The Urban Lab of Europe!

JOURNAL

PROJECT

DIACCESS - Digital ACCeleration for medium SizE Sustainable cities

Växjö, Sweden

TOPIC

Digital transition

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Journal 3 DIACCESS project

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Executive Summary The project has entered its extension stage; the digital lab and IT platform are completed. Three innovation partnership procurement projects continue developing towards 3 solutions for 1) smart heating, tested at schools but later to be applied to other older buildings; 2) Smart snow clearance and de-icing; 3) smart waste collection/bin emptying. The development phase of the cycles will end in February 2023. The planned 5 cycles of innovative partnerships will not be reached within the project period. Discussions are ongoing how to extend Digital Lab in the future, as it has delivered good results. The IT platform is active, yet it is not used by the Innovators related to the project cycles as envisioned in the project proposal.

1. What the DIACCESS project is about

The DIACCESS project centers around the application of the ***innovation partnership model (IPM),*** a procurement model that is not that new (introduced in 2014) yet not widely used. The model is useful when a public authority wants to have an innovation that is not yet available on the market. It is different from “regular” procurement in the sense that the city does not purchase a well-defined and known product or service from a company; rather, it invites one of more companies to co-develop a solution for a broader defined problem or challenge. After a selection procedure, the authority signs a contract with a company (or consortium of companies), that includes an R&D phase and an implementation phase at the same time. During the development phase, the new solution is co-developed by the company and the authority. After this is done successfully, the company will become the city’s supplier and will start to make a revenue; the authority does not have to write out a new procurement procedure to implement the solution. In the case of Växjö, the city is not interested in owning the intellectual property rights (IPR) of the new solution, product or service: that will stay in the hands of the company. So, the company can in principle also sell this solution to other cities. This should make it attractive for companies to enter in this partnership. A broader client base for the innovators is also good for the municipality as the product will be more likely to thrive and develop.

In DIACCESS, the project proposal foresaw five cycles of IPM. In each one, companies would be invited to develop solutions for one or more urban challenges, to be gathered from the city or one of the city-owned companies. The project envisioned a learning curve, in which urban authorities learn how to use this type of procurement in a good way (and obtain better urban solutions that are useful for citizens, city staff and/or save taxpayer money), and in which companies also get used to this new way of dealing with city authorities and may develop new markets. It was hoped that this type of IPP will lead to more digital innovations in the public sector, and also helps companies to explore new

markets and hence create economic development and job growth.

Alongside these IPM rounds, the DIACCESS project included the development of a **Digital Lab,** aimed to develop and prototype new urban innovations. The Lab works at the service of the city: departments can approach the Lab with challenges or problems, to have it explore if there is a possible solution. Another role of the Lab is to make prototypes that demonstrate how digital technology can work in practice. For municipal departments, it may take a lot of imagination to foresee how a solution might work, and in that case, a prototype or a proof of concept, even an imperfect one, can help to demonstrate in practice what can be achieved. The Digital Lab would also have a social function, by training unemployed people to obtain new skills that may help them to find a job. On a half-year rotation basis, four selected trainees, supervised by experienced IT experts, learned how to develop digital solutions.

Finally, the project set out to develop an urban **IT platform** to store, process and visualise the data that are generated by (and used by) the new digital innovations. The platform should provide its users with insights and information for better decisions and automated activities. The platform is to be open for all actors to provide and collect data with a built-in payment mechanism that will encourage private actors to deliver data on commercial terms.

2. Update of the project

This section provides an update of the progress of the project at the time of writing (September 2022) in the three main domains: the innovative public procurement, the digital lab, and the IT platform.

2.1 Update of the innovative public procurement (Innovation Hub, WP4)

The procurement procedure envisioned in the project turned out to be more time and resource consuming than expected. By Winter 2022 it became clear that the original plan to have five cycles (and then each one resulting in three innovations) was far too ambitious. Moreover the progress of the project was halted by the pandemic, making f2f meetings difficult if not impossible, whereas the development of new approaches asks for a lot of communication and trust, which is better facilitated when you see each other in person. Also, the pandemic asked a lot from the flexibility, capacity and ingenuity of the city staff to maintain their daily work; it was not easy to engage people in a new way of working with IPP.

It was decided to downsize the project to 3 cycles instead of 5, and agreed with UIA to extent the project of six month, beginning the 1st of September 2022 and ending 31 March 2023. The extension period would be used to bring the IPP cycles to a good end.

