



LIPSE

–European Policy Brief–

Policy recommendations for adopting, diffusing and upscaling ICT-driven social innovation in public sector organizations

**LIPSE: Learning from Innovation in Public Sector Environments
(Work Package 5)**

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This policy brief presents the findings of the fifth work package (WP5) of the “*Learning from Innovation in Public Sector Environments*” (LIPSE) project. LIPSE is a research program under the European Commission’s 7th Framework Programme as a Small or Medium-Scale Focused Research Project (2013-2016). LIPSE focusses on studying social innovations in the public sector. Full reports can be downloaded via www.lipse.org.

1 Relevance of ICT-driven social innovation

Nowadays, the issue of public sector innovation is very important in light of the economic and social crisis that is hitting European countries. Public sector organizations have to cope with so-called “wicked” societal challenges and an increasing demand for high-quality public services, while also facing a reduction in their budgets. In this sense, social innovation represents a sort of “magic concept” since it claims to promise public sector organizations (PSOs) suitable, cost-saving and inclusive solutions in responding to the emerging needs of citizens. The LIPSE project (Learning from Innovation in Public Sector Environments) identifies drivers and barriers to successful social innovation in the public sector. LIPSE is funded by the European Commission’s 7th Framework Programme (No. 320090, 2013-2016) and is comprised of researchers from 12 Universities in 11 EU countries.

Information and communication technologies (ICTs) can facilitate the spread of social innovation because they are able to process significant volumes of information and thus, can overcome physical and organizational barriers. The EU itself has accepted this as a challenge and as a way to respond to citizens’ needs today.¹ To deepen our understanding of this critical issue, this policy brief (based on LIPSE work package 5) focuses on two innovative practices in the public sector. The first is e-procurement, which refers to the use of ICTs to carry out several of the stages of the procurement process. This technology is relevant because it contributes to a more dynamic, transparent and competitive procurement process. The second practice refers to ICT and new media technologies that are focused on the creation of new ways of working (the so-called telework), which provide civil servants with instruments to work at home, while making use of the ICT infrastructure of their organization. This offers new possibilities for public employees to co-create a working environment that is compatible with their work/life balance aspirations. It also affects the attractiveness of the public sector as an employer. In our research, we also paid attention to followers, late adopters and laggards, whose role in diffusing and upscaling ICT-driven social innovation is very important.

This policy brief presents the results of a systematic literature review and an empirical comparative analysis across 6 EU countries. Our aim is to disseminate evidence-based knowledge on the determinants and barriers ICT-driven social innovation, relevant for policy-makers, managers, practitioners and scholars.

The three main objectives of Work-Package 5 can be summarized as follows:

1. To theoretically and empirically identify the determinants and barriers that play a role in upscaling ICT-driven innovations in two policy fields (e-procurement and telework), in relation to the specific characteristics of followers, late adopters and laggards in six European countries.

¹ Cf. EU Social Innovation, the Digital Agenda for Europe (established by the European Commission as a

2. To develop policy guidelines and instruments that public decision-makers can use to improve adoption, diffusion and upscaling of ICT-driven innovations.
3. To disseminate the research results and policy recommendations.

2 How did we examine the determinants and barriers of ICT-driven social innovation?

The research process started with a systematic review of the most prominent literature on the determinants and barriers of ICT-driven social innovation in the public sector. We drew on 194 journal articles and another 59 relevant publications. We then developed a theoretical framework. The determinants and barriers found in the literature were organized according to three levels of analysis. First, we placed the identified influential factors in the internal or external context of the public sector organization. Within each context, we identified more specific dimensions. Finally, we examined single determinants and barriers. We verified their positive/negative influence on adoption, diffusion and upscaling and connected them to various types of adopter (i.e. innovators, followers, late adopters, laggards).² For each country analyzed (i.e. France, Italy, the Netherlands, Romania, Slovakia, Spain), we explored and compared the institutional framework, the legislation and the stage of adoption for e-procurement and telework to appreciate their peculiarities. We also assessed the levels of ICT “readiness” and stage of e-government development.

