

'New forms of service delivery for municipalities, the contribution of social dialogue and good practice for well-being at work'
CEMR / EPSU

Theme: **Digitalisation of local authority services in Europe**

by

Jane Lethbridge

j.lethbridge@gre.ac.uk

2 October 2015

A briefing paper commissioned by EPSU/ CEMR



The Public Services International Research Unit (PSIRU) investigates the impact of privatisation and liberalisation on public services, with a specific focus on water, energy, waste management, health and social care sectors. Other research topics include the function and structure of public services, the strategies of multinational companies and influence of international finance institutions on public services. PSIRU is based in the Business Faculty, University of Greenwich, London, UK. Researchers: Prof. Steve Thomas, Dr. Jane Lethbridge (Director), Emanuele Lobina, David Hall, Dr. Pauline McGovern, Dr. Jeff Powell, Sandra Van Niekerk, Dr. Yuliya Yurchenko

Contents

1. Definitions.....	3
2. Context.....	3
3. How and why are municipal services introducing digitalisation?.....	7
CEEP Policy officer Maika Fohrenbach.....	9
4. What impact does digital work have on the quality of work?	11
5. What are the types/ forms of organisational re-structuring – outsourcing, contracting out of services, creation of cross-disciplinary teams,	11
6. How does this organisational re-structuring influence health and wellbeing at work?.....	13
7. Trade union responses to digitalisation.....	15
FNV policy on digitalisation in progress - Netherlands Marta Rogers	15
Vision – Sweden Anneli Hagberg	16
8. What role does social dialogue play in the change processes?	17
9. Conclusion.....	18
Recommendations	18

'New forms of service delivery for municipalities, the contribution of social dialogue and good practice for well-being at work'

CEMR / EPSU

Theme: Digitalisation of local authority services in Europe

This report identifies trends in the digitalisation of local authority services within Europe, with a special focus on Denmark, Finland, France, Italy, Scotland/ UK, Germany, Estonia, Croatia. It includes discussions and case studies which were generated from the seminar 'Identifying new forms of service delivery in municipalities, technological development and the impact on the workforce and employers – the challenge of digitalisation' held on 21st September 2015 in Brussels.

This report addressed the following research questions:

- How and why are municipal services introducing digitalisation?
- Which services are being affected by increased digitalisation?
- What does digital work mean – impact on quality of work?
- What forms of organisational re-structuring are taking place?
- How does this organisational re-structuring influence health and wellbeing at work?
- What role does social dialogue play in the change processes?

1. Definitions

This report draws on two definitions of digitalisation. First, digitalisation has been defined as the *"adoption or increase in use of digital or computer technology by an organization, industry, country, etc"*.¹ Second, and in a broader sense, digitalisation has been defined as *"economic and social transformation triggered by the massive adoption of digital technologies to generate, process, share and transact information"*.² These two definitions start to capture the impact of digitalisation in that it is a transformative process which had only just started to impact on local and regional government. The term e-government is defined as *"using information and communications technologies to support modernised, joined up and seamless public services."*³

The adoption of digital technologies in government and specifically municipal services has been gradually expanding since the 1990s. These definitions show that there is a difference between digitalisation, which refers to the use of digital technology and e-government, which uses information and communications technologies, to improve delivery of public services. This paper aims to highlight how these processes relate but does not assume that digitalisation necessarily leads to improved public services. Rather, digitalisation is part of a process of introducing new technologies which impact on workers and their control of the work process.

2. Context

There are several reasons for the gradual adoption of digital ways of delivering public services, which can be related to the influence of the European Union and its modernisation agenda, the impact of austerity policies on local and regional government spending and the use of digital technologies to provide information to the public in new and different ways.

European level e-government and digitalisation

At EU level, digitalisation is considered as part of a modernising government agenda and playing an integral role in the development of the knowledge economy. The Malmo Declaration (2009) identified four priorities:

- *Empower citizens and businesses;*
- *Reinforce mobility in the Single Market;*
- *Enable efficiency and effectiveness;*
- *Create necessary key enablers and pre-conditions for the above priorities.*

The development of e-government is dependent on citizens having access to on-line services, either at home or in the community, a telecommunications infrastructure which covers the whole country and citizens with a level of education and computer literacy that enables them to use new digital services.^{4 5 6}

Part of the 'Europe 2020' strategy, launched in 2010 aimed to stimulate growth as well as implement structural reforms. The 'Digital Agenda' was one of the initiatives outlined as part of the implementation of Europe 2020. The 2015 'Digital Single Market Strategy' goals include measures to improve the functioning of the internal market, e.g. cross-border e-commerce, reducing costs of parcel delivery and changes in telecom rules. The three pillars of the Digital Single Market Strategy cover: 1) Removal of digital barriers to improve access for consumers and businesses; 2) Creating rules which match the pace of digital technology and support infrastructure development; 3) Take advantages of digitalisation, through the use of ICT infrastructure and technologies, in relation to the economy, industry and employment, including government at all levels.⁷ The third pillar has implications for the way in which government data is shared and stored. A new EU e-government action plan for 2016-2020 is currently being developed, which will provide targets for the expansion of e-government services.⁸

Although framed as part of expanding the 'knowledge society' and the single market, EU digital policy is also part of a strategy to reduce government administration. A 2012 report on 'E-government and the reduction of administrative burden'⁹ examined how EU countries were reducing administration through the expansion of e-government. It identified three strategies which all separately contribute to increased levels of e-government:

1. The principle of 'once only' registration of relevant data;
2. Simplification and personalisation strategies and;
3. Digital-by-default strategies, where digital services are the immediate form of service provided.¹⁰

Although central government plays a lead role in the promotion of the 'once only' principle, local/ municipal governments are active with other personalization strategies. E-health and telemedicine are another expanding area of e-government. The EU has developed an action plan on "e-health- making health care better for European citizens – an action plan for the European e-health area". Part of the reason for the promotion of e-health policies is to provide information for patients and citizens to improve health and well-being. Digitalisation can improve the working life of health care practitioners through the use of electronic records, diagnosis and a safer work environment. E-health systems also contribute to the administration and management of health services, bringing administrative and clinical data together.¹¹

A 2012 EU report on digitalization in Europe measured progress on four government service clusters.

