



ERUDITE 2

Enhancing Rural and Urban Digital Innovation Territories

Case study report – using Social Economic Environmental Return On Investment, SEROI+

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Background

The aim of the project in the previous first phase was to create new community partnerships and new services that will fully exploit the economic and social potential of these networks and respond to real public, private and community needs. The main outcomes from the first phase for the Association of local authorities in Västernorrland (ALAV) and its stakeholders were exchange of experience in the partner regions (e.g. study visit to Örnsköldsvik, and two conferences on the theme group e-health in Västernorrland) as well as effect analysis of several digital services. Our e-collaboration platform was highlighted as best practice. Two SEROI analyses were performed and the calculated socio-economic effects of a multitude of digitalized services in Örnsköldsvik municipality gave an ROI of 770%. A new e-service for vaccination of school pupils, including automation of mailings / reminders + follow-up / effect analysis of student health, was also used in Timrå and Kramfors municipalities. In addition to all this the first phase made a basis for our regional projects Digitalization guide (DG) and Available e-services in the public sector that shortened as DG and TEO respectively.

When the second phase of the ERUDITE project began in October 2021 our stakeholders had successfully extended in digital transformation of activities on areas of school health or pupil health mainly on a digital vaccination consent service for all primary schools in Örnsköldsvik and Kramfors municipalities. Therefore, the focus area in this phase became school and student health, but within the context of the covid-19 pandemic and its impact on activities.

ERUDITE first phase

The first phase of European Interreg project ERUDITE was a collaboration between seven different EU regions, Sweden, Finland, France, Ireland, Slovenia, Italy and Hungary and the research institutes RISE (SWE) and the University of Ljubljana. The project aims to develop rural areas with the help of new, innovative e-services and take advantage of the potential that fast broadband networks can provide. The project's first phase took place between April 2016 and March 2018. The goal was to better prioritize and channel the public investments made in digital services, e.g., in health care, elderly care, school and public administration. This is done with an intensive exchange of knowledge and with the help of new methods of innovation and socio-economic impact (so-called SEROI analysis, Socio Economic Return-On-Investment). In this phase ERUDITE followed up on parts of the digitization and business development that is ongoing within the e-Collaboration project. To better understand how e-services are used, we have evaluated around thirty key services within the municipality of Örnsköldsvik. The report can be found at the bottom of this page.

ERUDITE first phase results in Timrå and Kramfors municipality

All children in Sweden are offered protection against serious diseases through a national vaccination program. Before the vaccination, the guardians need to respond to the vaccination offer. To provide this service the municipality of Timrå and Kramfors were devoted to work with consent of vaccination. To enable automation, Kramfors started the development work by developing an e-service. Consent of vaccination had previously been obtained both in Kramfors and

Timrå on a paper form that the responsible school nurse distributed through the students or via letters to the relevant custodians for registration. In the fall of 2018, Kramfors went ahead and developed the automation solution together with one supplier. Since Kramfors did not have any planned dispatches that were in place at that time, it was decided that the solution would instead be tested in Timrå municipality, since the school nurses in Timrå were already interested in the prospects of a new digital solution. With the common open-e platform which is widely used in municipalities the e-services could be shared directly seamless between intranets.

There is a great quantitative benefit in automating the management of vaccination concessions e.g., in the time savings, mailing and reminders. The e-service have resulted in an increase in the number of correct cases received in a timely manner. There are good opportunities for upscaling and further efficiency improvements: There is a good opportunity for increased use of the e-service since the target group is positive to e-service. The solution contributes to several different qualitative benefits. Parents are positive about the service that simplifies and facilitates them. There are also benefits for the children who do not have to carry the notes between school and home, and sometimes between custodians, and for teachers who in some cases have spent time helping in the administration.

Impact analysis of e-services in Örnsköldsvik municipality

Since 2014, the municipalities in Västernorrland have been conducting the e-Collaboration project with the aim of developing and implementing region-joint e-services in all municipalities within the region. In addition to these seven municipalities, a couple of other municipalities from other regions have also joined the collaboration. To better understand which effect(s) (social benefit, benefit to citizens) these e-services have had, there is a need within the region to clarify and quantify the possible effects that have been achieved. By that time, a relatively large number of e-services will already be implemented in Örnsköldsvik municipality (based on the same platform) and more will be in development or planned.

