

THE ART OF SCARCITY

The significance of economic constraints for public sector innovation



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public sector innovation**

INNOVATION BAROMETER

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CO-PI – The National Centre for Public-Private Sector Innovation
Kompagnistræde 20 A
1208 København K
61 81 31 10
info@co-pi.dk
www.co-pi.dk

Authors

Marie Munch-Andersen and Felix Facius, both from CO-PI
With contributions from Christian Jentzsch, Lene Krogh Jeppesen
and Majken Præstbro, all from CO-PI

Graphics

sigurdsdottir.fo

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Translator's note

This translation of "Knaphedens Kunst" has been done using GPT-4o with as little manual revision as possible. Our aim is to make the results of the Danish Innovation Barometer available to an international audience quickly and easily – as a consequence, the translation is far from perfect. If you come across content that is incomprehensible or misleading, please contact Head of Analysis Marie Munch-Andersen at mma@co-pi.dk.

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Introduction

It is no secret that the economy is pressured in many public organizations.

In an analysis of public top leaders' innovation agenda from 2020, many point out that the economy is an important factor when it comes to innovation work. On the one hand, a pressured economy can act as a driving force for innovation because ongoing savings requirements make it necessary to think differently (BETA & COI 2020). A state top leader states in the analysis:

” *The entire public sector is under pressure. But so is the business world and private organizations. It has always been said that private actors have a much stronger pressure to innovate because they are in a market, but I disagree. I experience that we have the same pressure, the same motivation to think anew.*

- state top leader in "Søges: Radikale løsninger"

On the other hand, several top leaders also experience that financial constraints and ongoing efficiency improvements over many years have starved the innovation power in public organizations. There are neither free resources nor mental surplus to think or do new things when there are barely enough resources for daily operations.

” *It is important to emphasize that a pressured operation creates a terrible environment for innovation. That needs to be looked at.*

- state top leader in "Søges: Radikale løsninger"

It is this duality in limited economic resources that we investigate further in this publication using data from the Innovation Barometer and research literature in the field.

First, we look at what is at stake when public sector innovations are promoted by limited economic resources. Financial constraints can both be a source of creativity and initiate innovation. And the innovations promoted by limited economic resources often create efficiency in the workplace.

Next, we seek to get closer to answering the question of how to work with innovation when financial constraints are a reality.

Public sector innovation is doing something new that creates value

Eight out of ten public workplaces have introduced at least one innovation in the workplace over a two-year period. This is shown by both this and previous editions of the Innovation Barometer.

In the Innovation Barometer, we asked public workplaces in the spring of 2023 if they had introduced an innovation in the last two years. Innovation is defined as a new or significantly changed way to improve the workplace's activities and results. This can be innovations that the workplace has come up with entirely on its own, or innovations that are inspired by others' solutions – or directly copied.

Specifically, the innovation can be new or significantly changed products, services, processes, and organizational forms or ways of communicating with the outside world, which have been implemented and created one or more forms of value:

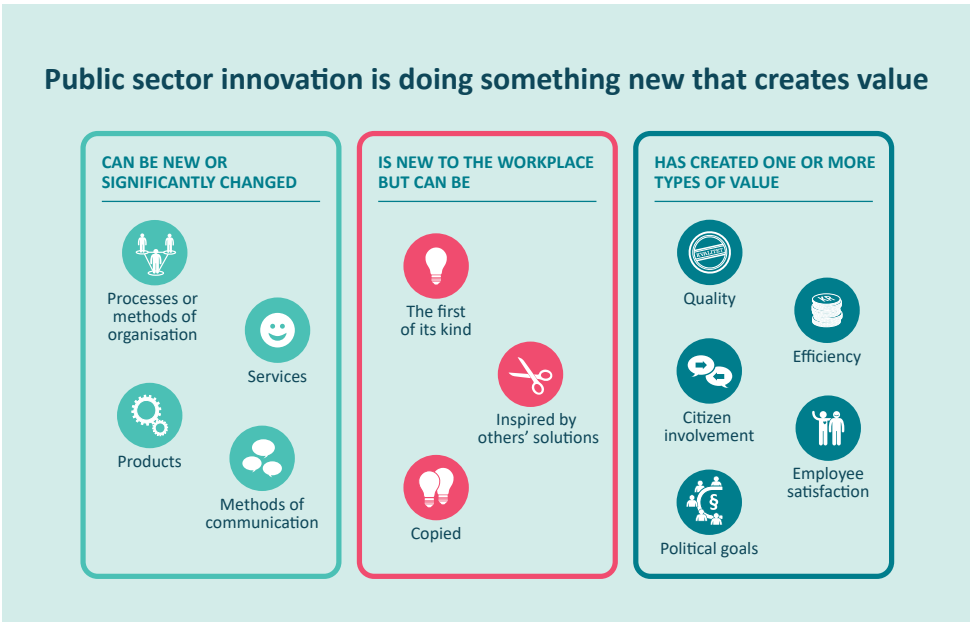


Figure 1: The figure illustrates the definition of public sector innovation.

To get closer to the specific innovations, we ask in the Innovation Barometer about the workplace's latest innovation. The data presented in this publication therefore primarily concerns the latest innovation at a representative sample of Danish public workplaces.

Financial constraints both hinder and promote public sector innovation

In the Innovation Barometer, we ask about a range of factors that hindered or promoted the work with the workplace's latest innovation.

Most factors have a positive influence on the innovation work. But when we ask about "limited economic resources," the picture is different. Here, a third of the innovations (34 percent) are hindered by limited economic resources. 23 percent are "somewhat" hindered by limited economic resources, and 11 percent "to a high degree."

It is not surprising that limited economic resources can act as a hindrance to innovation. Much innovation work requires resources, and if there are only limited – or no – resources available, it also places limitations on the work.

More surprising, perhaps, is that limited economic resources also foster public sector innovation. One in five public sector innovations (22 percent) is somewhat or to a high degree promoted by limited economic resources. Quite a few, nine percent, even point out that limited economic resources "to a high degree" promoted the innovation, while 14 percent answer "somewhat."

There is thus a duality in limited economic resources, which on the one hand places concrete limitations on the innovation work but on the other hand can be a contributing reason why the innovation work is necessary at all. There are probably also cases where both apply simultaneously.

