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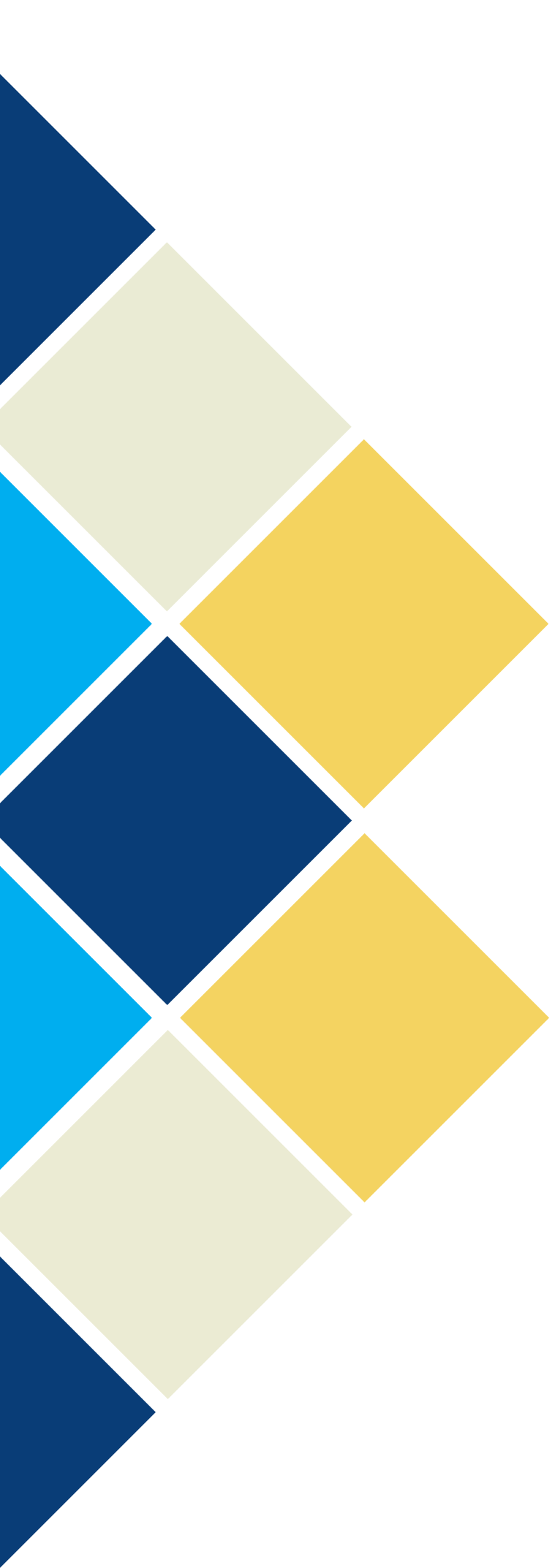
Report: Managing the Public Sector Digital Transformation

A Training Course for Public Sector CIOs and IT Leaders

Authors list (alphabetic):

Maxim Chantillon | KU Leuven | Belgium
Prof. Joep Crompvoets | KU Leuven | Belgium
Athanasios Deligiannis | International Hellenic University | Greece
Vasilis Koulolias | eGov Lab and Stockholm University | Sweden
Gideon Mekonnen Jonathan | Stockholm University | Sweden
Asst. Prof. Vassilios Peristeras | International Hellenic University | Greece





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1 | Introduction



Seven major European universities from seven European countries:

- *KU Leuven (Belgium)*
- *RWTH Aachen and Fraunhofer/FIT (Germany)*
- *International Hellenic University (Greece)*
- *Gdansk University of Technology (Poland)*
- *Delft University of Technology (the Netherlands)*
- *University of Stockholm (Sweden)*
- *Danube University Krems (Austria)*

together with the *Greek National Centre for Public Administration and Local Government (EKDDA)* organized a training course for Chief Information Officers (CIOs) in the public sector.

The event took place in Thessaloniki, Greece from 10 to 13 Oct. 2017 and was supported by the Greek government.

Prof. Costas Th. Grammenos, President, International Hellenic University and Asso. Professor Kamtsidou Ifigeneia, President, National Centre for Public Administration & Local Government (EKDDA), Aristotle University of Thessaloniki (AUTH) opened the event.

The objectives of the training course were multi-fold being:

- Meeting, discussing and learning from top professors coming from the 7 participating universities as well as invited top experts from the industry and the public sector.
- Having the opportunity to meet experienced colleagues from different countries and exchange practices, experiences and knowledge with them.
- Presenting, analyzing and demystifying “hot topics” for CIOs, ranked high in agendas of public administrations all over the world.
- Participating and contributing actively in stimulating discussions, knowledge exchange and creation.
- having the chance to meet top-class keynote speakers including national CIOs and industry leaders.

The training course covered four main areas:

- Information and data Management, Interoperability strategies/frameworks/practices, data analytics and intelligence.
- Open Government and Open Data.
- Innovative Technologies for the public sector, such as co-creation and smart government.
- Digital Government Transformation with topics covering IT governance, privacy, security etc.