1. Income generating for government e.g. taxation
2. Registration e.g. births, marriages, deaths
3. Service returns – health, social, libraries

4. Permits and licences – building, education, passport. ¹²

Governments have prioritised the development of income generating services but are gradually expanding other types of services which require citizen-government exchanges. Table 1 shows the different levels of household internet access and participation in e-government activities in a group of EU countries with different levels of internet access. This shows that although overall internet access levels may be high, the extent to which individuals obtain information and submit forms is much lower.

Table 1: Levels of household internet access and participation in e-government activities

2013	Germany	Finland	Denmark	Estonia	Italy	UK	France	Croatia
Household Level internet access	89%	90%	93%	83%	73%	90%	83%	<u>65%</u>
Individuals obtaining information	52%	76%	81%	48%	20%	40%	48%	<u>17%</u>
Individuals downloading forms	32%	60%	49%	25%	<u>16%</u>	31%	40%	18%
Individuals returning filled forms	16%	56%	66%	32%	11%	34%	44%	<u>10%</u>
Business level internet access	98%	100%	99%	96%	98%	95%	99%	?

Source: European Commission E-government factsheets

Table 1 shows the different levels of internet access and the use of the internet to access information and upload and send forms in eight countries. Businesses have higher levels of internet access than households in all of the eight countries. Household levels of internet access range from 65% in Croatia to 93% in Denmark. The percentages of individuals searching for information, downloading forms or returning filled forms show much lower rates. This suggests that although household access to the internet is increasing to over 80% of households, the percentage of individuals taking advantages of e-government is growing much more slowly. In some countries, the individual percentages for searching, downloading and returning filled forms has dropped over the last four years, for example Italy, France and Estonia. ¹³

Many digital services involve a direct interface between citizen and municipality. This raises questions about the level of digital involvement of the local population within municipal boundaries. In the UK, 9 million people are considered to be digitally excluded.¹⁴ Older people, people with disabilities and people in low income groups are most likely to experience problems in accessing the internet, whether because of lack of access to hardware and/or lack of digital skills.¹⁵ When introducing digital services for basic services, provision for the digitally excluded population will have to be addressed by local governments, but more research is needed to understand how people use the internet for particular types of services, especially at local municipal levels.

The use of digital services for increasing citizen participation has been considered for several years. A 2012 survey found that local government use of social media and Web 2.0 (a more recent version of the world wide web which allows people to collaborate and share information online) was mainly limited to information provision through RSS feeds. However, the use of

Web 2.0 to extend dialogue between local and regional governments and their citizens was limited because there was a limited use of podcasts, real time webcasts and specific social networks, all indicators of citizen-to-citizen dialogue. Bonson *et al* (2012) found that this had some fundamental implications for the future. As citizens were already discussing local policies on-line, local governments should take the opportunity to enter into these discussions as peers rather than experts. This means that the more intense use of Web 2.0 will have to involve a new relationship between local governments and citizens in terms of policy, leadership and governance, which would result in “*a more consultative, participatory, collaborative and transparent government*”.¹⁶

Both the EU and the UN highlight the evolution of e-government which covers several stages which moves from provision of information to different degrees of interaction and full integration. The value of this model is that it acknowledges that the incorporation of digital technologies into the operation of government has to be seen as a process of evolution.¹⁷ The four main stages are:

1. **Emerging** – limited and static information;
2. **Enhanced** – one-way interaction - regularly updated information on public policy & governance, links provided to documents, forms, reports;
3. **Transactional** – two way interaction between government to citizen and citizen to government communications, e.g. passport renewal, paying taxes and payment for services transactions;
4. **Connected** – total integration of all services across administrative and departmental boundaries, back-office integration of departments and cross unit information sharing.

18

Denmark

Denmark has the highest rate of broadband connectivity in Europe. Although this high level of connectivity is significant for digital government plans, the Danish strategy was also influenced by the financial crisis. ‘*Ambitions for More*’, the Danish government economic growth plan, sets out how digital solutions and new technology will save/provide DKK 3 billion every year until 2020.¹⁹ The Danish government e-government strategy (2011-15) has three aims: No more printed forms and letters; New Digital Welfare; Digital solutions for closer collaboration.²⁰ The act states that citizens and businesses must have a digital letter box for receiving digital letters from the public authorities. The Danish government, Local Government Denmark and Danish Regions have jointly launched a common public sector ‘Strategy for Digital Welfare 2013-2020’.

21

There is an emphasis on applying existing ICT solutions more effectively rather than developing new ICT solutions. Digital welfare is considered part of the process of modernising schools, the health service and eldercare, with an increasing use of digital communications instead of face to face meetings.²² This has implications for the way in which care is delivered.

Digitalisation of health care is an area of public services which is expanding. In Denmark, ‘Implementing tele-medical ulcer assessment in all Danish regions and municipalities’ has changed the way in which nurses communicate with the hospital when seeing ulcer patients in their homes. The nurse communicates with the hospital in a web journal from a cell phone or tablet. She uploads photos to the journal of ulcers. The hospital can then assess the ulcer without seeing the patient. Municipal nurses were positive about the introduction of this new service and felt that digitalisation would lead to job enrichment and employee satisfaction.²³

Germany

Since the late 1990s, Germany has been progressing through the four main stages of digital government, starting with a government portal which provided information and services to

citizens in 2001. This was followed by government departments identifying services which could be delivered digitally and increased use of digital systems by government at federal, state and municipal level. Services for citizens and business have expanded. It is now entering the 'connected' stage four of digital government.