We then did a qualitative comparison among 12 organizations in the 6 countries. We conducted 60 semi-structured interviews, reporting the results through standardized reports. We then carried out a cross-national survey among regional and local public organizations (117 and 269 responses for e-procurement and telework respectively). The aim was to generalize the findings on determinants and barriers. Eventually, we matched and triangulated policy documents with the qualitative and quantitative evidence to provide meaningful policy recommendations for policymakers and practitioners.

3 Determinants and barriers of e-procurement adoption and upscaling

Evidence-based knowledge about the determinants and barriers of e-procurement adoption is critical for people who want to foster such processes. As anticipated, a distinction is applied between the external and the inner context of public sector organizations. The former regards external environmental factors, which can be effectively influenced by policymakers: we then propose *policy* recommendations. The latter instead refers to those characteristics that are related to organizations, and which are in the realm of public management: in this case, we formulated what the implications are for practitioners.

² Such categories are referred to the single organizations analyzed, and not to regional/national contexts as a whole.

Determinants and barriers in the external context

First, we found that determinants and barriers referred to e-procurement are *not* so different from the determinants and barriers to innovations that do not require the use of ICTs. Despite its technological nature, e-procurement implies organizational changes. Technology per se is not a key element for its successful implementation. However, the development of territorial ICT infrastructures (such as the broadband connection) and the absence of a digital divide are important determinants when e-procurement has not been *adopted yet*. **Our policy recommendation for the adoption of e-procurement is to strengthen investments in ICT infrastructure in regions where this infrastructure is weak.**

Second, law obligations are the most powerful driver of adoption for *followers*, *late adopters* and *non-adopters*. Mandatory provisions push organizations to, at least, experiment with e-procurement. For example, most of the Romanian and Slovak regions adopted this innovation despite these countries' current relative low levels of ICT and e-government development. This is because of their national legislations (harmonized with EU Directives on public procurement), which oblige regional governments to adopt e-procurement. Conversely, Spanish regional governments have the lowest rate of adoption. In fact, Spain is the only country analyzed that does not oblige regions to do adopt e-procurement. Spanish Autonomous Communities are very independent in policy-making. This results in a heterogeneous "map of adoption" in the country. It is finally meaningful to observe how most of the adoptions registered occurred just after the approval of EU Directives in 2004³. **Our policy recommendation to foster the adoption of e-procurement is to elaborate policy guidelines for harmonizing national and regional laws with the proposals adopted by the European Commission in December 2011 (IP/11/1580) on public procurement's modernization. This implies fixing the following obligations: (a) use of electronic means for certain phases of the procurement process, notably the electronic notification of tender opportunities and the electronic availability of tender documents (originally expected by mid-2014); (b) use of electronic means of communication for central purchasing bodies (originally expected by mid-2014); (c) use of electronic means of communication for all the contracting authorities and all the procurement procedures (by mid-2016). Moreover, more detailed provisions need to be adopted for encouraging interoperability and standardization of e-procurement processes.**

Third, inter-institutional pressures and imitation foster the upscaling of e-procurement among *late adopters* and *non-adopters*. Public sector organizations indeed tend to replicate the best practices of their neighbors. For example, after the innovative Italian experience of ARCA S.p.A., numerous public sector organizations of the Lombardy region started to use e-procurement because of the benefits achieved by territorial "champions". **Our policy recommendations for the upscaling of e-procurement is to disseminate best practices that encourage other organizations' willingness to imitate. Moreover, we suggest that policy-makers publish**

³ 2004/17/EC and 2004/18/EC, available online at <http://goo.gl/u0yxIV> and at <http://goo.gl/L65H1t>.

data on the level of take-up of e-procurement on total regional procurement to promote “healthy competition.”