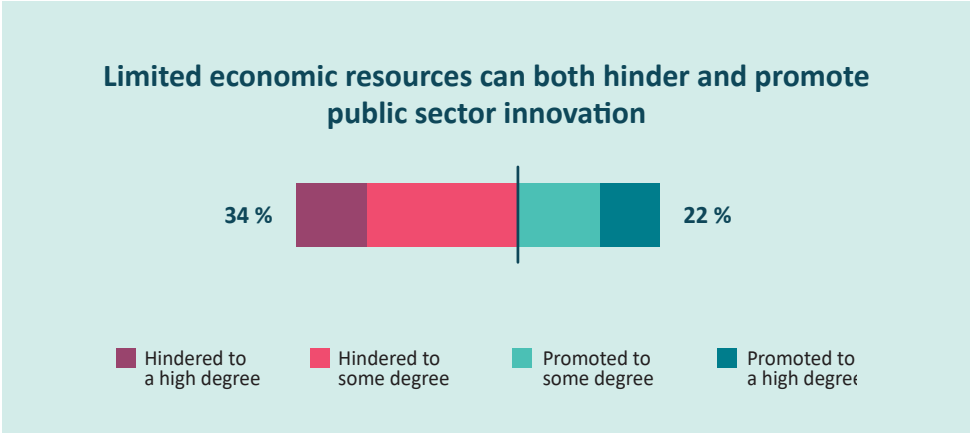


Figure 2: The figure shows the extent to which limited economic resources promoted or hindered the latest innovation. The percentage on the right shows the total percentage that answered "promoted to some degree" and "promoted to a high degree," while the percentage on the left shows the total percentage that answered "hindered to some degree" and "hindered to a high degree." The questions are only asked to workplaces that have introduced at least one innovation within a two-year period. The percentages do not sum to 100% because the 5% who answered "don't know" and 39% who answered "not relevant" are excluded. Data is weighted to represent the public sector as a whole. n=1,352.

When limited economic resources promote innovation

There are several suggestions for what is at play when limited economic resources promote public sector innovation. The literature points out, among other things, that limited economic resources can be a source of creativity. Data from the Innovation Barometer shows that limited economic resources can initiate innovation and that innovation can result in efficiency in the workplace. Technology is often part of the innovations that create efficiency.

Limited economic resources are a source of creativity

In research, there are several suggestions for the mechanisms at play when limited economic resources have a positive influence on innovation.

Researchers Martin Hoegl, Michael Gibbert, and David Mazursky in an article from 2008 ask when "less works as more" in innovation work and summarize the research in the field. The article is based on literature about innovation teams in private companies, which are often American, and not all points can necessarily be transferred to the public sector in Denmark.

The authors present two central barriers that prevent economic constraints from being a promoter of innovation: the capacity barrier and the will barrier.

The capacity barrier arises when, due to resource constraints, one does not have the capacity to do as usual. There are two ways out of this.

The first and perhaps most interesting is that constraints can boost creativity. Psychologists have described how people tend to choose the path of least resistance. The logic is that if one has unlimited resources available, the easiest solution to having too many tasks in a workplace might be to hire more employees, while never considering whether tasks can be phased out or solved differently. Thus, an abundance of resources can be directly inhibiting for innovation.

Others have researched under what circumstances people are most creative. While both researchers and practitioners often argue that one should think outside the box in creative processes, others believe that more can be achieved by thinking inside the box. Thinking within a frame of reference promotes new ideas more than if the frames are completely free. The human mind is thus most creative when it has few rather than many alternatives to solve a problem. Limited economic resources can function as a creative constraint. Some psychological experiments show that people are more creative in their problem-solving when given fewer resources to solve a problem. Teams that excel at working within this limited creativity manage to innovate despite limited economic resources.

The second way out of the capacity barrier is to utilize employees' relevant skills optimally. This means that teams in economically pressured situations must use the abilities that the team members have (Hoegl et al. 2008).

The second barrier, the will barrier, concerns the fact that resource scarcity can obviously be demotivating for employees in an organization. To overcome this barrier, it is crucial to have an engaging project goal that sets a direction and helps employees feel that they are on a mission together. The team must also have a strong cohesion in terms of chemistry between

colleagues, engagement in the team's task, and team spirit. Finally, team potency, or the team's confidence that they can handle the task ahead, matters. This is influenced by whether the team feels they have the necessary economic and human resources available but also involves having a culture characterized by can-do spirit (Hoegl et al. 2008).

Overall, the research literature suggests that turning resource constraints to one's advantage largely involves creating a positive innovation culture where the available resources are used in a way that makes the task seem manageable. Teams with a good innovation culture do not suffer from the negative impacts of limited economic resources in the same way as teams with a less good innovation culture do (Weiss et al. 2011).

” *While both researchers and practitioners often argue that one should think outside the box in creative processes, others believe that more can be achieved by thinking inside the box.*

Despite the positive factors highlighted here, there is no doubt that economic pressure is also a pressure. The research does not suggest that fewer resources automatically lead to more or better innovation, but rather how and in which situations there can also be positive elements associated with economic pressure and limited economic resources.

The significance of an innovation culture is somewhat reflected in data from the Innovation Barometer. Thus, workplaces that agree they prioritize sharing solutions and experiences with other workplaces, or that they systematically work with involving citizens' and/or companies' perspectives, are also more likely to believe that limited economic resources have promoted rather than hindered their latest innovation.