The course was organized in an interactive way with plenary and breakout sessions with hands-on workshops to facilitate knowledge transfer and experience sharing amongst the participants. This report is a summary of the training course.



2 | Setting the Scene

The digital transformation that is currently going on in societies all over the globe has an effect on citizens, businesses and public sector organizations. One of the key actors in the digital transformation of societies are public administrations. The European Union Ministerial Tallinn Declaration on eGovernment, which was ratified on 6 October 2017, acknowledges this development. The declaration states that the benefits from digital transformation can only be made possible through "... collaboration, interoperable solutions and sharing of good practices..." not only among public administration bodies within countries but also across national borders. Because of the crucial role that administrations play in the digitalisation transformation, public policy makers with a global background and academics from leading European universities proposed together to think about possible approaches on how to deal with the digital transformation in the public sector and society.

In his opening note to the participants, Asst. Prof. Vassilios Peristeras (International Hellenic University, Greece) presented a timeline of technological changes. These developments should not only be viewed as a substitution of technology (i.e. how problems can be solved) but also as a paradigm shift. Referring to the societal transformation caused by the technological shift at the end of the 19th century when electricity was introduced, Asst. Prof. Peristeras cautions that it takes time to see the added value of new technologies due to the time needed to change mentality and redesign the organisational environment exploiting the new capabilities. A similar situation can be observed in contemporary society that goes through the 4th industrial revolution: The current technological wave is disruptive, makes certain jobs obsolete and forces administrations to work in a new and completely different way. It is therefore important that public sector managers acknowledge the benefits of new technologies, understand the old habits of societies and administrations and be capable of managing change. Even though new technology is emerging faster than ever before, the procedures, business processes, organizational structures, the mentality and the culture to exploit these technologies are not yet always in place. These challenges, Asst. Prof. Peristeras argues, can only be met if public administrations are managed by managers who have understood the disruptive nature of the 4th industrial revolution.

European context

Mr Mario Campolargo (Deputy Director-General, DG DIGIT, European Commission) presented the European Commission perspective to the impact of digitalization on public administration in Europe. The aim of the presentation was to shed light on the opportunities and challenges of this development as well as to inform participants on the digital transformation journey which is being carried out by public administrations in Europe. Mr Campolargo started by drawing a picture depicting a hyper-connected society in which governments take challenges of citizens and businesses on board. This connectivity brings myriads of opportunities such as new forms of engagement, increased collaboration and participatory relationships and the emergence of new stakeholders. At the same time, European governments face several challenges which need to be tackled. Examples are the changing expectations on government's ability to deliver value, to integrate ICT in the core of public sector modernization, and to shift from a user-centric to a user-driven administration. To support public administration modernization, the OECD has developed a recommendation's list which includes; Openness and engagement, governance and coordination and capacities to support implementation (OECD, & Ubaldi, B., The Digital Transformation of Public Services; OECD, Recommendation of the Council on Digital Government Strategies, 2014). Furthermore, Mr Campolargo presented the five strategic priorities of DG DIGIT:

- (1) a modernized public administration
- (2) a digital workplace of the future
- (3) a data centre of the future
- (4) a better IT security
- (5) an optimized delivery

Finally, the significance of efficient information retrieval and delivery, collaboration and knowledge sharing, and maximizing use of data was reiterated. These five priorities can be accomplished via increased cooperation between EU public administrations, a stronger policy dialogue and the implementation of the recently revised European Interoperability Framework.





3 | Information, Data Management and Interoperability

3a | Introduction

The economist reported that, at the beginning of its operation in 2000, the Sloan Digital survey's telescope in New Mexico amassed more data in the first week alone than had been collected in the entire history of astronomy. Retail giants like Amazon and Walmart handle several hundred million of customer transactions every day which results in a storage of several petabytes of data. Processing the data and extracting information brings a challenge but also helps these retailers to gain a competitive advantage. Research indicates that the experience from the private sector has demonstrated that there are tangible benefits of the use of big data within the public sector. However, the availability of data from various sources within the public sector has brought not only opportunities but also key challenges that need to be addressed promptly. For instance, how can the public administrations exploit data to promote evidence-based policy making? How can the public sector make data available without compromising the trust of citizens or breaching data protection acts?

