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OPINION

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HARNESSING THE DIGITAL TRANSFORMATION OF PUBLIC SERVICES

Executive summary

- It is essential that policy-makers adopt a broad concept of industry and recognise the importance of public services, beyond e-government, to ensure a successful digital transformation of the European economy in which all players in the digital value chain are empowered to innovate and diffuse the benefits of their investment the whole society.
- Public services have to deliver services to all citizens. An inclusive digital transformation requires the right policy responses to deepen the penetration of digital infrastructure in rural areas and increase the digital skills of more segments of the population. Furthermore, policy choices should leave flexibility and be technologically neutral, allowing public services' providers to find cost-effective solutions to adapt services to citizens' needs.
- Increasing transparency, trust and security in the digital economy is a core concern to public services providers which have a strong expertise in dealing with sensitive data and securing essential infrastructure. The elaboration of clear and effective guidance following the approval of the GDPR (General Data Protection Regulation) requires the inclusion of all stakeholders in the discussions. Furthermore, public services' providers are committed to contributing to the discussions on data ownership and liability.
- The future of public services lies in horizontal integration. Important synergies between infrastructures could be created within one organisation and beyond, for instance in the context of smart cities. It is essential to develop effective ICT standards which enable interoperability between different domains, in strong partnership with end-users.
- Managing the impacts of the digital revolution on the workforce will be a major challenge for public services. It will require retraining and attracting employees and management able to master the digital world. Hence it is essential that initiatives such as the Grand coalition for jobs take a holistic approach including all sectors.
- Public services' employers will have to deal with the impacts of the digital transformation on the labour market. In order to create a fair digital economy for enterprises of all sizes and sectors and for workers, the European Commission needs to work hand in hand with the social partners to assess the impacts of digitalisation on the labour market.

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INTRODUCTION

The digital era is transforming our societies; it has introduced new ways of providing services to users, brought in new perspectives for process management and produced an immense quantity of data and information on both users and providers of services. The convergence between the digital and physical world are not new but changes are gaining speed and scale in a way that will change public services' provision, as well as the way we work and live together. This presents public services' providers with both opportunities and challenges.

Public services' providers are aware of the need to engage into the digital transformation process and have started with the integration of digital tools into their daily operations. As they provide essential infrastructures and services to citizens and businesses, the successful digital transformation of public services will significantly benefit, thanks to major advances, crucial sectors such as health care, transport, energy, water, waste, audio-visual media and education. Public services are also important actors within the digital society and economy as they contribute to the development of broadband infrastructure, fueling the demand for high speed broadband, offering universal and affordable access to information and making data available to citizens and businesses, and thus allowing their active involvement. Digitalisation will soon impact every public services' field, whether service or infrastructure related, where it can enhance efficiency, quality and effectiveness. Connectivity, interoperability, flexibility and transparency are more and more integrated into infrastructures and design, deployment and operation of services. This means important changes ahead in terms of business structures, management culture and workforce adaptation. An investment friendly policy framework is necessary to support public services' providers in implementing those changes.

Because of their mission of general interest, public services aim to ensure that all citizens are able to benefit from affordable, efficient and quality services. They are close to the citizen and know their needs. Therefore, the Digital Single Market has to provide a level playing field and be "citizen-focused". Increased security, universality, transparency and accessibility need to be guaranteed in order to deliver the full societal value of the digital transformation. Efforts to provide a level playing field are essential to avoid distortions of competition that disadvantage public services' providers.

Public services' providers and employers welcome the Digital Single Market strategy. The strong rationale for the EU to unlock the potential of the digital economy is unquestioned. It is essential for EU growth, competitiveness and jobs, to position digital issues as a top priority at the heart of any EU actions, and accordingly to design an appropriate digital strategy. Simultaneously, data flows will increase and thus the need for European solutions regarding data protection and data security.