Financial constraints initiate 14 percent of public sector innovations

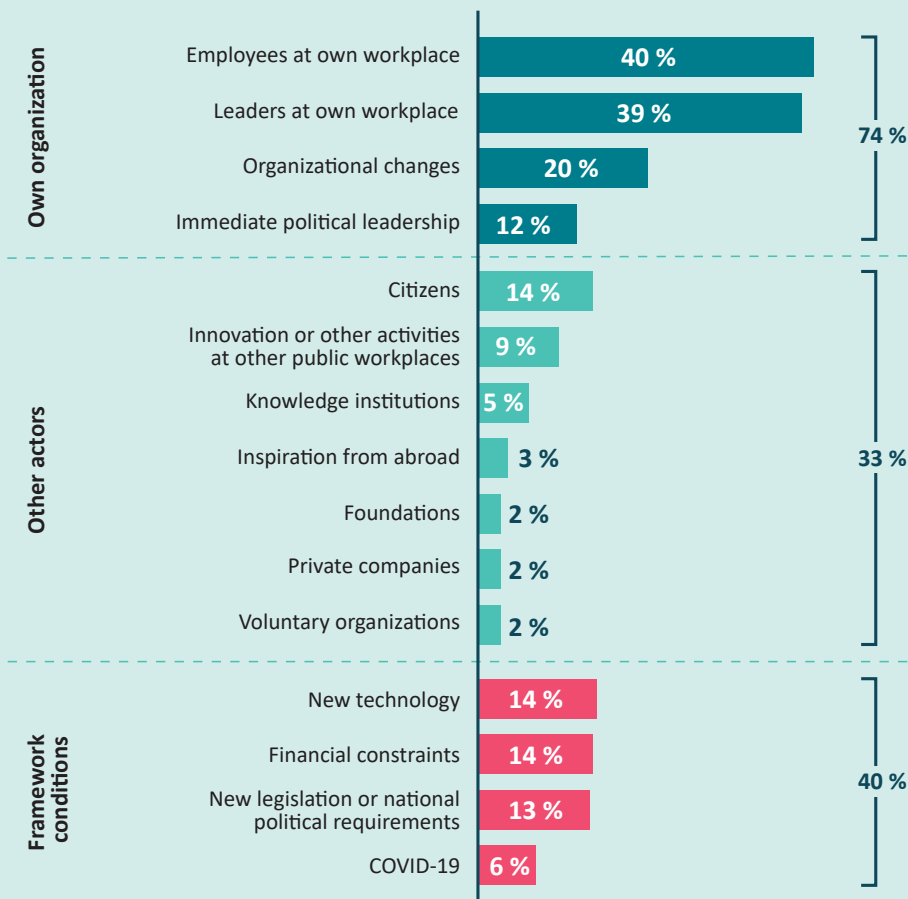


Figure 3: The figure shows who or what led to the initiation of the workplace's latest innovation. The percentages on the far right show the proportion that has chosen at least one of the initiators within the category. The categories are an analytical addition and have not been shown as part of the question. The figure is based on the question "who or what primarily led to the initiation of the latest innovation at your workplace?". The question is only asked to workplaces that have introduced at least one innovation within a two-year period. The percentages in the figure sum to more than 100% because workplaces have had the opportunity to choose up to three options. The figure does not show the 11% who answered "other" and the one percent who answered "don't know." Data is weighted to represent the public sector as a whole. n=1,352.

Financial constraints initiate innovation

In the Innovation Barometer, there are a number of correlations that can help explain how limited economic resources promote innovation. The first of these concerns the fact that financial constraints initiate innovation.

The Innovation Barometer shows that financial constraints help initiate 14 percent of public sector innovations.

When innovations are initiated due to financial constraints, limited economic resources more often act as a promoter compared to the broad group of innovations initiated by all other reasons. 54 percent of the innovations initiated by financial constraints are somewhat or greatly promoted by limited economic resources, while this only applies to 17 percent of the innovations initiated by other reasons. Limited economic resources can promote innovation because financial constraints are one of the reasons why one needs to think and do new things.

At the same time, it is worth keeping in mind that there are many other factors that also initiate public sector innovation. The two absolute high-flyers are employees and leaders at the workplace, who help initiate 40 and 39 percent of public sector innovations, respectively. In that light, financial constraints can be considered a relatively small initiator. Public sector innovation can thus by no means be reduced to solely how workplaces and organizations respond to financial constraints, as 86 percent of public sector innovations are initiated for other reasons.

When innovations are initiated due to financial constraints, limited economic resources more often act as a promoter compared to the broad group of innovations initiated by all other reasons.

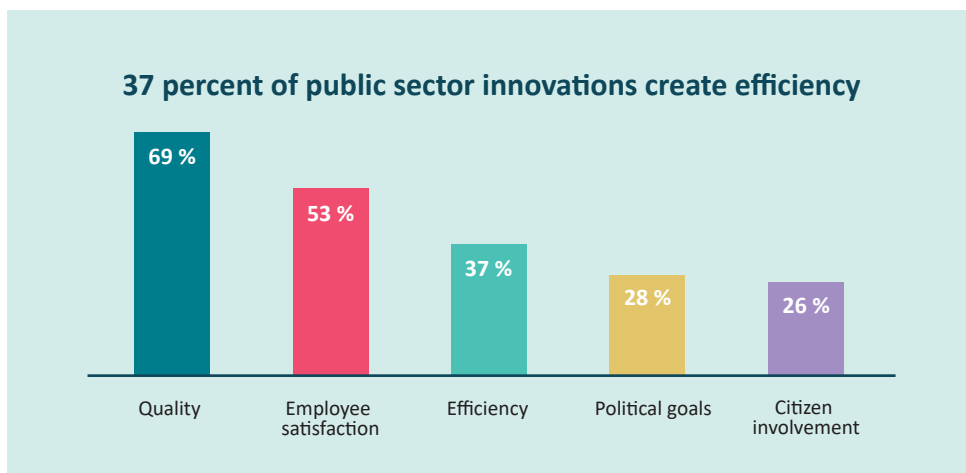
” *When innovations are initiated due to financial constraints, limited economic resources more often act as a promoter compared to the broad group of innovations initiated by all other reasons.*

Public sector innovation creates efficiency

The Innovation Barometer also shows a correlation between whether innovations have created efficiency and whether they are promoted by limited economic resources.

Public sector innovation is characterized by having created one or more values at the workplace, such as increased quality or efficiency. If the innovation has not created any value, it is by definition not considered innovation.

When we talk about economy and financial constraints, it is particularly relevant that public sector innovation creates increased efficiency in the workplace. This applies to 37 percent of public sector innovations. It more often happens that innovation creates increased quality in task performance (69 percent) or increases employee satisfaction (53 percent). Conversely, the fulfillment of political goals (28 percent) and increased citizen involvement (26 percent) are forms of value that are less common than efficiency.



Figur 4: The figure shows what types of value the most recently introduced innovation has created. The figure is based on the question "what type of value have you achieved overall with the latest innovation?". The question is only asked to workplaces that have introduced at least one innovation within a two-year period. The percentages in the figure sum to more than 100% because workplaces have had the opportunity to choose several options. Data is weighted to represent the public sector as a whole. n=1,352.