The program looked as follows:

Opening & Keynote:

- **Prof. Costas Th. Grammenos**, President, International Hellenic University
- **Asso. Professor Kamtsidou Ifigeneia**, President, National Centre for Public Administration & Local Government (EKDDA), Aristotle University of Thessaloniki (AUTH)
- **Asst. Professor Vassilios Peristeras**, Scientific Coordinator of the CIO Training, International Hellenic University
- **Keynote: Digital Public Administration – an opportunity for Europe: Mário Campolargo**, Deputy Director General DG DIGIT, European Commission

Thematic program:

- *Introduction: Towards data-driven administrations*
Vassilios Peristeras & Stefan Decker
- *Implementing interoperability in the EU: the new European Interoperability Framework*
Miguel Alvarez-Rodriguez, DG Informatics (DIGIT), European Commission
- *The Common Information Management Framework (CIMF)*
Declan Deasy, European Commission
- *The Role of the Once-Only Principle for Cross-Border Data Exchange within and outside the European Union*
Robert Krimmer, Tallinn University, Estonia
- *Managing the Public Sector Digital Transformation - Malta's Casestudy*
Emanuel Darmanin, Malta
- *Unified data space principles implementation in Latvia's public sector institutions*
Dita Gabalina, Latvia
- *Data governance: laying the foundations for data-driven public sector*
Nikolaos Loutas, PwC Belgium

1 | The Economist (Feb 25th, 2010)

2 | Malomo & Sena (2017)

3b | Web information Systems and Interoperability + Short Breakout report

Mr Miguel Alvarez-Rodriguez (Programme Manager, DG DIGIT, European Commission) presented the new European interoperability framework and underscored that although the work on interoperability requires investments, those have however already started to pay off. Mr Rodriguez argued that interoperability is the key to improved data management and exchange and will result in better public service delivery. This is also acknowledged by the Tallinn Declaration which supports both the European Commission and Member States' commitment to the principles of interoperability by default as well as the national frameworks based on the European interoperability framework. Evidence suggest that the EU and national interoperability alignment in 2016 is promising (more information can be found in e.g. Mondorf & Wimmer (2017)). In the 2017 updated version of the European Interoperability Framework more emphasis is put on implementation, alignment with emerging trends and policy development. Some new or revised recommendations to improve interoperability were presented. For instance, making data openly available; sharing information among different agencies where privacy concerns are not an issue. Other recommendations include, addressing legal, technological as well as organizational issues that could significantly hinder interoperability. Those recommendations were later also presented during the breakout sessions.

3c | Data-driven administrations

Asst. Prof. Peristeras, introduced the 4th industrial revolution with the emergence of new technologies that fuse physical, digital and biological worlds and highlighted the central role and importance of data in this new environment. Major challenges discussed including Data management e.g. by avoiding data silos and promoting the use of data standards, risks on social cohesion and employment, AI safety risks and algorithmic bias, privacy issues, and the concentration of enormous power to data giants like Google, Amazon, Facebook and Apple (GAFA). At the same time, the EU public sector lags behind in capturing value from data and analytics, a situation that deserves immediate action from public sector leaders.

3d | Common Information Management Framework + Short Breakout report

Dr Declan Deasy (former Director, DG DIGIT, European Commission) started his presentation by depicting a digital future and then outlining the different actions taken at EU level to facilitate the journey towards a more digitalized public administration. Dr Deasy pointed at the progress which is made in the right direction but in slower pace than expected and underlined that silos, lack of interoperability and lack of trust are among the main challenges. He emphasized on the need administrations to treat information and data as a valuable asset and apply robust and corporate-wide data management and governance policies. He presented the Common Information Management Framework (CIMF), an information management framework already adopted and used by the Luxembourgish government. During one of the breakout sessions, the participants reviewed and commented on the Common Information Management Framework and a high-level model for data-driven administrations currently discussed with the Uruguayan government. . A number of comments were put forward by the participants. In the first place, it was highlighted that a strong governance model is necessary for the creation of a data-driven administration, secondly it is necessary to include the business.



3e | The cases of Malta and Latvia

Mr Emanuel Darmanin (Head of Strategy and Business Department, Malta Information Technology Agency) presented the digital transformation case of EU Member State Malta. He indicated his governments' conviction to digitally enable all sectors of society. Therefore the government ICT Agency, i.e. the digital leader for the government of Malta, developed a digital strategy, which includes a digital governance framework (focus on strategic, policy and operational level). Mr Darmanin acknowledged that there are several challenges that need to be addressed through a paradigm shift. For instance, there should be focus on sharing and open data, elimination of silos and once only principle.

Mrs Gabalina (IT architecture expert, Ministry of Environmental Protection and Regional development, Latvia) discussed the unified data space principle implementation in Latvia's public sector. In addition to the challenges already mentioned by the previous presenters, Ms Gabalina argued that differences in the institutions' ICT maturity level are one of the main hurdles in the digital transformation process. This case revealed the significance of having a clear overview of the current information system landscape. This overview shows not only that different systems in the country exist, but also how these are connected. The landscape overview is highly valuable in indicating the status as well as analysing what needs to be done in the future. Furthermore, Latvia's eGovernance model was presented. Another work-in-progress model for data-driven administration was also presented and discussed modified in one of the breakout sessions. The participants underlined the need for a clear and understandable model which allows for the creation of trust between the administrations(s) and citizens. The overall scope of the model was accepted by the participants, but some elements were proposed to be included such as the role of governance and business-processes.