In Germany, 84 % of individuals had internet access and in 2010 an e-ID card was launched, reflecting this high level of connectivity. In 2010, an Inter-Länder (state government) Agreement was introduced, which provided the basis for the cooperation of the Federal Government and state governments in relation to use of ICT in government. This agreement also established an IT Planning Council to coordinate digital government activities, which focused on an e-ID Strategy, to support citizens to exchange secure data with the government and businesses through the internet, with the aim of protecting 'electronic identities' and ensuring the secure use of the e-public services. This showed how the German government addressed security issues for its citizens.

In Germany, legislation has been used to support and encourage different parts of government to cooperate to deliver simpler public services. On 1 August 2013, a new e-government law was approved, which aims to 'facilitate electronic communication with the administration and to enable federal, state and local governments to provide simpler, more user-friendly and efficient e-government services'. Germany has been influenced by the Danish experience of digitizing records management, administration work and casework to seven ministries and is seeking to adopt some of the same training and capacity building strategies.

Croatia

In contrast, the adoption of e-government by Croatia in 2006 was the result of funding by the USAID/Croatia Operational Plan, which started to promote eGovernment as part of the Local Government Reform Programme. 50 local government organisations/ authorities adopted new e-government systems in order to increase transparency and respond to needs of businesses planning local investments.²⁴ This shows that e-government is sometimes part of a wider process of public management reform.

A study of how the financial crisis has affected the expansion of e-government in Europe identified the decline in EU funds which were used for e-government research and development. Between 2001 and 2006, there were two large projects which explored e-government development: the Consortium for Open Source Software in Public Administration (COSPA) and; Free/Libre and Open Source Software (FLOSS). These projects aimed to develop methodologies, business models and frameworks for implementing and using open source software in public administration around Europe.²⁵ After 2006, although there were no new large research projects, the results of these earlier projects were used by local governments in Germany (Munich), Austria (Vienna) and Spain (Extremadura).

3. How and why are municipal services introducing digitalisation?

The introduction of e-government and the related digitalisation of public services have been taking place in most countries for over a decade. Countries show that there are different strategies for increasing digitalisation and e-government. Several countries adopted national strategies to promote a digital strategy. The use of legislation and government strategies are used to trigger the changes that countries have to work through in order to increase the increase citizen involvement in the digitalisation in government services. Table 2 shows 12 basic services which are affected by digitalisation as seen through the experience of the eight countries highlighting the impact on local and regional government.

Germany and Denmark have the most e-government services delivered through local and regional governments. Although the provision of public services at local, regional, federal and central government level is determined by historical national arrangements, there are several public services which are most often delivered through local and regional government. These include: application for building permission; registration of births, marriage and deaths; public libraries and; announcements of moving. The levels of digitalisation are highest in these areas.

Table 2: Digitalised services by federal/ central, regional and local government

LG = Local Government; RG = Regional Government; FG = Federal Government; CG = Central Government

	Germany	Finland	Denmark	Estonia	Italy	UK	France	Croatia
Income taxes	FG/RG							
Job search								
Social security			LRG		RG			
Personal documents – passport Driving licence			LRG					
Car registration	LG						CG/ LG	
Application for building permission	RG	LRG	LRG	LG	LG	CG/ LG	CG/ LG	
Declaration to police	F/RG							
Public libraries	F/LRG	LRG & other agencies				CG/ /LG	CG/ LG	
Certificates births marriages	LG		LRG	LG			CG/ LG	
Enrolment HE/ Universities								
Announcement of moving	LG			Cent/ LG	LG			
Health related services	n/a		LRG		Cent/ RG			

Source: EU survey of e-government in

An OECD survey of innovatory use of digital services provides examples of how digitalisation is being used by local and regional governments to provide public services more effectively. Many of these services are information-based. There are also examples of how digitalisation is being used to improve the effectiveness of the way in which local and regional governments operate.

Table 3: Innovations in digital services

Country	Sector	Project
France	Education	Collèges Connectés Part of a the strategy to bring schools into the digital era, 72 middle schools (pupils from age 11 to 15 years) have been selected to receive support for integrating digital technology into their teaching and the school administration. These 72 pilot “ <i>collèges connectés</i> ” are meant to be innovation and change leaders
Spain	Municipal	City Council Innovation Plan, Malaga The aim is to simplify structures, processes, proceedings and tasks across the municipality of Malaga, create a good governance culture and better use of resources.
Finland	Municipal	New administrative model of the municipality of Utajärvi The new integrated management system is used to both implement the strategy and assess its implementation. The new model organises the work of elected representatives in accordance with Deming’s PDCA cycle (Plan, Do, Check, Act). Political matters are clearly separated from operational tasks allowing elected representatives to focus on essential issues. Therefore, officials will take more responsibility in clear-cut, non-political matters, such as taking and implementing operational decisions. Residents participate more in preparatory work through hearings and can express their opinions through an electronic feedback system.
Italy	Justice	INSIDER I.N.S.I.D.E.R. (Illegal Detecting Network Security Intelligence and Resources) is an investigation and intelligence system that aims to improve legality and competitiveness of the region of Calabria. It is a tool designed for the police and the justice administration to identify the boundaries between legal and illegal businesses.
Sweden	Health	IT support for advanced care at home This project supports advanced medical home care through the use of information and communication technology (ICT). Advanced care in the home provided by hospital staff, needs a different kind of support to hospital care. The initial focus of the system was for palliative care of terminally ill patients, but the scope has now been widened.
Germany	Childcare/ Family	AMILIENWORKSTADT Aims to improve the quality of education and care for children, advance educational equality for children with a migrant background and from socially disadvantaged families, facilitate stronger participation of families in the daily routine of child care facilities, build-up parental competencies, develop an integrated approach in working with families and a neighbourhood network to support families.
United Kingdom	Health	Manchester Health Trainer Programme Links the National Health Service and local partners in order to train and employ individuals as local health trainers in disadvantaged and at-risk communities. These individuals have little or no work experience, but local knowledge and insight into their neighbourhoods, along with a passion for helping others to improve their health.