Last, organizations that are very autonomous in managing public procurement are more capable of upscaling e-procurement. In fact, the only two organizations qualitatively analyzed that have accomplished upscaling are the Italian and Dutch ones. In contrast to the other cases (in which public procurement is managed by regional governments through their units/departments), ARCA S.p.A. and IBMN are, respectively, a publicly owned company and a foundation of municipalities. These organizations are then fully dedicated to the management of public purchases. This resulted in greater expertise and more slack resources. **Our policy recommendation for upscaling e-procurement is to establish autonomous and specialized public sector organizations for the centralization of regional procurement through electronic means.**

Determinants and barriers in the inner context

While the external context seems relevant to provide the “necessary conditions” for implementing e-procurement, determinants and barriers from the inner context are instead critical to eventually upscale this ICT-driven social innovation.

First, similarly to the external context, technological factors are the basic conditions necessary, especially among *non-adopters*. The research proves how such actors severely suffer from the lack of ICTs skills and equipment. **The implication for practitioners in the adoption of e-procurement is enhancing the quality and the quantity of ICT equipment within public sector organizations and investing in training activities to improve ICT skills.**

Second, a fundamental obstacle is the risk-averse bureaucratic culture that sometimes characterizes public sector organizations. In this sense, the skepticism of single employees is also a barrier. For example, in the Slovak context, this has been attributed to the bureaucratic attitude inherited from the communist regime, characterized by a strong aversion to change and innovation. In Spain, this can be interpreted as a result of the conservative culture of public servants, who often benefit from a comfort zone. This makes innovation seem excessively risky, especially in light of the possible negative repercussions in political terms. Governance traditions thus matter a lot. **The implication for practitioners in the upscaling of e-procurement is that they need to pay attention to change management when modifying governance traditions and employees’ preferences in the use of e-procurement.**

Connected to this, the support of managers in arranging training and consulting activities for end-users (both public servants and providers) is necessary. At the individual level, this also requires visionary leaders to generate consensus with respect to e-procurement. The eventual achievement is the increase of both employees’ ICT skills and, more importantly, the change of organizational cultures. **The implication for practitioners in the upscaling of e-procurement is that they need to identify a pivotal figure, who acts as a visionary leader and who generates consensus on this issue, emphasizing the benefits achievable in daily activities.**

Lastly, a prominent barrier is the lack of inter-operability; that is, the coherent integration of organizational processes among departments or organizations. Although this issue is technical, managerial competences are needed to achieve this objective. **The implication for practitioners in the upscaling of e-procurement is that they need to invest in training and consulting activities that take into account both the technical aspects in the use of e-procurement platforms and its organizational repercussions.**

4 Determinants and barriers of telework adoption and upscaling

As for e-procurement, deepening our knowledge of the determinants and barriers of telework is critical to triggering its adoption and diffusion. Here, we apply the same distinction between the external and the inner contexts of the public sector organization. Since environmental factors can be more influenced by policy makers, we propose *policy* recommendations for the external context. Conversely, the inner context regards internal factors of organizations that closely concern public managers. For this reason, we formulate what the *implications* are for practitioners in this case.

Determinants and barriers in the external context

Similarly to the e-procurement case, influential factors of telework are *not* so different from the influential factors of innovations that do not require the use of ICTs. Telework rather implies a deep organizational reshaping. Technological factors, thus, represent basic elements to allow the first implementation of telework. For example, overcoming the territorial digital divide is a necessary but insufficient condition to *become an adopter*. **Our policy recommendation for adopting telework is to strengthen the investments in ICT infrastructures (e.g. broadband connection) and to eliminate territorial digital divide.**

Second, legislative factors are also critical. Differently from e-procurement, law imposition is not so relevant for the adoption of telework. The latter is implemented through decentralized negotiations between employers and unions at the organizational level. Yet, the legislation has to, at least, allow for experimentation with this practice. Romania is the only country analyzed that lacks any legislative framework for telework (the EFAT⁴ has not been implemented). The consequence is that no public sector organization has adopted it. **Our policy recommendation for the adoption of telework is to implement the *European Framework Agreement on Telework (EFAT)* at the national level according to the most appropriate regulatory tools (i.e. national legislation, collective agreement or soft-law mechanisms). This implies the establishment of clear rules, rights and duties for employers, employees and teleworkers. Within this general framework, telework relationships can be then arranged in autonomy within public sector organizations at the local level.**

⁴ European Framework Agreement on Telework, cf. <http://goo.gl/CyIsFq>.