The goal of the survey was to find out which of the e-services in Örnsköldsvik municipality that had been successful (or less successful) and to be able to quantify the effects. The survey involves a socio-economic analysis, and the focus of the study is to evaluate selected e-services which have been prioritized as key services within the municipality of Örnsköldsvik based on the municipality's administrations and operations. The method used in the study is a combination of quantitative and qualitative analysis, which gives a greater opportunity to generalize observations on a population, while maintaining a deeper understanding of how and why certain effects occurred. As a main analysis tool, so-called SEROI analysis (Social and Economic Return On Investment) is used. On behalf of the municipality of Örnsköldsvik and ALAV, the consulting company Stelacon has carried out the study, with the support of the research institute RISE.

ERUDITE second phase

The second phase of the European Interreg project ERUDITE was a collaboration between eight partners in six different countries: Digital Nièvre Joint Authority (France) Lead partner, Burgundy Franche-Comté Regional Council (France), ERNACT (Ireland), University of Ljubljana (Slovenia), Regional Council of South Ostrobothnia (Finland), Pannon Business Network Association (Hungary), RISE (Sweden) and Association of Local Authorities of Västernorrland- (Sweden). Methodological support was given by researchers from RISE and the University of Ljubljana.

In the second phase focus area became school and student health within the context of the covid-19 pandemic and its impact on activities. The aim of this additional one-year project was to conduct COVID-19 impact analyzes of a selected digital service and improve the Social Economic Environment Return on Investment (SEROI +) methodology. The services being evaluated or studied could, for example, already be implemented or new ones could be planned. It can also be services that have made a difference during the pandemic or that have fulfilled their function thanks to the pandemic. The main question in this context is how did digitization help when covid broke out?

In addition to this, the aim was also to study how the pandemic have affected the project's results from the first stage and to further share experiences on how the crisis has affected and possible measures to face and recover from it. Above all, this is to conduct the exchange of experience between partners regarding the effects of the pandemic on the digital services. When this phase began in October 2021 our stakeholders had successfully extended in digital transformation of activities on areas of school health or pupil health mainly on a digital vaccination consent service for all primary schools in Örnsköldsvik and Kramfors municipalities.

Activities during Erudite 2

The second phase of Erudite started in October 2021. The municipal association of local authorities, ALAV have included Kramfors and Örnsköldsvik municipality in the project. It was these two municipalities that participated in the first phase of Erudite project. In this phase, the focus area has been School and student health in the wake of the covid-19 Pandemic. The municipal association together with stakeholders Kramfors and Örnsköldsvik municipality, with the support of RISE, have carried out several activities.

The activity began by answering a survey about digital services that are relevant to analyze - to highlight how usage and benefits looked like before the pandemic and whether this has changed during the pandemic. ALAV and its stakeholders participated in the meeting(s) of the Interregional Steering Committees in the reporting period. Introductory training in the SEROI+ method have been carried out for stakeholders (decision makers and civil servants in the municipalities). A SEROI+ analysis of digital vaccination consent has been carried out in Kramfors and Örnsköldsvik with the support of RISE. Exchanges of experience have been carried out on an ongoing basis with partner countries digitally and physically. Three physical project meetings have been held, first in Slovenia in March and second in June in Finland. We have made input into improvements to the municipalities' policy instruments. In addition, input to improvements to the SEROI+ method as well as to the design of the new interactive SEROI calculator.

Project group meetings, stakeholder meetings, partner meetings and exchange of experiences, interviews with stakeholders, desk research and workshops have been carried out. The project group had recurring meetings every two weeks and more frequent contact between meetings over a period of one year. The association of municipalities with the support of RISE held several stakeholder meetings, which started with

an introductory training on the SEROI methodology for stakeholders and followed by interviews with key people, decision makers, managers, school nurses and digitization strategists. In the meantime, desktop research has been carried out and in June a joint workshop where the results of completed SEROI analysis on vaccination consent services in Örnsköldsvik and Kramfors were shown. Partner meeting and experience exchange in Slovenia, Finland and in September ended with a final conference in France.