The innovations that create efficiency are characterized by limited economic resources more often promoting the innovation – and less frequently hindering it. 35 percent of the innovations that have created efficiency are promoted by limited economic resources, while this only applies to 15 percent of the innovations that have created other values than efficiency.

Not surprisingly, there is also a correlation between efficiency and financial constraints as an initiator of innovation. When innovation is initiated due to financial constraints at the workplace, the innovation creates efficiency in more than half of the cases (54 percent). Conversely, only 20 percent of the innovations that have created efficiency are initiated due to financial constraints. So, although financial constraints can initiate innovation, four out of five innovations with efficiency are initiated for other reasons.

Efficiency can consist of a saving in monetary terms, but it can also result in an increasing workload being handled within the same budget or freeing up time for other (new) tasks for employees.

Thus, there is not necessarily a pot of money to be gained in connection with innovations that create efficiency. In some cases, it is more about that without the innovation, it would have been more expensive (or perhaps not possible at all) to solve the tasks that the workplace solves now. When assessing whether an innovation has created efficiency, it can be useful to consider how the workplace's task performance would look now if one had not done something differently.

Public sector innovation often creates several types of value at once. This is also true for innovations that have created efficiency. Only four percent of public sector innovations have solely created efficiency, while 33 percent have created efficiency in combination with one or more other values – often quality and/or employee satisfaction.

REMEMBER THE EVALUATION

When we talk about innovation creating efficiency, it is worth noting that this is the workplace's own assessment of what value the innovation has created. 39 percent of public sector innovations are evaluated, and the proportion of evaluated innovations is neither larger nor smaller when it comes to innovations that have created efficiency.

For the many innovations that are not evaluated, one can question whether the innovation actually created the value the workplace indicates. Are there gut feelings where the outcome could be different if it were examined systematically?

It can be difficult to assess whether something has created efficiency without a systematic approach. Does what you save in the end justify the time and resources invested in development and implementation? How extensive is it to maintain technology, skills, and workflows? And what could have been achieved with the money and efforts spent on the innovation?

Use the [guide to evaluate public sector innovation](#) to get started.

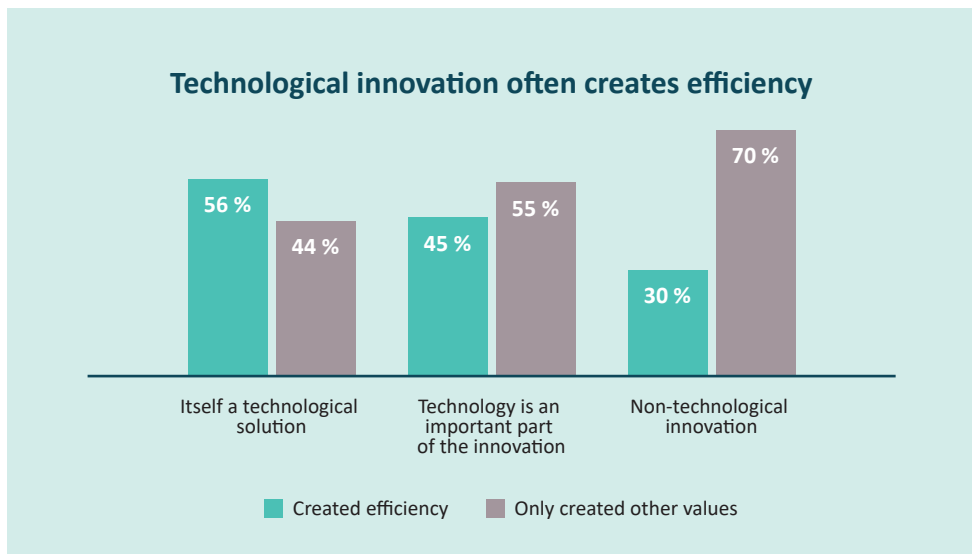
Marie Munch-Andersen,
head of analysis at CO-PI



Technology helps create efficiency

37 percent of public sector innovations are technological in the sense that the innovation itself is a technological solution (11 percent), or that technology is an important part of the innovation (26 percent). In the remaining innovations, technology is only a minor part of the innovation or does not play a role at all – or the answer is "don't know." Technology can cover both physical and digital solutions, but technological innovations in public workplaces are rarely purely physical solutions (COI 2021).

Technological innovations are characterized by often creating efficiency. When the innovation itself is a technological solution, 56 percent have created efficiency, and this applies to 45 percent of the innovations where technology is an important part of the innovation. Non-technological solutions only create efficiency in 30 percent of the cases.



Figur 5: The figure shows how often innovation has created efficiency, depending on whether the innovation is itself a technological solution, whether technology is an important part of the innovation, or whether it is non-technological innovation (i.e., technology plays only a minor or no role, or the answer "don't know" was given). The question is only asked to workplaces that have introduced at least one innovation within a two-year period. The overall difference is significant at a significance level of 0.05. Data is weighted to represent the public sector as a whole. n=1,352.

It is not surprising that there is a correlation between technology and efficiency. Many of the technologies relevant to public workplaces involve letting technologies take over or assist with tasks that humans would otherwise have to perform. This applies, for example, to Syddjurs Municipality's use of sensor technology to measure whether rooms have been used before being cleaned. Thus, cleaning staff do not need to spend time cleaning rooms that do not need it (Deloitte & KL 2022).

The example is part of KL and Deloitte's case collection on time-saving technologies with documented effect. The case collection shows ten examples of how municipalities can save time and resources using technological solutions. The cases also clearly show that one should

not underestimate how many resources it takes to develop, purchase, and implement technological solutions. For instance, the sensor-driven cleaning did not generate economic surplus at the time it was described, as the costs of the sensor technology in the pilot phase were higher than the savings in labor time. Furthermore, the company LOMWAS bore the development costs as part of their own investment in the solution (Deloitte & KL 2022).

KL and Deloitte also emphasize that classic implementation strategies are crucial for the success of technologies. It is not only the technology itself but also how we use it that determines whether the technology helps create efficiency. In the worst case, new technological solutions can end up as extra work to manage and use or as an expensive investment that is not used in practice. In short: Implementation is crucial for reaping the value of the innovation. When it comes to implementing technology, one can use the 80/20 rule as a rule of thumb. The rule describes that only 20 percent of the work concerns the technology itself, while 80 percent concerns all the aspects around the solution and its use that must be in place (COI 2021).