The digital transformation of the European economy shall be driven by enterprises. The EU needs to remove barriers and create a fair and safe environment which ensures that all types of enterprises and citizens can take advantage of digital opportunities. Increasing legal certainty in data management and building a sound strategy for investment in digital infrastructures, services and content must be a priority of the European digital agenda. Furthermore, public services' providers see an important role for the EU in raising awareness, creating synergies between stakeholders and providing additional funding opportunities to support digital transformation and innovation.

Acceleration is crucial for Europe's competiveness and more needs to be done in order to bring to life a truly comprehensive vision of a digital economy that takes into account the implications for all stakeholders, including public services. Hence this paper lays down the rationale, challenges and recommendations of public services' providers and employers in the digital transformation.

WHY ARE PUBLIC SERVICES' PROVIDERS ENGAGED IN THE DIGITAL TRANSFORMATION?

The role of public services in today's society depends to some extent on their capacity to adapt and transform "fast enough" to the digital era. The digital transformation in public services is underway, however the speed and degree of upheaval still differ from one sector to another and across Member States. Some sectors are playing in a fully digitalised environment and some are even affected in their whole value chain. Other sectors face more gradual changes. However, a strong rationale exists for all public services' providers to be engaged into the digital transformation in order to remain competitive, provide the services that citizens expect and meet societal challenges.

Meeting users and market expectations

Citizens' expectations as users of public services

First and foremost, the digital transformation of public services is led by the need to adapt to changing expectations from citizens and enterprises: continuous, simple, convenient and meaningful digital interactions with public services, as well as access to services in a more personalised way ("mass customization"). In response, public services' providers have been developing new solutions to better inform, involve and communicate with citizens, and improve their users' experience. Communication to the citizens has now become a key strategic issue for public services. In the future, most communication is expected to occur through digital channels.

Examples are numerous and include the development of apps, mobile devices, online portals and social media:

- Energy providers are becoming energy advisors. Social media help utilities to communicate with users regarding outage restoration or peak demand or engage users in a discussion on energy services. Smart meters and connected devices provide consumers with greater transparency and control over their energy use and enable them to manage their home comfort.
- In the healthcare sector, patient information portals can make health information available both to patients and health professionals.
- Public services' media programmes can be offered on all relevant devices at any time.
- In the transport sector, new user habits are integrated through the development of new urban mobility concepts integrating multi-modal ticketing and cross-selling solutions.
- Public authorities develop new ways to interact with citizens and renegotiate the citizens-government contract.
- Public services are rolling-out high-speed networks and making available WIFI in cities, open spaces and enterprises.
- In the future, (shared) data-platforms for connectivity of different public services' providers could be developed, offering huge potential for customized solutions.

Public services efficiency

Economic constraints are forcing public services to be resourced efficiently and to optimise functions and service delivery processes. In this regard, digital technologies offer a great potential. In energy, transport and water, digital tools such as internet of things can bring huge costs gains in terms of maintenance of infrastructure. Operators are switching from reactive to proactive and predictive maintenance so as to maximize uptime, avoid outage and improve plants' economic value. The need to provide better quality healthcare while controlling costs is pushing hospitals to deploy high performance information and communication systems and associated digital solutions. Applications are infinite and exist in all sectors: Emergency services can be enhanced through self-organised search parties and digitally assembled first responses from citizens; citizens can send alerts to the nearest located police services via apps… At the same it is important that digital solutions are appropriately targeted in order to meet a real need and provide an added-value to users.

Adaptation to new market actors

Public services must also deal with increasingly complex market dynamics, including new market actors. This evolution raises fundamental questions on some core activities of public services' providers as well as quality, continuity, affordability and universal access of public services. A new generation of public services is about to emerge and thereby new regulatory challenges will have to be tackled in a sensitive way taken into account their specificities.

In order to stay competitive, public services have to be fast in innovating. In the energy sector, traditional players have to deal with new entrants with disruptive technologies which are seeking to build business ecosystems in the area of connected home, trying to capture the full value of customer data (e.g. Google & NEST). In the transport sector, intermediaries are emerging in activities such as ticketing selling. The rapidly changing media environment is characterised by a globalised market and technological convergence. New digital audio-visual platforms play an ever more important role and operators are increasingly vertically integrated, covering cable transmission, internet access, content distribution and content production. In this context public services' providers increasingly need to build networks and seek new strategic partnerships and alliances within their own sector and beyond.