3f | Once Only Principle + Short Breakout report

The task ahead in the implementation of the once only principle, or tell us once principle as Professor Robert Krimmer (Professor, Tallinn University, Estonia) has put it, lies today especially in streamlining the collection and storage of data which will allow then for a re-use and full operationalization of the once only principle. Prof Krimmer's discussion focused on the potential of the once only principle for cross-border transactions. For instance, cross-border data exchange can reduce public administrations' burden on storing and managing data so that they can instead focus on carrying out business as well as public administrative activities. Using two case studies as examples, a breakout session discussed the legal, semantic, organizational and technical issues influencing the implementation of once only principle. A number of benefits were detected by the participants: a simplified administration, increased efficiency and decreasing costs, and an improved governance model. Concerning the challenges, the respondents had different priorities but overall they agree that the right momentum has to be found to make the shift towards the once only principle, and also the legal framework needs to be changed.

3g | Data governance + Short Breakout report

Data governance and the way in which organizations can justify the cost of it, is one of the topics of discussion among current IT and administrative leaders. Dr Nikolaos Loutas (Director, PwC Belgium, Belgium) presented the potential benefits of the use of data in the public sector. Dr Loutas outlined a number of strategies to show the need for investment based on his personal experience from the European Commission. A number of crucial elements for the governance of data were put forward: The development of a business case and strategy, the willingness to learn from others, to develop processes, to select

the right tools, and finally to engage and communicate. During the breakout sessions, participants debated on how data can be used to improve service delivery in the public sector while challenges were identified including, the lack of political will, a number of legal issues (such as privacy concerns), the public recruitment process on acquiring technology to make use of open data and the organizational culture. All those elements are considered to hinder the current governance system and therefore also the exploitation of data.

3h | Key recommendations for digital transformation practitioners

- Change in paradigm is needed to succeed in digital transformation; including new leadership(s), cultural change(s), political willingness
- Necessity of building trust between citizens and the public sector
- Recognition that technology does not solve all existing challenges - collaboration with businesses, citizens, political leaders, lawyers as well as experts in other disciplines is necessary
- Knowledge sharing is important in order to eliminate silos
- Interoperability is a critical prerequisite for re-use of information and therefore for the successful implementation of the once-only principle
- Sharing and reusing data requires new levels of ICT governance maturity
- Understanding the ICT landscape is crucial processes in such a governance model. Also, the importance of base registries was underlined: those are the building blocks for the seamless delivery of e-services, and enablers for the successful implementation of the once only principle.
- Recognition that technology does not solve all existing challenges-collaboration with businesses, citizens, political leaders, lawyers as well as experts in other disciplines is necessary
- Knowledge sharing is important in order to eliminate silos
- Interoperability is a critical prerequisite for re-use of information and therefore for the successful implementation of the once-only principle
- Sharing and reusing data requires new levels of ICT governance maturity
- Understanding the ICT landscape is crucial

4 | Open Government and Open Data



4a | Introduction

Countries have embraced open government as a way to close the distance with their constituents and to facilitate innovation of businesses. Yet, the results are often disappointing and the focus has been on opening data and the facilitating technology, instead of on realizing transparency, accountability and engagement. Nevertheless, there are many successful practices and results. The focus of this session was put on arriving at more effective policies by sharing good practices as well as challenges.

The program looked as follows:

- **Keynote:** *Open data policy: The Greece initiative on open data*
Nikolaos Michalopoulos, General Director for Reformation Policy and eGovernment, Ministry of Administrative Reconstruction, Greece
- *Collaboration in Open data: Does open data create an open government?*
Marijn Janssen, Delft university of Technology, The Netherlands
- *New General Data Protection Regulation with regard to the public sector*
Ioannis Inglezakis, Associate Prof., Law School, Aristotle University of Thessaloniki

4b | Collaboration

Prof. Janssen (professor, Delft University of Technology) highlighted that when it comes to open data and open government the one does not necessarily follow from the other. Opening more data can lead to more transparency, engagement and innovation but collaboration with citizens and private parties is necessary to create real value. Open government also requires a change in public sector culture and there is a need for balance between openness and privacy protection. Such a balance can for example be expressed by the creation of “Openness Officers” to balance Data Protection Officers. Open data can provide competitive advantages to companies, but in disseminating best practices we have to be careful to be country and context specific. Opening structured data is preferable, but when the data is not structured algorithms can be used to create value out of the dataset. Openness might imply different levels of access for different citizens and carries significant misuse risks (e.g. fake news) since data in itself cannot be equated with facts. Access to raw data is useful as is the ability to reuse it without significant limitations.

Advantages of open data platforms include better control, the ability to verify data, the possibility of being able to instigate public-private partnerships to create useful services. Platforms act as focal points that attract users and developers, make development easier and allow data originators to maintain some level of control and to dictate the rules of engagements to improve levels of trust on the data offered. Single/central platforms with consistent user interfaces are preferable to a multitude of disparate systems. Users of such platforms expect ease of use and understanding, absence of technical knowledge requirements and a user-centric systems approach. When opening data the societal benefits should be clear. Value does originate from combining open data to analyse and support decision making and new policies. There are however also a number of key challenges. These include: data discovery, ownership, and linkability to facilitate understanding as well as avoiding bias and negative nudging. Prediction algorithms and algorithms that are used for the data should therefore also be opened. So, it can be concluded that not only open data is a necessity but also open algorithms. Only in this way the open government concept will come closer.