The first two cycles had resulted in three innovation projects: two for the first cycle (smart snow clearing, smart heating system) and one for the second (efficient waste collection). The third cycle started promising, it went in the direction of having a food delivery solution for the elderly, but in the end this project was abandoned because the gains for the involved city department (and the end users) was considered too low in relation to the costs. There were two more innovations in circulation: Automized Water irrigation and Increased circulation of building material, but both did not developed enough.

At the time of writing of this journal, three projects are still running, until March 2023. There has been substantial testing and tweaking in the last months; for two solutions (school heating and snow clearing) the coming winter is an essential testing period to further develop and refine the solutions. this happens in close co-development process between need owner (municipal department) and supplier, asking for a lot of management and coordination, especially in projects with a high level of technical and organisational complexity.

At the current stage, the key assumptions of each project are being validated. Development goes around the further improvement of the services. For example for the snow clearing solution, the partners are now analysing smart new ways to measure when and where roads are slippery as to optimize the clearing routes. And for the waste collection solution, interview were held with the truck drivers to have their perspective on the challenge of overloaded bins, and to see what the solution could bring in terms of different work practices.

For all solutions, it became clear that the issue of data ownership and management worked out differently than expected. The city wants to own (and be able to use) the raw data generated by the sensors that the projects install, and had envisioned the IT platform as a solution to gather these data and have them eventually used by third parties. But the suppliers preferred to use their own data systems, and want control over them because data are valuable.

To summarize, the conclusion is that the original ambitions of the IPP were not met in terms of the number of innovations, the time frame, and the data management. But importantly, there are indications that DIACCESS has a lasting impact on procurement practices in the city. City managers and department leaders are now aware of this new way of innovative purchasing, and it is increasingly used.

2.2 Update and evaluation of the Digital Lab

The Digital Lab has ended its operations officially by the end of August 2022, the original end of the DIACCESS project (without extension). The final event of the Digital Lab was an excursion of the team members and trainees to the city of Kalmar, where they learned about how that city is dealing with smart city challenges. They visited the IoT lab and two ICT companies.

Looking back, the Digital Lab can be considered a success in several respects. During its lifetime, the Digital Lab has made several prototypes that demonstrate how digital technology can work in practice (see earlier journals). Also, it has educated a number of people who are now prepared for a job in the ICT sector: the Digital Lab was committed to train unemployed people with some distance to the labour market to obtain new skills that may help them to find a job. The Digital Lab was also intended to work in close harmony with the suppliers and need owners of the procurement process (as described in 2.1), but in practice, this did not really materialise mainly because the selected suppliers preferred to work with their own staff. As a result, the prototypes developed in the Digital Lab were very useful indeed, but have had little if any relation to the solutions developed by the suppliers.

Looking forward, the question is now on the table how to restart the digital lab without the support of the DIACCESS project. Policymakers recognize the social value of the project and currently explore opportunities to mainstream it within the social department of the IT department of the city.

3. The challenges

3.1 Leadership

The project leadership is effective and adequate, though its tasks were slimmed down from the start of the extension period as the work packages on the IT platform and the digital lab have expired. The city management is still interested to scale up Innovative Public Procurement and supports the DIACCESS project. The experiences from DIACCESS are seen as valuable and stepping stone for later innovation projects using Innovative Public Procurement.

3.2 Public procurement

In this project, public procurement is a central element, if not the foundation: a key objective is to co-create digital urban solutions with private suppliers, through innovation partnership method.

Five lessons have been derived on public procurement:

1. Time Management. Applying Innovation Procurement Partnership requires time and continuous dialogue with bidding suppliers during the negotiation phase in order to reach solutions in a partnership.

2. Focus on necessary requirements and the effects, rather than demands. In traditional procurement focus is placed on “SHALL” and “SHOULD” requirements, whereas in Innovation Procurement it is about minimizing such requirements that can narrow the innovation. Växjö had to learn to put more focus on formulating the organization’s needs, and the type of outcome they expect from the new solutions.

3. Reach early agreement on requirements for placing orders and maintenance. What differs with the procurement of innovation partnerships from traditional procurement is that the agreement includes both parties in an early stage where both contribute to developing solutions as well as enjoying them. Even though the agreement is settled at an early stage before its development, one must not forget to follow the contracted terms after the developed solutions are at place.

4. A good dialogue between parties is vital during the entire partnership. Dialogue is central both during the procurement process as well as during the development phase. It is important that both parties’ perspectives are taken into consideration. Many meetings are required to create an understanding of the needs and its process. As new inventions will affect how the organization’s employees will work in practice, the end-users should be included in the dialogue to give their perspective already at an early stage.