Meeting societal challenges

Developing innovative solutions to support EU policy goals

Digital tools using high speed broadband infrastructure open new perspectives to meet societal challenges such as ageing, demographic change, climate change and to promote social, territorial and economic cohesion as well as informed citizenship. Examples are numerous:

- Reducing CO_2 emissions: In the energy sector, digital tools will help to enhance grid reliability (e.g. by improving outage response), reduce losses (e.g. by better identifying thefts and other power losses) and integrate distributed resources.[1] Digital tools can also enable to develop an integrated approach for CO2 emissions reduction in the heating and mobility sectors.[2]
- Adapting to an ageing society: The use of digital tools in health care services offers new perspectives for elderly care with home monitoring and sensors.
- Promoting social, economic and territorial cohesion:
    - Targeted media programmes for specific groups of society offered online and on-demand;
    - Trains traffic management via satellite bring new opportunities for better serving rural areas;
    - A better inclusion of people with disabilities through the development of city apps.

Supporting the emergence of smart cities

In smart cities, digital technologies translate into better public services for citizens, better use of resources and less impact on the environment. As more and more of the world's population will live in cities, we are facing a great challenge to adapt European cities and urban ecosystems to more sustainable, efficient and integrated communities that can generate growth, jobs and attract investment.

Public services are important actors of emerging smart cities by:

- Providing solutions for smart buildings;
- Optimizing the management of public distribution networks;
- Promoting sustainable transport solutions, such as connected electric cars;
- Leading the transformation of digital hospitals;
- Developing multi-services apps.

[1] The development of connected generation plants, smart grids, and the possibility to combine different data sets (e.g. customer databases and weather forecast) can improve the coordination of a growing number of decentralised renewable energy plants.

[2] As for example, for current-regulated heat generation, there is a great potential to facilitate the integration of renewables in the distribution network and thus to reduce CO2 emissions, thanks to the use of smart grids and demand response management in combination with highly efficient CHP plants and modern CHP technologies. In the transport sector, batteries of e-vehicles could function as smart intermediate storage entities for electricity thanks to a smart feed-in system which would connect them to the electricity grid.

KEY RECOMMENDATIONS:

- Recognize the importance of public services in ensuring a successful digital transformation. While e-government is crucial, the contribution of public services goes well beyond.
- Adopt a broad concept of industry taking into account the strong rationale for all types of enterprises and sectors to get on track in the digital transformation.
- Policies and rules should be future-oriented, pro-innovation and support investments, as well as ensure that all players in the digital value chain are empowered to innovate and to diffuse the benefits of their investments to the whole society.
- It is crucial that digital industrial solutions are developed in close cooperation with adjacent industry sectors, including public services' sectors, with a view to meeting their needs and boosting the integration in the wider economy and society.

WHAT ARE THE CHALLENGES FOR DIGITAL PUBLIC SERVICES?

An inclusive digital transformation of public services

Public services' providers have to deliver services to all citizens. Therefore, how to involve all citizens into the digital experience is a core concern to them. Important steps will be to create the right legal and regulatory environment so that network operators invest in digital infrastructure in more rural areas, as well as to increase the digital skills of more segments of the population.

A reliable and fast broadband infrastructure

All citizens and enterprises need to enjoy access to reliable and fast broadband connections. Secondly, broadband connections need to provide citizens with easy and affordable access to content. Internet connection is essential in order be attractive to citizens and enterprises, thus for economic development. A particular challenge in this regard are rural areas. Public services provide broadband infrastructure and contribute to its rapid deployment. They also require high speed broadband infrastructure to deliver the services users expect (e.g. connectivity on the whole railway network).