4c | Greek initiatives

The Greek government initiatives and policies on open data were presented by Mr Nikolaos Michalopoulos (General Director for Reformation Policy and eGovernment, Ministry of Administrative Reconstruction, Greece). He explained that Greece has implemented Directive 2013/37/EU on the re-use of public sector information with law 4305/2014 that encompasses the majority of public sector bodies. It has also enacted an Open by Default principle that provides free access to data in case public entities do not publish it within the allocated timeframes. Furthermore, a National Open Data Portal (data.gov.gr) was created. There are currently 5787 datasets available from 258 public bodies, the majority of them municipalities. Main file types include Excel (49%), CVS/XML/JASON (17%), 13% HTML (13%) and PDF (9%).

The Greek government recognizes specific benefits for opening data namely: reducing administrative burden, re-use of information, increased tax revenues and a possible positive impact on GDP. Similarly, for citizens and enterprises, open data policies can increase transparency and accountability, foster research and development, and support economic developments. The Ministry feels however that there is a need for concretely measuring the impact of open data and re-use of information. Claims of open data having a positive impact should be examined in relation to the cost of providing the data. The suggested positive correlation between open data and an increase in transparency should also be examined, as should the positive impact of openness policies on citizens. Finally, specific measures for those bodies that are refusing to open their data sets should also be implemented.

4d | General Data Protection Regulation

Professor Ioannis Inglezakis (Associate Professor, Law School, Aristotle University of Thessaloniki, Greece) focused on the challenges for public sector bodies of the introduction by May 2018 of the new EU General Data Protection Regulation (GDPR - Regulation (EU) 2016/679). Prof Inglezakis states that the GDPR is not an impediment to the re-use of open data but can actually play a complementary role: It would be unthinkable to open such a large amount of information without protecting privacy, otherwise trust in government is endangered. In any open government framework protecting privacy rights should be a clear priority and should happen through a transparent process.

Public sector bodies should prepare for changes introduced by the GDPR in the following areas: access rights, the importance of a single set of rules within the EU, the creation of independent national Supervisory Authorities, the lawful basis for processing, the supplying consent, the right to erasure, the Data Protection Officers, the data breaches and relevant sanctions, the data portability and data protection by Design and by Default.

4e | Elements of an Open Government + Short Breakout report

Open government formed the topic of a breakout session in which several groups discussed the necessary elements of an open government.

During a breakout session examining the perspective of citizens on open government it was suggested that openness should be clearly defined as a principle worth pursuing, with opportunities and incentives for citizens' participation (e.g. crowdsourcing and feedback platforms, open dialogue mechanisms and satisfaction surveys). Openness policies, either for the private or public sector, should have well defined

boundaries in terms of privacy protection (e.g. GDPR), especially in terms of large dataset correlation. Efforts should be made to change public sector organisational culture towards openness while at the same time introducing measurable key performance indicators and a process to enforce openness. Education of citizens on digital skills and openness awareness was also seen as essential, as was the inclusion of the private sector and civil society in providing solutions. This involvement could also benefit from the widest possible stakeholder spectrum.

Open policies are seen, to some extent, as self-sustainable in terms of cost but one should be aware of unwittingly pushing much of the cost of openness to citizens. There is also the possibility of policy paralysis. The aim should be clear recommendations for policy makers and avoid policies that only benefit small elite groups and ignore passive majorities.

4f | Key recommendations for digital transformation practitioners

- Access to raw data is useful and so is the ability to re-use it without limitations.
- Open government does not automatically follow the opening of data sets, but requires certain policies and a change in mentality.
- Opening data can increase transparency, engagement and innovation while collaboration with citizens and private actors is necessary to create value.
- Maintaining consistent open data platforms as single-access points confers significant advantages.
- Open data provides competitive advantages to companies, but best practices should be country and context specific.
- A need exists to verify the current claims and suggested impact of open government and open data policies.
- Public sector bodies should start preparing for the introduction of the General Data Protection Regulation.
- A clear framework for noncompliance with open government policies should be developed.
- Openness policies should be balanced with transparent privacy protection rules.

5 | Public Section Innovation



5a | Introduction

The public sector plays a key economic role as a regulator, service provider, and employer. Jobs provided by public sector account for more than 25% of total employment and a significant share of economic activity in Europe. An efficient and productive public sector can be a strong driver of private sector growth. At this moment, there is a strong justification for efficiency gains, better governance, faster delivery, and more citizens' involvement in public sector. Therefore, public sector innovation was one of the necessary topics to analyse in a context of digital transformation.

