Innovation in the Public Sector

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On innovation in the public sector

By Per Koch and Johan Hauknes

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On innovation in the public sector – today and beyond

By Per Koch and Johan Hauknes,

based on contributions from Paul Cunningham, Thomas Halvorsen, Friso von Hertog, René Kemp, Ludmilla Malikova, Andrés Maroto, Ian Miles, Luis Rubalcaba, Ayalla Ruvio, Rannveig Røste, Nitza Schwabsky, Aviv Shoham, Katarina Staroňová, Eran Vigoda-Gadot, Rifka Weehuizen, Paul Windrum and the national Publin teams.

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Content:

Introduction

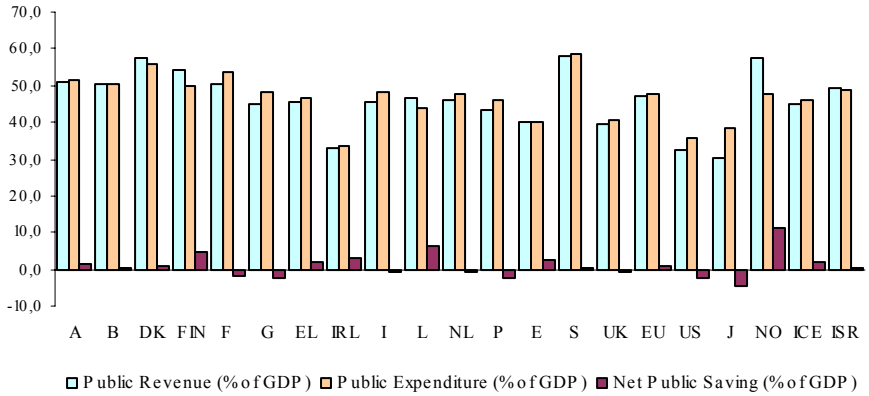
We live in a time of great wealth and great opportunities, and where the creativity and ingenuity of man has led to competences and technologies that have helped us solve or alleviate problems that have been haunting mankind for ages. This applies to everything from the production of new medicines and food, to the philosophical principles underpinning the modern democracies.

During the renaissance Europe let loose a strong belief in mankind's ability to solve its own problems, a belief that still shapes our activities and our way of thinking. Modern "Western" Man (which now includes people from all parts of the World), believes that given enough freedom and the necessary resources, most – or at least many –of the problems facing him can be solved.

Whether this is literally true or not is beside the point. Our various industrial, scientific and political revolutions clearly show that much is possible, and that human creativity can be used to achieve overreaching goals of social welfare, social justice, cultural development and economic growth.

Still, many challenges lay ahead. Moreover, the same creativity that brings us solutions to social problems also brings us new challenges, as in the areas of ecology, diseases and new ways of waging wars, and it is our common responsibility to meet these challenges, on the individual, local, national, European and global levels.

In all modern societies there is a division of labour between the public sector on the one hand and the private and "civil" sectors on the other. We will come back to what distinguishes these sectors later on in this report. For the time being let us say that there are activities in our societies that is directly controlled by the state and other public authorities, and that is – in one way of the other – meant to serve the common good of the citizens.



In the Publin report D14 *The structure and size of the public sector in an enlarged Europe*, Andrés Maroto and Luis Rubalcaba, point out that there are different ways of defining and calculating the size of the public sector. The figure shown above illustrates two indicators for the relative size of the public sector in 2002 in the EEA countries, in Israel, US and Japan:

- public revenue as a percentage of GDP,

- public expenditure as percentage of GDP.
- In addition the figure describes the overall net public savings as a share of of GDP.

The data are taken from OECD 2004. In some countries, such as Finland, Denmark, Sweden, Norway, France, Belgium and Austria, the public revenue as percentage of GDP exceeds 50 percent. At the other side, countries such as Mediterranean countries (Spain, Portugal and Greece), presents levels around 40%-45%, and Ireland around 35%, close to the levels of other countries such as Japan or the United States.

Whatever the percentage, one thing is clear: the public sector plays an important role in all these countries. It makes use of a significant part of the resources available, and it contributes in an important way to the overall wealth creation. This sector's ability to develop relevant competences and innovate in order to deliver better as well as new services is therefore of an outmost importance.

This report includes reflections mainly based on the general "horizontal" work done within the Publin project, i.e. on the general discussion taking place within the Publin consortium and on the following reports[1]:

D9 *On the differences between public and private sector innovation*
By Thomas Halvorsen, Johan Hauknes, Ian Miles and Rannveig Røste

D14 *The structure and size of the public sector in an enlarged Europe*
By Andrés Maroto and Luis Rubalcaba

D15 *Policy learning, what does it mean and how can we study it?*
By René Kemp and Rifka Weehuizen

D16 *Studies of innovation in the public sector, a theoretical framework*
By Rannveig Røste

D17 *Report on the Publin surveys*
By Eran Vigoda-Gadot, Aviv Shoham, Ayalla Ruvio, Nitza Schwabsky

We have, however, also included some of the general conclusions from the two case study summary reports:

D18 *Innovation in the social sector – case study analysis*
By Ludmila Malikova and Katarina Staroòová

D19 *Innovation in the health sector – case study analysis*
By Paul Cunningham

The purpose of this report is to give an overall synthesis of the work in the Publin project concerning the question of the characteristics of innovation, of the innovation activities and their impacts, in public sectors and activities in our economies. The overall summary report from Publin will be reported to the European Commission and Member States in December 2005. A key part of the final report is to draw

[1] All reports are available for download at the PUBLIN site, www.step.no/publin

implications of this work for the formulation of policies and strategies to improve the operation and management of public activities and sectors. These implications will form the basis for the identification of more operational policy recommendations, both at the level of the European Union and at the level of Member States.

Innovation in the public sector

A range of studies of the development of new products, new production processes and new behaviors in private, market-based companies have contributed with important understanding of some of the main processes underlying social and economic change in modern economies.[2] However, in no way does this understanding provide explanations of the wider processes of change in our societies and economies. Even when it comes to economic structures the answers it provides, are only partial.

One evident aspect of modern societies that is conspicuously missing in much of this analysis is what in a wide term generally is denoted the "public sector". Generally activities by public organizations and institutions are seen as either regulatory frameworks for innovation activities or as more or less passive providers of inputs to private sector innovation, or as recipients and users of – or a "market" for – innovative products generated by a "private sector" – of market based agents.

Clearly the role of the "public sector" activities in our societies is more important than this – more important for socio-economic development and for the achievement of the ultimate welfare objectives that underpin the goals of public activities and policies. It is therefore something of a paradox that the socio-economic innovation literature has almost completely neglected what is a major aspect of all European economies: the public sector activities.[3] Becoming aware of this neglect was an important factor in motivating the Publin study. Further dialogue and clarification suggested to us that Publin's key role should be to generate a framework for the inclusion of this vital element in the trans-disciplinary analysis of socio-political and –economic change in our societies.

Our main starting point is simply stated: In a market based framework innovation by agents/organizations is basically the reflection of the agents' adaptation to and attempts to mould the structure of the incentives and expected rewards they perceive as facing them. The simplified way of expressing this starting point to market-based innovation is that companies as suppliers of economic goods generally are profit-seeking agents, and more specifically – in their attempt to reap as large profits as possible – profit-maximizers. Innovation strategies by companies is thus deliberately chosen and shaped by the search for maximal profits, conditioned by the information and insight the decision maker has about that part of the socio-economic universe in which the company is operating. We will stick to this oversimplified model for the time being.

A central characteristic of what we generally conceive of as "public activities" is that the *apparently* simple structures of drivers for private sector innovation are not applicable. To put it bluntly, public sector innovation is too complex to fit a simple model like this. To some extent this is only apparent, but to understand why this is so, we need to be more explicit on what we mean by the concept of 'innovation'. To approach the innovation concept and attempt the translation of the concept to a public

[2] See the Publin Report No. D8 *Studies of innovation in the public sector, a literature review* By Rannveig Røste for a presentation of research on innovation in the private sector . See the literature list in this report for references.

[3] This does not mean that there has not been done research in innovation in the public sector. See Report D16 for an overview.

or other non-market context, makes it necessary to go back to the core analytical definition of innovation.

From this we will attempt to generate a framework for analysis of activity changes and their motivations in contexts where public control, provision or ownership is a key characteristic. In short; we will attempt to generate an understanding of innovation in public organizations and institutions. Though these are essentially non-profit, even public organizations can in a basic sense be seen as reward-seeking.

We emphasise here that our approach is based on a key conviction – the conviction that the direct application of any notions of "private sector" technological or non-technological, product or process innovation to "public sectors" does not address the key characteristics of any non-private, non-market activities. Although the use of technologies, services, knowledge and services developed in the private sector is an essential part of public sector innovation, the public sector is not a passive user of and adaptor to such innovation. From a social as well as a technological point of view, public innovation processes should be seen as genuine innovation processes in their own right.

As well as *not* being primarily about the use of technical artefacts imported from the private sector, the Publin project is not primarily about the implementation of a range of business management methods in public organizations. Rather, these constitute some of the many the informational inputs to innovation in public activities and organizations. As such they partake in the structured environment around the public activity/organization in question. We might rephrase this as saying that these and other informational input mechanisms generate a structured 'innovation system' of the activity or organization in question.

The key analytical questions are *not* about the automatic implementation and direct translation by the agent into behaviour of such information. The required focus here should be on the decisions to utilize specific parts of the wider information set built on these and other informational inputs, how the relevant information parts are – so to say – pieced together and the rationales and impact of the innovations – i.e. the implementation of behavioural change – both at the level of the activities and organizations, and at the aggregate system- or macro-level. As such the perception by the organization of its structured innovation environment is important.

Publin's objective is thus ultimately to provide a basis for a genuinely trans-disciplinary micro-theory of innovation in activities and organizations operating within a framework of public governance and analytical principles for understanding the macro-implications of this micro-level foundation. As such the long term goal of the agenda Publin launches is a 'bottoms-up' theory which we are convinced will provide a vital complement to more traditional 'top-down' theories of public activities.

What is innovation?

From the PUBLIN report D19 Paul Cunningham: *Innovation in the Public Health sector: A case study analysis*

Green, Howells and Miles (2001), in their investigation of service innovation in the European Union, provide a suitable definition of the term innovation which denotes a process where organizations are

> "doing something new i.e. introducing a new practice or process, creating a new product (good or service), or adopting a new pattern of intra- or inter-organizational relationships (including the delivery of goods and services)".

What is clear from Green, Howells and Miles' definition of innovation is that the emphasis is on novelty. As they go on to say,

> "innovation is not merely synonymous with change. Ongoing change is a feature of most… organizations. For example the recruitment of new workers constitutes change but is an innovative step only where such workers are introduced in order to import new knowledge or carry out novel tasks".

Change then, is endemic; organizations grow or decline in size, the communities served, the incumbents of specific positions, and so on. Innovation is also a common phenomenon, and is even more prominent as we enter the "knowledge-based economy".

Defining innovation

Our mental model of thinking about innovation has a strong legacy – not just from market-based activities in general, but more specifically from manufacturing activities. The ways we reflect over the innovation concept in both everyday and analytical usage tend to carry with them a reification – or even materialisation – of innovation. This may be applicable in a *commodity*[4] production context, but becomes increasingly problematic when the information required to convey a description of "what is produced and how it is done" gets more complex *in an informational sense* and hence more costly to access[5].

[4] A commodity is essentially an economic good which is information-poor; the information set needed to describe its transaction and utility (its 'economic') characteristics is small, and hence transferable at (very) low cost.

[5] It is important to emphasize that this is not a question of material, technical or related complexity, but complexity of the information required to convey sufficient information about the transfer and use characteristics of the 'product' supplied. The structure – or complexity – of this information set includes both the direct information on the 'product' and the information needed to make sense of this information set for the user side. The investments needed to access this information, thus also encompasses the necessary investments to establish the required translation capability.

Innovation in the public sector may indeed include the production of material "things" or products, but more often that not public innovation entails the application of already existing "things" or the delivery of services, accompanied by organizational change and policy development.

The problem of defining innovation in a general, context-free way is evident in the attempts to understand innovation in service activities (see e.g. Hauknes 1998). It is a further aggravating problem that the instruments of innovation measurements may be taken as support for such a "reified material business practice" approach to innovation (for a service based criticism of these instruments, see Hauknes 2003).

There is an ambiguity in the use of the innovation concept in the innovation research literatures. Innovation is used in these literatures to describe

– the *first use* of some type or category of behaviour (e.g. a new product),

– the *development and implementation process* of a new product, new organization or

– the *codified information* set describing the functional content of the innovation in more or less generic terms (i.e. independent of its context of application and development).

The common misapprehension that meaningful and valuable innovation is "technological" does not alleviate this problem. There are very strong indications that the understanding of the concept of "technology"' varies substantially between cultural and language contexts, a crucial point when measurements of innovation are at the core based on subjective assessments by responding participators in the activity. But this then immediately also transfers to a difficulty when "non-technological" innovation is introduced.

To answer the core question – what is innovation? – in the context of public and non-market activities, we have to go back to the fundamental question.

Firstly: Innovation is at core the *premeditated implementation of purposeful or intentional behavioural change by social agents* within the activity context under consideration. The agents as "units of analysis" may be individuals or multi-individual organizations, pending the specific activity context and analytical questions addressed.

Secondly: The concept of innovation is to function as an analytical concept and tool. It should not be understood as a descriptor of an objective reality or generic category of behavioural dimensions in an empirical reality. It is *a tool for analysis of social activities and interaction* and, thence, is equally a function of the type of analysis and the questions raised in this. Ultimately *we* as analysts have to decide what is to be or not be counted as (an) innovation. It follows that a critical stance is needed towards

- normative assessments of innovation in general or of types of innovations (i.e. that innovations are normatively positive – or negative – in themselves, and thus 'the more, the better',

- of generalisation of conceptions of innovation rooted in one particular set of social contexts (e.g. "markets for manufactured goods", "high-tech products", etc.),

- of the direct application of "obvious" generic typologies of innovation – as "product" and "process" innovations – and, lastly,

- of the reification of innovation independently of the specification of an analytical context.

Types of innovation in the public sector

Innovation in the public sector can be divided into several types, like for instance:

- a new or improved service
  (for example health care at home)
- process innovation
  (a change in the manufacturing of a service or product)
- administrative innovation
  (for example the use of a new policy instrument, which may be a result of policy change)
- system innovation
  (a new system or a fundamental change of an existing system, for instance by the establishment of new organizations or new patterns of co-operation and interaction)
- conceptual innovation
  (a change in the outlook of actors; such changes are accompanied by the use of new concepts, for example integrated water management or mobility leasing)
- radical change of rationality
  (meaning that the world view or the mental matrix of the employees of an organization is shifting)

The first two types of innovation can be subsumed under product innovation.

The innovations can be labelled in the following ways:

- Incremental innovations—radical innovations
  (denoting the degree of novelty, in industry most innovations can be considered incremental improvements of already existing products, processes or services)
- Top-down innovations—bottom-up innovations
  (denoting who has initiated the process leading to behavioral changes, "the top" – meaning management or organizations or institutions higher up in the hierarchy – or "the bottom" – meaning "workers on the factory floor", in this case public employees, civil servants and mid-level policy makers)
- Needs-led innovations and efficiency-led innovation
  (denoting whether the innovation process has been initiated to solve a specific problem or in order to make already existing products, services or procedures more efficient)

Taken from PUBLIN report D9 *On the differences between public and private sector innovation,* by Thomas Halvorsen, Johan Hauknes, Ian Miles and Rannveig Røste

To start with the basics, we suggest the following general definition of innovation:

Innovation is a social entity's implementation and performance of a new specific form or repertoire of social action that is implemented deliberately by the entity in the context of the objectives and functionalities of the entity's activities.

With this innovation is a behavioural expression of the agent's intentions and objectives, shaped within the context of his/her/its local theory[6] of the socio-cultural and socio-economic environment. Its rationale and wider 'meaning' resides at the fundamental level only in the subjective life world of the social agent.

To put it bluntly: Innovation is doing something differently and deliberately in order to achieve certain objectives. And rationale for doing so is shaped by the environment of the individual.