Vaccination consent Örnsköldsvik municipality

Örnsköldsvik have developed a solution for consents as above, but which can also be extended to more information collections than vaccination consents. In short, the solution consists of an ordering application where each nurse can follow their cases from order to journal entry, whether it concerns consents for vaccination or other data collection. The solution is based on the nurse's view, where an overview of the classes one is responsible for is offered. The nurse orders collection for students and what information is to be collected and an RPA solution posts the case in the external case management platform under the responsible guardian in Open-E platform. The guardian receives a notification that they have a case to answer and can then go into a started case that is pre-filled with information that the municipality already knows and finish it by entering information plus signing. If there are several custodians, the case goes on to the next and when all custodians have signed, the case is submitted, and another RPA process downloads the case and enters the response into the record system. The solution was implemented in spring 2022 and used in production from autumn 2022.

Vaccination consent Kramfors municipality

In Kramfors, this process began in 2018. Kramfors used service design as a method and in-depth interviews with guardians to find out what their needs and experiences were regarding the entire vaccination process. Step two was to map the entire vaccination process and after that the e-service was developed together with the school nurses who had filmed the moments and could now sit together with the programmers. The municipality had to update its webpages on vaccination to meet the needs of the residents. The automation was first tested at a school with good results. In year two, all schools had to try the e-service to varying extents. Development areas and possible pitfalls were identified. In year three, the vaccination consent e-service was fully used. Digitizing the vaccination consent have created increased digital awareness within the student health organization and four more e-services have been developed to ease the administrative burden for the school nurses and to increase the service to the municipality's residents.

SEROI analysis and impact of Covid-19 on vaccination consent e-services

During the project we have conducted two cases studies (using SEROI+ methodology) of the impact of introducing a digital vaccination consent service for all primary schools in the municipalities of Örnsköldsvik and Kramfors. A particular focus was set to identify impact related to the covid pandemic.

New functions and features have also been introduced in the service, compared to previous study done in the first, main phase of the ERUDITE project.

We have conducted the SEROI analysis with the aid of an impact map using different means of input research:

- Interviews with key stakeholders
- Workshops
- Desktop research (indicators and values)

The output (indicators, proxy values, sources etc.) has also been used as input to the SEROI+ calculator development team.

Stakeholders

We have identified and analyzed the impact of the service for the following main stakeholder groups:

- School nurses
- School health organization (e.g. HR, financial)
- Legal guardians
- Pupils
- Teachers
- IT and support staff

The stakeholder group politicians/decision makers have also been affected but regarded as the stakeholders responsible for investments and operating costs needed for the implementation.

Activities, investments, and operating costs

The following activities and their corresponding investments and/or operating costs have been identified:

- Operational cost of vaccination consent e-service: Recurring annual fees and cost of operations.
- Development of e-service and annual licenses: Design, development, and implementation av new e-service to dispatch, sign and collect vaccination consent for school pupils. Also including automated reminders, automated registration in e.g. medical records system, generating messages etc. Annual cost of software licenses.
- Training (time invested) of school nurses and other relevant staff in handling the e-service: Develop training material and conduct training sessions of school nurses.
- Coaching and support (time spent recurringly) to school nurses by e-service owner or IT staff: Coaching, supporting, and helping school nurses with questions how to handle steps and functionality in the e-service.

Total investment/costs for Örnsköldsvik (year 1): €66,400

Total investment/costs for Kramfors (year 1): €37,700

Description	Activities	Investment/cost (Euro; year 1)
Operational cost of vaccination consent e-service.	Recurring annual fees and cost of operations.	8,000
Development of e-service and annual licenses.	Design, development and implementation av new e-service to dispatch, sign and collect vaccination consent for school pupils. Also including automated reminders, automated registration in e.g. medical records system, generating messages etc. Annual cost of software licenses.	20,000
Training (time invested) of school nurses and other relevant staff in handling the e-service.	Develop training material and conduct training sessions of school nurses.	25,600
Coaching and support (time spent recurringly) to school nurses by e-service owner or IT staff.	Coaching, supporting and helping school nurses with questions how to handle steps and functionality in the e-service.	12,800
	Total	66,400