The agenda was the following:

- *Case study about the Belgian Public Sector Digital transformation*
Frank Leyman, Manager International Relations, DG Digital Transformation
- *Open innovation in the Swedish public sector*
Vasilis Koulolias, Director eGovlab, Stockholm University, Sweden
- *Public Sector Innovation – Current Trends*
George Spiliotopoulos, Director of Strategic Planning, General Secretariat for Digital Policy, Ministry of Digital Policy, Telecommunications and Media
- *Innovative practices in Public Administration (Observatory, Repository and Consultations)*
Emmanouil Zoulias, & Dimitrios Tsimaras, Research & Studies Officer, National Centre for Public Administration and Local Government (EKDDA)
- *Public Sector Innovation - Governance of Smart World*
Joep Crompvoets, Professor 'Information Management in the Public Sector', KU Leuven, Belgium
Manager International Relations, DG Digital Transformation

5b | The Belgian case

Mr. Frank Leyman (Manager International Relations, DG Digital Transformation – FPS Policy & Support, Belgium) explained how the transition was made from a traditional ICT Ministry providing technical solutions to other actors within the federal administration to a Digital Transformation Office (DTO) that focuses on the evolution of the administration to the digital era. Thereby the DTO aims to achieve a maximum digitisation of customer interactions and the underlying operational processes. The focus of this new organisation will be put on innovation, transformation activities, the increase of synergies, interoperability, and the necessity to communicate about the digital federal possibilities towards citizens and businesses. One of the key elements in this overall transformation process will be the creation of a GovLab to test and find innovative solutions to existing challenges in cooperation with businesses and citizens. Besides explaining the actions performed by the DTO, one of the current projects was presented: Cross border Electronic Identification via eIDAS in which the DTO plays a leading role in the Belgian federal context. to maintain some level of control and to dictate the rules of engagements to improve levels of trust on the data offered. Single/central platforms with consistent user interfaces are preferable to a multitude of disparate systems. Users of such platforms expect ease of use and understanding, absence of technical knowledge requirements and a user-centric systems approach. When opening data the societal benefits should be clear. Value does originate from combining open data to analyse and support decision making and new policies.



5c | The Swedish case

Mr. Vasilis Koulolias (Executive Director eGovlab – Stockholm University, Sweden) presented the approach of open innovation in the Swedish public sector. Via the eGovlab, which is part of the Swedish government and functions within the context of the academic context, a stronger society can be built by making use of technology. As the time of automation and traditional e-services has passed, it is time to take it a step further and to ensure a fully fetched digitalisation of society: a “Digital Government in a Smart Nation”. The Swedish administration has chosen to focus on a number of areas for smart innovation: Smart building, smart environment, smart business, smart food-chain, smart health and smart school. This can be achieved by making use of the eGovlab which offers of a number of different approaches. There are activities related to open data and co-creation, there is applied research, education, and focus on enabling technologies. Finally, the Lab offers a test bed for future technologies and e-services. Furthermore, one of the main strengths of the eGovlab is the fact that it brings together different societal actors and offers a stimulating environment for co-creation: The public sector, academics and the private sector to co-create better services to the advantage of citizens.

5d | The Greek case

Also the Greek approach towards public sector innovation was presented. Mr. George Spiliotopoulos (Director of Strategic Planning, General Secretariat for Digital Policy – Ministry of Digital Policy, Telecommunications and Media, Greece) informed the audience on the innovative approaches taken by the Greek administration: The current public sector digitalisation lacks a user-centric approach. Greece is improving the public sector digitalisation, but more needs to be done in comparison to other countries. Therefore a National Digital Policy Framework 2016-2021 has been developed with a focus on user-centricity and closer connections between the state, citizens and businesses.

A practical perspective on innovation in the Greek public sector was provided by the Mr. Emmanouil Zoulias (Research & Studies Officer, National Centre for Public Administration and Local Government, Greece) and Mr. Dimitrios Tsimaras (Research & Studies Officer, National Centre for Public Administration and Local Government, Greece) presented the creation of an innovative online public consultation platform for laws which are under preparation in the Greek Parliament. Via the consultation the Greek Parliament aims to increase transparency, trust and accountability of the parliament. Although it is a successful tool with an increasing participation rate, there are a number of problems such as lack of resources and the need to increase transparency on the influence of public comments made during the consultation process. Furthermore, it was proposed to extent the online public consultation also to other types of policy making and to have a higher interoperability between parliament and other governmental entities. A second innovation is the Greek digital repository for public administration studies: Overall it would benefit from a simplified data submission procedure. Finally, the recently created Public Sector Observatory was presented. It aims to monitor administrative operations in a scientific way to support the overall coordination of the public sector evaluation.