Third, the external context is relevant in pushing organizations to adopt telework because of the need-based demands of society. Responsive organizations want to meet the emerging (personal, environmental, etc.) needs of their citizens. The survey we conducted shows how this is also connected to the particular geo-morphological contexts in which organizations operate. For example, where there are relevant distances between homes and workplaces (because of mountainous territories, densely inhabited cities, etc.), the option of telework is more urgently perceived. **Our policy recommendation for adopting telework is to be responsive to the specific emerging needs with respect to work/life balance and other daily-life aspects. These may vary depending on the territory considered. Organizations can then discuss the most appropriate solution in light of employees' particular needs, while also making clear arrangements with respect to the time that has to be spent at the employers' premises.**

Last, inter-institutional dynamics (e.g. top-down pressures and positive imitation) are influential for upscaling telework in the case of *followers*, *late adopters*, *laggards* and *non-adopters*. In the Netherlands, telework is largely diffused among public sector organizations. It is not by chance that positive imitation is a very important factor in this national context. **Our policy recommendation for upscaling telework is to disseminate existent best practices to encourage public sector organizations' willingness to imitate other cases and to publish data on the organizational well being achievable through the implementation of telework.**

Determinants and barriers in the inner context

The inner context is much more important than the external one in the case of telework. This implies that local governments should focus more on organizational issues to successfully implement telework.

First, as for the e-procurement case, technological factors are basic enabling conditions for implementation, in particular for *non-adopters*. Such actors must be equipped with the proper ICT skills and facilities to support the process of adoption. **The implication for practitioners in the adoption of telework is enhancing the quality and the quantity of ICT equipment within public sector organizations and investing in training activities for improving ICT skills.**

Second, bottom-up initiatives are fundamental. According to a "grassroots dynamic," committed employees generally design telework projects in autonomy, then promoting it to the top management, who have to, at least, allow some experimentation with it. Top management's decision whether to consent employees to telework or not is necessary, of course. Their support is a key facilitator. **The implication for practitioners in the adoption of telework is that they should favor the spontaneous emergence of "grassroots" initiatives among employees for experimental telework and providing the necessary support through top management's guidance.**

Third, the bureaucratic culture is a critical barrier to upscaling, especially (but not exclusively) among *late adopters* and *non-adopters*. This attitude regards the emphasis on processes and on physical presence as synonymous with productivity and is related to the absence of a result-oriented managerial style. Knowledge management is then important to overcome such obstacles. Attention has to be paid to training activities that go beyond the simple improvement of ICT skills: teleworkers also have to be capable of autonomously managing their working activities. The wide diffusion of telework in organizations requires change management for modifying the ways of thinking, especially among top managers. **The implication for practitioners in upscaling telework is that they will need to invest in training activities (e.g. coaching, mentoring) that take into account both the technical aspects in the use of telework and also the need to manage work activities and relationships with colleagues autonomously.**

Connected to this, the ability to experiment with telework projects is also very important. Experimenting with telework on a narrow organizational basis through pilot projects allows managers to limit the consequences and to generate consensus as benefits or disadvantages become more evident. **The implication for practitioners in the upscaling of telework is that they should highlight the diffused benefits achievable for both managers and employees through pilot projects; this may attenuate their perception of risk.**

5 8 Policy recommendations for implementing e-procurement and telework

In very general terms, the adoption of e-procurement and telework (especially by *late adopters* and *non-adopters*) is more strongly determined by factors in the external context. Therefore, the first adoption mostly requires leverage at the political level, rather than at the management and practitioner levels. Once adopted, the challenge is to scale up such innovations. This heavily relies on determinants in the inner context, closer to practitioners than to policy-makers. Indeed, upscaling requires public sector actors to surpass organizational and individual resistance through instruments that can deal with the ICT-driven social innovation as a “human-executed processes”. A holistic approach that takes into account their organizational impacts, and not just technological ones is necessary.