Private companies are a partner in technological innovation

As the case on the next page shows, private companies often play an important role in technological innovations in the public sector. There is collaboration with private companies on 22 percent of technological innovations compared to only 12 percent of non-technological innovations. Thus, private companies are also an important partner in creating efficiency. The correlation mainly concerns the fact that there is often collaboration with private companies on technology – and technology often creates efficiency.

In many areas, technological development is rapid, and private companies are an obvious partner in technological innovation because they have the opportunity to specialize in certain technologies to a degree that is often not possible or advisable in public workplaces. Private companies have entirely different opportunities than public workplaces to invest in the development and adaptation of technology, as they can recoup the investment by selling the solution to others.

Private companies can also play a more indirect role in technological innovation in public workplaces. Even if there is no direct collaboration, the technologies that companies develop and sell can be crucial for innovations in the public sector. For example, it does not require collaboration with a manufacturer for employees to use tablets as part of an innovative solution – but it would not be possible if the technology had not been developed and made available. Such interplay between public and private innovation is not reflected in data from the Innovation Barometer.

When collaborating with private companies to create efficiency, it is worth remembering that the collaboration often involves a purchase that funds must be allocated for. Purchasing is part of 71 percent of all public-private innovations (CO-PI 2023b).

Although the correlation between technology and efficiency is strong, it is still "only" half (49 percent) of the innovations that have created efficiency that are technological. So, technology is far from the only way to achieve efficiency.

CASE

AI access to documents saves time in case processing



Fredensborg, Sønderborg, and Vejen Municipality teamed up in 2021 to develop a solution that can reduce the time spent anonymizing documents in access to documents requests. With artificial intelligence, the time spent on access to documents is reduced by between 33 and 50 percent. This offers the prospect of annual savings of between 3.7 and 5.6 million DKK.



Handling access to documents requests is time-consuming. Employees must both find the relevant documents and anonymize sensitive information – tasks typically done manually.

Across Fredensborg, Sønderborg, and Vejen Municipality, the administrations involved in the project handle more than 2,500 access to documents requests annually. Therefore, the potential to automate the access to documents process and reduce work time is significant.



Fredensborg, Sønderborg, and Vejen Municipality have teamed up to reduce the time spent on access to documents requests.

The solution consists of two components: Sønderborg Municipality previously developed the access to documents platform Aktio Indsiget, which uses RPA (Robotic Process Automation) to identify and retrieve a list of files for the access to documents request based on a CPR number. The platform also automates tasks such as drafting decision letters and records lists, sending decisions to citizens, and archiving. Alone, this reduces manual work.

In collaboration between Fredensborg, Sønderborg, and Vejen Municipality and the company Aktio, the solution has been further developed. A language model has been developed and trained to identify information in texts that potentially needs to be excluded in an access to documents request. Artificial intelligence thus helps anonymize the relevant documents, reducing work time. The solution also contributes to consistent and quick processing of access to documents requests.

The developed language model is publicly available on sprogteknologi.dk.

The project is supported with 5.3 million DKK as part of the signature projects that aim to gather experiences with the use of artificial intelligence in the public sector. KL estimates that the solution can reduce the time spent on access to documents by between 33 and 50 percent, corresponding to annual savings of between 3.7 and 5.6 million DKK across the three municipalities. In rough terms, 1,500 DKK is saved per access to documents request when the time spent is reduced by 33 percent.

AI Insights is one of the ten cases described in KL and Deloitte's case analysis "Time-saving technologies with documented effect."



If you want to know more, contact:

Jesper Schmidt, project manager, Sønderborg Kommune
Tlf. 20 20 64 36 · jssc@sonderborg.dk

Anders Munk Andersen, partner, Aktio ApS
Tlf. 42 78 29 17 · ama@aktio.ai

How can we work with innovation in an economically pressured reality?

So far, we have focused on the positive aspects of limited economic resources. But what about the 34 percent of public sector innovations that are hindered by limited economic resources? And what about the 63 percent of innovations that have not created efficiency?

We now look more closely at the negative impact limited economic resources can have on public sector innovation. Then we turn our attention to the question of how to work with innovation when financial constraints are a reality.

When "less is less"

Cinar et al. point out that a lack of resources is one of the most important organizational barriers to public sector innovation. Resource scarcity can involve a lack of funding, a lack of employees or time, or limitations in the technical infrastructure. Other organizational barriers to public sector innovation include leadership, organizational culture, and lack of competencies (Cinar et al. 2019).

Also, in research on private innovation, economic constraints are described as a major challenge for both the development and implementation of innovative solutions. The argument is that economic resources are needed to support activities such as experiments, idea generation and selection, user studies, collaboration with suppliers and technology partners, and prototype testing. Researchers describe that economic constraints can lead an innovation team to choose not to carry out activities that are otherwise considered necessary. The perception of limited economic resources can mean that one expects low results from the start, blames the organization for not providing more economic resources, or views the project as doomed. Therefore, one might tend to distance oneself from the innovation work (Hoegl et al. 2008).

Data from the Innovation Barometer primarily concerns the innovations that have actually been implemented. There is thus a "survivorship bias" in the data, as we do not see the innovation work that did not result in outcomes. However, we can see that at workplaces that have not introduced an innovation within a two-year period but have worked on developing innovation, limited economic resources are an even greater hindrance than for the implemented innovations. Here, more than half (55 percent) of the innovation work is to a high or some degree hindered by limited economic resources, while it is the case for a third (34 percent) of the implemented innovations. Although these are different workplaces and the proportions cannot be directly compared, it indicates that limited economic resources can play an even greater role in the innovation work that has not yet produced results – or may even be one of the reasons why the innovation has not yet been achieved.

When the economy is pressured, there are basically two ways to go. One can try to get more resources, or one can make do with what one has. These are the two options that we now unfold.

Seek funding sources

The Innovation Barometer shows that public sector innovation can be financed in many ways. Although the workplace manager could point to several different funding sources in the question, there is rarely more than one funding source in play.

The workplace's own budget helps finance more than half (54 percent) of public sector innovations and is thus the most frequent funding source.

One in five (18 percent) innovations is financed by central funds within the municipality, region, or ministry. These can be pools targeted at innovation or funds allocated to a specific professional or focus area.

