anti-S 21 Facebook groups used the application to coordinate their own actions.

Political implications: There were three main political outcomes of the events.

- A parliamentary enquiry took place into the possible involvement of the regional government in the police operation.
- The regional government appointed a conciliation committee. Its task was to find a joint dispute regulation, even though a political decision had already been taken in a completely legal way. This public mediation mechanism proposed a “stress test” which would enquire whether the new train station could really handle 30% more capacity than the current railway station. Only then, it was said, should the S 21 construction go ahead.
- The governing coalition of Greens and Social Democrats established that a referendum on the construction of the S 21 would take place at the end of November 2011. This new government has begun initiatives to involve more direct democratic elements of decision-making in the regional constitution.

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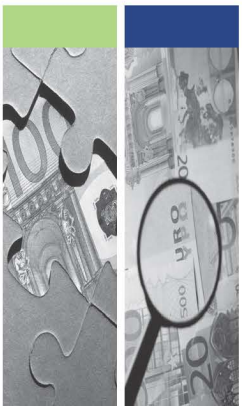

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