Source: EU Observatory of Public Sector Innovation

CEEP Policy officer Maika Fohrenbach

Information and communications technologies are contributing to new ways of delivering public services which will result in the “*emergence of a new generation of public services with a focus on the needs of a single consumer*”. Three examples of public services which have benefitted from adopting new technologies are CAP Holdings Integrated Water Services,

Lombardy, Italy, Transport for London (TfL), London, England and Local Heroes, Lomma, Sweden. All three examples are outlined below.

CAP Holdings Integrated water services in Lombardy, Italy

Seven public water companies - CAP Group, BrianzaAcque, Uniacque, Padania Acque, Lario Networks Holding, Sal and Pavia Waters - have come together to create "*Water Alliance - Acqua di Lombardia*" to provide water services to more than 5 million inhabitants (half the population of Lombardy). This integrated approach to water services has resulted in more investment, new business opportunities and greater transparency towards users. The group received funding from City of Milan to set up a data warehouse where data is integrated in one cycle for greater efficiency. The aim is to try and develop a commercial path following consumption patterns drawing on the concept of big data.

Transport for London (TfL), London, UK

TfL has developed innovative, intelligent transport systems by analysing passenger flows so that services can be planned better. Disruption is reduced. New business opportunities such as advertising have been created. TfL pioneered integrated ticketing, e.g Oyster card, which is a type of 'smart transport card'. TfL has introduced driver-less transport. There are improved inter-modal connections, allowing passengers to move from one mode of transport to another.

Local Heroes, Lomma, Sweden

Lomma is a town with 23,000 inhabitants with 2,700 companies and 1,700 run by a single owner. In 2014 "*My municipal engagement*" made municipal services available 24/7. These included about 30 e-services, for example, water consumption, child care, building permits. As these e-services were used more often, this led to an increased awareness of the value of internet access, which led to a demand for fast and reliable broadband connections. "Broadband in Lomma" was set up supported by local neighbour ambassadors groups.

These examples of innovative digital services show that digitalisation can provide new ways of delivering services or ways in which new services can be created that provide information to different user groups. There is the potential to create new public services.

Data security

In 2012, the EU published a draft European data privacy framework that includes a new regulation and a new directive. This will apply to all 27 member states, without ratification from member state being required. It will provide "*a single set of European rules on data protection that are valid across all member states*". Each national data protection authority will operate as a single one-stop-shop for businesses and citizens in each member state. Organisations will have to tell citizens what information is being collected and obtain consent from each individual for the collection of any personal information.²⁶ This will replace the Directive of 1995 (Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data). This has implications for local authorities in terms of their overall responsibilities to their citizens and for municipal workers who will require training to be able to operate within the new framework. New competencies will be needed.

4. What impact does digital work have on the quality of work?

Looking at what digitalisation means in relation to the quality of work, involves an analysis of how the working patterns of public sector workers change and how the adoption of digital technology to do tasks that were previously done manually affects different groups of workers. An study by Ernst & Young/ Danish Technological Institute (2012) found that e-government requires changes in organisational structures, operations and working practices.²⁷ It can lead to changes in job content, skills, relationship between administration and service users and changes in the relationship between different structures. In this way, e-government is introducing a new relationship between service providers and service users. Concepts of co-production and immediate evaluation start to change the nature of the relationship between the user and service provider. The satisfaction of the user can be used as an indicator of service satisfaction which could be used against service providers. These changes may be mediated by new institutional systems.²⁸

There is a lack of research into the impact of digitalisation on jobs, skills and working conditions in the public sector.²⁹ The lack of research into the employment effects of ICT makes it difficult to assess the long term impact on employment in the public sector. One example of how the introduction of ICT affects the number of jobs can be seen in the closure of 10,000 post offices in the UK between 1979 and 2009. Due to a lack of systematic research about the impact of digitalisation on local and regional government, several studies will be discussed below which have explored some aspects of digitalisation and e-government on local government workforces.

5. What are the types/ forms of organisational re-structuring – outsourcing, contracting out of services, creation of cross-disciplinary teams,

In a study of organisational culture in municipalities, Schutten (2009) provided accounts of the different reactions of workers with externally focused job descriptions and those who were focused on internal operations.³⁰ There are differences in the way in which workers experience organisational change and this is important for understanding the effects of e-government programmes. Schutten (2009) found that there is a relationship between organisational culture and a worker's job description. Workers who work with internal clients perceive the organisational culture as internally focused. This is in contrast to workers who work with external clients who see the organisational culture as externally focused. In this way, workers have different views of how the values of the organisation are implemented according to their job description. If organisational change is introduced, different strategies will be needed for groups of workers according to their internal or external focus.

Schutten found that internally focused workers were more likely to have a commitment to change and less need for closure than more externally focused workers. This was explained by externally focused workers facing more changes to their work. Consequently their need for information and support was greater. Workers with internally focused job description may have a simpler workload with fewer relationships with organisations and clients. The results of the relatively small survey show that organisational changes have to consider the needs of different sub-groups of workers.

Nygren (2012) explored the impact of a new digital system for dealing with municipal business and documents in a Swedish municipality by looking at both workers' and managers' perception

of the process.³¹ The study looked at the introduction of a new ICT system in the HR department. The research used a narrative method, asking workers and managers to write their own accounts of the process. This study looked at the impact of ICT changes on women and how they felt about the introduction of ICT/ digitalisation. The study found that there were significant differences in the way in which managers and workers perceived the introduction of ICT.

Managers viewed ICT as a neutral activity and also talked about the move from administrative to service work, including changing from telephone to computer work. They saw older women as lacking in computer skills and motivation to address these skills gaps. Although the managers were women, they still used stereotypical views of women, skills and ICT with ICT seen as part of a masculine way of working and older women lacking the enthusiasm to acquire new ICT skills. The workers perceived the changes in work as focused more on loss of personal contact which had been maintained through telephone work. The increased use of computer work made the workers feel undervalued and unable to use their professional skills. ICT creates a greater volume of more monotonous work. In contrast, the managers assumed that a lack of ICT skills made the work too difficult for the workers and that they needed more ICT skills to overcome this problem.