5e | Smart World

Professor Joep Crompvoets (Professor, KU Leuven Public Governance Institute, Belgium) underlined the importance of governance for innovation. Prof Crompvoets proposed five key lessons for the development of an innovative governance model. First of all there is a need for a well-balanced implementation of the three governance approaches (i.e. Hierarchy, Market and Network) in order to create a sustainable

environment. Secondly, it is crucial to supply data and services in a demand driven way and to develop a clear demand-supply strategy, to increase the overall satisfaction. Thirdly, organisations should work around their datasets, and not the other way round – which also implies the needs to invest in key registries. Fourthly, it is advised that organisation work from solution to solution whereby there needs to be awareness that the solution of one problem can become a problem that requires a new solution. Overall, focus on solutions can be achieved by working closely together with stakeholders in the overall policy cycle. Finally, it is was advised to establish multidisciplinary task force(s) which can operate simultaneously and complementary with a focus on semantic interoperability.

5f | Misinformation

Misinformation, i.e. false or inaccurate information which is deliberately intended to deceive, is a threat to the structure of societies and public administration in particular. It is especially problematic as it is a common part of the digital media environments and makes it possible that societies develop false opinions and policies (Castillo et al., 2011. ; Flanagan et al., 2000. ; Friggeri, et al., 2014. ; Kata et al., 2010. ; Lewandowsky et al., 2012. ; Rieh et al., 2007.). Therefore, and in combination with the high accessibility rate of the internet by the world population, it is advisable that administrations take action and invest in innovations dealing with misinformation. The consensus was that the Internet and opinion echo chambers are making things worse but the problem was also occurring in the past. At least now technology and open data should make it easier to fact check misinformation and awareness of the problem grows. Governments can partner with journalists, civil society and organizations such as the Open Government Partnership to evaluate the dangers of fake news and prioritize the response through education and regulation. Society should be aware of profiling by social media corporations, the power of black-box algorithms as information gatekeepers and the dangers of a copy and paste sensationalist journalistic practice coupled with a financial model based almost solely on advertising.

A number of specific actions were proposed to deal with this societal challenge: Empowerment, engagement, education and encouragement are seen as elements to tackle this new challenge. Especially the importance of education (e.g. via communication campaigns) was underlined by the participants, as well as the creation of a(n) (financially) independent organisation which can deal with misinformation in both a proactive and reactive way. There were however also a number of concerns in tackling this issue: education cannot deal with specific issues, and it might not always be easy to make a distinction between fake facts and opinions – as both can be used in the action of misinformation. Open Data was also seen as an tool for combatting misinformation, whereby citizens and journalist should not only have access to the data but also to the algorithms used for analysing the data. Finally, the question was raised to what extend a misinformation manager might be helpful for dealing with misinformation.



6 | Digital Government Enterprise

6a | Introduction

Digitization created enormous benefits for societies and economies in terms of access to public services, more efficient, transparent and responsive public administration, greater engagement of citizens in political and government affairs, and the development of knowledge-based societies and economies. However, it is also showing its dark side by increasing existing inequalities as well as by creating new ones. Examples include the explosion of people to cybercrime and loss of privacy, and the enabling of mass manipulation of people's political sentiments. The attention was put specifically on the role and responsibilities of Government Chief Information Officers (CIOs) in making sure that the Digital Government Enterprise, through available policy and program instruments, can help deliver the benefits and address the risks of digitization.

The program looked as follows:

- *Inclusive e-Governance to Reach out to a Billion+*
Mr Sanjeev Gupta, President & CEO, National e-Governance Division (NeGD), Ministry of Electronics and Information Technology, Govt of India
- *Digital transformation in the Spanish Government*
Miguel A. Amutio, Deputy Head of Unit, Coordination of ICT Units, General Secretariat for Digital Administration, Ministry of Finance and Public Function, Spain
- **Digital government transformation in the Netherlands**
John Kootstra, Coordinating Policy Advisor, Ministry of the Interior and Kingdom Relations, The Netherlands

6b | The Indian case

Mr Sanjeev Gupta (President & CEO of the National e-Governance Division (NeGD), Ministry of Electronics and Information Technology, India) presented the vision and main achievements of the Indian Government so far. The Digital India Vision is built on three pillars. The first pillar is Digital infrastructure as a utility to every citizen with a focus on, among others, the creation of a digital identity via biometrics (the so-called Aadhaar Act) and the development of common services centres which allow, especially in rural areas, for the participation of citizens. A second pillar focuses on governance and services on demand, whereby the government aims for example to create integrated services by the demolition of virtual and organizational silo's. Another working area in this second pillar are the cashless and digitally organised financial transactions. A final and third pillar, digital empowerment of citizens, aims to reduce the digital literacy of the 1.2 billion citizens and the transformation and the reduction of the physical submission of documents by citizens and companies. The government aims to achieve this vision in a number of ways, i.e. developing software projects in an agile way, ensure the availability of data (also open data), unlimited access to services available in the 13 official languages and a focus on mobile governance.