5. Keep the focus. With a lot of dialogue, it is easy to come up with new requisites, new solutions and bigger plans than the original. It is advisable to “park” these new ideas for the future.

3.3 Organisational arrangements within the urban authority (cross-department working)

DIACCESS involves in principle every city department that wants to develop a smart city innovation with a supplier.

The procurement department takes a central role, as they are the ones to support the departments and help to draft the contracts. The city CEO (and her team) is still a strong advocate of the project and “sells” the project among the department leaders, and gradually it becomes more normal for municipal departments/companies to take up the role as problem owner. Thus, there are signs of mainstreaming of the method within the city administration.

3.4 Participative approach for co-implementation

The participative approach is strongly adopted in the innovations that are currently under development: snow clearing, school, heating, waste collection. In all of them there is close involvement of workers (snow ploughers, planners, drivers) and end users (citizens, school masters and teachers, inhabitants of social housing estates, commuters, depending on the type of solution). Hence in DIACCESS, participation has two aspects: the involvement of end users, and of workers/contractors who have to work with the innovation.

3.5 Monitoring & evaluation

The project leadership continues to monitor if the project goals, timelines deliverables and milestones are met. For the various challenges, it proved difficult to find/collect baseline data and results/performance indicators for the specific challenges, but in the end, for the three challenges addressed (snow clearing, school heating and smart waste collection) the project has managed to make it and continues to monitor it during this winter. It proved not so easy to qualitatively monitor the wider overall objectives of the project, such as “increased supplier participation”, “satisfaction with suppliers”, or “satisfaction with the municipality”, again there is a lack of baseline data, departments so far have delivered little relevant information, partly because they do not have it and partly because they are occupied with so many other things due to the pandemic. Hence, it is still a challenge for the project to collect the needed data, but also to develop more qualitative methods to assess the various types of impacts.

3.6 Communication with target beneficiaries and users

As reported in the previous journal, communication with the external interest groups (potential suppliers/innovators, other municipalities, public sector, etc.) has improved significantly in DIACCESS, thanks to the experienced communications manager who pro-actively reaches out to the business community, not only in the region but also nationally, and also within the municipal department. In the extension period, the team focused on communicating about the further improvements and testing of solutions for the challenges.

3.7 Upscaling

The upscaling in DIACCESS has three dimensions:

1. The project is mainstreaming, i.e. leading to a wider application of innovation procurement methods (especially innovation partnership) and a culture of co-development and experimentation in the city. Here, progress has been good, DIACESS is well known among the departments.
2. Scaling is relevant for the suppliers that co-develop solutions with the city. The city prefers not to own the digital solutions developed by the companies, but rather buy a licence, and the IP remains with the companies. The companies manage to attract new clients thanks to having Växjö as their launching customer.
3. DIACCESS is scaling up in the sense that it acts as an example and catalyst for the adoption of innovative procurement and digital innovation for smaller municipalities in the wider region. DIACCESS helps to build capacity in those smaller and less resourced municipalities, as is happening in the school heating subproject, where a regional network of schools are following the results.

Suppliers increasingly understand the method; the procurement department and city departments have gained experience they will use to continue with Innovation Partnership projects after DIACCESS. A point of concern remains the mobilisation of more needs in the municipality: who will do that, after DIACCESS ends?

4. Conclusion and lessons learnt

The project has entered its extension stage; the digital lab and IT platform are completed. Three innovation partnership procurement projects continue developing towards 3 solutions for 1) smart heating at schools; 2) Smart snow clearing; 3) smart waste collection/bin emptying; These cycles will end in February 2023 and are closely monitored. The planned 5 cycles of innovative partnerships will not be reached within the project period.

There are ongoing discussions how to extend Digital Lab in the future, as it has delivered good results. The IT platform is active, yet it is not used by the suppliers as envisioned in the project proposal.

Despite some delays due to COVID-19 and slower-than-expected negotiation stages, DIACCESS is developing well. The city continues to gain a rich experience how to work with innovation partnership model of procurement, and three concrete and useful urban innovations are under development. Due to strong communication effort, suppliers now better understand what IP is, and how it works;

A great result is that the DIACCESS project is getting noticed, and that the solutions under construction already attract the attention of other cities, even before they have been fully implemented. This is good news for the suppliers involved in DIACCESS who see new market opportunities emerge (one of the goals of DIACCESS).

Concerning the digital lab, it has showed amazing results both in terms of outputs (8 prototypes have been created) and its role in educating people out of the labour market, so it would be really worthwhile to find a way to continue it.

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