This study showed that when work is changed by ICT/ digitalisation, the new systems are designed so that invisible/ social skills are not needed and the knowledge that the workers have built up is not used. Resistance is a reaction to the deskilling of work and the devaluing of the client-bureaucrat relationship. Workers perceive themselves as active agents before the introduction of digitalisation but as victims after its introduction. Gender, skills and IT become bound together. The implementation of digitalisation needs to consider how to introduce digitalisation *“without making the employees feel powerless, insignificant or socially isolated in order to get employees on board. As part of this it is crucial not to make these feelings feminised”*.³² This would require a more participatory approach to organisational changes. Although there is research into the value of employee participation, there is little research which looks at employee participation in digital changes.

The Framework for Multi-agency Environments (FAME) project in England provided an interesting experience of multi-agency working and the use of Information Communications Technology (ICT). Baines, Wilson and Walsh (2010) examined how local government introduced multi-agency working through the use of ICT.³³ Although FAME was relatively successful in involving partner agencies at a strategic level, it was less successful in *“engaging front-line practitioners, whose usage of the ICT systems after implementation was low”*.³⁴ This meant that the project was only partially implemented on the front line. The interpretation of why this happened was not that staff from different organisational cultures were resistant to change but that many state agencies interact with citizens in different ways and each has its own model of user that can work in a specific context. Attempts to improve the way in which different agencies work together show how different some of the approaches to users actually are. The examples of resistance by front line workers lay in the *“over-integration”* of client information in an IT system that they disliked.³⁵ The concept of a ‘seamless’ care facilitated by the integration of policy, practice and technological resources sometimes led to the many practitioner skills and approaches being ignored within the system. This implies that the more personalised approaches that come from soft skills need to be incorporated into ‘seamless’ care.

A similar finding can be seen in the study by Berger (2014), which looked at the experience of introducing mandatory e-government in Denmark.³⁶ The Danish government passed a Public Digital Post law in 2012 which made it mandatory for citizens to receive electronic messages from the public sector, which were given the same status as paper letters. This study explored the attitudes of clerical staff who were involved in implementing this change. Staff were critical

of how this change had been implemented in local government, feeling there had been a lack of preparation in relation to procedures, strategies and information provided to staff and citizens. The main finding was that staff were concerned about citizens who did not have access to computers or who were unsure about how to use them, most often older people, people who were unwell and the unemployed. Staff felt unable to solve the problems of their users and this made staff feel that their 'public sector ethos' was under threat. This also increased their workload and reduced the quality of their working life. No longer could they feel that they were helping citizens access services because they were implementing a system that was more complex and created barriers that made access more difficult.

A survey of information culture in three municipalities in Sweden and Belgium found that investment in information systems was not enough if e-government was to result in high quality services, increased transparency and accountability as well as improving local government administrations. The information culture of a municipality has to be strengthened before the new information systems will benefit the organisation. Employees need to be trained in information and records management. If more user-friendly tools and standardised procedures are used, this would reduce personalised systems, resulting in a more integrated IT environment. The study recommended that municipalities invest in electronic archives but more importantly, address some of the staff issues that arise with the introduction of new information systems.³⁷

What seems to be emerging is that the workforce is diverse when examining the impact of digitalisation. One example of how diversity should be taken into consideration is in relation to gender. Gender differences impact on how digital technology is viewed but not necessarily in predictable ways. Employers need to have a detailed analysis of how digitalisation is affecting the different parts of the workforce. A second issue is how the introduction of digitalisation affects the way in which workers feel about their work. In the municipal sector, workers are motivated by wanting to help the users of public services. Electronic systems often reduce the amount of face to face or personal contact with service users. This reduces the control that workers have over their labour process and reduces their personal satisfaction of their work.

6. How does this organisational re-structuring influence health and wellbeing at work?

If the introduction of digitalisation reduces the control that workers have over their labour process, this has implications for their mental and physical well-being. There are several studies which have looked at the impact of organisational re-structuring on the health of workers over time. These will be discussed because they are relevant for a workforce which is experiencing the introduction of digitalisation, which affects the way in which work is organised, the control that workers have over their work and the quality of the services that they deliver.

A ten-year study of organisational downsizing and employees health in ten local authorities in Finland found that downsizing did have an impact on both mental and physical health. ³⁸ There was a strong association between downsizing and reduced self-rated health. The rate of decline of self-rated health was faster in employees who had experienced downsizing. Employees remaining in employment experienced increases in musculoskeletal symptoms. These were more severe immediately after staff reductions. There was also an increase in absences due to musculoskeletal symptoms for two years after the downsizing.

There were differences between long term (medically certified) and short term (self-certified) sickness absence. Long term sickness absence rose but short term sickness declined. The decline in short term sickness was interpreted as due to a reduction of absences which were not due to health issues. Similarly, an increase in sickness absence was not found in employees with temporary job contracts because they were the most likely to lose their jobs and so were more likely to attend work when ill, a form of 'sickness presenteeism'. Men who kept their jobs in a downsized organisation was 50% more likely to have a prescription for a mental health problem than men who were in organisations which were not downsized. Women working in downsized organisations were 12% more likely to have a prescription.

The study found that workers in downsized organisations were more likely to suffer from increased mental and physical health problems. There were three mechanisms that help to explain this increase in ill health. Downsizing resulted in:

- “(i) alteration in characteristics of work, e.g. job insecurity, job demands, job control;
- (ii) adverse effects on social relationships e.g. social support and :
- (iii) behaviour prejudicial to health, e.g. smoking, excessive alcohol.”³⁹

It is the impact of the changes in the characteristics of work that are similar to the introduction of digitalisation.