The only way innovation can gain inter-subjective status is through the transmission of information about the new repertoire or about its direct or indirect impacts on the externally observable characteristics of the agent. In other words: In order for an innovation to succeed, more people must understand and accept it, and in order for that to happen, learning must take place. Hence information generation, transmission and reception necessarily have to play a key role in any theories of 'innovation diffusion' and impacts.

We have introduced a criterion of *novelty* in this definition to reflect the core definition's focus on 'behavioural *change*'. Innovation is seen as a process of change in the repertoire of the entity's actions. Clearly the relevant type of novelty here is *new (1) at the time of implementation (2) for the entity*.

In other word: Innovation is a change of behaviour that is new to the relevant agent, but not necessarily new to society as a whole. If a civil servant deliberately introduces a new way of doing his or her professional obligations or activities, with the purpose of providing an improved service, this is an innovation, even if someone else might have done something similar elsewhere.

Change and novelty still leaves ample room for further specifications and limitations, a question we will return to shortly.

Four implications follow of this approach to innovation:

- Innovation is always *activity specific*, specific to the agent, its activities and the relevant institutional environment of these.

- The relevant design and decision making context is always *subjective*, reflecting the relevant decision maker's operationally oriented perception of the characteristics of the activity, available resources, and the relative expected benefits of the potential innovation and its alternatives.

[6] The cognitive concept of 'local theories' used here, has been given many names f.i. in the social psychological, organization theory and management literatures, as mental models, schemata, frames of reference etc. For a discussion of these see Walsh, *Organization Science*, vol 6 (1995), 280-321

– The process of designing new operational modes of behaviour and choice on their implementation imply a degree of *autonomy*[7] within the domain of control in the relevant decision making process. In order to innovate, the agent must have leeway to do so.

– The subjectively determined, altered mode of behaviour is implemented over an institutional and functional domain, corresponding to a domain of control over which the relevant behaviours may be instructed. The border of this domain is closely related to the *distinction between the innovating agent and its institutional and functional environment* with which it interacts. In other words: there are limits to the area of the public sector an innovator controls,

To emphasise; innovation is *location specific* in socio-economic time and space and *activity specific*. Furthermore, it is *subjectively determined*, shaped by the resources and perceptions of the individual agent, and thus *agent specific*. Hence it follows that an innovation – a behavioural transition by a specific agent - is strictly a *micro-level* phenomenon.

An innovation generates information of two kinds:

1 First of all the innovation implementation – the decision making – creates the information set "agent A has now started doing B" where B itself is an information set describing aspects of the behavioural procedure. This information set may be captured by other agents[8] in the environment of agent A more or less completely and will be integrated into their overall activity oriented information set. This is the innovation diffusion process. *People learn from other people's way of doing things*

2 Secondly the innovation generates experiential data concerning

- its implementation and
- its effects on the operations of the agent and its environment.

For the innovating agent the correspondence between this information and its *ex ante* expectations concerning the impact on its operations and position *vis-à-vis* its environment, provide information on further needs or opportunities of innovation – for further changes in the active repertoire of behaviours. I.e. the agent is learning from experience.

For organizations in the environment of the innovator, this information may – but need not – provide inputs to their own further behavioural decisions. I.e. it may alter the criteria for their perceptions and decisions concerning what are effective future behaviours. In short: they are learning and gaining experience based on their familiarity with this particular innovation.

[7] We implicitly assume that the agent has a feasible choice between *at least* two options; to continue the old 'way of doing [a] thing' or implement new ways of doing the same thing. The location of responsibilities for management clearly indicates some degree of autonomy at the level and over the domain it 'manages'.

[8] It far from necessary to assume here that these other agents are 'competitors' to A.

The latter point of inter-agent diffusion of information implementation and impact suggests some key characteristics of the associated generalized diffusion processes of information on innovation. To be diffused among agents, this information set, i.e. what is learned,

– must in some sense be "visible",

– it must be sufficiently complete or rich in its content to be decipherable by the receiver, to be translated and interpreted into the receiver's cognitive and activity-related information context, and lastly,

– it must be of sufficiently noteworthy content for these other agents to take notice of it.

That is, for a diffusion process to arise: The specific information set must have a sufficient "signal-to-noise" ratio, and it must be coded in a way the receiver can interpret. Furthermore, the interpreted content must be sufficient to trigger the recipient; it must alter the criteria for the receiver's behavioural decisions.

This clearly involves much more than an epidemiological diffusion of a specific "innovation" in the reified sense (i.e. the adaptation of a technology or product), or even of evolving categories of innovation "types" as they are described in e.g. product cycle descriptions. What we describe here is a generalized diffusion process – but where we make explicit a fundamental point, what is diffused is not reified innovations, but an *information set*. This information set bears no direct relation to any specific repertoires or activities to provide a relevant response to the information set generating innovation; the information set requires translation and interpretation before it can provide guidelines for choice of behaviour by the recipient. [9]

This approach to innovation diffusion takes explicitly into account the aspects that lead to the description of innovation as "interactive" and "systemic". Innovation is "systemic" – structured and contextual – exactly because the behavioural decisions of one agent, imparts a change in the expected costs or rewards on variant choices of behaviour for organizations in its environment. Or, from the perspective of the prospective innovator; an innovation implemented by one organization in the environment, may generate altered expected benefits for alternate behaviours – it may alter the subjectively perceived (innovation) incentive structure of the prospective innovator. The world has in a sense become a different place due to the introduction of this innovation, which also have consequences for how people behave elsewhere in this part of the system. An obvious conclusion from this is that such sequential innovation diffusion processes will exhibit a strong form of historicity, or path-dependence.

[9] Moreover, nowhere should we limit this to single- or few-valued relations between the interpreted information and prescriptions – or blue prints – for behavior on the side of the original innovator. External observation of an organization and its activities does not generally allow complete observation of what is done or how it is done at a functional level. What can be observed are facets, or implications, of these behaviors and their impact on various external measures of performance for the organisation.

These generalized diffusion processes involve processes clearly reminiscent of information percolation and other permeation processes. Our outline emphasizes a reactive correlation of behaviours between agents far beyond restricted imitation-based contagion diffusion, in that our approach reflects the cognitive interpretation, reformulation and assessment of the information set by the agents in this diffusion process. Hence, they should perhaps better be described as reaction processes or chains, rather than as diffusion.

Hence civil servants are not passive containers taking up new technologies or new inventions. They are themselves changed through the innovation process.

From this it is evident that innovation has a close relation to generation of social time – it may even be described, as the Austrian economist Ludwig Lachmann does – as generating "socio-economic" time (Lachmann 1968). This view has strong connotations to the Shannon type of information theories; information is to these systems what entropy is to thermodynamical systems. We will not enter into these fascinating and important topics here, but just note that this is what is behind the ubiquitous claim that innovation is intimately linked to "learning" – and Bengt-Åke Lundvall's suggestion that the present stage of our societies development may be denoted a "learning society" or economy. But in this sense our societies have always been "learning" societies; hence it cannot function as an analytical concept to distinguish our present era from previous ones.

The "learning" associated with this is learning of a very general and diffuse sense – it includes every aspect of the processes that underpins agents' implementation of new behaviours – that generates innovation. This suggests that "learning" is not a fundamental concept in this discussion. Rather, it is used at this level as a derivative of the innovation concept, ultimately defined as all cognitive activities underlying innovations. So, by defining innovation, we also define the derived "learning" concept used in the innovation literatures.

This is intimately linked to a key aspect of the implementation of behavioural change – of innovation. Innovation is as we saw above, subjectively determined, and based on expectations of future rewards. These expectations may be confirmed or disproved – whether one or the other is outside the control of the innovating agent.

Disappointment or confirmation will only be revealed to the innovator some time after the innovation has been expressed or implemented. In fact, in this inter-temporal gap between expectations and revealed consequences lies a key spur or incentive to further innovation. But more than this, innovation has to be seen within a context of (genuine) uncertainty[10]. Hence, innovation activities must be seen as exploratory and conditional. Ex post innovations are seen to succeed or fail, but their success or failure is not necessarily an expression of the success or failure of the innovator *at the time of innovation*.

[10] It is usual in this context to refer to Frank Knight's distinction between *risk* and *uncertainty*, see Knight (1932). Risks are what agents can form objective probability based expectations on future 'states' about – it is solely a question of getting access to complete information – while uncertainties are factors on which it is impossible to have complete expectations – factors that are totally 'unpredictable'.

This is not just a simple question of stochastic variables and factors in the equation – or of new knowledge opening previously unforeseen opportunities. What is generally the case – whether in private or public sectors – is that improved rewards for one agent imply reduced benefits for another agent. This generalized competitive framework is the essence – both of market competition, and of most public sector activities. Most of our public activities are placed in a competitive framework, though not necessarily a framework as simple as market competition. Whatever its form the competition acts as a spur to innovation. But here the ultimate benefits accrued to the innovator depends on what the competitor – who is generally also an innovator – does. If the first innovator lacks information on the decisions on future behaviour made by the competitor, her best expectations may generally be that the present behaviour is continued. In this, she will often be proven wrong.

It is easy to design simple models to emphasize this point. Within a public sector we could consider e.g. the competition for (public) funding in a system based on Sir Humphrey's law[11], a powerful outline of the incentive system facing public agencies and organizations. Sir Humphrey's law would have a profound impact on the innovation strategies of the competing agencies or departments. In such a model education would compete with health services, the police force with kindergartens, and defence with sanitary services.

There is always a dimension of competition – and always incentives to innovate. Innovations should neither be seen as normatively good in itself – innovations are basically normatively neutral in a social context – nor as activities that have some obligation to serve the 'public good'. Micro-level innovation is simply a reflection of the incentive system imposed – partly deliberately, but to a large extent probably un-intentional – on the activities in question.

Ultimately we are left with "innovation" as the key concept. Now evidently, the definition we gave above is very wide[12]. But at this general level, this is as far as we can go. To limit the set of "innovations" further, we need to bring in a different type of perspectives. The obvious category of perspectives to bring in with our context is the set of analytical questions we address. So by defining our analytical position and the issues we address, we have to work backwards into the set of innovations. The (narrower) definition of innovation this generates is thus only relevant within the frame set by our choice of issues and questions. If we change the content and orientation of our analysis, we need also consider the need of changing this delimitation of the (broader) set of innovations defined generally.

[11] Sir Humphrey's law is stated as follows in the BBC series "*Yes, Minister*": "[T]o measure success in […]the Civil Service […], we measure success by the size of our staff and our budget. By definition a big department is more successful than a small one … [T]his simple proposition is the basis of our whole system". However, with emphasizing solely stocks and neglecting its changes, Sir Humphrey misses on important criterion, namely growth. The core essence of this system lies in the combined effect of size and growth rate.

[12] The definition at this level does not distinguish any forms of behavioral change, neither in terms of their content or activity orientation, or in terms of information 'height' or visibility.

Defining public sector

Besides "innovation", the other key concept in the Publin project and its issues is "public sectors," including their organizations and activities. Again we are facing a situation where we may choose different paths to delimit the key concept.

It is not easy to make a perfect definition of what the public sector entails, especially in a time where there is no one-to-one relationship between the area of public responsibility and the organisations providing public services. For instance: health and social services is a public responsibility in all European countries. However, in some countries the required services are provided by public institutions. In others private companies and third sector organisations like the church are involved in providing publicly funded services as well.

We could choose to start from characteristics of the products generated. The concept of "public goods" would provide such a starting point. Public goods are socio-economic goods that are *non-excludable* and *non-rival*[13].

An approach here would focus on the production or management of public goods. Goods may be public – or private – due to its natural characteristics, or by institutional arrangement. Now clearly, what we generally understand as "public sectors" do not accord completely by this.

The generation of several public goods is outside the public sectors, and public sectors very often generate non-public – i.e. private – goods, sometimes on the basis of an institutionally set monopoly, sometimes in competition with private organizations. More importantly, the various types of goods fall between these two extreme, perfect categories. A well-known example is the treatment of knowledge and information; often being described as a "quasi-public good".

Knowledge and information may be excludable both by institutional arrangements – as the setting up of property rights systems or oath of secrecy arrangements – and due to its internal characteristics – as with the need of required extensive expertise to read, or understand, the information. This suggests, furthermore that the quasi-public characteristics of information, may change over time.

Similarly could start from a *control or ownership* perspective. Ownership and control may be defined widely through collective or communal ownership – which would encompass both the so-called 'third sector' and institutional constructions such as foundations etc. where the expression of ownership is prohibited by a legal framework. Alternatively, a more narrow starting point would be focusing functions and activities organized within institutions under explicit public ownership and control, either through natural and/or legal monopolies or through the activities' status as legal or traditionally status as public provided services.

[13] *Excludability* refers to the opportunity to express property rights over the good, with a perfectly excludable good an owner can exclude other users costlessly from getting access to the good. *Rivalry* expresses broadly speaking that the good can only be used one at a time, when used or consumed by one party it cannot be consumed by another. The implication of this is that it is impossible to set up a market for public goods.

A related starting point may be provided by the characteristics of *funding* of the activities and the provision of the services in question. If the main funding of current expenses is through the 'public purse' – by state or local authorities – without these authorities being the direct user or consumer of these services, they would be included within the category of the 'public sector'.

This suggests a further approach, focusing the nature of the social surplus or benefits generated, and the *beneficiaries* of the activities; who appropriates what benefits of the activities. To what extent are the benefits individually or collectively appropriable?

The characteristics and *conditions of competition* in which the activities are produced or generated is an alternative avenue. An immediate distinction here would be between provision within a market framework with its specific forms of price competition, and non-market provision, whether competitive or non-competitive.

A generalization of several of these points would be to base a delineation of public *governance*, which would need to consider characteristics of ownership and control, of funding, of beneficiaries, and of other stakeholders.

Though interesting, we chose not to follow this rather resource-intensive line of argument of defining the foundation of the Publin project. Rather, in Publin we chose a pragmatic approach to defining the public sector. The ultimate objective of Publin is to provide an improved basis for European innovation policies by extending the present knowledge bases for these – to encompass an understanding of innovation in the context of activities and functionalities that are *generally* or often institutionalized in our countries with a strong public participation and where the provision to the public, where relevant, is not generally based on market-based mediation.

The importance of innovation policies to target also public and other non-market provided services is evident. This point should need no arguments beyond pointing to the fact that an innovation policy that misses out such services, their generation and provision, miss crucial elements of the welfare agenda that provides the core rationale for innovation policies. The well-known processes of blurring the line between public and private institutions, market and non-market provision institutions etc. do not change this. Nor does it change the need for policies aimed at generating improved quality, efficiency and enhanced adaptation to social welfare needs in the performance of publicly controlled services – an innovation policy adapted to the characteristics of public services, public activities and organizations. This focus on the micro-level processes and activities we call innovation, requires then that these policies are based on a solid understanding of the incentive structures facing the organizations and individuals, and their mental models of them. In short, it needs to be based on a contextual understanding of the inhibitors and enhancers of innovation in the sense we defined it above – and of the relevant processes of information diffusion.

Hence the main focus for this study is innovation processes of direct relevance to the performance of public services, where public institutions are involved in the actual innovation process. To adapt to this, we have as a point of departure chosen what has been characterized as a *functional* definition of public activities and sectors, see the text box below. In this we have approached the concept of public sectors as being comprised of the services and activities that are commonly organized as public – whether state or region – owned institutions in our countries. Public administration

and management, social security, the legislative and regulatory framework, education, health care, and wider social services are activities that generally are seen as 'public' – and parts of the obligations and key operations of a public sector. In this, defence, education and health and social services are activities where (almost) the complete "production system" within the European welfare model resides within the public sphere.

This definition by necessity introduces an ambiguity in the institutional characteristics. Both privately owned 'for profit' companies and non-governmental 'private non-profit' institutions may deliver services paid for and controlled by public authorities. To what extent private companies and NGOs are involved in this kind of activity vary both between sectors and countries.

If one wants to compare public innovation in various sectors and countries variations in the institutional set-up must be taken into consideration. If one country decides to provide care for the elderly through publicly owned organizations, another through private and yet another through a mix of both types, these should all be included when saying something useful about innovation in the public sector – when a functional perspective is chosen. The only institutions that would fall outside this definition are private homes for the elderly that do not receive public funding.