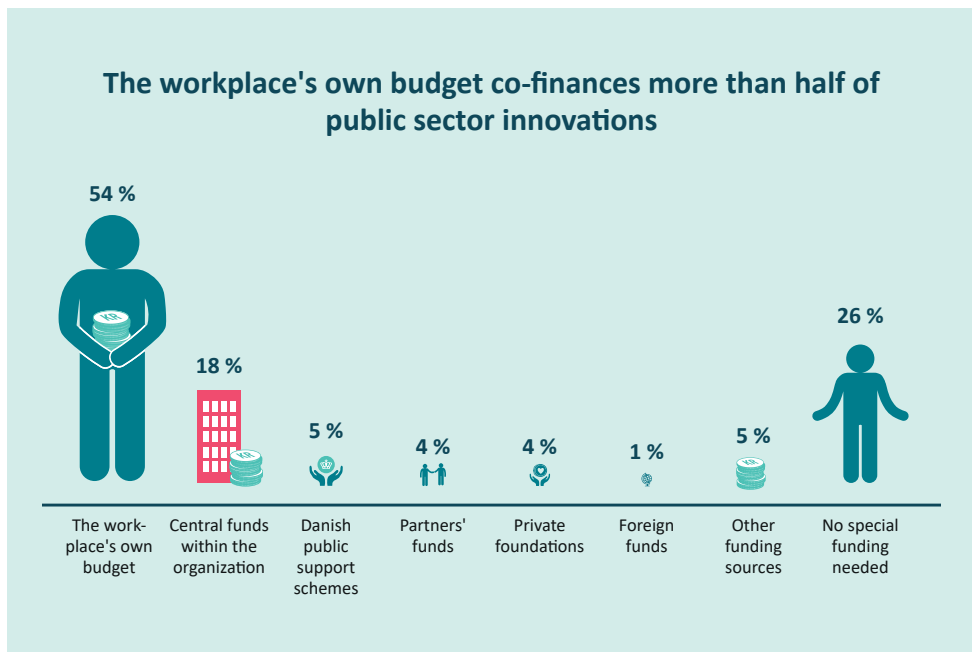


Figure 6: The figure shows how the workplace's latest innovation is financed. The figure is based on the question "how is the latest innovation financed?". The question is only asked to workplaces that have introduced at least one innovation within a two-year period. The percentages in the figure sum to more than 100% because workplaces have had the opportunity to choose several options. The figure does not show the one percent who answered "don't know". Data is weighted to represent the public sector as a whole. n=1,352.

A smaller proportion of public sector innovations are externally funded. Five percent are financed by Danish public support schemes or pools, four percent by partners' funds, four percent by private foundations, and one percent by foreign funds. In total, 12 percent of public sector innovations are (co-)financed by one or more external sources.

An example of external financing is the state pool for signature projects, which has helped finance AI Access to Documents, which you can read more about on the previous page. You can read more about external financing of public sector innovation in CO-PI's report "Financing Innovative Public Procurement in Europe" (CO-PI 2023a).

Finally, five percent of public sector innovations are financed by entirely different funding sources, and a quarter (26 percent) of workplaces indicate that the latest innovation did not require special funding.

Note that while the data provides a valuable insight into the distribution of the various funding sources from the workplaces' perspective, it does not indicate the amounts involved.

In the analysis of technologies that create efficiency, KL and Deloitte describe that the choice of funding model is important and should be in place from the start. Even for innovations where an economic gain is expected, one cannot be sure that it will materialize within the first few years. Therefore, it is not only important to agree on who will cover the development costs. There must also be a clear plan for how the funding will look when the solution is in operation (Deloitte & KL 2022).

” *Therefore, it is not only important to agree on who will cover the development costs. There must also be a clear plan for how the funding will look when the solution is in operation.*

APPROACH FUNDING STRATEGICALLY

External financing is not only about what the individual public workplace does but also about how the organization as a whole approaches external financing.

To strengthen the organization's strategic approach to working with external financing, one can develop multi-year strategic plans that precisely identify and prioritize investment areas in accordance with the organization's long-term goals and needs. By ensuring that projects financed by external sources align with the organization's strategic directions, more efficient resource allocation is achieved. It requires close connections between political discussions, executive decisions, budget processes, and the choice of external partners and funding sources.

At the same time, it is recommended to establish a cross-organizational working group. Key people across the organization can identify and pursue collaboration opportunities with external community actors. Such a group is crucial for creating opportunities for external financing and solving complex problems through strategic partnerships.

The interdisciplinary perspective is important since many projects that require external financing span across different professional areas within the organization. By combining expertise and resources across the organization, it can better meet these challenges and maximize the results of external investments.

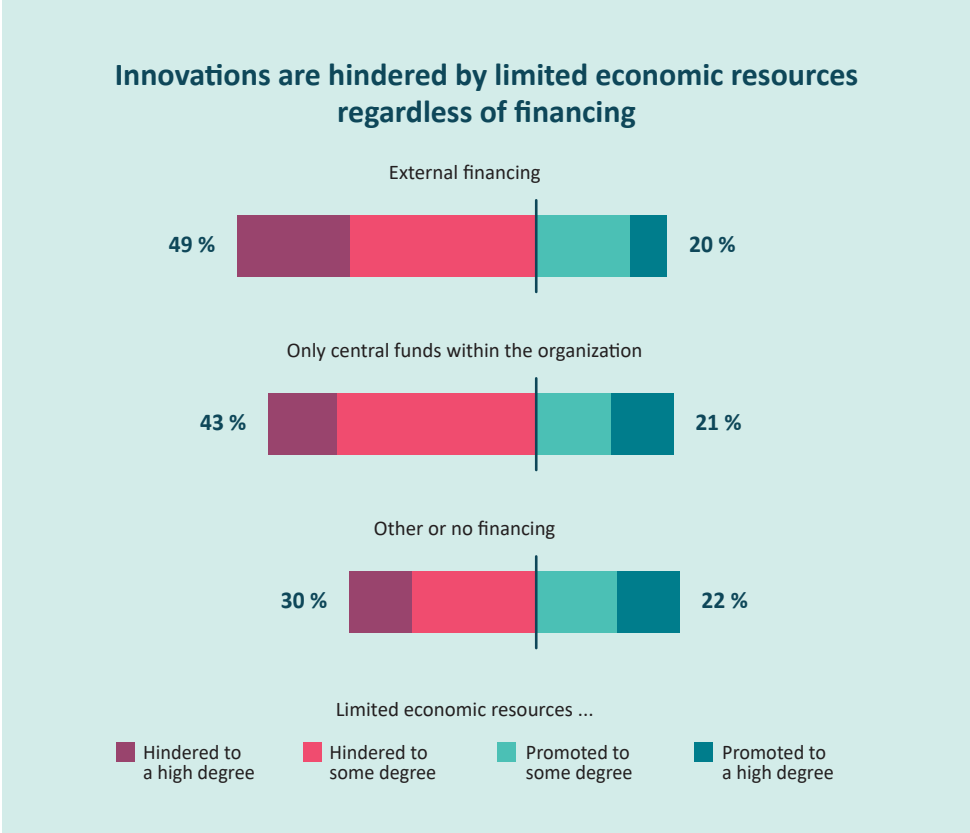
Christian Jentsch,
financing specialist at CO-PI