KEY RECOMMENDATIONS:

- A universal coverage of internet access services can be achieved with a mix of pro-investment regulation that encourages a competition-driven coverage by market players, public support of demand for high speed connectivity and efficiently targeted public funding to support infrastructure deployment in rural, remote and low-density areas.
- In order to meet future connectivity needs and ever-growing demand for high-speed broadband, the current regulatory framework for fixed and mobile network investment should be improved, with a significant simplification of the current set of rules and incentives to invest. Therefore, a modernisation of the EU telecom framework is needed.
- A fair regulatory environment for broadband providers need to take into account all market players, including at local and regional levels.
- In order to support broadband development in rural, remote and low-density areas, targeted EU funding is required and its access needs to be facilitated, notably at local level. In the same way, existing EU state aid broadband guidelines need to be fit for purpose and their use facilitated through appropriate clarifications, notably taking into account the specific needs of municipalities.
- Competitiveness of European players on the global scale should be taken into account and fostered by a favorable regulatory environment for European broadband operators.

Accessibility and social inclusion

Digitalisation should be an inclusive and socially emancipating process and take into account the reality of a rapidly ageing population and people with disabilities. Public services need to consider that a substantial segment of our EU-population is more or less "digitally illiterate". This might require a gradual approach and a balance between digital and physical solutions in order to make sure not to discriminate part of the population. This also means that initiatives need to be developed to support digital skills and media literacy, notably for the elderly.

KEY RECOMMENDATIONS:

- Policy choices at European and national levels need to leave enough flexibility and be technologically neutral to allow public services' providers to adapt services to citizens' needs and find cost-effective solutions.
- Adapting existing and future legislation to digital developments should also take into account their potential to increase inclusiveness.
- The economic case for developing inclusive technologies and processes needs to be strengthened.

Easy and affordable access to content

The Digital Single Market strategy is an opportunity to give easy and broad access to content of a particular value for society, in particular Public Service Media (PSM) programmes.

KEY RECOMMENDATIONS:

- Copyright licensing solutions to increase online access to PSM programmes and services;
- An audiovisual media services regulation fit for the digital convergence;
- A policy approach ensuring that PSM programmes and services remain easy to find and access on all platforms and devices;
- Support for R&D to leverage innovation and creativity in the European audio-visual sector.

Increasing transparency, trust and security in a digital economy

Without the trust of users there will no major developments in digitalisation. Legal certainty on the collection, processing, analysis, publication and re-use of data is crucial in this regard. This is a core concern to public services' providers, which have a strong expertise in dealing with sensitive data and securing essential infrastructure. Furthermore, public services will continue to provide citizens and enterprises with the physical infrastructure they need today and in the future. Therefore, they are concerned about a regulatory environment which enables them to define fair rules in terms of data access and use.

Data privacy and transparency

The success of public services is based on confidence and trust they build by providing users with a high level of transparency and control over the collection and use of their personal information and activities. Privacy rights need to be guaranteed and citizens need to be able to understand in a user-friendly way where their data are and how they are used. In this regard CEEP welcomes the adoption of the General Data Protection Regulation (GDPR). The review of the data protection rules is a significant step forward to laying down fundamental principles which guarantee the respect of citizens' privacy rights in a digital world. The GDPR will clarify a number of important points including:

- Promoting pseudonymisation as an appropriate measure for the protection of personal data;
- Establishing clear definitions for the roles of data controllers and data processors;
- Clear rules on obtaining consent from users to process their personal data and stronger rights for users to withdraw consent;
- Creation of a number of specific legal obligations for data processors.

KEY RECOMMENDATIONS:

- CEEP calls upon the European Data Protection Board, which will be established as part of the GDPR, to publish clear guidance following the approval of the GDPR in order to ensure that it is well understood, including on the treatment of pseudonymised and personal data, and on users' consent.
- Therefore, relevant stakeholders should be included in the discussions regarding the implementation of the text (and the development of guidelines, tools and procedures) to allow the new legal framework to be effective for the first quarter of 2018.
- Adjust the scope of the currently reviewed ePrivacy directive to the present situation on the Digital market, targeting the regulatory level playing field for all players of the Digital Economy, and in coherence with the GDPR provisions.