There is another reason for including non-public companies and institutions providing publicly funded services, and that is their role as nodes in the diffusion network of innovations. Private companies and non-governmental organizations may implement innovations that are later adapted by publicly owned services (and visa versa), or they may be key nodes in the generation of signals on certain forms of innovation to the wider community of actors within the relevant sphere of activity. As their governance framework differs, they may have variant incentives to express such signals in a situation with variant ownership and control systems operating in parallel.

The interaction between private companies and public institutions go beyond outsourcing – or other immediate forms of externalization. Innovation in the public sector may be the result of a public institution buying and implementing technology, machinery or competences developed by and for private companies. In many cases this innovation is the end product of an innovation process where private and public institutions interact and cooperate. This applies, for instance, to public hospitals procuring medical instruments and equipment or medical instruments from private suppliers, or the acquisition by the national Air Force of new platform for fighter planes. Given that many of these products and services are commissioned and defined by public sector institutions, and more generally that neither of these sectors exist by themselves it will be difficult to draw a definite border between market-based "private" innovation on the one hand and innovation in what we understand as public organizations and sectors[14].

[14] This reflects the old debate on the sources and drivers of radical technological innovations and the importance of public – mostly governmental - procurement in these. It is a fact that in many of the key, radical technological innovations in the 20th century, public sectors played a central role in enabling these.

Defining the public sector

"The term 'public sector' is often used indiscriminately. Three definitions can be found (Khury and Van der Torre, 2002; Kuhry, 2003):

Legal definition: the public sector includes government organizations and organizations governed by public law

Financial definition: besides the above organizations, the public sector includes private organizations largely funded by public means, including non-profit organizations providing education and health care

Functional definition: in this case the pubic sector includes all organizations in the field of the public administration, social security, law and order, education, health care, and social and cultural services, irrespective of their funding source and the legal form of the supplier. The functionally defined public sector is sometimes termed the 'quaternary sector' in policy debates in some European countries, such as Netherlands or Belgium.

In this report, the functional definition is applied. Instead of the awkward term 'quaternary sector' the term 'public service sector' will be used in this context."

From PUBLIN report D-20: Andrés Maroto and Luis Rubalcaba: *The structure and size of the public sector in an enlarged Europe.*

The differences between public and private innovation

In the Publin report D9 *On the differences between public and private sector innovation* Ian Miles and Rannveig Røste argues that there are great differences between the public and private sectors as regards innovation. They point out that public organizations are typically the primary supplier of services and are not competing in order to maximize profits[15]. This lack of product competition is widely held to mean a lack of incentives to improvement.

However, as Miles and Røste point out, the notion that the connection between a firm's behaviour and pecuniary reward is the central dynamic of economic rationale and the development of innovation has to be seen as too simplistic. Frost and Egri (1991) consider that there is a "rational myth of innovation" that portrays organizations as goal-directed. Although they do not address public-sector innovation as such, they do question the role of profitability as criterion for the development of innovations. There is often competition for resources among different individuals and projects *within* a firm, and the strategies that secure victory here are multifaceted – for instance, being able to affect who assesses costs and benefits, and how this is done, is rather important.

[15] Though not profit-maximizing, it is interesting to note that a competition as outlined above of public agencies facing Sir Humphrey's law would bear key resemblances to William Baumol's theory of revenue-maximizing agents and the structure of the competition between them.

We would counter to this, however, that it is really not a question of organizations being 'goal-directed' – or reward-maximizers, to use a somewhat more neutral term than profit-maximizers. Though responding – reactively and proactively – to incentives, we should never see incentives structures as complete and beyond any difference of opinions in how they are understood and interpreted. Furthermore, global incentives are supplemented both by local and intra-organizational incentives, where the latter are crucial parts of the incentives facing the individuals comprising the organization. Within any organization there is a political struggle[16]. It will still be rationality, but we will open the box of what we include as accepted rationalities.

One important outcome of the Publin project is that we have learned more about innovation related human behaviour in general, and that this knowledge may also be used to get a better understanding of incentives for innovation also in the private sector.

It is more than likely that private company employees find their motivation from a large number of reasons, the urge for profit being only one of many. As in the public sector, private sector workers may be motivated by idealism, the joy of creating something new, an intense interest in the topic at hand, friendship and a sense of belonging, career ambitions, etc. In the Publin case studies we have found that idealism and the urge to develop a better society is an important driving force for public innovation.

Now, this generates a key question – whether these individual sensibilities are more likely to survive to organizational and more aggregate levels in public than in private activities. If so, what are the implications for overall social welfare considerations in a dynamic perspective where we accept that the long term future needs and demands for public services are as unknown as the future demand for market goods?

We have not followed up private sector innovation within Publin. After all, Publin is a study of public sector activities. Nevertheless, this general approach to human behaviour should be kept in mind when discussing innovation in any sector.

Possible motivations in the public and private sectors compared, adapted from Publin report D9 On the differences between public and private sector innovation*, by Thomas Halvorsen, Johan Hauknes, Ian Miles and Rannveig Røste*

Motivations for innovation in the public sector /Individuals	**Motivations for innovation in the private sector /Individuals**
o Prestige o Self-fulfilment o Professional recognition o Potential for spin-off business o Idealism o Career o Power o Money (salary)	o Prestige o Self-fulfilment o Idealism o Career o Power o Money (salary, profits, bonuses) o Job security via enhanced company competitiveness and profitability o Imposed requirement

[16] It goes without saying that in any the study of any organization we can never neglect the possibility of 'freak beavior'.

Motivations for innovation in the public sector /Organizations	**Motivations for innovation in the public sector /Organizations**
o Problem solving (in order to reach objectives) o Increased funding o The propagation of a policy, idea or rationality o More staff o Public relations	o Problem solving (in order to reach objectives) o Profits o Market-shares o Pre-empt competition o Growth (in size) o Public relations

We can easily identify some major differences between public and private sector institutions with relevance for analyses of innovation activities. These differences also have some immediate implications for the incentive structures for innovative activities.

One factor is the unit of analysis. Apart from publicly owned companies, most public institutions are part of a larger chain of command and control where it is harder to draw a line between the different parts of the system – and where legal frameworks provide little help in this. For instance: public agencies – like research councils or directorates of health – interact closely with ministries as well as subordinate institutions and "users". The innovation activities in these institutions are heavily influenced by decisions made above and below in the chain of command. The closest parallel in the private sector will be large conglomerates or multinational companies.

Another important difference is that the political aspect is much more important in the public than in the private sector. Policy decisions normally affect companies indirectly, through laws, regulations and financial support. The public sector is at least formally controlled by elected politicians. The intimate link between this governance dimension and funding of current expenses of the activities implies a very strong link between ownership and control on the one hand and the growth strategies of the subsidiary organizations.

Just as important are the differences in management incentives. Public managers are in general more likely to receive lower and less performance based material benefits, which may influence their willingness to take risk.

It may be that the public sector – on an aggregate level – recruits fewer risk-taking entrepreneurs than the private sector relatively speaking, due to the expectations of rewards or penalties of entrepreneurial activity.

It is likely that innovative private companies are more likely to accept "failure" than public institutions. By "failure" is here meant innovation projects that do not accomplish their expected objectives. Private companies may consider "failures" an integrated part of any risky enterprise, while the pressure to short term economizing of public funds – and not wasting the 'public purse' – may imply a critical disincentive to innovation. Overall we would then expect to see public organizations being risk-aversive relative to market-oriented firms, essentially due to the characteristics of the effective incentive system facing the two kinds of organizations.

To reiterate: potential differences between public and private sectors in the level of innovation activities may be caused by

- a stronger co-linearity of control and funding, restricting the space of potential innovation strategies

- a weaker delineation of organizational and individual change oriented incentives to long term performance incentives

- inter-temporal self-selection effects, where the perception of private vs. public sectors as a divide between change-oriented, 'dynamic' sectors and static, non-innovating sectors are being reinforced by the resources mobilized and renewed over time,

- graver disincentives to innovation, though stronger ex post penalties for operational or functional innovation failures.

However: In our research we have found no proof substantiating the proposition that public sectors are less innovative than private sectors.

On the other hand: The Publin interviews reveal a public sector that is less willing to take risks. There are several reasons for this.

In many countries the public sectors are now under the rule of various forms for new public management techniques (see below), where performance measurement and reward and funding systems have been increasingly linked to assessments based on predetermined sets of throughput, output and impact indicators.

It is not a point that the integration of qualitative and quantitative indicators into performance and output-based funding is inherently bad – or good. To capture essential dimensions of the organization or activity requires careful design of these systems in the context of the objectives set and the functional and institutional requirements. To avoid that their interpretation and use solidify contemporary 'ways of doing things', implies the need of understanding the operational as well as strategic characteristics of the activity in question. Add to this that indicator-based reward systems would immediately be key parts of the explicit innovation incentive structures facing the organizations, a part with direct and immediate impact on the supply of material and immaterial resources for the activity/institution.

Stone, paper and scissors - a simple theory of innovation in public activities

It should be readily evident that any use of indicator systems such as these, would exert a strong pressure on the orientation of innovation strategies. If we assume that such indicators form a substantial part of the funding decisions by superior agencies, this would obviously tend to generate an inter-temporal selection environment for innovations. The resulting selection environment of organizational and functional behaviours would then select those behaviours that over time adapt best to the theory of the activity implied by the indicator system and its use.

We can illustrate this with three different scenarios, based on a very simplified model. The model comprises three sectors: The first – sector A - is the organization or activity in itself. It might be an agency or directorate implementing policies in a given societal sphere, or it may be sectors of public service production – such as education or heath service. The second sector – sector F - is the policy, politics and funding

system for the first sector. The basic aspect of this sector here is that it sets unilaterally the constraints of the performance of the activity.

The key process is the decision of allocation of resources for the first sector. We assume that there is a standard 'grid' for assessment of the activity in question, the score on which determines the size of the resources allocated in the next period. Introduce in addition a third sector – sector P, we may call it 'the public eye'. Here is included the press, voting constituencies and the democratic system, the wider society etc. Their role is to provide the 'assessment system' of the superiors in this model – in a sense this sectors role is to appoint, demote and replace the superiors based on the perception in 'the public eye' of incumbent superiors performance. The activities in sector A have sector P as its 'client base'. The possible perception gap here is between the supply side model of A, and the 'demand' or use side model of sector P.

Each of these three has their specific mental model of the activity, the expected behaviour of the other sectors, the objectives of the operations and the impact of the activities on the operation of the total system. Each model is complete enough to specify behaviours and give criteria for optimal performances beyond any reasonable doubt – *within its analytical framework*. We assume that each sector behaves rationally – i.e. according to the specifications and requirements of the relevant model. Behavioural decisions will be conditioned not just on the local theory of the activity, but also on the expected reactions in terms of future behaviour of the other sectors.

If the models of sectors A (the service level) and F (the policy level) are equivalent in terms of funding implications and behavioural specifications, there should be no conflicts over choices of behaviours and its funding implications. The first scenario would thus be characterized by harmonious relations in the sense that there would be no battle on the theory of the activity. The innovation strategies chosen in sector A would have an immediate acceptance in sector F through its own mental map. Whether the model P (the public sphere) is equivalent or not is a mute point in the short run, but it may have consequences in the longer term. If it is perceived as sufficiently different, it would tend to demote the incumbents of sector F and appoint new leaders with a model of sector A more in accordance with the model of sector P. This would imply that the system transitioned into one of the other scenarios.

In the other scenarios sectors A and F have different models of A. Depending on the relation of the P-model to these two; the long term result could be different. Since there for any of these sectors are two channels for the 'battle' of models, depending on the weights accorded to short term and long term goals and the perceived investment costs of altering the model of other sectors, the outcome of games as these could be different.

However, at least in the short run, the behavioural choices of sector A would tend to conform with those aspects of model F captured by the performance assessment 'grid'. The effective system theory emerging through a description of the actual behaviours in sector A would increase its bias towards model F over time. Depending on the size of the penalties 'for doing the wrong things' within the funding system and the required costs of altering the model F, the compliance of sector A of model F would be stronger or weaker. What is short and long term would be the time frame

required to operate the triangle "downwards" (A → P → F → A) or "upwards" (A → F → P → B)[17].

Nowhere in this model is it assumed that any of these models are – objectively – 'true'. 'Learning the reality' comes in through a process of updating the models if the information feedback generated by the chosen behaviours is in sufficient conflict to the original expectations of the response. In the long run the model would then tend to generate a consensus, if the inter-sectorial interaction is sufficiently strong. Whether P aligns with F or with A, a compromise between the two aligned sector models would be likely to form the basis of the consensus. If not, a permanent situation of a tug-of-war could ensue.

The main outcome of this innovation theory is the importance of considering the 'grid' design – the design and operation of the measurement system. The grid is a powerful element in shaping the development of the system and the innovation strategies. This applies to its relevance to all three models, and its open-endedness to encompass the impact of the learning processes.

Further elements of innovation incentives

Leaving this model behind, we note that at an individual level, an important part of the incentive structure would be related to job security and probabilities of promotions in the system. Roughly we may distinguish between tenure-based and merit-based systems. In some countries and in some areas of the public sector, promotions are more likely to be tenure-based, based on accumulated length of tenure, rather than merit-based. Promotions would tend to be more likely, the longer you avoid doing notable mistakes[18]. In such systems risk-evasiveness and conforming with expectations in innovation strategies would be rewarded more strongly than more risk-seeking strategies.

Tenure-based models would probably be more likely to facilitate the generation of collective models or 'belief systems', both within and between organizations. If so they would tend to increase the likelihood of collective strategies and behaviours – to ease the alignment of individual choices and strategies.

On the other hand a strongly merit-based system could lead to the preponderance of overly risk-seeking choices; the possible rewards for success may substantially outweigh the alternatives, unless the penalties are sufficiently strong. If the reward systems are individualistic, this suggests that such systems in contrast to tenure-based systems would increase the costs of establishing collective belief systems and strategies.

The point here is not that one of these systems is 'better' than the other – the striking of a balance between them is one important part of the design of an overall innovation incentive system. Where the balance should be struck will probably not have a general answer, but will depend on the functionalities and institutional structure of each activity.

[17] Within the logic of this schematic model, F is the 'superior' of A, P is the 'superior' of F, while A is the 'superior' of P, and similarly for 'subsidiarity' in the other direction.

[18] In line with Sir Humphrey's law noted above, this is formulated in the Minister's proposition; "since there are virtually no goals or targets that can be achieved by a civil servant personally, his high IQ is usually devoted to the avoidance of error".

Secondly, the media is becoming increasingly interested in the public sector, and especially in public sector malpractice. Any "personal interest" story revealing a public sector "scandal" is likely to sell. The good side of this is that the media really does function as a watch dog revealing incompetence and systemic failure in the public sector. The problem is that this scrutiny is likely to make public sector employees less likely to take chances, i.e. implement more radical innovations. This applies to the service level as well as the policy level. A scandal of this kind may well ruin the career of a politician as well as of a high level civil servant.

The solution to this problem is obviously not to accept malpractice or uninhibited spending of public money. However, it should be possible to get politicians, public sector managers and the press to accept that the risk for failure is an integrated part of any innovation strategy, and that failed innovation projects in fact are a vital aspect of innovation strategies – without failures the overall innovation strategies are failures.

On supplier-client interfaces

It can be argued that the public and private sectors differ as regards the interaction with their end user, whether these are defined as "customers", "clients" or "citizens". Private companies will normally interact with their customers on a daily basis, and unless the company is too large, the information gained by this interaction will find its way to the managers quickly. Ultimately, a company that fails its customers will be in dire straits. "If they don't by, you die!" This is also why companies often spend considerable amounts of money on market research. They need additional information on what the customers demand today and what they will request in the future.

In the public sector things are not so clear cut. There may indeed be a direct interaction between the service provider's front office and the user of these services, but there is not necessarily a good feedback loop to the local management, or – which is even more important – leading public officials higher up in the hierarchy. This may impair the learning process of the whole system.