Financing does not eliminate financial constraints

It is obvious to assume that funding beyond the workplace's own budget can help ease the extent to which limited economic resources hinder public sector innovation. All other things being equal, more money should mean that one is less financially constrained, right?

The Innovation Barometer suggests that this is not the case. Innovations that are externally or centrally funded within the organization are more hindered by limited economic resources.



Figur 7: The figure shows the extent to which limited economic resources promoted or hindered the latest innovation, depending on whether the innovation is externally financed (public support schemes, foreign funds, private foundations, and/or partners' funds), has received central funds from within the organization (but no external funds), or only has other or no funding sources (only the workplace's own budget and/or other funding sources, no funding needed, and don't know). Note that the three groups, unlike Figure 6, are mutually exclusive. The question is only asked to workplaces that have introduced at least one innovation within a two-year period. The percentages do not sum to 100% because the answers "don't know" and "not relevant" are excluded from the figure. The overall difference is significant at a significance level of 0.05. Data is weighted to represent the public sector as a whole. n=1,352.

Thus, half (49 percent) of the externally financed innovations are to some or a high degree hindered by limited economic resources, while this applies to 43 percent of the innovations that have received central funding within the organization without also receiving external financing. In the broad residual group of innovations that are only financed by the workplace's own budget, have not required financing, are financed in other ways, or have answered "don't know" to the question, only 30 percent are hindered by limited economic resources.

There is no difference in how often the differently financed innovations are promoted by limited economic resources. The proportion is just over 20 percent within each of the three groups.

The correlation is thus precisely the opposite of what one might expect. Innovations that have external or central funds available are also those that are most hindered by the lack of economic resources. It is therefore clear that funding from external sources or centrally within the organization does not eliminate the perception that limited economic resources hinder innovation work. There can be several explanations for this.

The figures may indicate that regardless of the funds available in an innovation process, there is a risk that both the process and the solution will be more expensive than expected. Professor Bent Flyvbjerg and journalist Dan Gardner describe that projects, in general, are often planned based on a "best-case scenario" where everything goes well, while larger projects in reality always encounter various challenges along the way, often exceeding the allocated economic buffers. Flyvbjerg and Gardner suggest that for large and small projects alike, it is better to base plans on the experiences from similar projects within the same area, as these often provide a more accurate picture of the actual project course and costs (Flyvbjerg & Gardner 2023).

However, it is worth noting that it is not random which innovation projects receive funding. The projects that receive funds may initially be among those that need it the most – for example, because they operate in areas with very tight budgets or seek funds for ambitious innovation work with many built-in risks. We do not know how the figures would look if the externally and centrally funded innovations had not received funding. Perhaps the perceived economic constraint would be even greater? Or maybe the innovations would not have been possible at all?

The perception that limited economic resources hindered the innovation does not necessarily mean that the project ended up being more expensive or time-consuming than planned. It can also mean that one did what one could with the resources available but is aware that more could have been achieved with additional resources. Doing what you can with what you have is precisely the mindset we will now delve into.

The case on the next page illustrates that public sector innovation also involves small, new, smart approaches and solutions developed by employees and leaders across the public sector every day, which do not require many resources.

CASE

Rapid Service ensures quick delivery of assistive devices



Since 2019, the municipality of Copenhagen has run the Rapid Service, where citizens with permanent disabilities can apply for, have their case assessed, and receive an assistive device in one go. This makes the process faster for the citizen and saves the municipality a range of expensive administrative processes.



Getting an assistive device can be a slow process, as it typically involves several different actors. It is both costly in administration for the municipality and cumbersome for the citizen to apply for even small assistive devices.

Before the Rapid Service was introduced, the citizen had to first apply for an assistive device, after which this application had to be assessed by a caseworker before the device could be delivered to the citizen from the Assistive Device Center. The device was then delivered to the citizen by a driver who conducted a brief review of the device with the citizen. It was thus not only a slow and costly process but also one where the citizen did not have the opportunity to try different devices under the guidance of a qualified therapist. Therefore, it was common for the citizen to receive a device that did not suit them, and the process had to start over.



The Health and Care Administration in the Municipality of Copenhagen has, with the Rapid Service at the Assistive Device Center, eliminated several administrative steps in the delivery of assistive devices, where the administrative costs for assessment and dispatch or delivery exceed the price of the device itself.

Now, citizens with permanent disabilities can apply for, try out, and receive an assistive device on the same day. The citizen can show up without an appointment at the Assistive Device Center, where they, in dialogue with an occupational or physical therapist, try out and select the right device, which the citizen can then take home. The employees themselves assess the citizen's needs and can then find the right device in the stock at the Assistive Device Center.

The new approach gives the citizen quicker and easier access to assistive devices, reduces case processing time, and lowers distribution costs, as the citizen takes the device home themselves. Additionally, it allows the citizen to try out a range of devices and find the one that suits them best, reducing the likelihood that the device will need to be exchanged.

The Rapid Service is inspired by a similar solution in Frederiksberg Municipality, and several other municipalities in the country use the model.

Implementing the service requires few resources, primarily for setting up the premises and managing inventory. The Assistive Device Center in the municipality of Copenhagen saves roughly one million DKK annually by using the Rapid Service. The savings primarily come from reduced case processing, but there are also savings on follow-up visits, delivery, transport to the citizen, and exchanges of devices.