Free flow of data and open data

Data is the fuel of the digital economy. Legal certainty and clear guidelines are needed in order to fully seize the opportunities of digital tools. In this regard, CEEP welcomes the upcoming EC initiative on data flows. In this perspective, discussions need to further mature. Data ownership and liability are complex notions which need to be carefully debated before taking any action, involving all types of enterprises into the discussions.

Open data is already a reality in Europe. Data from public services are more and more open and reusable. It's a question of transparency and democracy towards citizens but also a way to promote innovation, new services and products from third companies. By making data available, public services' providers support the Commission's focus on promoting the development of the EU's digital economy. It allows both start-ups and established companies to develop innovative new digital products using the data made available by public services' providers. In order to develop those open data policies, clear guidance on the legal framework such as the GDPR and sustainable frameworks for open data policies balancing public and private interests are needed.

KEY RECOMMENDATIONS:

- Stakeholders should be allowed to access the economic value of data on equal regulatory ground. The flow of data should not be unnecessarily restricted when there are no legitimate reasons to do so.
- Public services' providers need to keep room for manoeuvre to define appropriate conditions for ensuring a non-discriminatory and reliable use and re-use of data.
- Open data should be promoted in a sustainable framework, balancing public and private interests. It should be taken into account that open data requirements are particularly sensitive when public services' enterprises operate in a competitive environment. In order to maintain a level playing field, data security, privacy, and intellectual property rights, trade secret constraints and concerns need to be taken into account.

Cybersecurity

The digitalisation of public services opens a new form of vulnerability to cyberattacks. Therefore, reducing risks to a minimum is a top priority (loss of confidential information, industrial or economic sabotage, intrusion into privacy…). In this regard CEEP welcomes the political agreement on the Network and Information Security (NIS) Directive and calls for prompt adoption of the text. Cybersecurity is a horizontal domain which applies to many if not all sectors, some of which are critical. Public administration and public services' enterprises are important users of cybersecurity services and products and therefore possess a strong expertise which should be valued in the development of industrial solutions.

KEY RECOMMENDATION:

There is a need to strengthen the European cybersecurity market. Additional initiatives should include all stakeholders (not only the service providers) and take into account the know-how, points of view and constraints of the users, including public services' providers, adopting a cost effective approach.

Consumer rights for digital public services

Public services' providers need legal certainty regarding the protection of consumer rights for digital public services. For instance, the possibility to cancel or return a good or service purchased online within a certain timeframe (as foreseen by the Consumer Rights Directive) may question the development of certain digital public services provided on a longer term basis.

KEY RECOMMENDATION:

In the context of the on-going REFIT Fitness Check of consumer law, particular attention should be given to the evaluation of existing EU consumer rights legislation with regard to digital services in order to ensure a fair regulatory environment taking into account the consumers and the market players.

Standards & Interoperability: building synergies between public services

The future of digitalised public services lies in horizontal integration. Important synergies between infrastructures within one organisation and even beyond could be created, making the horizons of interconnecting different services and sectors almost infinite. A good illustration of this are smart cities where interoperability is needed between the different domains addressed in a smart city. For an efficient and effective digital transformation of public services, it is essential that different systems and assets are able to communicate with each other, share data and respond to common monitoring and control systems. Furthermore, data standards can help to drive consistent analytical views which support decision making.

CEEP welcomes the ongoing strategic reflection lead by the European Commission on the ICT standardisation priority plan. Enterprise-led standards provide a real potential for cost reduction, the creation of new business models or increased competition and greater opportunities for system effectiveness and efficiency. For the public administration, ISA^2 (Interoperability Solutions for Public administration), eSENS (Electronic Simple European Networked Services), eIDAS Regulation (electronic identification and trust services for electronic transactions in the internal market) need to effectively deliver interoperability.

KEY RECOMMENDATIONS:

- International standardisation bodies are in many cases the relevant level for ICT standardisation, before European bodies. The EU should help European stakeholders and standardisation bodies to be active and have influence internationally.
- European standardisation work should be based on relevant representation between the many actors involved in the business - often with diverging interests - to avoid imbalances between parties in terms of access to information and technical expertise. In particular, the existing vertical framework should be replaced through a stronger partnership with end-users, such as public services providers, to reduce the risk of over-representation of specific interests.