Table 1: Investments and costs year 1, Örnsköldsvik

Description	Activities	Investment/cost (Euro; year 1)
Operational cost of vaccination consent e-service.	Recurring annual fees and cost of operations.	5,700
Development of e-service and annual licenses.	Design, development and implementation av new e-service to dispatch, sign and collect vaccination consent for school pupils. Also including automated reminders, automated registration in e.g. medical records system, generating messages etc. Annual cost of software licenses.	20,000
Training (time invested) of school nurses and other relevant staff in handling the e-service.	Develop training material and conduct training sessions of school nurses.	4,000
Coaching and support (time spent recurringly) to school nurses by e-service owner or IT staff.	Coaching, supporting and helping school nurses with questions how to handle steps and functionality in the e-service.	8,000
	Total	37,700

Table 2: Investments and costs year 1, Kramfors

Effects and outcomes identified

The following main outcomes have been identified and quantified for both Örnsköldsvik and Kramfors:

- Reduced financial costs for handling papers (printing, postage, collection, scanning).
- Time savings in administration of paper-based consents.
- Simplification of consent process for legal guardians, reducing time spent and increasing reach.
- Time savings for teachers (and pupils) in administrating paper-based consents.
- Reduced workload and stress for school nurses.

- Increased awareness, knowledge and maturity about digital services and process re-design, giving synergies in digitalizing other workflows and processes
- Increased reach, patient security and health prevention for vaccinated pupils
- Reduced school nurse turnover giving lower staff turnover costs, e.g. related to recruitment and introductory training of nurses

Total value of impact in Örnsköldsvik (year 1): €143,400

Total value of impact in Kramfors (year 1): €37,900

Outcome	Stakeholder	Category	Value (Euro; year 1)	Covid 19 impact
Reduced financial costs for handling papers (printing, postage, collection, scanning)	School health org.	Financial	1,300	Limited
Time savings in administration of paper based consents	School health org. / Nurses	Allocation	51,800	Limited
Simplification of consent process for legal guardians, reducing time spent and increasing reach	Legal guardians	Allocation	12,600	Moderate
Time savings for teachers (and pupils) in administrating paper based consents	Teachers	Allocation	3,700	Limited
Reduced work load and stress	School nurses	Social / Health	25,600	Limited
Increased awareness, knowledge and maturity about digital services and process re-design, giving synergies in digitalising other work flows and processes	School health org.	Allocation	N/A	Substantial from year 2 and onwards
Increased reach, patient security and health prevention for vaccinated pupils	Pupils	Social / Health	33,000	Moderate
Reduced school nurse turnover giving lower staff turnover costs, e.g. recruitment and intro training	School health org.	Social / Financial	15,400	Moderate
		Total	143,400	
		SEROI	2.2 : 1	

Table 3: Impact and outcome values year 1, Örnsköldsvik

Outcome	Stakeholder	Category	Value (Euro; year 1)	Covid 19 impact
Reduced financial costs for handling papers (printing, postage, collection, scanning)	School health org.	Financial	300	Limited
Time savings in administration of paper based consents	School health org. / Nurses	Allocation	12,600	Limited
Simplification of consent process for legal guardians, reducing time spent and increasing reach	Legal guardians	Allocation	3,100	Moderate
Time savings for teachers (and pupils) in administrating paper based consents	Teachers	Allocation	900	Limited
Reduced work load and stress	School nurses	Social / Health	8,000	Limited
Increased awareness, knowledge and maturity about digital services and process re-design, giving synergies in digitalising other work flows and processes	School health org.	Allocation	N/A	Substantial from year 2 and onwards
Increased reach, patient security and health prevention for vaccinated pupils	Pupils	Social / Health	8,100	Moderate
Reduced school nurse turnover giving lower staff turnover costs, e.g. recruitment and intro training	School health org.	Social / Financial	4,800	Moderate
		Total	37,900	
		SEROI	1.0 : 1	

Table 4: Impact and outcome values year 1, Kramfors

SEROI analysis results

Örnsköldsvik:

- SEROI ratio: $143,400 : 66,400 = 2.2 : 1$

Positive SEROI already year 1 (2.2:1), even better from year 2 and onwards. If all pupils in Örnsköldsvik would be addressed annually a fourfold impact value is expected.