Policy recommendations and implications for practitioners for implementing e-procurement

To summarize, our policy recommendations and the implications of our research for practitioners are that public sector organizations should try to:

1. Strengthen the investments in **ICT infrastructures** (e.g. broadband connection) for eliminating territorial digital divides.
2. Elaborate **policy guidelines** for harmonizing national and regional laws with the proposals adopted by the European Commission in December 2011 (IP/11/1580) on public procurement’s modernization. This implies fixing the following obligations: (a) use of electronic means for certain phases of the procurement process, notably the electronic

notification of tender opportunities and the electronic availability of tender documents (originally expected by mid-2014); (b) use of electronic means of communication for central purchasing bodies (originally expected by mid-2014); (c) use of electronic means of communication for all the contracting authorities and all the procurement procedures (by mid-2016). Moreover, more detailed provisions need to be adopted for encouraging interoperability and standardization of e-procurement processes.

3. Disseminate **best practices** for encouraging public sector organizations' willingness to imitate other cases; and **publish data** on the level of take-up of e-procurement on total regional procurement for promoting "healthy competition".
4. Establish **autonomous and specialized public sector organizations** for the centralization of regional procurement through electronic means.
5. Enhance the quality and the quantity of **ICT equipment** within public sector organizations and invest in training activities to improve **ICT skills**.
6. Pay attention to **change management** for modifying governance traditions and employees' preferences in the use of e-procurement.
7. Identify a **pivotal figure** who acts as a visionary leader and who generates consensus on e-procurement, emphasizing the benefits achievable in daily activities.
8. Invest in **training and consulting activities** that take into account both the technical aspects in the use of e-procurement platforms and the organizational implications of upscaling.

Policy recommendations and implications for practitioner for implementing telework

To summarize, our policy recommendations and the implications of our research on telework for practitioners are that public sector organizations should try to:

1. Strengthen the investments in **ICT infrastructures** (e.g. broadband connection) for eliminating territorial digital divides.
2. Implement the **European Framework Agreement on Telework (EFAT)** at the national level according to the most appropriate regulatory tools (i.e. national legislation, collective agreement or soft-law mechanisms). This implies the establishment of clear rules, rights and duties for employers, employees and teleworkers. Within this general framework, telework relationships can then be arranged more autonomously within public sector organizations at the local level.
3. Respond to the specific **emerging needs** with respect to work/life balance and other daily-life aspects. These may vary depending on the territory considered. Organizations can then discuss the most appropriate solution in light of employees' particular needs, while also making clear arrangements with respect to the time that has to be spent at the employers' premises.
4. Disseminate the existent **best practices** to encourage public sector organizations' willingness to imitate other cases; and publish data on the **organizational well-being** achievable through the implementation of telework.
5. Enhance the quality and the quantity of **ICT equipment** within public sector organizations and invest in training activities to improve **ICT skills**.

6. Favor the spontaneous emergence of **“grassroots” initiatives** among employees for the implementation of telework experiments and provide the necessary support through top management’s guidance.
7. Invest in **training activities** (e.g. coaching, mentoring) that take into account both the technical aspects in the use of telework tools and also the need to manage work activities and relationships with colleagues autonomously.
8. Highlight the diffused benefits achievable for both managers and employees through the **experimentation of pilot projects**, which may limit the perception of risk.

In conclusion, the adoption and upscaling of ICT-driven social innovations is a critical challenge for the present and future European society. Further developing our knowledge in this field is crucial in both theoretical and empirical terms. The determinants and barriers of ICT-driven innovation need to be investigated to overcome the bias of innovation as a “magic solution” and to eventually take meaningful policy and managerial decisions.

6 Project identity

Project Name

Learning from Innovation in Public Sector Environments (LIPSE)

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Consortium

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- Ecole Nationale d'Administration (France)
- Erasmus University Rotterdam (The Netherlands)
- ESADE (Spain)
- Hertie School of Governance (Germany)
- Matej Bel University (Slovakia)
- National School of Political Studies and Public Administration (Romania)
- Radboud University Nijmegen (The Netherlands)
- Tallinn University of Technology (Estonia)
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Website

www.lipse.org

For more information about Work-Package 5

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