A fair "digitalised" labour market

Bridging the digital skills gap

With 30% of the workforce employed in a sector providing SGIs, managing the impacts on the workforce and the labour market will be a major concern for public services' employers in the years to come. Technological progress is extending the range of tasks that machines can perform better than humans. At the same time, the digital transformation is leading to the emergence of new kinds of jobs (e.g. data protection officer, data scientists) and skills combination' needs (e.g. mechanical & digital engineers, digital & HR - business - finance). Full automatic train operation will mean that drivers need to be retrained to controllers. Energy utilities are turning to technology specialists with a growing need for people who are able to monitor, manage and analyse data.

A successful digital transformation requires retraining and attracting employees and management that can fully understand and exploit the digital transformation. In addition, there is a growing need for external specialists. In this regard, a current challenge is to find the right framework to work with start-ups in an efficient and secure way on innovative solutions, services and products (e.g. development of apps). Finally, IT can be a change for the better in the way we work by reducing repetitive tasks as well as promoting creativity, entrepreneurship and interpersonal relations skills.

KEY RECOMMENDATIONS:

- Focusing on both "hard" and "soft" skills;
- National and European awareness initiatives, such as the Grand coalition for Jobs, should adopt a holistic approach taking into account all sectors of the European economy;
- Strengthening the recognition of the fundamental role of the education sector in training and the role of public services' media in raising awareness amongst citizens about the use of digital tools (e.g. e-learning platforms, talent communities...);
- Development of digital skills is a necessary investment in school leaders, professors, teachers and trainers, so that they may ensure the best possible work and life outcomes for their students;
- Additional public and private investment in the education sector, and notably in vocational education including for non-standard forms of employment.

A social agenda for digitalisation

Public services' employers will have to deal with the impacts of the digital transformation on the labour market. In order to deliver the societal value of the digital revolution and ensure fair labour markets, it is urgent to assess those impacts. Access to and coverage by labour market institutions for all workers, including workers in non-standard forms of employment, is important to guarantee fair competition.

KEY RECOMMENDATIONS:

- In line with the joint declarations issued respectively by the EU social partners[1] and the Public Services Employers' Forum (PSEF)[2], we invite the relevant Commissioners to work hand in hand with the social partners to define an ambitious and coherent social agenda for digitalisation.
- In particular, the European Commission and Member States, in cooperation with social partners and regional and local authorities, need to monitor the impact of digitalisation on jobs and working conditions, including new forms of employment (e.g. co-sourcing, crowd-sourcing, crowd-working), and its impact on work-life balance;
- Adapting social and employment legislation, in order to reflect the development of atypical and flexible employment relationships and stay ahead of such changes.

[1] http://www.ceep.eu/wp-content/uploads/2016/03/11.03.16_final_draft_eusp_message_digitalisation.pdf
[2] http://www.ceep.eu/psef-joint-declaration-on-digitalisation/

OUTLOOK: ADAPTING PUBLIC SERVICES TO A NEW WAY OF WORKING

Digital tools offer the possibility of finding innovative ways of adapting public services by increasing organisational flexibility, collaborative work (e.g. “agile management”) and thus work quality, performance and innovation. With the digitalisation of the economy and society, public services’ providers will increasingly need to be organized according to the needs of citizens and not organisational boundaries.

Furthermore, the digitalisation of the public sector requires bringing together different types of expertise and having a cross-domain approach. Public services’ providers are already becoming more and more part of a new ecosystem, building new strategic partnerships and alliances in order to develop innovative solutions, services and products. This cooperation can take different forms, such as joint ventures or outsourcing contracts.

In the long run, they might need to go through strategic partnerships with other private actors. The development and coordination at EU level of digital innovation hubs can serve as inspiration for public services. As such, they could play an important role, as some of them already do, in promoting the development of competitive starts-up and supporting ICT leaders.