The table below, which is fetched from the Publin D9 report, highlights many of the main differences between public and private sector organizations that are relevant to innovation. It does so in a necessarily exaggerated way – the contrasts made are sometimes rather extreme ones – to underline the points of difference. Some private sector organizations are more like public sector ones (especially, but not only, parts of the non-profit sector), and some public sector organizations more like private ones (especially some semi-autonomous quasi-governmental organizations and state owned companies).

The table does attempt, however, to capture some of the major changes that have been underway in public sector management. While not a thorough mapping of the systems of innovation in the public and private worlds, it does contain enough material on elements of these systems to demonstrate that they appear to vary considerably across the sectors. Accordingly, we would anticipate differences in the motivation for innovation, the selection processes that shape innovations, the ways in which the innovation process is constricted and the effects that it has.

That being said, we must not underestimate the diversity of public services. Universities are not very much like military bases, for instance, and even within a sector like the health service there are immense differences between, say, the ambulance service and dental surgeries.

Nor should we draw too sharp a distinction between "competitive" private markets and "bureaucratic" public hierarchies. Some public services are only one player in areas where markets also exist for private provision – e.g. education and health in many countries. There are non-market forms of competition: There is competition for positions as well as for funding.

Archetypal Features of Private and Public Sectors and their possible relations to the Propensity and Direction of Innovation (From Publin report D9)

	Private Sector	**Public Sector**
Organising Principles	Pursuit of Profit, of Stability or of Growth of Revenues. *– Changing market conditions may require innovations to enhance perceived value for money or generate new products. Market as a selection process for innovations: business cycles create periods of relative austerity and prosperity for many firms, and can be related to investor willingness to support innovative sectors and start-ups.*	Enactment of Public Policies. *- New and Changing Policies may require Innovations of many kinds Often the problems with which these policies are meant to contend are highly complex, not always well-understood, and policies may thus have contradictory effects. The political cycle as a selection process debates alternative policy directions, and opportunities to restructure public organizations.*
Organizational Structures	Firms of many sizes, with options for new entrants. *– Large firms can have dedicated innovation budgets; new entrants may be forged around innovative products; different firms may experiment with innovations of different kinds.*	Complex system of organizations with various (and to some extent conflicting) tasks *- Many innovations have to be fitted into a massive complex of organizational structures, and "rolled out" in a politically acceptable way given concerns about social equity and economic efficiency.*
Performance Metrics	Return on Investment *– While some innovations are hard to cost-justify (e.g. IT infrastructure), many can be quantified in terms of increased sales, profits etc.*	Multiple performance indicators and targets *- These often relate to streamlining organizational structures and achieving best practice in the terms decided and implemented as top-down policy. Benefits f innovations are often hard to quantify, or those achievements that are apparent are hard to value in strictly financial and budgetary terms.*
Management Issues	Some managers have considerable autonomy, others constrained by shareholders, corporate governance, or financial stringency. Successful managers liable to be rewarded with substantial material benefits and promotion. *– Variation among firms in ability to innovate and take risks in general. Managers liable to pursue innovations that they believe will be successful in meeting company objectives – and thus in furthering their own careers. One of the most substantiated results in the innovation literature is that successful innovations typically require product champions who are prepared to take risks and continue to support innovations through the difficult periods often encountered in early phases of development and/or implementation.*	While there are efforts to emulate private sector management practice, mangers are typically under high levels of political scrutiny. Successful managers likely to receive lower material benefits than comparable private sector managers. *– Major innovations are likely to require approval of political masters – or even to be demanded and/or specified by them. The role of championing an innovation may be thrust upon a manager – though proactive managers can also promote major innovations to their political superiors, and may be able to proceed with less visible innovations with little interference. Managers motivated not only by aims of furthering their own careers through being associated with successful innovations, but also by pursuit of public service objectives.*

Relations with: **~ End-Users**	Markets may be consumer or industrial ones, and firms vary in the intimacy of their links with the end-users of their products, but typically market feedback provides the verdict on innovation. *– Innovation often motivated by need to maintain or increase market share, and one of the most substantiated results in the innovation literature relates success in innovation to understanding of end user requirements.*	End-users are the general public, traditionally seen as citizens, though recently there have been efforts to introduce market-type principles and move to see them as customers or consumers. *– "Customer relations" have often been underdeveloped, with an assumption that public servants know best about what services are required, and thus about relevant innovations. The customer side on the relationship is somewhat different from in private sector: price is not necessarily a market feedback mechanisms; the customers often pay a stipulated sum and the state the rest (often the difference in costs between various actors) The marketing strategies are different: the public sector is not an eager seller, the customer role require active information seeking citizens. The services/products "sold" has more far-reaching personal consequences in medical, health, social, educational effects etc than most of the products/services in the private sector.*
~ Supply Chains	Most firms are parts of one or more supply chains, with larger firms tending to organise these chains. *- Smaller firms may find their innovation trajectories shaped by the ways in which large players in supply chins seek to specify details of their products and production processes, their stockholding, delivery, order management and transactional procedures (e.g. use of ecommerce systems)*	Public sector is typically dependent on private suppliers for much of its equipment, and is a very important market for many firms. *– Scope for public procurement to impose standards and other features on suppliers; scope for suppliers to introduce innovations into the public sector (e.g. new computer equipment, pharmaceuticals).*
~ Employees	Nature of workforce varies considerably, and relations between employees and management range from fractious to harmonious. Efforts are made in some firms to instil company loyalty and/or a customer-centric approach, but employee motivations are often mainly economic ones of securing a reasonable income. *– Employees rarely consulted about technological and organizational change, though they may be encouraged to make suggestions as to how to improve the company's products.*	Public sector employees are typically highly unionised (economists and social scientists in the central administration and health- and social professionals as nurses, social workers, child-care workers, teachers etc in the public services). Many are also professional workers organised through professional associations. While usual concerns about status and salary are experienced, many workers enter public service with idealistic motivations. *- Workforce may be able to use industrial action to oppose innovations seen as threatening quantity or quality of jobs or services. Professional workforce may bring innovation-related knowledge from their associations and networks – but are also relatively well-placed to try to adapt innovations so as to maintain professional status and working conditions. Conflicts among professionals might facilitate and restrain innovations. Workforce may seek to introduce and influence innovations in order to improve quality of public services.*
~ Sources of Knowledge	Companies have considerable flexibility in sourcing innovation-related information	Despite large resources, parts of the public sector may be constrained from using private

	from consultants, trade associations, and public sector researchers, but many smaller firms have limited resources to do so. *– Much knowledge is generated privately and efforts to retain intellectual property may constrain the diffusion of certain innovations and underpinning knowledge. There is believed to be considerable variation across different sectors in terms of the extent to which systems of innovation give firms access to relevant knowledge of new technical and other developments..*	sources of knowledge (other than those of suppliers). Public sector sources of knowledge (e.g. Universities) may be highly oriented to other parts of the public sector *– The public sector is able to make use of a wide range of sources of innovation-relevant information and knowledge. Recently efforts are being made to make public sector organizations more aware of intellectual property issues: while this is intended to enhance innovation efforts, this result is by no means guaranteed.*
Time Horizon	Short-term in many sectors, though utilities and infrastructural services may have very long horizons *- Innovations typically need to pay off in the shorter term, though some firms do invest strategically in the hope of major long-term advantages.*	Often long-term (this means that responsible decision-makers may have moved on by the time that results are achieved) though many decisions do have shorter horizons. *- It may be difficult to assess the consequences of innovation in the short term. Major investments may need to be sustained over long periods.*

Source: (further elaborated version) based on Ian Miles (2004) – see also Tan (2004) for a less elaborate view.

On the "privatization" of the public sector

There is a commonly held belief that the incentive structure of the private sector generate more innovation than the one found in the public sector. This has lead to a drive towards "privatization" of the public sector, in the meaning of making public institutions more like private ones. The fact that the belief is wrong has not hindered its use as a key rationale for policy thinking on 'modernization' or 'streamlining' of the public sectors in many countries.

A common set of strategies to achieve such streamlining can be outlines as follows. It has been done:

1. By replacing hierarchical contracts with market contracts (public services buy and sell services between themselves).

2. By using private and third sector service provider to carry out work financed and controlled by the public sector – i.e. by exposing public services to competition.

3. By introducing new systems for measuring production and efficiency and through linking funding to performance (New Public Management)

4. By giving public institutions more autonomy and responsibility (the extreme version is turning them into publicly owned companies).

5. By substitution of publicly-planned provision with private services for market provision (i.e. the public sector leaves these services to the private market).

As pointed out in Publin report D9, *On the differences between public and private sector innovation,* neo-Tayloristic principles is partly replacing hierarchical contracts with market contracts in the public sector. A major reason for this is that governments

believe that this will encourage (or force) public service providers to innovate and produce cheaper and more effective services.

This is often achieved by establishing specialized units that offer a limited number of services. These services are offered in quasi-market arrangements, with clear separation between the public contractor and the public provider, between buyer and seller. Thus a market-based financing of public organizations becomes a supplement or alternative to the traditional budget-financing, and in line with the creation of more economically autonomous units in public sector, more is expected of head of departments etc. with respect to economic control and reporting.

Another expression of the substitution of hierarchical contracts with market contracts is the shift from the state as the monopolist provider of public services, to the use of private providers of public services. Outsourcing is one example of this, but also state support of private institutions (schools, hospitals, nursing homes, etc), and the privatization of state oned companies (like railways, telephone providers and electrical plants).

The term privatization is, however, also used to describe situations in which public services are exposed to competition. In this case, the delivery of services remains a public responsibility, but the public may pay public, private or third sector organizations to provide these services.

The point here is simply that the term "privatization" can have different meanings, and that a great deal of the recent changes within – for instance – Scandinavian welfare systems are not pure forms of privatization, but rather a process of establishing new contractual relationships, and of increased differentiation and interaction among the various parts of the public sector and private sector, and within public sector itself.

Privatization or the exposure to competition of formerly public activities has created a need for new regulations and new organizations to enforce them. It also calls for reformed regulation following the deregulation of certain financial processes, for instance with the increased level of establishment of public-owned corporations. There is an overall need to develop the appropriate combination of economic instruments and regulation to meet the development of an expanded and integrated economic system. A great proportion of the instruments of institutional innovation in the public sector relate to the development of different kinds of contracting, both short- and long-term[19].

[19] See Bogen & Nyen (1998), Klausen & Ståhlberg (1998)(chap. 4.)

New Public Management

A significant body of literature exists on NPM. Discussions concerning NPM are typified by some or all of the following characteristics:

- *"Private sector styles of management principles*: a move away from bureaucracy-style to greater flexibility and new techniques.
- *Competition* in public sector: rivalry is the key to lower costs and better standards. Use of public tendering procedures and term contracts.
- *Disaggregate units*: break up formerly monolithic units and create manageable units where production and provision interests are separated. Efficiency advantages of use of contract or franchise arrangements inside and outside the public sector.
- *Hands-on professional management*: active, visible, discretionary control of organizations from named persons at the top. Accountability requires clear assignment of responsibility for action, not diffusion of power.
- *Explicit standards and measures of performance*: definition of goals, targets and indicators of success, preferably expressed in quantitative terms. Accountability requires clear statement of goals, efficiency requires "hard look" at objectives.
- *Output controls*: need to stress results rather than procedures. Break-up of centralized bureaucracy-wide personnel management, resource allocation and rewards linked to measured performance.
- *Discipline and parsimony*: need to check resource demands of public sector and do more with less. Cutting direct costs, raising labour discipline, resting union demands."

The New Public Management philosophy (NPM) is part of this process and has transformed the role of the public sector in many countries and in many sectors. There is more attention on output and the results of public sector activity, accompanied by new indicators for measuring efficiency and expenditure. The individual public organizations are held responsible and accountable for the achievement of certain targets. The state budgetary system acts as controlling and rewarding mechanism of the public sector activity through established performance measures. Hence, the performance based money transfer system is intended to act as strategic and operational planning guidelines. NPM is clearly inspired by methodologies developed for the private sector, and can therefore be considered part of the "privatization" movement mentioned above

The adoption of terms such as "customers" instead of for instance "citizen" to describe the users of public services is one of the main features of the new movement towards characterizing the public sector in terms of the market. The term "customer" indicates freedom of choice in buying services in a market and implies effective market relationships between buyers and sellers.

Personalization of Social Services

From Publin Report No. D18 *Innovation in the social sector – case study analysis,* by Ludmila Malikova and Katarina Staroňová

A key phenomenon in western countries is the gradual personalization of social services, regardless of the type of service. Thus, services for elderly, special education or pension reform, all have features of search for tailoring the services to the needs of individual person, with the possibility of choice. This trend has its roots in New Public Management where the responsibility for person's own social status is shifted towards the citizen and his/her ability to choose among various possibilities. In special education, the specially designed instruction and services provided by the school district or other local education agency aspire to meet the unique needs of students identified as disabled. Special education may include instruction in a general education or special education classroom. The pension reform in Ireland was designed to deal with the more immediate problems associated with supplementary pension coverage in order to bridge the gap in coverage in a way that was accessible, flexible and responsive to the needs of individuals. This was to be a major new vehicle through which supplementary pension cover could be improved**.** The development of an individual retirement savings account product in the form of PRSAs marks a significant policy development and product innovation in the context of the Irish pension system.

In transition countries, the shift in philosophy – i.e. the new orientation towards the client[1] - became the centre of all innovative efforts that focused on the 'humanization' of the environment, gradual de-institutionalization of social care and improvement of the relations between the staff / facility and the client. This innovative approach in the transition context, though common in the developed countries, was reflected in both Slovakia and Lithuania in a range of new features ranging from creation of alternative services, physical improvements in the facilities, introduction of new (personalized) services according to the clients' needs and related free-time activities for senior citizens, to the introduction of quality standards and performance management to secure minimum standards in the services provided.

Adopting the "customer" perspective in public administration might cause a re-think about the foundations of the public sector's role. However, it might be argued that the use of such terms is mainly symbolic. The concept of "customers" has been adopted in many areas of public administration for which it is inappropriate and does not make sense at all. When, for example, public agencies allocate funding to regional development projects, these actors cannot be described as customers. Moreover, the relationship between the public authority and the other actors is not a price-regulated relationship.

However, the shift towards a practice of treating the citizen as a customer may lead to a real change in the relationship between the citizen and the public sector. The traditional relationship or social contract between the citizen and the state is based on reciprocal rights and responsibilities. The individual has responsibilities towards the community. A customer has, on the other hand, no responsibility towards the company providing services, except one: to pay for the bill. Hence people considering themselves to be customers may loose the sense of solidarity or communality that has

been included in the traditional social democratic, social liberal and conservative ideologies.

The Publin researcher Séamus O'Tuama points to the connection between New Public Management and what he calls neo-liberalism (O'Tuama 2005b). He argues that in putting the terms consumer and customers to compete with citizenship the neo-liberals are attempting to counter the collectivist excesses of the welfare state while at the simultaneously relabelling aspects of the citizenship that underpinned it. This has indeed led to a lot of innovation – and even much needed reform – but the danger is that it undermines the glue that holds society together: a sense of responsibility for the community as a whole.

The problem is therefore to develop a system that does include innovation and accountability, but at the same time retains the role of the public sector as a vehicle for equal rights and solidarity.

The innovation process in the public sector

> From personal memo written by Permanent Secretary Sir Humphrey Appleby:
>
> "Wolley came at 5.15 p.m. to discuss the £32 million saved by the [North-West Regional] controller. I remarked I was aghast. Wooley said he was also aghast, and that it was incredible that we new nothing of this. He sometimes reveals himself as worryingly naïf. I of course, know all about it. I am merely aghast that it has got out. It might result in our getting less money from the Treasury in next year's [Public Expenditure Scrutiny Committee] review. […]
>
> I asked him why he was looking worried. He revealed that he genuinely wanted the [Department of Administrative Affairs] to save money. This was shocking. Clearly he has not yet grasped the fundamentals of our work.
>
> There has to be some way to measure success in the Service. British Leyland can measure success by the size of its profits. […] However, the Civil Service does not make profits or losses. *Ergo*, we measure success by the size of our staff and our budget. By definition a big department is more successful than a small one.
>
> It seems extraordinary that Wolley would have passed through the Civil Service College without having understood that this simple proposition is the basis of our whole system.
>
> From *The Complete Yes Minister,* by Jonathan Lynn and Anthony Jay, BBC Books, Chatam 2003, British TV comedy

The various forms of privatization are both types of public innovation *and* vehicles for stimulating innovative activities in the public sector. They do tend to blur the lines between the public and the private sector, both as regards incentive structures and governance models. Still, one should keep in mind that large sections of the public sector are not market driven in any normal sense of the word. Moreover, even if companies, NGOs and public institutions may compete for government contracts, the public buyer itself, being this a ministry, an agency or a public institution, is not part of an open market.