A recent report on 'Online labour exchanges' or 'crowdsourcing' has highlighted implications of more flexible ways of working for occupational safety and health.⁴⁰ Crowdsourcing is defined as the “*process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers.*”⁴¹ This is a new form of work organisation which is beginning to impact on public, private, high-skill, low-skill, manual and non-manual work. On-line platforms coordinate workers and monitor work being done. Tasks are becoming increasingly standardised. In e-government, platforms externalise work from the service user. Low skill service workers, such as care workers, are allocated work through digitalised platforms. Smart phone apps allocate work and workers have to report from different locations.

There are extensive occupational and safety health implications for on-line workers. As it is difficult to define where the workplace is, it is difficult to identify who is responsible for equipment and the monitoring of health and safety standards. The extent of employment insurance coverage is uncertain. There are psycho-social risks relating to off-line and on-line work which is linked to the unpredictability and precariousness of on-line work. Although the existing regulations are unsuited to these new ways of working, it is expected that new forms of regulation will emerge which fit into this new working environment.

A Finnish study (2014) which looked at the future of work identified a range of occupational health problems that emerge from using information communications technologies more frequently and the resulting changes in the way in which work is organised.⁴² There is a change from face-to-face communities working in the same space to networked communities operating across space, with people operating in many different relationships. Supervisory and managerial work is beginning to be scattered across different work communities. There are a growing number of organisational changes taking place which create stress among the workforce. The bonds that have previously linked people to a workplace have become more complex and often link an individual worker to one or more workplaces. This can create stress among workers which can be a cause of ill-health. Increasingly workers' careers are influenced by mobile communities and this may mean that they have several forms of employment, including operating as an entrepreneur. These multiple forms of employment will require new forms of institutional structures and regulation. This creates uncertainty for the individual worker.

7. Trade union responses to digitalisation

Two case studies of trade union responses to digitalisation were presented at the seminar held on 21 September 2015. The findings are set out below.

FNV policy on digitalisation in progress - Netherlands Marta Rogers

There are extensive changes taking place in public services. Decentralisation and regionalisation are still in process and there are increasing competing demands from the outside world. Politicians have different views about how public services should be delivered and funded.

At provincial level, there has been a decline in employment as a result of regionalisation and decentralisation through task reduction. There are 10,000 full time employed, of whom 4,800 women. 2.5% of total wage costs is spent on education. The average age of workers is 48 years, with 39 years as the average age of entering employment.

At municipal level, there are 157,980 people employed with 130,000 employed full-time. There has been a 12% decline in employment over the last five years. A future decline of 6% is expected. Employers spent about €965 per worker on education but 66% of the municipalities have no strategic human resources policy. The average age of a municipal civil servant is 48 years. The overall impact of decentralisation is that more tasks are expected to be delivered on a reduced budget. Social services and tax collection are now organised at a regional level.

Water boards /authorities have increased the number of staff by 4.6%. There has been an increase in the average age of staff of 1.3 years to 47.8 years. Although staff recruitment has remained stable, there has been a reduction in staff leaving from 4.7%/year to 3.8%/year. The majority of employees that leave are over 60 years. There has been a decrease in open vacancies but an increase in employees moving through the organisation from 4.5% to 8.5%. There has been an increase in the number of interns (from 5.4% to 6.3%) and trainees (from 0.3% to 0.4%). The number of organisations that have implemented strategic HR planning has increased from 46% to 63%. 5% of the employees in the sector received career counselling. Sickness absence decreased slightly from 4.2% to 4.1%.

There are several consequences of digitalisation which include:

- Decline of employment
- Change in responsibilities/accountabilities
- Change in work-processes/workflow
- Change in content of the job
- Change in work environment
- Change in job requirements (competencies)

The FNV has several ways of providing support to workers going through these changes. The Workers' Council provides advice on reorganisation and redundancies. There are special collective arrangements for workers to increase the employability of employees. Workers are given 24 months to find another job. Coaching or outplacement services are provided with pay and after that unemployment benefits are paid by the employer. FNV recommends that workers should be made aware of how to maintain their employability and the need for education and personal development to enable them to take up future job opportunities. Managers should get workers to reflect on the next steps in their careers as part of their performance appraisal meeting.

Vision – Sweden Anneli Hagberg

Vision is the Swedish Union of Local Government Officers which organises white-collar workers employed by the municipalities and county councils, or companies owned by them, or the church. Based on a belief that good working conditions for people working in the welfare sector contributes to good business and high quality well-being, the 2014 Vision Congress agreed that its goals should be: to work towards creating conditions for the welfare sector to be “an innovation friendly workplace”, which would make better use of employees’ skills and thus contribute to being an attractive employer. Another goal was to work towards the creation of a good digital work environment.

There is a need for innovation to solve existing problems in the Welfare system. As a pro-active union, Vision wants to be involved in shaping the future of welfare. There are a wide range of factors which will have a fundamental influence on the business environment in the future. These range from globalisation, expanded urbanisation, changing demographic structures, migration to technology and digitalisation. In order to meet these challenges in the delivery of welfare services, changes in the way in which professions operate and the roles that they perform will be needed. The expectations of both service users and services providers will also change.

Vision defines innovation in several ways. It can involve processes to develop new services and methods that improve quality, efficiency and usability. Innovation can capture new perspectives on old problems, so changing the design and delivery of services. It can identify opportunities in new technology and new work methods, contributing to an innovation-friendly workplace. Vision focuses on the potential of its members to develop creative solutions and innovative thinking. The advantages of employee-driven innovations is that they bring participation and influence for the employee. There is a great potential for employees to use their professional knowledge, experience and skills to improve in their work. Employees are creative and they want to learn and develop. Professionals will have to constantly evolve to address the challenges of the future.