6c | The Spanish case

Mr. Miguel A. Amutio (Deputy Head of Unit, Coordination of ICT Units, General Secretariat for Digital Administration, Ministry of Finance and Public Function, Spain) informed the participants on the current state-of-affairs of the Spanish digital transformation. Not only have high level recommendations been formulated by the Spanish Council on Digital Government Strategies but also a Digital Transformation Plan for the Spanish General Administration and Public Agencies has been developed. These actions included in the Plan range from increasing productivity and efficiency to ensuring that citizens and businesses choose a digital channel to interact with the administration. There is also attention for security and smart corporate management of knowledge, data and information. For each objective, a number of action lines were developed. Mr. Amutio also introduced a number of challenges to be addressed: The overall digital transformation, the need to focus on the legal framework, the sharing of services and the importance of coordination at the same time, the necessity to listen to the users, the focus on security and the increased use of digital services, and finally the importance of harnessing the potential of internal re-use of information.

6d | The Dutch case

Mr. John Kootstra (Coordinating Policy Advisor, Ministry of the Interior and Kingdom Relations, The Netherlands) introduced the Dutch Digital Government Policy, and focused thereby on the currently achieved results and challenges for the future. The Dutch administration take a user centric approach, whereby a common infrastructure is developed and policy is alternating from broad modernization programmes to specific e-government programmes. Mr. Kootstra underlined that the infrastructure is implemented and used, enabling in this way the service providers to improve their services. Furthermore, the intergovernmental governance structure is in place, whereby Logius, the agency for the management of the infrastructure services, provides overall support. Also, the culture has shifted towards a focus on the re-use of data. One of the key elements of the Dutch Digital Government Policy is the Common Digital Infrastructure (GDI) a common framework for service delivery, authentication, data and interconnectivity. Nevertheless, there are also a number of challenges for the Dutch administration: The sustainability and further development of the GDI, the enduring focus on users, broadening the re-use of data, the need to increase public value, personal data management and ethical concerns on e-services and e-government.

6e | Key recommendations for digital transformation practitioners

- The CIO has a key role in defining, leading and implementing the digital transformation vision and strategy of a country.
- It is advisable to put the users, from the start of a strategy, at the centre of the attention.
- Close collaboration with other partners, both with the public and private sector, is helpful for a countrywide vision and strategy.
- The development of a common infrastructure is not only beneficial for the end-users, but also for the internal administrative coordination.
- There should be attention for technical aspects, but also for organizational, legal and cultural challenges.



7 | “Take aways”

One the last day all participants were asked to bring forward their main take-aways. A short summary is presented below.

The aim of this course was to bring together a number of leading actors from both the public and academic sector to discuss possible approaches on how to deal with the digital transformation in the public sector and society. One of the main lessons learned from the discussion was the realisation that there is a strong need for more cooperation and coordination. Not only at the national level, but also at a European and international level. Different actors have common challenges which can appear in different form and time and may have different level of importance – but they remain common challenges. Therefore, it is crucial, according to the participants, to create more cooperation and collaboration across administrations, the EU and the globe. Not only however should there be cooperation and collaboration within the public sector and with the academic world, but also with the private sector: Lessons can be learned from their actions as well.

The role of the private sector is also connected to the importance of implementation. Strategies, visions and actions plans are necessary as a starting point, but various participants underlined the need to focus now on the implementation of digitalisation. This will allow those involved to see the results of their actions, and the others can witness the positive effects of a digital transformation. It is in this respect that the private sector was mentioned: It can become an important partner in the implementation of e-services towards citizens and businesses. Furthermore, one of the participants stated that citizens can get confused by the growing number of applications – often in an unstructured way. Not only is there a need to coordination and collaborate in the development of a strategy or vision, or in tackling common challenges, but also in the development of applications for citizens and businesses. Administrations and departments need to consider what the effect will be of an uncoordinated approach towards the development of applications.

At the end, the course participants also expressed their opinion on a number of other more specific topics;

- An overall agreement existed among the participants that the main challenge for the digital transformation is not the technological aspect but rather the cultural and educational aspects. Administrative staff, as well as citizens and businesses, need to be informed, educated and trained on the various aspects of a digital transformation in both the public sector and the broader society.
 - There is an ongoing discussion on the importance of open data, although legal frameworks are in place and the importance of open data is widely recognised, there are also a few points of critique. First of all, on the importance of protecting the data sufficiently, whereby the connection is made to the role of new legal framework, the General Data Protection Regulation, which will enter into force in May 2018. Secondly, the added value of opening the data should become clear.
 - The GDPR is seen as a positive evolution which gives the necessary tools for the sufficient protection of data Nevertheless, it was remarked that it is confusing and unclear what specific actions and consequences it will have.
 - Finally, the topic of misinformation was a highly relevant issue for many participants. It is not very well known within administration, and strategies to combat misinformation are missing. There is, therefore, an opportunity, to tackle this challenge, in cooperation with citizens and the private sector.
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IT Leaders

Authors list (alphabetic):

Maxim Chantillon | KU Leuven | Belgium

Prof. Joep Crompvoets | KU Leuven | Belgium

Athanasios Deligiannis | International Hellenic University | Greece

Vasilis Koulolias | eGov Lab and Stockholm University | Sweden

Gideon Mekonnen Jonathan | Stockholm University | Sweden

Asst. Prof. Vassilios Peristeras | International Hellenic University | Greece





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