Why should public organizations innovate, when they are not challenged by competition in the market or confront a need to expand in order to survive in the market? Publin Report D9 points to two classes of reasons.

First, there are *political* reasons. The public sector does not as a whole face the test of competitive markets, but politicians and political parties in Western democracies face the test of competitive electoral politics. Political support and votes are gained through being seen to perform better than opposing political actors, and the provision, delivery, and cost of public services is an important domain for competition between claims of effective (potential) performance.

Second, there are more *personal* reasons. Public sector policy makers, managers and workers gain satisfaction – and status among their peers – from improving public services.

Moreover, there are procedures for complaints and control embedded in most public services. These may not be perfect, and citizens may find it hard to get anywhere with complaints, but if they succeed both public employees, their bosses and the responsible politicians may get into serious trouble.

The policy level

Political actors may have some of the same personal qualities as are attributed to entrepreneurs. They may try to realise a particular vision of how society should work – including, for example, notions of when and how public services should be helping people achieve their aspirations and secure their quality of life. In the Publin research, the case of NHS Direct – a telephone helpline for health services in the UK – was promoted in the high levels of government.

Politicians do not necessarily have an in-depth understanding of new technological potentials in a particular area or of new management theories. But they are often highly committed to improving social welfare or achieving particular outcomes from public services. They may thus seek innovative solutions, consulting with various sources for policy advice. In the course of Publin studies, it has been suggested that some politicians may promote very radical changes in public services, since they can see a chance to make their mark on society – and, it is further suggested, the risk may be low as they will probably have moved on to other fields if the particular innovation proves to be a failure.

The ability to convince other strategic actors is central for political actors as it is for economic entrepreneurs. In innovation studies there has been much focus on the actor networks and socio-technical constituencies required to develop and push through major innovations. In short: The "radical" politicians (which can be found at both ends of the political spectrum) need extensive networks and an ability to convince and engender enthusiasm.

In contradiction to Weber's ideal bureaucracy, with a clear-cut dividing line between the hierarchical subordinated civil servants to the political leadership, the civil servants often play important roles in the decision-making processes. Given the size and the heterogeneity of public sector, no politician is able to obtain deep insight into all policy areas. Politicians often specialise in one or some few policy areas, but are not able to gain the professionalism of the bureaucrats. Civil servants have professional education and qualification, are full-time employed and have also often lifetime careers within their specialized field of the bureaucratic system. Politicians do not necessarily have the same background, or the opportunities to explore policy areas in such depth.

In ministries civil servants are engaged in policy development work. Hence both politicians and civil servants can be considered policy makers. This group of policy oriented civil servants extends to various policy agencies, councils and directories that often have as an explicit role to give advice to politicians. These are often politically interested persons with a drive towards policy development and reform. Policy change is also a form of innovation, and they can thus be called innovators or entrepreneurs even.

The traditional picture of the top level civil servant is Sir Humphrey in the British TV comedy *Yes Minister!,* a very intelligent man doing his best to keep the status quo and to keep the minister from implementing any sensible reform. And indeed, such civil servants exist. Thus, civil servants might both a source to innovation and hamper innovation. Their professional background and insight into the policy area might give them quite other views than the ones held by the government in power. Civil servants might argue that the new policy will not work, based on their own gained experience of the system, and might actively try to influence on the decision making process with their knowledge of how the policy should be best be framed.

Their views are of course also based certain belief systems, world views, schools of thinking or – even – ideologies. If these views conflict with the ones of the ruling politicians, they may – consciously or unconsciously – do their best to stop the new policies from being implemented.

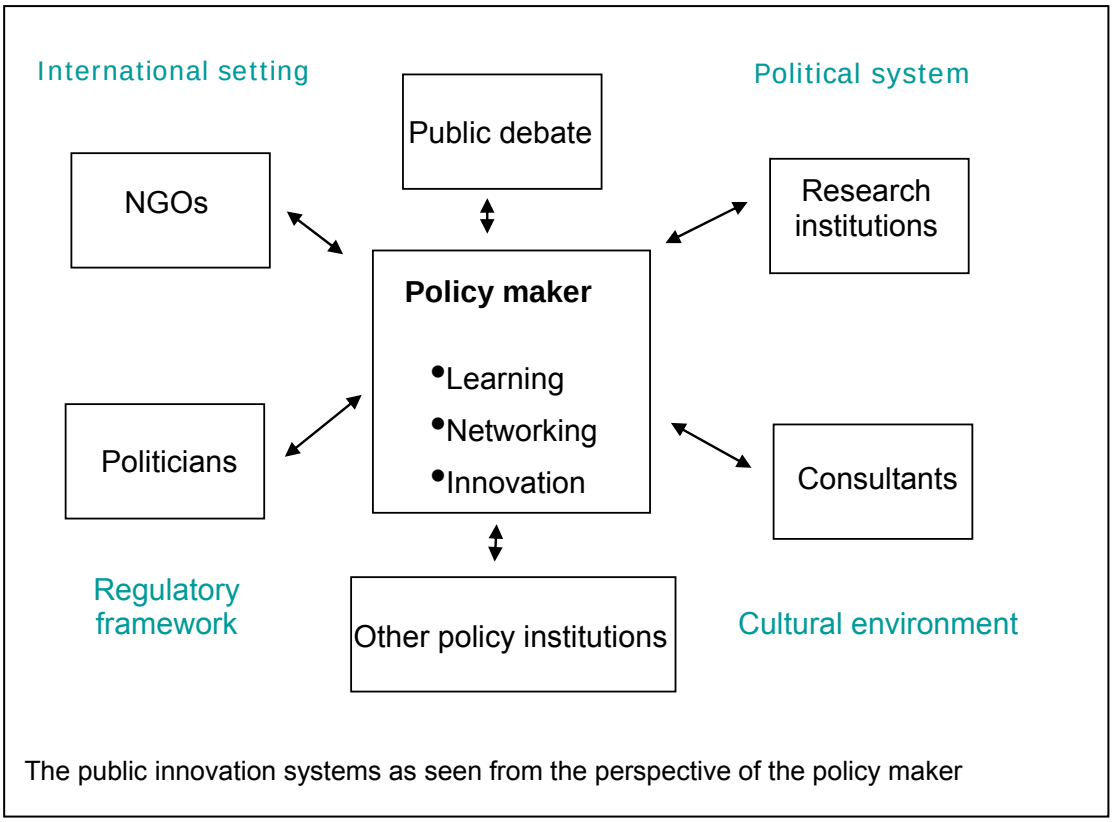
The structure of belief systems

	Deep Core	**Policy Core**	**Secondary Aspects**
Defining characteristics	Fundamental normative and ontological axioms *Examples*: The nature of man: inherently evil or socially redeemable; the relative priority of various ultimate values: freedom, security, health, knowledge	Fundamental policy positions concerning the basic strategies for achieving core values within the subsystem *Examples*: Identification of key issues and groups whose welfare is of greatest concern; proper distribution of authority between government and market; proper distribution of authority among levels of government; priority accorded to policy instruments (regulation, covenants, economic instruments); technological optimism vs. pessimism	Instrumental decisions and information searches necessary to implement policy core *Examples* Seriousness of specific aspects of the problem in specific locales; causal links; efficacy of administrative rules, and policies, appropriateness of funding arrangements and budgets; statutory interpretation
Scope	Across all policy subsystems	Specific to a subsystem	Specific to a subsystem or a sub-subsystem
Susceptibility to change	Very difficult; akin to a religious conversion	Difficult but can occur if experience reveals serious anomalies	Moderately easy; this is the topic of most administrative and even legislative policy making
Type of learning	Social learning	Problem learning, social learning	Instrumental learning

From Publin report D15, *Policy learning, what does it mean and how can we study it.* Adapted from Sabatier and Jenkins-Smith (1993, p. 221)

To give one example: the Publin researchers have in many countries heard the story about the mighty Ministry of Finance or Treasury, staffed with civil servants well versed in the school of traditional macroeconomics, and with a strong felt responsibility for keeping "irresponsible" ministries in check. Given that power is money, this often leads to intense struggles between the staff of the Ministry of Finance and the policy makers in other ministries. The values systems found in ministries of culture or ministries of the environment differ often wildly from ministries of industry or the Foreign Offices.

It should be noted, though, that such differences may also lead to innovation, as the interaction between different ministerial cultures may lead to the dissemination of new ideas, and hence innovation.



The public innovation systems as seen from the perspective of the policy maker

Innovation at the policy level is based on policy learning, i.e. the ability of the policy makers to learn what is needed in order to change behaviour. It should be noted that policy makers are experts in their own right. Not only do present day policy makers have extensive education; they may also develop a good sense of the written and unwritten rules of the public service, knowledge outsiders – including researchers – often lack.

Policy makers need to know about

- the ideas and attitudes of the ruling politicians (even the ideas they didn't know they had)
- the formal rules of the game (how to handle parliament, how to present a white paper)

- the informal rules of the game (how not to embarrass your minister)
- channels of influence (who is in and who is out)
- communication (how to present complex ideas in a convincing way so that they are understood and accepted)
- project coordination
- sources of information
- international trends

However, these learning processes may be impeded by a lack of resources, being that time to find, understand and make use of competences found outside the relevant unit, or money to buy research and consultancy services. Inter-departmental or inter-ministerial haggling may, moreover, weaken the cooperation and learning needed to develop broad based strategies. Moreover, any policy level entrepreneur needs acceptance at the top level, i.e. the institution must encourage learning and change.

The service level

Traditionally, the role of the public employees has been to be hierarchical subordinated the political leadership and the bureaucracy. The public employees have not been expected to come up with good ideas of how to change the public services, but rather to deliver the public services framed by the political actors. This especially applies to civil servants found in the system below the ministries.

Although institutions are the result of human activity, they are not necessarily products of conscious design. The preferred models are rather taken for granted, assuming that "actors associate certain actions with certain situations by rules of appropriateness (March and Olsen 1984: pp.741)" through socialization, educations, on-the-job learning or acquiescence to convention (Lærgreid and Olsen 1978; March and Olsen 1989; Powell and DiMaggio 1991; Olsen 1992).

Hence, even though the role of the public employees is changing in many countries, the public employees still find it hard to be innovative because their role in the public system as mere service providers and producers is institutionalised. Moreover, the institutionalised role might be hard to change because the public system still demand the production and providing of specific described public services, described and controlled through the state budget system. For that reason, it might be hard to find opportunity space from the demanded tasks to be innovative. Thus, the resources, in capital, time and manpower might restrain the entrepreneurial activity.

Certain structures and processes evolve historically through selective experience and become the basis of self-organization. Institutions develop considerable robustness against changes in the environment, including explicit reform efforts. The members do enter the organization with individually shaped ideas, expectations, agendas, values, interests and abilities. Still, they are often soon "socialized" into the local culture, and may often adapt the belief systems found in that organization. Members who do not agree to the institutionalized norms and preferences will often find few if any venues to voice the incongruence between personal and institutional preferences, the result being either a exit from the organization or a revaluation of own preferences. This selection mechanism leads to a further institutionalization of

existing practices, and is strengthened by the fact that many employers tend to employ people with similar belief systems and educational backgrounds as themselves.

This does not mean that it is impossible to innovate in such organizations. Within the limits set by the ruling belief system and the existing policies, both managers and employers will try to solve the problems facing them, and problem solving is an important form of innovation.

However, such activities require that the employees are encouraged to innovate and that an entrepreneurial spirit is at least tolerated, if not supported. This type of entrepreneurial spirit among the public employees is slightly similar to the one found among political entrepreneurs:

- They may be ideologically inclined to innovate i.e. they have a word view or a rationality that makes them believe that change is necessary.
- They may be idealists or altruists. They have found work in the public sector because they "want to make a change".
- By proposing innovations they may further their own careers. It is certainly true that organizations may oppose radical changes, but it may nevertheless appreciate "fixers" and "doers" that are able to get the leaders out of a tight spot.
- They may be intellectually curious or they may find the need for change an interesting challenge. The fact that the public sector in European countries employs a large number of highly educated personnel makes this even more likely.

Moreover, the public sector is characterized by large heterogeneity. In many areas there is room for more radical innovation, especially if the area is put under some kind of stress or external shocks. A political crisis may lead to demands for reform. A scandal, let us say too many deaths caused by negligence or malpractice in public hospitals, may force through new practices. Moreover, such shocks may bring in new managers with new ideas about what has to be done. An extreme example of this kind of shock is the fall of the Berlin Wall in 1989. The post-communist countries have faced an ongoing revolution in public service provision, partly requiring a replacement of the "old guard."

The system of innovation

If we take the need for innovation for granted, and also argue – as we do – that innovation is an integrated part of public sector activities, it will be interesting to map social factors that stimulate innovation and those that hinder the application of new ways of doing things.

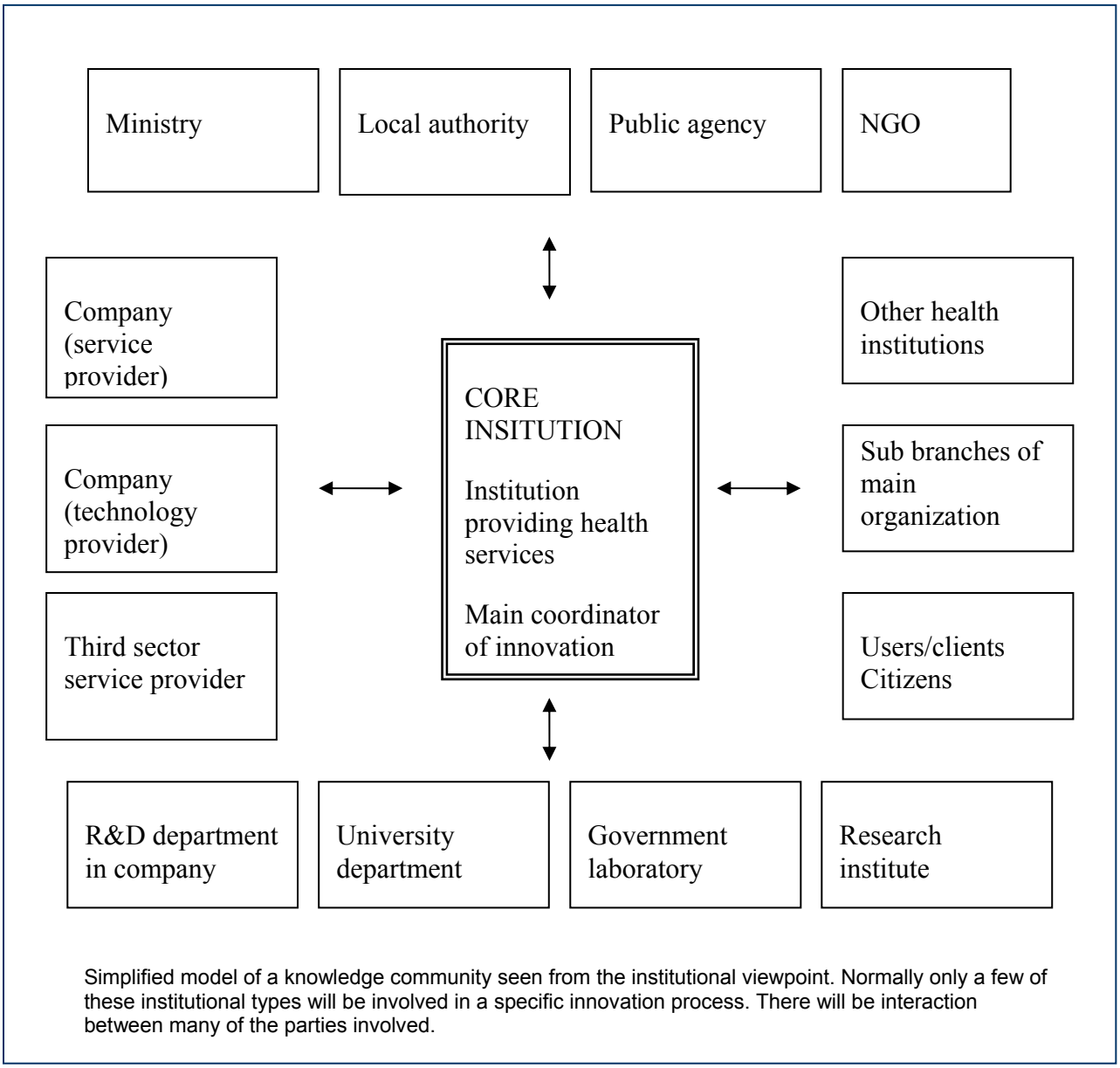
Publin is based on a systemic approach to innovation. We have looked at the innovating unit, this being an organization, organizational department or and individual, and studied how this unit learn. Innovation processes are normally initiated in order to solve specific problems, this being the inability of a hospital to treat the required number of patients, the need to heal a certain disease or the need to coordinate health policies in a better way. In order to solve such problems, i.e. change their behaviour, these actors must be able to learn. This is why Publin consider learning and innovation to intertwined phenomena.