From the perspective of an employee, there is the potential for developing creative solutions and innovative thinking. Workers are expected to have an ‘innovative mentality’ but what sort of rules and systems do they want and how do they like to be managed. How do workers define a good job? It may be a job where the worker wants to stay. Understanding how workers view their work and what they value in it are important if workers are to contribute to new ways of working and delivering services. Work culture should help workers to contribute to new ideas and to think outside existing structures and forms of services delivery. From the management perspective, there should be an open working environment which supports managers in leading and developing innovations. Innovation-friendly workplace can be supported through the use of innovation networks, an ‘Innovation Bank’, a checklist and case studies and specific examples to show how innovation can be nurtured in the workplace.

Vision has chosen several approaches to encourage innovation. It is taking a pro-active role and trying to: ensure that managers and employees are given the opportunity and the space to work with innovations; ensure that there is a work environment that embraces creativity and open climate and; ensure that the employer has management systems, methods, and support for innovation. This is the strategy for enabling workers to contribute to the design of future prosperity.

In discussion, several issues were raised about how to digitalise public services. The right legislative environment has to be created. Investment in infrastructure has to be a priority.

A holistic, integrated view of public services and a locally rooted process also helps to make the needs of users central to the process. A greater understanding of “digital poverty” is needed so that measures to support people without broadband connections and computers can be put in place. In rural areas, where it is most difficult to get access to broadband, more flexible rules about state aid are needed. How can local authorities find funding for digitalisation?

Although digitalisation offers more opportunities to work at home, which can benefit some workers, it is unclear who is responsible for working conditions at home. Working at home changes the way in which people interact at work.

Increasing dependence on computer systems for allocation of work, leave and other benefits is raising questions about how much responsibility should be given to a computer and who is ultimately responsible. Allocating decisions to a computer software package is avoiding political decisions about resource allocation.

The discussion triggered by these presentations focused on the occupational health costs of digitalisation. A recurring comment from workers affected by digitalisation and the organisational changes that result from it was that it resulted in the “lack of own working place”. This indicates that the different ways in which digitalisation affects the workplace can impact on the mental and physical health of workers. In Belgium there has been a 32% increase in musculo-skeletal conditions among workers. This increase can be explained by two major structural changes that affect the quality of work, which contribute to musculo-skeletal conditions: a) changes in organisation with increasingly time based competition between workers but no change in autonomy, b) changes in work status and labour regimes.⁴³

8. What role does social dialogue play in the change processes?

This paper has argued that in order to appreciate the impact of digitalisation on employees health, it requires a review of studies which show a) how digitalisation has affected the sense of control over the work process and b) how a lack of control over work can affect the health of both men and women. An EU study, the ‘Health Impact on Restructuring on Public Employees and the role of social dialogue’ provides useful recommendations on the role of social dialogue on organisational restructuring. In a study of the Salo Region Municipal Merger in Finland, there was extensive preparatory work with both trade unions and managers. Working parties, with both trade unions and managers, were set up in every municipality involved. Involvement of staff at all levels and stages of mergers have been found to be one of the most important elements of good practice. Support, fairness and transparency were important principles that informed the merger process with different types of support and information offered to employees and managers.

If these principles are applied to the introduction of digitalisation and e-government, they show that:

- The introduction of digitalisation has to be an open and transparent process;
- Different types of information have to be provided to employees and managers at all levels;
- There has to be enough time to consult and explain the strategy to all municipal employees and to service users;
- The impact of digitalisation on the control over the labour process has to be monitored;
- Monitoring of sickness absence and wellbeing at work has to be monitored
- Adequate training has to be provided, not just in ICT but in the implications for soft skills;

- Monitoring and evaluation of the implementation process should be put in place from the beginning of the process and should look at different groups within the workforce, not assuming that the workforce is homogenous.

9. Conclusion

Digitalisation and the introduction of e-government is going through a development process in most European countries at federal, regional and local levels. Digitalisation has the potential to introduce new public services which meet the needs of groups which have not been met before as well as to deliver existing public services more effectively. However, the impact of new ways of working and new work processes can result in workers losing control over their work and their sense of satisfaction in their work.

Recommendations

It is recommended that employers and trade unions:

1. Explore the changes to the work process caused by digitalisation;
2. Consider the information and training needs for workers at different stages in the implementation process and for different groups within the workforce;
3. Identify how workers feel about the loss of personal/ telephone contact with clients after the introduction of digital systems;
4. Monitor the incidence of muscular-skeletal conditions in the workplace;
5. Monitor the incidence of psycho-social conditions in the workplace;
6. Implement monitoring of sickness absence after the introduction of digital systems;
7. Identify examples of good practice in the implementation of digitalisation;
8. Facilitate the sharing of good practice.

Jane Lethbridge
2 September 2015
j.lethbridge@gre.ac.uk

¹ <http://culturedigitally.org/2014/09/digitalization-and-digitization/#sthash.A8ysVEXV.dpuf>

² Katz et al (2014) Using a digitalization index to measure the economics and social impact of digital agenda, info 16(1): 32-44

³ (Silcock, 2001) in Baines, Wilson, Walsh, 2010 – ‘Framework for Multi-agency Environments’ – one of 22 projects to support the delivery of local e-government in England

⁴ UN (2014) UN survey e-government http://unpan3.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov_Complete_Survey-2014.pdf

⁵ Teiu C M (2011) The impact of the financial crisis on European e-government CES Working Papers 3 : 429-439, on www.cceol.com.

⁶ Georgescu, M., Georgescu, I. (2008) Do We Need a Powerful E-Government? , Communications of the IBIMA Volume 5, www.ibimapublishing.com/journals/CIBIMA/volume5/v5n30.pdf.