If you want to know more, contact:

Didde Neuchs Christensen, head of the Assistive Device Center,
Health and Care Administration, Municipality of Copenhagen
Tlf. 21 71 02 28 · fb5t@kk.dk

Making do

Innovating with the means and reality at hand can be called "frugal innovation." It can be summarized as "doing more with less for more" (Corsini et al. 2021) and is also known as "jugaad innovation," as the Hindi word jugaad describes an improvised and ingenious solution. The concept originates from India, where Navi Radjou and Jaideep Prabhu have used it to describe how entrepreneurs in countries like India, China, Brazil, and Kenya develop innovative solutions with very few resources, which can also be used within the constraints that the local population experiences (Radjou & Prabhu 2015).

An example of frugal innovation is a clay refrigerator that does not require electricity and thus can keep food cool in areas without electricity (Weyrauch & Herstatt 2016). Frugal innovation has also become a popular concept in industrialized countries, where companies, consumers, and the public sector seek solutions that are both cheap and functional.

Researchers Timo Weyrauch and Cornelius Herstatt identify three criteria that recur across many definitions and contexts of frugal innovation:

1. **Significant cost reduction:** The solution must be significantly cheaper for end-users to buy or use compared to conventional solutions.
2. **Focus on core functionalities:** The solution must be simple and able to address the fundamental needs rather than having less important extra features or fancy designs.
3. **Optimized performance level:** The solution must not compromise on quality but be able to perform the same as conventional solutions (Weyrauch & Herstatt 2016).

Authors like Radjou and Prabhu also emphasize that frugal innovation is a sustainable approach to innovation. It aligns with the fundamental mindset of frugal innovation to use fewer resources for production, for example (Radjou & Prabhu 2015).

The prospect of solutions that are cheap, high-quality, and sustainable is appealing, but it is challenging to formalize how they are developed. Instead of a formula, it involves working towards a goal of focusing on the fundamental needs of the end-user. This goal is met as efficiently as possible while considering the end-user's constraints. In a Danish context, the end-user's constraints are unlikely to involve a lack of electricity, but the mindset can be transferred to other conditions, such as how digital solutions work for citizens with poor access to computers or the internet.

REUSE OTHERS' SOLUTIONS

In the public sector, it is perfectly acceptable to "steal" solutions, and workplaces are quite good at this. Three out of four public sector innovations are actually reuses of others' solutions. Reusing solutions allows for quicker implementation and builds on the experiences others have already made. Learning from others' mistakes and successes is crucial when spreading innovation, and public workplaces could become even better at this.

Some reused solutions are directly copied from one workplace to another, but in most cases, the solution is adapted to the new workplace. Before starting the significant adaptation work, it is a good idea to test whether and how the solution actually works in one's own context. This provides a much better basis for assessing how the innovation should be adapted.

Use the [Guide for spreading innovation](#), which helps both sharers and reusers ask the right questions in the spreading process.

Majken Præstbro,
innovation specialist at CO-PI



EXNOVATE

While innovation is essentially about doing something new that creates value, exnovation is about stopping doing something. For example, a study from Steno Diabetes Center showed that many people with diabetes have their eyes checked annually to prevent complications. However, many of the patients have such good control of their blood sugar that they can manage with eye screenings every five or ten years – and the resources used for annual screenings can be beneficial elsewhere.

Exnovation can be a form of innovation in itself or part of an innovation process where one actively considers whether the innovation has made other tasks or workflows redundant. It is important to consider what needs to be phased out to make room for the new. Otherwise, innovation can end up meaning more tasks.

Use the [exnovation tool](#), which also helps you consider whether other areas in the organization are affected.

Lene Krogh Jeppesen,
chief consultant at CO-PI



Altitude in innovation?

No matter how good we become at innovating with few resources, reusing others' solutions, or exnovating, there are still limitations with limited economic resources.

In 2022, CO-PI analyzed which public sector innovations could potentially impact society's "wicked problems" such as the climate crisis, labor shortages, and youth mental health issues. These are innovations that have both scale and a completely new approach that breaks with the existing. The analysis shows, among other things, that the innovations that can potentially impact wicked problems very rarely can be achieved without some form of funding (CO-PI 2022).

In the same vein, BETA and COI's analysis of public top leaders' innovation agenda from 2020 describes that it is particularly radical innovation work that is pressured by limited economic resources. Incremental innovation work focusing on adjustments to the existing can, to some extent, be achieved. But it is difficult to create flight altitude in innovation work when one is "bogged down in operations." Radical innovation also requires a different management logic than one aimed at efficiency and optimization (BETA & COI 2020).

In the pursuit of creating innovation in an economically pressured reality, we must therefore also acknowledge that there are simply limits to what innovation work can be done without human and economic resources.

” *In the pursuit of creating innovation in an economically pressured reality, we must therefore also acknowledge that there are simply limits to what innovation work can be done without human and economic resources.*

Read more

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Here's how we did it

The Innovation Barometer is the world's first official statistics on public sector innovation. The statistics are prepared by The National Centre for Public-Private Sector Innovation in collaboration with Statistics Denmark. This is the fourth time the survey has been conducted. Previous rounds were published in 2015, 2017, and 2020.

This fourth round is based on responses from 1,611 public workplaces, and the results are weighted to be representative of the public sector. The responses were collected from April 21 to June 7, 2023, via a web-based questionnaire sent by email to the workplace's top manager. The responses relate to any innovation activity in the past two years, i.e., from spring 2021 to spring 2023. It has been voluntary to respond to the questionnaire, and the response rate is 36%. You can see more about the survey method at co-pi.dk/innovationsbarometeret and at [Statistics Denmark](#).

The correlations and differences highlighted in the text are significant at a significance level of 0.05 unless otherwise stated.



INNOVATION BAROMETER

The Innovation Barometer is the world's first official statistics on public sector innovation. The statistics are prepared by The National Centre for Public-Private Sector Innovation in collaboration with Statistics Denmark and are representative of the entire public sector in Denmark. Four rounds of data have been collected; in 2015, 2017, 2020, and most recently in the spring of 2023. You can read more about the surveys at co-pi.dk/innovationsbarometeret and at [Statistics Denmark](https://www.statistik.dk).

Public sector innovation in the survey is defined as a new or significantly changed way to improve the workplace's activities and results.

Inspired by the Danish survey, public sector innovation barometers have been developed in all the Nordic countries, and even more countries are on their way.

You can read more about the international surveys at innovationbarometer.org.