Kramfors:

- SEROI ratio: $37,900 : 37,700 = 1.0 : 1$

Slightly positive SEROI year 1 (1.0:1), and with 3 additional processes already implemented, sharing the largest part of the costs, there is a clear positive SEROI from year 2 and onwards.

Effects of Covid 19 pandemic

The Covid 19 situation has stressed the need for well-functioning e-services due to remote working and need to carry out different tasks online. This has been a clear driving force in implementation and further development of additional e-services in both Örnsköldsvik and Kramfors municipalities. The increased user maturity and their expectations to carry out many administrative tasks by using digital services are now well established, driving the implementation of new ways of working, both from a sender and a receiver perspective.

Business learnings and next steps – Improvements in partners' policy instruments

Here it is described how the pandemic has affected the operations in the short term but also impacts in the longer term, extended results in development, digital services and digitizing additional processes. Due to the outbreak of Covid-19, many organizations have changed their position and insight to use digital solutions. As one of ongoing developments in the field of digital transformation in society the Kramfors and Örnsköldsvik extended results in development, digital services and digitizing additional processes (e.g., health talks, health assessments, different consents etc.)

Kramfors

In Kramfors, they have learned to focus more on information security. The municipality have started an information security policy. They have also created routines around e-services. In terms of the impact on operations, the view on meetings and training has changed. More employees can take part in meetings as they are mostly digital now and the school nurses can participate in more training as many of those are offered digitally. For them in a sparsely populated municipality, the pandemic has increased digital awareness. They have focused on secure digital meetings, the school nurses have become better at handling other digital tools such as time books via e-service, Microsoft teams, digital meetings. They experience less resistance in the working group regarding

digital development in general. In the future they see a need to continue reducing the administrative burden for the school nurses through more digital tools and reduced administrative burden. Being able to offer municipal residents more transparency and service through better and easier-to-use e-services is important. A long-term benefit is seen by reducing the administrative burden for the school nurses and making the work more attractive. The school children also get more time with the school nurse now that less time is spent on administrative tasks. This process has also made other professions curious about digitization, and school counselors are next in line. Their work must be mapped to see if there are any administrative tasks that can be digitized.

Several new e-services have already been developed and are being used by the school nurses, with good results. It is about collecting health data about the children from the guardians. It takes place in several grades and is an important tool to avoid, for example, allergic reactions and to increase the knowledge of other serious diseases at school. Consent to store health conversation data have also been digitalized. Another e-service that is used a lot is consent, which guardians must sign for the school nurse to have access to the student's previous medical records. All these e-services are handled by robots just like the vaccination consent. These e-services have partly been financed by the same project as the vaccination consent, but also via the education administration of Kramfors municipality. Currently, many of the administrative burdens have been digitized for the school nurses in Kramfors Municipality and work is now underway to streamline the e-services and merge them to reduce the number of signatures for the guardians.