In order to learn and innovate, the actors must interact with other actors, this being people, organizations or various sources of information. Their ability to innovate is dependent on their ability to find such relevant competences, understand them and make use of them. We are using the word “competences” deliberately here. Information, being that any codified presentation of data, is of no value unless you have the competences needed to interpret it.

The better the actors are at developing networks that can help them get access to relevant competences and partners that can help them in their learning processes, the greater are the chances that their innovation processes will succeed.

These innovation networks may be informal, i.e. dependent on individuals working in the public organization. A network may be used on an ad hoc basis, i.e. to solve a “small” problem that needs a solution right now. Hence a ministerial policy maker may call a colleague in the Directorate of Health, in order to get input to a new policy strategy, and a nurse in a local hospital may call a colleague he met on a conference in order to discuss the use of a new method of treatment.

However, these networks may also be used in more systematic innovation processes, where the organization as a whole has decided to start an innovation process aimed at solving a particular problem. This may for instance entail discussions with private companies delivering machinery, equipment or services, and may also in some cases involve research institutions. The figure below is a presentation of an institutional network for learning and innovation.



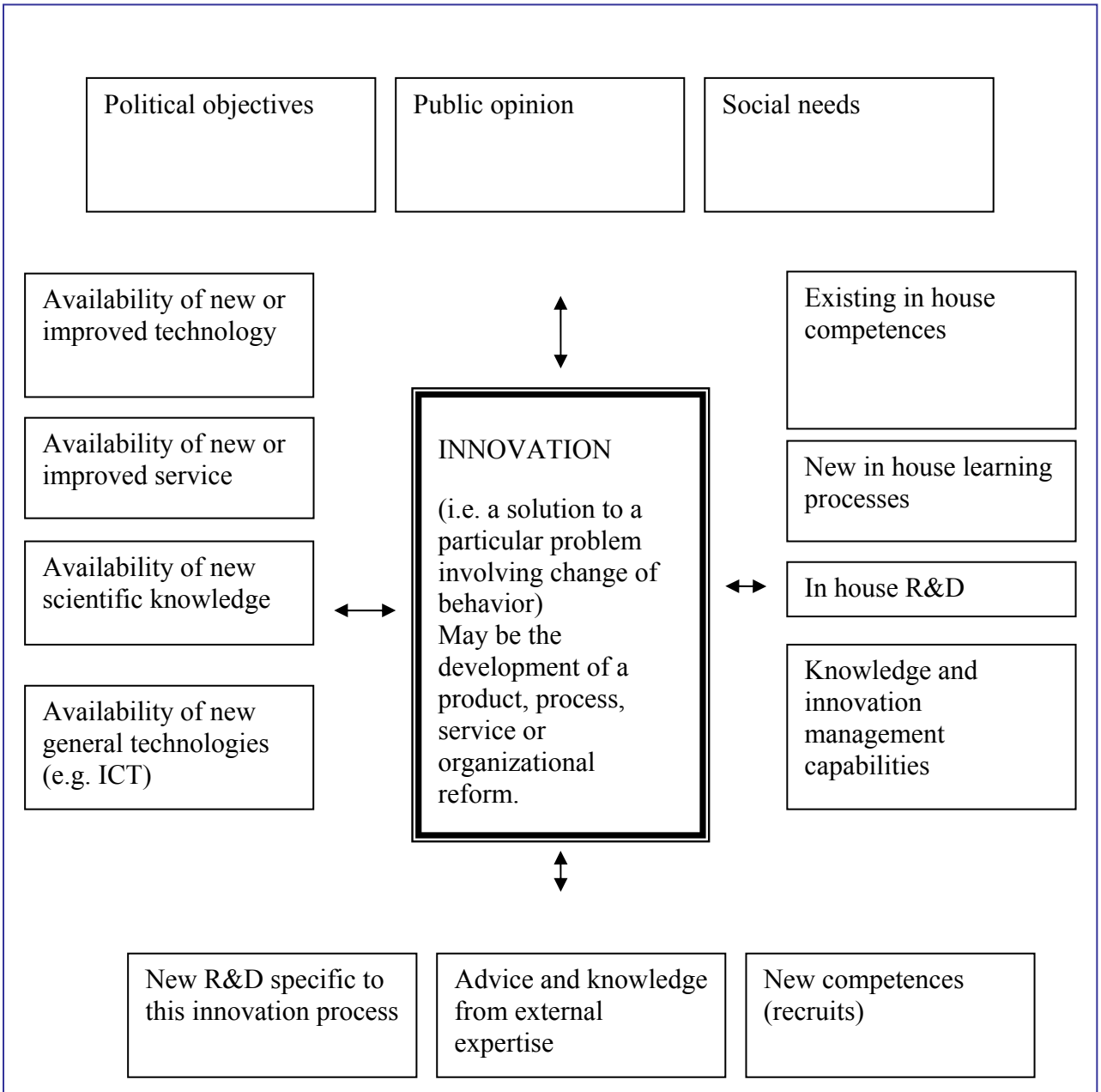
Simplified model of a knowledge community seen from the institutional viewpoint. Normally only a few of these institutional types will be involved in a specific innovation process. There will be interaction between many of the parties involved.

One may also look at this innovation process from a non-institutional point of view. In the following figure we have put the individual "innovation" in the centre, i.e. the final solution to the problem at hand. Around it we have placed the various types of demands, competences and technologies that shape the innovation process.

When reading this figure, the following should be kept in mind:

- There is no clear demarcation between in-house competences and competences delivered by outsiders. Some problems may be solved by the employees of the institution alone; other problems require cooperation with others. Moreover, the use of competences developed elsewhere requires relevant in-house competences, i.e. the employees must have the educational background and the experience required to communicate with the outside helpers.

- In this figure we include all kinds of sources of innovation, including competences needed for organizational change and the improvement of service deliveries, as well as the acquisition of new physical technologies, including new equipment and machinery. Again there is no clear dividing line between the various types of knowledge transfer. The use of a new machine also requires learning, being that the ability to use the machine or the underlying competences needed to understand its function as a part of a larger process. There is no point in buying a digital x-ray machine, if you know no medicine.



Simplified model of innovation process sources of knowledge and competences. The learning and innovation process relies on an efficient flow of knowledge.

On the basis of this model we can stipulate that successful innovation, i.e. innovation processes that leads to a solution to the problem at hand, requires:

- Networks
    - Access to relevant in-house competences
    - Access to relevant competences outside of the organization (networks)
    - In-house competences needed to find, understand and make use of outside competences and technology
- Culture and organization
    - An in-house culture that encourages – or at least allows – such learning and innovation processes
    - An in-house organizational structure that supports such learning and innovation processes

Given that any public organization or unit is part of a larger hierarchy, the last point may be extended to include other organizations in the public sector. The innovative capabilities of a hospital may be strengthened or weakened by policies made by – let's say – the Directorate of Health. Furthermore, the directorate's ability to innovate requires a close interaction with the Ministry of Health. In this respect public institutions differ from private companies, where the chain of command is normally much shorter.

Given the systemic nature of innovation, any analysis of the innovative capabilities of public organizations, must take their innovation culture and networking abilities into consideration. We must find out what engenders innovation and what hinders it.

In report D19 *Innovation in the health sector – case study analysis,* Paul Cunningham lists several barriers to innovation in the health sector, as well as drivers. They can serve as examples of framework conditions influencing the innovative capabilities of institutions as well as individuals. The following text is based on his analysis.

Barriers and drivers

> From the Minister's diary: "I am now able to draw some conclusions about the Civil Service in general and Sir Humphrey in particular. I begin to see that senior civil servant in the open structure have, surprisingly enough, almost as brilliant minds as they themselves would claim to have. However, since there are virtually no goals or targets that can be achieved by a civil servant personally, his high IQ is usually devoted to the avoidance of error."
>
> Excerpt from the book *The Complete Yes Minister*, by Jonathan Lynn and Anthony Jay, BBC Books, Chatam 2003.

Barriers

The public health systems studied appear to share a number of common features which could act in a way to hinder or prevent the process of innovation. Although a

number of categories have been identified, they are rarely mutually exclusive and one barrier may be the cause or effect of one or several others in a complex interplay.

Size and complexity: Typically, the public health sector comprises an extremely complex and large-scale organizational entity, composed of multiple-tiered interlinked systems. In turn, these often exhibit: huge staff numbers[20]; a large range of professional, semi-professional and ancillary occupations; and a diversity of organizational arrangements and service processes. This size and complexity can generate additional factors that hinder the innovation process, such as localised skills shortages and gaps, lack of clear agreement with respect to perceived problems, approaches and solutions, and communication (particularly knowledge management) difficulties. Typically, such large-scale organizations are prone to the development of internal barriers (the "walls and ceilings" of the Dutch case study) and, in the worst case scenario, the development of "silo mentalities" wherein parallel systems maintain their own organizational norms, beliefs and practices with little communication with each other. Such systems are highly unlikely to communicate the need for innovation within themselves and will militate against the successful dissemination of innovative ideas and practices.

Heritage and legacy: Public sector organizations are frequently prone to entrenched practices and procedures – that which has worked in the past is seen as good practice and there is frequently an attitude of "if it isn't broke, don't fix it". The systemic impact of innovation and change is often viewed as an unwelcome perturbation to the overall functioning of the organization and change and new operational methodologies may be discouraged. Similarly, there may also be a tendency to adopt the "not invented here" attitude with an unwillingness to accept novel ideas from outside the immediate organizational peer group. Again, these factors will militate against the inception of innovations and their dissemination.

'Professional' resistance: Public health systems comprise a number of distinct and well-established professional groupings, with their own communities of practice, rationales, and perspectives. These tend to adhere to their established roles, and associated policy agendas. Parts of the public system may operate according to differing command and control structures. There may hence be a reticence to embrace change and innovation. A lack of dialogue between different parts of the public system, horizontally or vertically, between different professional groups may also hinder innovation and its dissemination. Thus, different medical professions may be unwilling to accept the ideas of others, even if both share similar professional status (for example, surgeons and anaesthetists), whilst the problem may be exacerbated between members of (perceived) hierarchically separated professional levels (for example, gynaecologists and midwives, or doctors and ambulance staff). A further barrier concerns problems of non-ownership of ideas and resistance to disseminate "good ideas" that may be appropriated by others – similar to the "not invented here" phenomenon mentioned above under heritage and legacy. At the technical level, this may translate to problems over the ownership of IP.

Risk aversion: There is an understandable inherent resistance (which is particularly strong in the medical professions) to undertake or implement changes which may result in an increased probability of risk (to the patients in their care or to the other

[20] For example, the UK National Health Service is the largest public sector employer in Europe.

recipients of their services). The emphasis placed on the development of evidence-based medical and clinical practice over recent years is one consequence of the health professions' desire to minimise the unforeseen consequences of new health interventions. The definition of innovation implies novelty with its attendant lack of pre-knowledge on the possible outcomes. Moreover, innovations are rarely isolated phenomena and often depend upon, or engender, further changes and innovation leading to a ripple-effect across the entire system in which they are applied.

Public/political profile and accountability: The health sector has a professional and public duty to deliver the highest possible standards of care. As a result, health is a major political issue and the shortcomings of government health policies often form the focus of political, and hence, media debate. Likewise, examples of medical malpractice and maladministration are seized upon by the popular media in its search for news material. Consequently, public service managers and politicians are very wary of enacting changes that may result in negative outcomes, particularly if there is the risk that these will attract media focus. There may also be a tendency towards a blame culture, with its associated high levels of accountability. Added to this is the risk of patient litigation in the event of adverse impacts and events. These features contribute to the broader notion of risk aversion already described above and could further hinder the process of innovation.

Need for consultation, and unclear outcomes: Further allied to the issues of the lack of pre-knowledge associated with the introduction of novel medical practices and procedures, and that of risk aversion, the large range of stakeholder involvement within the health sector generates a strong requirement to consult and review any planned changes and modifications and to attempt to identify all the potential consequences of such actions. This is exacerbated by the complexity of the health system and difficulties with obtaining a clear picture of all the eventual effects of these actions. Thus diffusion or roll-out of new innovations forms a major management issue. A related problem concerns the systemic nature of innovation, i.e. the possibility that the introduction of one innovation may shift the underlying problem to another, downstream, part of the system or may have unforeseen and adverse consequences. Thus, the introduction of any innovation should require close *ex ante* assessment, coupled with careful review and evaluation.

Obstacles to learning in the public sector

(Taken from Publin report D15 *Policy learning, what does it mean and how can we study it?* by René Kemp and Rifka Weehuizen)

There are clear obstacles to learning in the public sector. Although learning is a normal human phenomenon there are significant obstacles to learning within the process of government and policy making. According to Chapman (2002, p. 13) the most important obstacles are:

- An aversion to failure, exacerbated by the political process which uses failure to score points rather than learn lessons
- The pressure of uniformity in public services.
- Shared assumptions between civil servants and ministers that command and control is the correct way to exercise power.
- Lack of evaluation of previous policies.
- Lack of time to do anything other than cope with events.
- A tradition of secrecy used to stifle feedback and learning.
- The dominance of turf wars and negotiations between departments, effectively making end-user performance secondary to other considerations.
- The loss of professional integrity and autonomy under the knife of efficiency in policy making, and resistance and protection of vested interests by some professional and intermediary bodies

The barriers have to do with mentalities, tradition and with power by obstructing learning feedback. Deutsch (1963) famously remarked that those in power can afford not to learn (From foreword by Hoppe in Eberg et al., 2002).

Pace and scale of change: Many public administrations, for a variety of political and policy reasons (such as the introduction of New Public Management approaches), have over recent years been subject to a large number of often radical changes. The pace of change has also been dramatic and this has led to an environment of shifting targets and the absence of adequate opportunity to reflect upon and assess the consequences of many of the innovations introduced. The introduction of new political ideologies, new 'world views' etc. may also accelerate the pace at which policy makers (at all levels) wish to see change implemented. Thus, while political will may be viewed as a driver for innovation and change (see below), the systems to which it applied may become "innovation-fatigued" and resistant to further change.

Absence of a capacity for organizational learning (at all levels): There may be a lack of structures and mechanisms for the enhancement of organizational learning, exacerbated by their scale and complexity and the problems these features generate (see above). If there is a lack of dialogue between the actors in a complex system, for a variety of reasons such as legacy and professional resistance, how can the diffusion of good practice be managed? Frequent reorganizations (see "g. pace and scale of change") will also promote a lack of corporate memory. This problem can operate at all levels from the top of the policy-making hierarchy down to the service delivery level.

Public (and end-user) resistance to change: There is an assumed general resistance of the public to reorganization and changes in the way healthcare and other public services are delivered. Thus, the public, or elements of it, may also be risk averse. Various factors may operate here such as age, ethnic background, personal wealth, access to ICT, etc. It is assumed that the public forms the typical end-user, although it may be represented by various lobby and interest groups. In some cases, perhaps where the mode of delivery is changed with no discernible change to the service or 'product' from the public user's perspective, the end-user may be the service deliverer.