⁷ European Commission (2015) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A Digital Single Market Strategy for Europe {SWD(2015) 100 final} Brussels, 6.5.2015 COM(2015) 192 final

-
- ⁸ Workshop on the new EU e-government Action Plan 2016-2020 <http://ec.europa.eu/digital-agenda/en/news/workshop-new-eu-egovernment-action-plan-2016-2020>
- ⁹ Ernst & Young and Danish Technological Institute (2012) E- government and the reduction of administrative burden' SMART 2012
- ¹⁰ Ernst & Young and Danish Technological Institute (2012) E- government and the reduction of administrative burden' SMART 2012
- ¹¹ European Commission (2004) Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area {SEC(2004)539}
- ¹² EU (2012) Digitalising public services Putting ambition into action Benchmark report p.8
- ¹³ EU E-government factsheets (2015) Estonia, France, Italy
- ¹⁴ Office for National Statistics, Internet Access 2010, published online August 2010 cited in NAO (2011) Information and Communications Technology in Government
- ¹⁵ Comptroller & Auditor General (2011) Digital Britain Two: Putting users at the heard of government's digital services National Audit Office (NAO) Report prepared under Section 6 National Audit Act 1983
- ¹⁶ Bonsón, E., Torres, L., Royo, S. and Flores, F. (2012) "Local e-government 2.0: Social media and corporate transparency in municipalities", Government Information Quarterly, vol. 29, no. 2, pp. 123-132
- ¹⁷ EU (2012) Digitalising public services Putting ambition into action Benchmark report
- ¹⁸ UN (2012) E-government survey <http://www.slideshare.net/undesa/united-nations-egovernment-survey-2012-12023033>
- ¹⁹ Danish Government (2011) e-government strategy The digital path to future welfare
- ²⁰ Danish Government (2011) e-government strategy The digital path to future welfare
- ²¹ <https://joinup.ec.europa.eu/.../eGov%20in%20DK%20-%20June%20201...>
- ²² Danish Government (2011) e-government strategy The digital path to future welfare
- ²³ [https://www.oecd.org/governance/observatory-public-sector-innovation/innovations/#?hf=10&b=0&sl=opsi&q=Country%3A\(dk\)&s=desc\(document_lastmodifieddate\)](https://www.oecd.org/governance/observatory-public-sector-innovation/innovations/#?hf=10&b=0&sl=opsi&q=Country%3A(dk)&s=desc(document_lastmodifieddate))
- ²⁴ eu e-government Croatia)
- ²⁵ Teiu C M (2011) The impact of the financial crisis on European e-government CES Working Papers 3 : 429-439 www.ceeol.com.
- ²⁶ <http://www.computerweekly.com/news/2240114326/EC-proposes-a-comprehensive-reform-of-data-protection-rules>
- ²⁷ Ernst & Young/ Danish Technological Institute (2012) Final Report: Study on eGovernment and the Reduction of Administrative Burden (SMART 2012/0061) <https://ec.europa.eu/digital-agenda/en/news/final-report-study-egovernment-and-reduction-administrative-burden-smart-20120061>
- ²⁸ Kirov V. (2015) Literature Review on the "Digitalisation and Public Services" Brussels: EPSU p.46
- ²⁹ Kirov V. (2015) Literature Review on the "Digitalisation and Public Services" Brussels: EPSU p.46
- ³⁰ Schütten, M. (2009) E-government in municipalities : the relationship between organizational culture, need for closure and commitment to change <http://essay.utwente.nl/59568/>
- ³¹ Nygren K. G. (2012) Narratives of ICT and Organisational change in Public Administration Gender, Work and Organisation 19(6): 615-630
- ³² Nygren K. G. (2012) Narratives of ICT and Organisational change in Public Administration Gender, Work and Organisation 19(6): 628
- ³³ Baines S., Wilson R., and Walsh S. (2010) Seeing the full picture? Technologically enabled multi-agency working in health and social care New Technology, Work and Employment 25(1):19-33.
- ³⁴ Gannon-Leary P., Baines S., and Wilson R. (2006) Collaboration and Partnership: A review and reflections on a national project to join up local services in England Journal of Interprofessional Care 20(6):665-674
- ³⁵ Baines S., Wilson R., and Walsh S. (2010) Seeing the full picture? Technologically enabled multi-agency working in health and social care New Technology, Work and Employment 25(1):19-33.
- ³⁶ Berger J.B. (2014) 'Mandatory e-government has arrives: a silent protest from staff calls for the committed scholar – resistance must never be futile'. Paper presented at the 25th Australasian Conference on Information Systems 8-10th December 2014 Auckland, New Zealand
- ³⁷ Svard P. (2014) Information culture in three municipalities and its impact on information management amidst e-government development International Federation of Library Associations and Institutions 40(1): 48-59
- ³⁸ Vahtera J. and Kivimaki M. (2010) Organisational downsizing and employee health. Lessons learned from the Finnish 10 town study in Health in re-structuring (HIRES) Recommendations, National Responses and Policy Issues in the EU DG Employment pp.185-194
- ³⁹ Vahtera J. and Kivimaki M. (2010) Organisational downsizing and employee health. Lessons learned from the Finnish 10 town study in Health in re-structuring (HIRES) Recommendations, National Responses and Policy Issues in the EU DG Employment pp.192

⁴⁰ Huws U. (2015) On-line labour exchanges or crowdsourcing Report for the European Occupational and Health Agency [http://vuh-la-risprt.herts.ac.uk/portal/en/publications/online-labour-exchanges-or-crowdsourcing\(e8b94837-c283-4b1e-803f-27ad9b0384c4\).html](http://vuh-la-risprt.herts.ac.uk/portal/en/publications/online-labour-exchanges-or-crowdsourcing(e8b94837-c283-4b1e-803f-27ad9b0384c4).html)

⁴¹ <http://www.merriam-webster.com/dictionary/crowdsourcing>

⁴² Finnish Institute of Occupational Health (2014) Changes at work – a challenge and an opportunity for well-being at work, careers and the quality of work life Report for the international evaluation of the Finnish Institute of Occupational Health (FIOH) [www.ttl.fi/en/publications/Electronic.../Changes at Work.pdf](http://www.ttl.fi/en/publications/Electronic.../Changes_at_Work.pdf)

⁴³ <http://www.eurofound.europa.eu/observatories/eurwork/comparative-information/national-contributions/belgium/managing-musculoskeletal-disorders-belgium>