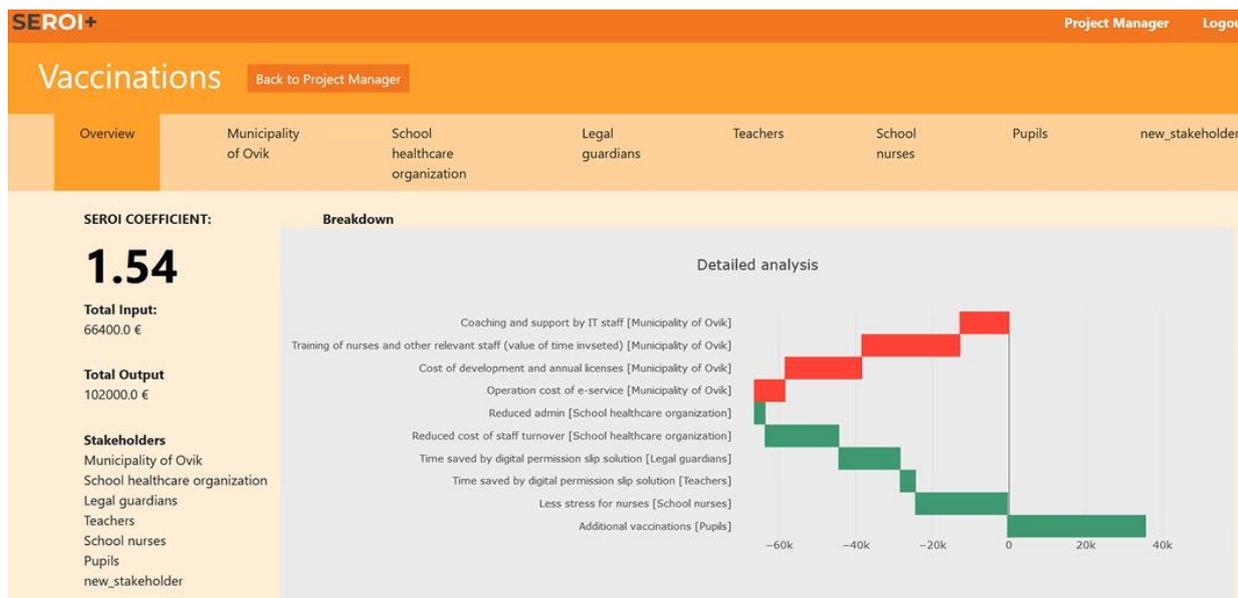
Örnsköldsvik

Örnsköldsvik has planned additional services, health assessments and consent to handle health data, to be implemented in 2023. This will contribute to the overall goal to free up time in administration for nurses and improve student health care quality. The services will be financed by the municipality and will contribute to the use of RPA-platform where costs already have been taken.

SEROI+Calculator

The SEROI+ Calculator is a tool for calculating a projects' social, economic, and environmental return on investment, based on publicly available indicator proxy values. It is an intuitive way to plan, track and evaluate the ROI on the program, project, or per-stakeholder level. It is an easy-to-use web tool with a guided questionnaire form for project creation and clearly presented & exportable project insights for project management. It's powered by a curated dataset of social, environmental, and economic outcomes with measurable proxy indicators and well documented sources. At this stage we have about ten indicators and proxies used from the Västernorrland pilot case. All partners (and others) can use the tool, and it will be available on the internet. The interest from stakeholders to learn the SEROI tool and how it can be used has increased. ALAV plans to initiate skill development opportunities for its employees, people within the municipalities, leaders, and other partner organizations. The tool can be reached here: [SEROI+ Calculator](#).

See below, the example screen shot of the tool:



Conclusion

The municipal association together with stakeholders Kramfors and Örnsköldsvik municipality and with the support of RISE has carried out several activities. There is a great quantitative and qualitative benefit to automating the management of vaccination consents as SEROI analysis has shown. SEROI analysis results on Örnsköldsvik shows positive SEROI as soon as year 1 (2.2:1), and the result is even better from year 2 and onwards. If all pupils in Örnsköldsvik would be addressed annually a fourfold impact value is expected.

SEROI analysis results on Kramfors shows slightly positive SEROI year 1 (1.0:1), and with 3 additional processes already implemented, sharing most of the costs, there is a clear positive SEROI from year 2 and onwards. The activities included answering a survey about digital services, training in the SEROI+ method, SEROI+ analysis of digital vaccination consent in Kramfors and Örnsköldsvik.

With exchanges of experience with partner countries digitally and physically and these are project meetings first in Slovenia in March, second in June in Finland and finally the final conference in France. This report also shows inputs made to improve the municipalities' policy instruments, in addition to the input to improve the SEROI+ method, as well as to the design of the new interactive SEROI calculator. For this to be achieved the main part of the activities were stakeholder meetings, partner meetings and exchange of experience, interviews with stakeholders, desktop research and workshops. Project group meetings were successful thanks to scheduled meetings every two weeks and more frequent contact between meetings over a period of one year.

SEROI results shows Covid-19 situation has emphasized the need for well-functioning e-services due to remote work and the need to perform various tasks online. This has been a clear driving force in the implementation and further development of additional e-services in both Örnsköldsvik and Kramfors municipalities. Further the results shows that the increase in user digital maturity and

their expectations to perform many administrative tasks by using digital services, are now well established, driving the implementation of new ways of working, both from a sender and a receiver perspective.