The role of public sector entrepreneurs

(From Publin Report No. D19, *Innovation in the health sector – case study analysis,* by Paul Cunningham)

Irrespective of the organizational capacity for innovation, one of the most striking features common to most of the case studies was the key role played by the presence of highly skilled and committed "entrepreneurs" or champions, able to drive forward the innovation process. Such people were found to have played key roles both at the national and regional level in the case of NHS Direct, in the Salford specialist diabetes education team, the introduction of Digital Radiology in the Madrid Hospital and in the Swedish SABH process. In a broader context, the presence of a positive staff attitude towards new ways of operating was also found to be important in the Spanish case study.

The degree of success of such entrepreneurs and innovations was also found to be highly dependent on a number of organizational features. The NHS Direct local systems were themselves very open to innovative practices whilst the open remit of the NHS Direct sites encouraged problem solving and new, spin-off or complementary, initiatives and innovations; many instances were noted of new applications and linkages with complementary services. In the Dutch case study it was found that the linkage of care programmes with the administrative system promoted the management of the new organization, offering improved ownership of patient care problems. There was also recognition of the importance of feedback mechanisms for monitoring the (intended and unintended) impacts of innovation at a variety of levels. This element of self assessment and self introspection was also noted in the Irish case study: the project was preceded by a thorough baseline research study and by the use of focus groups; it was introduced on a test basis as a pilot (as was NHS Direct in the UK); there was a strong element of evaluation (as in several other case studies); and the use of team meetings was seen as a positive learning experience. In Sweden, the SABH process was found to heavily rely on developing both a teamwork approach and in having staff able to work independently. There was also an extensive pre-project planning phase. Lastly, it was noted that in the Salford diabetes education project, a high degree of organizational learning had been exhibited by the relevant Primary Care Trusts.

While the above indicates that mechanisms such as appraisal, dialogue and evaluation are all key components for organizational learning, a willingness to experiment and try new approaches was also seen to be a useful attribute towards the success of the innovations studied.

Absence of resources: This feature has been clearly identified within the general factors affecting public health systems, particularly those associated with demographic changes and disease conditions. Not only does it include a lack of financial support, either in a general context or specifically for the support of innovation, it can also include shortages in relevant skills or other support services required for the implementation of innovations. As noted above, the systemic nature of the impacts of innovation, whilst relieving pressure on one part of the system may result in a shift of the problem or bottleneck to another part of the system. Moreover, the general desire to improve the quality of health provision often entails the need to expend additional resources – not all health innovation is aimed at economic efficiencies.

Technical barriers: Whilst the development of a new technology or technological application may serve as a strong driver or facilitator of process or organizational change, the absence of a technology which exhibits certain specifications may also hinder the development of a sought-for innovation. Thus, the application of new uses to existing equipment, for example, may push the technology to the limits of its capabilities and act as a driver for further technical innovation.

Drivers and facilitators

A number of counters to the barriers noted above may also be discerned. These may be categorised as drivers for (i.e. pressures for innovation) and facilitators (i.e. factors which aid the uptake and dissemination of innovation) in the public health system. Again, these may operate either at the national level, in the broad environment of the innovation or may be specifically linked to the innovation itself.

Problem-oriented drivers: It is clear that many innovations in the public health sector are introduced in response to one or more specific problems. Typical underlying causes, as noted above, include demographic factors, ageing population, fragmentation of families, life-style health and social problems, etc. Thus, an innovation may be required to deal with new specific problems (i.e. the rapid increase in child obesity), or with generic problems (such as the need to reduce in-patient resident times as a means to free up hospital beds), or to speed up the processing of health care administrative tasks.

Non-problem oriented improvement: Innovations may also be introduced because, rather than dealing with a specific problem, they represent an improvement on the former situation. For example, doing things faster or more efficiently is generally a broad goal but does not necessarily represent a specific problem in itself. Similarly, a new medical technique may confer improved quality of life for patients but may not offer any further advantages..

Political push: Strategic change in the public sector frequently requires a strong, top-down, political will coupled with the political recognition that change requires the allocation of substantial resources. This may be ideologically based or in response to critical events and pressures. It may also include the adoption of new world views and concepts – thus, in several countries successive political ideologies have sought to find free-market solutions mainly to ameliorate the enormous financial burden imposed by a “free” (at point of delivery) public service and also, indirectly, to provide incentives for improved service delivery. At the delivery level, political goals may be reflected through the imposition of performance targets (which may facilitate

innovation although with the danger that, as with most indicators, they can distort the behavior of actors within the system in unanticipated and possibly undesirable ways) – see Competitive drivers, below.

Growth of a culture of review: A range of assessment practices have developed over the years in the public sector (especially in the health system), ranging from evidence based guidance, health technology assessment, and clinical audit through to broader scale review activities. The development of these techniques could, at least in theory, alleviate the problems associated both with assessing the potential impacts of innovations and with promoting a culture of organizational learning, hence this feature may represent both a barrier to and a facilitator of innovation.

Support mechanisms for innovation: This can represent the allocation of appropriate resources (finance and other forms of support) to promote innovation and its implementation. Allied to the allocation of resources is the provision of actual structures and systems designed to promote, stimulate or disseminate innovation (e.g. staff suggestion boxes, staff fora, stakeholder feedback mechanisms, networking activities, competence building, encouragement of alternative thinking, etc.). These may operate either from the top-down or from the bottom-up. Both mechanisms may also monitor external sources, such as practice in other public service systems either domestically or abroad for transferable examples of innovations.

Capacity for innovation: Staff in the public health system are often characterised by their high levels of professional expertise, exhibiting a high level for creativity and problem solving, thus providing an environment in which innovation should both be generated and accepted. This is frequently demonstrated by the presence of entrepreneurs or "innovation champions" who drive forward the process of innovation and its implementation and diffusion. Moreover, medical and health professionals are generally driven by a strong desire to improve the well-being and quality of life of the patients in their care, which may further prompt the search for new solutions and approaches.

*Competitive drivers***:** The use of performance targets to derive "league tables" (for example, of hospitals, schools and universities, in the UK) can encourage the use of innovative approaches in order to force up performance ratings. However, the use of such targets, indicators and league tables often distorts operational behaviors, sometimes with unintended and deleterious consequences (such as the refusal of GPs to operate accessible appointments systems in order to drive down waiting lists). Therefore, this is one example of a driver which may force innovation to operate in non-optimal ways.

Technological factors: It is clear that technological innovation can be a strong determinant or driver for subsequent innovation. The introduction or availability of new technology (for example, telemedicine or advanced data storage and handling capabilities, etc.) may provide an opportunity for another form of innovation (process, organizational, delivery, system interaction, etc.) to take place or to be implemented.

In the final summary report of Publin, these barriers and drivers will be used as the basis for policy recommendations.

The role of crisis and reframing in learning and innovation

In the Dutch case study, the management of a psychiatric hospital decided to implement a major innovation: the implementation of so-called care programmes ("zorgprogramma's"). This is a patient-centered, process-oriented, evidence-based approach, which involves major changes in the care chain. A newly hired experienced manager from outside of the health care sector was willing to take up the task to prepare an innovation plan for and with the organization; he was the innovation "entrepreneur" in the process. There was considerable resistance to change, especially from the side of the psychiatrists, who up until then were king in their own kingdom and did not feel like giving away power to professional managers. At some point the innovation process was slowing down, it was very hard to get from the conceptual phase to the phase of actual implementation.

Then a crisis hit the organization: there were serious financial problems due to mismanagement of the director. The director had to resign and the "entrepreneur" of the innovation process was appointed as the new director. The crisis made the personnel including the psychiatrist see that they needed to change in order to survive as an organization and this facilitated the implementation of the innovation. It changed their perspective dramatically. Instead of seeing the innovation as an unwanted change involving more effort of the personnel and representing a threat to the positions of the psychiatrists, it now was seen as a solution that could save the organization and the people working in it.

A crucial element was to gain the trust and confidence of the employees in the time of crisis. The "innovation entrepreneur" recognized the crisis as a "window of opportunity" to get acceptance and support of structural organizational changes. It involved substantial management skills to take away the distrust; many employees in the health care sector are cynical, seeing innovation as a hidden attempt to simply cut costs. An acute crisis however changed the view of "we" (the employees) against "them" (the management) into a "we" (the organization as a whole, together) against "them"(the financing institutions of health care). The new director made sure that the organization did not perceive him as an agent of "them". The reframing was important for increasing the willingness to change. The wider institutional structure was conducive to innovation because the main financial agency involved offered an arrangement to deal with the financial difficulties on condition of a plan of how things would be done differently and better. Because of all this the innovation still goes ahead.

The empirical studies of Publin

The various aspects of an analytical framework for a theory of innovation for public activities and sectors outlined in this paper, has found confirmation or otherwise mirrored in the conclusions of the empirical work having been undertaken in Publin. We give a brief synopsis below of the two strands of empirical work. The first section is based on the survey and interviews performed in the WP 3 of Publin – see Publin Report D17. Secondly we consider the national case studies. For an overall synthesis of these see Publin Report D18 and D19, cf. also the eleven detailed case study reports, Publin Reports D12-1 – D13-5.

The Publin Surveys

Work Package 3 of the Publin project, i.e. the surveys and the common questions included in most case study interviews, was to reach a better understanding of patterns of innovation that are underused today, and that may be used to encourage greater collaboration between the government and its operative-administrative branches, its citizens, and the business and private sectors.

Publin distributed two questionnaires, one to managers and employees in public sector organizations and one to so-called "end users". The "end users" were represented by members of organizations representing the interests of end users vis-à-vis public authorities (mostly NGOs), as it was felt that these persons would have a better knowledge of how public organizations are functioning.

In the Publin survey report (Report D17, *Report on the Publin surveys)* Eran Vigoda-Gadot, Aviv Shoham, Ayalla Ruvio and Nitza Schwabsky point out that organizations in which innovativeness is valued are more likely to implement or adopt innovations. Based on the extant literature, they identify five components of innovativeness that have been incorporated into the theoretical model. This model also included antecedents of innovativeness and expected outcomes of organizational innovativeness.

Lumpkin and Dess defined innovativeness as reflecting "the firm's tendency to engage in and support new ideas, novelty experimentation and creative processes that may result in new products, services, or technological processes". As such, innovativeness is not tied to specific product innovations; rather, it reflects an organizational trait and the willingness to pursue new opportunities. Hurley and Hult (1998) distinguish between innovativeness and the capacity to innovate. In their conceptualization, innovativeness is part of an organization's culture, whereas innovative capacity is an organizational outcome.

The theoretical model underlying the Publin survey research project includes the following antecedents of innovativeness:

- Market Orientation (including Information Generation, Information Dissemination, and Responsiveness)
- Team Spirit
- Internal Politics
- Connectedness
- Centralization

These constructs were expected to impact *Organization Innovativeness*, conceptualized as a five-component construct that includes Openness, Risk Taking, Future Orientation, Creativity, and Pro-activeness.

The Publin researchers distinguished between two types of outcomes of innovativeness – an individual level of outcomes and an organizational level of outcomes. At the individual, behavioural level, Organization Innovativeness was expected to have an impact on Commitment and Work Satisfaction.

At the organizational level, they expected Innovativeness to have an impact on Innovation Performance (benchmarked against Plans, Leaders' Expectations, and

Users' Expectations), Organizational Performance (benchmarked against Plans, Leaders' Expectations, and Users' Expectations), and Organizational Learning (a six-dimensional concept).

Data Collection

A mixed methodology, quantitative and qualitative, was developed to examine innovation in the public sector. Following a pilot study of public practitioners and end users for each of the research methods, surveys were collected as follows: A minimum of 100 managers and frontline employees of health and social service organizations, and a minimum of 50 end-users of non-profit organizations were surveyed in each of the nine countries that participated in the study.

Interviews

Additionally, about 15 in-depth interviews with public sector managers and frontline employees were conducted in each of the participating counties for a total of 163 in-depth interviews. The in-depth interviews focused on definitions and examples of innovation, entrepreneurship, drivers and barriers, networking and learning, politics, performance and the evaluation of innovation.

Manager/Employee Survey

Participants of the Manager/ frontline employee survey consisted of close to 70% female employees (69.4%). A little less than a half of the participants are of public Health organizations (42.1%), and a little over a half are of the Social Services (57.9%). Regarding their organizational positions, of the entire group of participants, about a third are managers (33.1%), and close to a half are frontline employees (45.2%), and about 20% of the participants classified themselves as "other", meaning, that they hold positions other than "managers" or "frontline employees". The participants' age mean score is 41.68 (*SD* = 11.04), and their education mean score is 14.74 (*SD* = 6.32).

End-User Survey

The end-users survey was distributed to end-user representatives, in particular representatives of relevant NGOs and member of public sector boards. The reason for this was partly practical (there were not enough resources to carry out a full scale public survey) and partly methodological (traditional end-users, like patients, do not normally have knowledge of the internal innovation practices of public institutions). Of the entire group of End-User survey participants, close to 65% are female employees (64.3%). A little over a third of the participants are of the Third sector, and close to two thirds are of the Public Sector (60.9%). Participants' age mean score is 45.48 (*SD* =16.96), and their education mean score is 15.64 (*SD* =3.94). Participants' average income is divided almost evenly, with about a third of the participants (32.6%) earning below average, a little over a third (39.2%) earning an average income, and close to 30% (28.2%) earning an above average income.

In reviewing the results of this facet of Publin, the researchers were mindful that they examined pairs of related constructs in isolation. They expected the set of antecedents to have a strong overall impact on innovativeness and its sub-dimensions. Similarly, the set of innovativeness sub-dimensions was expected to have a strong impact on the various outcomes studied.

The data from the manager's survey (i.e. responses to the questionnaire distributed among public sector employees) provided strong support for the theoretical model,

both when assessed at the combined (multi-sample) level, as well as when assessed for each country separately (with a few minor exceptions and differences).

Specifically, most of the antecedents of innovativeness, in isolation, had correlations with the five components of innovativeness varying between 0.40 and 0.50. In other words, the impact of each, considered on its own, explains 15-25% of the variance in the relevant components of innovativeness. Therefore, even assuming some conceptual and empirical overlap among these antecedents, a much higher proportion of the variance in the components of innovativeness should be explained by the full set in combination.

Similarly, the five dimensions of innovativeness affected all outcome variables. While a few had a weak correlation with some outcomes (most notably for Organizational Learning), the general pattern was encouraging. Innovativeness was correlated with the outcomes mostly at a level of 0.35-0.60. Thus, even in isolation, innovativeness' components provide an explanation for 10-35% of the variance in these outcomes (except for Organizational Learning). Here, too, even if the five innovativeness components overlap empirically to some extent, a much higher portion of the variance in outcomes should be explainable by these components.

The end-users model was developed to explain public sector performance using a series of attitudinal and perceptional variables representing users' views of public sector innovation. The researchers expected the perception of the public sector as innovative to lead to higher levels of trust in public sector organizations and increased satisfaction from such organizations among citizens. Satisfaction from public institutions, a positive image of public service organizations, and trust in them are all vital in a democratic society (Chanley, Rudolph & Rahn, 2000).

The model for end-users was originally developed to parallel the one for managers and frontline employees. However, the researchers made two major changes before the commencement of data collection. First, they replaced some constructs and changed a number of others (generally by reducing the number of items used to operationalise them) to fit the specific context of this second survey. Secondly, data was collected from managers in third-sector organizations that advocate and promote citizens' interests, rather than from citizens themselves as originally planned. The surveying of such managers is advantageous in that they know more about the phenomena studied, making them more accurate sources of information. Its major disadvantage is that the participants answered as managers, making them less representative than the population-at-large as sources of data.

Antecedents to perceived innovativeness of the public sector included Connectedness, Employees' Professionalism, Ethics and Morality, Internal Politics, Promoters of Innovation, Public Sector Leadership/Vision, and Responsiveness. A key point to note is that the data in this area reflected the perceptions of the participants. A two-dimensional approach was used to measure innovativeness (Innovation and Innovativeness). The three outcomes (referred to as consequences in the results) were Image, Satisfaction with Provided Services, and Trust in Institutions.

Findings indicated that end-users do not consider the public sector highly innovative – the mean innovativeness score for the entire sample was 2.8 out of 5. Relationships within this second study (end-users) were for the most part weaker than for the first study (managerial/frontline employees). It should be noted, however, that this was not

true for all the variables and that in some of the countries, moderate to strong relationships were found in certain cases. Still, while explained variance should improve with the inclusion of multiple predictors, we expect the full set of antecedents to explain much less of the variance in innovativeness than the set for the managerial/frontline employees' survey did.

The strongest predictor of innovativeness, Connectedness, had a correlation of 0.35 with it. In isolation, therefore, this strongest predictor explained only about 12% of the variance. The other antecedents that had some sort of association were Leadership and Responsiveness. These latter two reflect the public sector's ability to understand and address the public's needs in a quick and efficient manner. Public organizations that accomplish this goal are viewed as open to changes and new technologies, and are thus seen as innovative. Meanwhile, Internal Politics, which is normally considered a hindering factor for public sector innovation (Borins, 2000; 2001), was not perceived as such by the end-users in our study.

As was the case with its relationships with the antecedent variables, innovativeness, however it was measured, was a fairly weak predictor of the outcomes studied. The highest correlation was for Innovativeness and Satisfaction with Services, which reached 0.33. Accordingly, Innovativeness, in isolation, accounts for about 11% of the variance in Satisfaction. Here, too, improvements should result from the inclusion of a fuller set of predictors, but the set of outcomes would be explainable by Innovativeness to a lesser degree than in the first survey.

We note several reasons for the weaker results of the second study. First, some of the constructs in the first survey were excluded from the second. Second, for variables included in both surveys, there were fewer items in the second, increasing potential measurement errors. Third, whereas managers/frontline employees should be knowledgeable about their organizations, managers in third-sector organizations should not be as knowledgeable, again increasing measurement errors.

In sum, we believe that the model was generally supported by the data in both studies. This conclusion holds at the complete sample level as well as for each country separately (although, not surprising, there are minor differences across countries).

According to the survey report, there are numerous practical implications arising from the two studies. First and foremost, given its positive and strong impact on Organizational and Innovativeness Performance, public sector organizations should encourage and build organization-level Innovativeness. In this respect, although all components of Innovativeness contributed to Performance and should be emphasized to some extent, some components of innovativeness are more crucial than others and deserve special attention from top management. However, given limited resources, of the five, Creativity should be singled out, as it had the strongest impact on measures of Performance. In contrast, Risk-Taking can be de-emphasized, as it had the weakest impact on Performance.

Since Innovativeness contributed to Performance, how can we encourage it in public sector organizations? Both Internal Politics and, to a lesser extent, Centralization reduced organizational innovativeness. Thus, both should be managed to reduce their pervasiveness in organizations seeking to increase their Innovativeness. Market Orientation (Information Generation, Information Dissemination, and Responsiveness), Team Spirit, and Connectedness all contributed to Organizational

Innovativeness. Consequently, public sector organizations should consider ways to enhance these antecedents.

The Publin survey findings are based on research in the public sector (first-sector organizations) and our recommendations therefore refer to these types of organizations. However, we believe that our theoretical model and findings may be applicable for other non-profit organizations (third-sector). This could be an interesting avenue to explore in future research.

The Qualitative Study

The national Publin teams were asked to include some selected questions when interviewing policy makers and public employees for their case studies. The responses were used for a transnational mapping of attitudes and practices.

Analysis of the international managers' and front-line in-depth interviews shows that innovation is a ubiquitous phenomenon in the public sector. Even if some of the interviewees were not familiar with the term "innovation", they used synonymous words to describe innovation, and there was no question about the need for innovation, and its existence in the public sector. Innovation reflects newness and change, and is closely allied with organizational and policy learning.

According to our respondents managers are the primary initiators of innovation, followed by employees, other organizational personnel and professionals, government and politicians, end-users and external organizations. While the majority of innovations in the public sector are top-down and policy-driven, findings show that interviewees generally see the organization's management or political parties rather than external organizations or the EU as the initiators of new approaches.

In their role as innovators, managers and department heads are believed to be the ones who create, plan, and promote the innovation. Employees are viewed as the ones who provide the service: they bring ideas, argue, report problems, and implement the innovation. The end-users respond to the changes, give feedback and complain.

Innovation would not occur without facilitating and hindering forces. Facilitators of innovation are predominantly internal, organizational forces that include the leadership and management, cultures open to change, supportive personnel and proper funding. External facilitators include the EU, the legislature, or national initiatives, as well as information, learning, and networking.

Obstacles to innovation are predominantly internal to the organization as well. Findings show that interviewees perceive barriers to innovation as deriving from public service’s leadership and management (i.e., budget cuts or poor allocation of budget funds, and poor leadership). Additional obstacles are the traditional regulations and work routines, employee resistance, internal and external politics, poor learning environment, and end users' resistance.

Organizational learning and policy learning emerge as an integral part of innovation, and are reflected through the infrastructures that facilitate organizational learning, networking and cooperation with other organizations, and the development of competencies and networking. Internal and external organizational networking emerged as important for the success of innovations.

There was broad agreement as to the importance of the measurement criteria of innovation success. These range from routine measures to a lack of overall criteria. Quantitative scientific measures and qualitative measures are used to evaluate innovation. Quantitative measures often consist of observed criteria such as number of people served, duration of hospitalization, medical malpractice, percentage of clients who are referred or complete the service, etc. Qualitative measures consist of measures such as general notions of client satisfaction and the reasons for it, managers' evaluations, and performance progress. Some of the measures, however, rely on “gut feelings” rather than on scientific methods. Interviewees seemed uncomfortable with this question, and some interviewees reported being unaware of any clear method for measuring innovation. Difficulties with measurement criteria include information that is not linked to primary processes of innovation, scarcity of measurement tools, lack of time or resources, or difficulty in accessing clients' or other sensitive data. The importance that interviewees placed on innovation combined with the lack of clear measures suggests that this area needs some attention.

Expected and unexpected implications followed. Expected and intended implications, positive or negative, emerged in relation to the improvement of service provision and performance, management and administration, professionalism and work conditions. Examples of intended implications include safety, economic changes and aspects of innovation flexibility. Unintended implications and consequences of innovation, both positive and negative, emerged in the areas of service provision, performance reputation, administration, networking and support. Additional unintended consequences were heavier workloads (i.e. paperwork), end-users' and employees' resistance to innovation, competition from interest groups, and innovation serving as an impetus to further additional innovations. Some implications are both positive and negative simultaneously, when directed at different goals or players.

The primary beneficiaries of innovation according to the interviewees are the end-users ("clients"); however, practitioners and employees also benefit from innovation.

In sum, findings show that innovation is ubiquitous in the public sector. It is aimed at improving the provision of service, involves a variety of stakeholders, is linked to organizational learning, and benefits end users, practitioners and managers. While there are indications of successful innovations, not much is known about unsuccessful innovations, their characteristics, or why they fail. Managers should be attentive to obstacles that hinder innovation and negative consequences as much as to positive consequences of innovations and success stories.

Recommendations to innovators reflect the interviewees’ major comments in descending order - from the most frequent, to the least, as follows:

1. Develop quality leadership that creates the right climate for change (Swed), "walk the talk" (Neth) and institute "cultural change" (UK, Slov, Isr, Norway).

2. Involve employees and get their support and commitment (Swed, Ireland, Neth, UK), encourage personnel to take initiative (Swed), make people feel 'it’s their project' (Neth), provide feedback (Ire), 'buy in' a full range of stakeholders for commitment (Ire) and cultural change (UK).

3. Develop inter and intra- organizational networking, coordination and cooperation at all levels (Lith, Norway, Spain, Israel),

4. Plan ahead, assess the situation and evaluate (Lith, Israel, UK) while remembering the goal of improving the provision of services (Lith, Neth); "Innovation must be based on evidence… (a) "studying future demands", and (b) "developing creative service/delivery solutions could yield substantial savings in the mid to longer-term." [UK]

5. Be open and creative, think "outside of the box", listen to new people, use research, admit mistakes, and take risks (Ire, Lith, Isr, UK).

Managers must take all aspects and consequences of innovation into consideration when they plan an innovation, and never "rest on their laurels".

Lessons from the case studies

In Publin Report No. D18 *Innovation in the social sector – case study analysis* and and report No. D19 *Innovation in the health sector – case study analysis,* Paul Cunningham Ludmila Malikova and Katarina Staroňová identify a a number of factors, or shared characteristics from the social sector case studies, that, at least partially, may contribute to the initiation, development and implementation of innovations in the social service sector. It should be stressed that while all the evaluations studied were successful the pathway to implementation was not always smooth. Thus, the following lessons are not a recipe for successful innovation but only indicators of potential contributory factors. They may also be interpreted as a set of broad policy recommendations.

1. *Pluralism in different approaches* to improving service provision to the client groups is important and should be encouraged. As seen in the case studies from Norway, Slovakia, Lithuania, and Israel the pluralism in terms of many different service providing organizations (NGOs, stakeholders' associations, etc.) has generated many different models and "experiments" for service provision. Similarly, autonomy left to the municipalities and service providing organizations for the implementation of the national Action Plan (Norway, Slovakia) or fulfilment of the national goals leads to innovative environment. Although this is not a result of design, the situation is beneficial in terms of public debates and political awareness – and ultimately, for policy learning

2. There was a marked tendency for innovating organizations or for key personnel to demonstrate *openness to ideas* and a willingness to think 'outside of the box'. This was found to be equally important in the development of novel solutions to problems, or in the identification of solutions to previously unrecognised problems or issues. It was also an important factor in the acceptance of new ideas and new operational practices, both from the perspective of management and from the perspective of those expected to deliver or utilise the innovation.

3. In some cases it was clear that it was important to *seize opportunities* in order to implement change and to gain the acceptance of new ideas. Such opportunities could relate to the availability of resources, the need to respond to enforced change or new circumstances, and the timing of political or

organizational events. The coalescence of two or more factors might also be seen as an opportunity, such as in the Irish home help innovation where the availability of funding and a new agreement on working practices assisted in the development of the new process.

4. The role of *"champions" or entrepreneurs* was clearly significant. The presence of individuals with sufficient vision and determination to push the innovation process was a characteristic shared by all of the case studies. Entrepreneurs are important in development of innovations in public services. Although entrepreneurs always are emerging, in the public domain (such as service provision and care for the elderly) the challenge is to leverage their creativity and channel their energy into activities that give them a sense of meaning. If possible, policy should be able to recognize these persons and bestow them with resources – and responsibilities.

5. As noted above, champions were important, but also required support. Many of the innovations relied, at one level or another on positive attitudes towards *teamwork and independent thinking* in order to take forward the innovation concept through a process of development to fruition. In some cases, innovations required an entirely new approach, thus the supporting team also had to be fully committed to the idea and able to deliver it in what were often novel, rapidly changing circumstances. It is also beneficial to co-opt staff members and create "agents of change" to overcome potential resistance from the (professional) staff.

6. *NGOs and the civil society* they represent are very important for a number of reasons: Being agile and flexible, they seem to have a type of creativity and climate for entrepreneurship which is not possible in public organizations. Although one may possibly claim that these are not representative, they nevertheless represent interests that are committed to public causes. In this, they have networks to dedicated people and local chapters which represent potentially powerful resources of human capital and creativity. Also, NGOs (as proved in transition countries) may have access to additional financial resources and in this way be crucial in the research, evaluation or piloting of the innovation. In Norway, some of the private charitable funds (old family fortunes) function as "venture capital" for development projects in NGOs. This model – venture capital logic - is very interesting and public money should be used in a similar manner. In a policy perspective, the significance of civil society should be recognized and given opportunities for development.

7. The *engagement of stakeholders* and extensive and ongoing *consultative and participatory process* were key factors in initiating, sustaining and implementing innovations. In many cases, a range of stakeholders had to be convinced of the utility of the proposed innovations and resistance (to change procedures, to provide resources, to engage in practices with a higher perceived risk, etc.) had to be overcome. Once innovations had been put in place, it was essential to ensure all stakeholders still shared the same vision,

that expectations were being met and that the lessons learned were being disseminated quickly (see below).

8. Innovating organizations need a *high degree of reflexivity* – essential an ability to demonstrate organizational learning. In concrete terms this behaviour was evidenced through practices such as *ex ante* appraisal, assessment and ongoing monitoring processes and evaluation of the outcomes and impacts, often within very short timeframes. In some cases these processes were carried out directly by the 'project team' itself whilst in others they were a feature of the broader innovation environment. Reflection and appraisal could occur at all levels. Coupled with such reflexivity, a high degree of responsiveness – an ability to react quickly to the outcomes of the review process – is also important: there is little point in monitoring if it does not prompt reaction.

9. Linked to the above point it seems, from some of the case study evidence, that the *demonstration of the utility* of implemented innovations is an important factor in terms of developing further support either for the innovation itself or for the implementing team or organization. In cases where the innovation was problem-oriented, this is less critical as the success becomes self evident.

10. Again linked to the previous two points is the need to *generate recognition and support* for innovation, both for the innovating organization itself but also more widely across the social services system. This was the remit of the Norwegian case study where the challenge was to construct arenas or institutions for sharing knowledge and learning, e.g. some mechanism for demonstrating "best practice" (or "worst practice"). These should be action oriented, i.e. demonstrate to actors what kind of measures, approaches or techniques that are efficient, etc. A number of the case studies mention the need to provide incentives for innovation, particularly in terms of persuading various stakeholders to adopt new practices.

11. The *retention of momentum* is another important factor. Of particular relevance is the need for organizations and systems to exhibit flexibility and work actively on the identification of further opportunities which may assist their particular innovations or which may benefit from it. To some extent, these features are linked to a culture of organizational learning and exploit the complex nature of innovation.

Publin reports

The following reports have been finalized (hyperlinks included in PDF-file. See also www.step.no/publin/reports.html):

D9 *On the differences between public and private sector innovation*
By Thomas Halvorsen, Johan Hauknes, Ian Miles and Rannveig Røste

D14 *The structure and size of the public sector in an enlarged Europe*
By Andrés Maroto and Luis Rubalcaba

D15 *Policy learning, what does it mean and how can we study it?*
By René Kemp and Rifka Weehuizen

D16 *Studies of innovation in the public sector, a theoretical framework*
By Rannveig Røste

D17 *Report on the Publin surveys*
By Eran Vigoda-Gadot, Aviv Shoham, Ayalla Ruvio, Nitza Schwabsky

D18 *Innovation in the social sector – case study analysis*
By Ludmila Malikova and Katarina Staroòová

D19 *Innovation in the health sector – case study analysis*
By Paul Cunningham

National case studies

D12-1 Sweden: *Hospital-Managed Advanced Care of Children in their Homes*
By Lennart Norgren and Kristina Larsen

D12-2 UK: *Developing Patient-Oriented Education Systems for Diabetes*
By By Paul Windrum and Pascale de Berranger

D12-3 UK: *NHS Direct, An Innovation in Social Trust*
By Paul Cunningham, Lawrence Green, Ian Ian Miles and John Rigby

D12-4 Spain: *The Adoption of Technological and Organizational Innovations in a Traditional Public Hospital in Spain*
By Manuel García Goñi

D12-5 The Netherlands: *Process Innovation in Mental Health Care*
By Friso den Hertog, Rifka Weehuizen and Maarten Verkerk

D12-6 Ireland: *Innovation in the provision of home help services in the Southern Health Board area*
By Joan Buckley and Carol Linehan

D13-1 Slovakia: *Residential Care for Elderly in Slovakia*
By Katarina Staronová and Ludmila Malíková

D13-2 Ireland: *Pensions Retirement Savings Accounts*
By Dr. Mairéad Considine

D13-3 Israel: *Regional Resource Centres of Special Education*
By Nitza Schwabsky, Eran Vigoda-Gadot, Aviv Shoham and Ayalla Ruvio

D13-4 Lithuania: *Innovation in Services for the Elderly*
By Rita Bandzeviciene, Aiste Dirzyte, Vidminas Dauderys

D13-5 Norway: *Innovation in home based services for the elderly*
By Helge Godø, Rannveig Røste and Marianne Broch

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