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Future Ecom
Interreg Europe

Industry digitization action plan

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EKONOMIKOS
IR INOVACIJŲ
MINISTERIJA

LITHUANIAN
INNOVATION
CENTRE

Introduction

Future Ecom project (Exploiting digitisation to increase B2B e-commerce) has focused its activities on improvement of the effectiveness and impact of the policy instruments addressed within the partnership stimulating the exploitation of digitisation in SMEs in order to improve their competitiveness in the future and thereby to grow. More specifically Future Ecom aimed to provide policy makers with the knowledge and understanding of the potentials digitisation holds while at the same time make them aware of the challenges and barriers that SMEs face in terms of preparing their internal processes and their company in general for the digital age.

Future Ecom project conducted effective learning and exchange of experiences addressing topics how different digitization tools are used in various economic and business processes. This exchange of experiences among the regional partners (10 project partners, representing 8 EU regions) was followed by the transfer of the lesson learnt to the regional programmes. The project contributed with insight into different topics, various digital tools and systems to reinforce B2B in the region boosting innovative ecosystems where actors, regional and local authorities and innovation partners, together with stakeholders: associations, academia, regional governments can worked together in the Action Plan to reach the needed policy change for the digitization of SMEs to increase B2B services.

Furure Ecom partners understand the importance of the learning outcomes that need to be transferred and inspire the implementation of change in each partner region to result the effective policy change, also to put the emphasis on the needs of SMEs, clearly identifying their problems and potential solutions.

In the progress of the project Lithuanian Innovation Centre started discussions about policy instrument E-Business, Structural Funds Operational Programme, priority axis no3 (SMEs competitiveness). After discussions and analysis of the policy instrument funds were directed to other policy instruments because of inefficiency of policy instrument “E-Business”, scattered investment into low innovation technologies. There will be no more calls for applications under this policy instrument.

The business IT solutions in applications of companies were very simple and non-innovative under the policy instrument E- Business. In order to increase efficiency, 2 directions were chosen:

1) the funds which were not distributed to applications in e-business policy instrument were transferred to an integrated policy instrument „Industry Digitization LT” for companies to implement IT solutions along with hardware technologies (robots).

2) In order to promote cutting-edge IT solutions based on R&D results, a new policy instrument, Digital Innovation Centres, has been initiated to provide businesses with access to innovation consulting and support services needed to implement innovative IT technologies.

According to interviews with experts, companies still need funding for small e-business projects. The newly created policy instrument “Industrial Digitization LT” aims to ensure that e-solutions are integrated with advanced manufacturing technologies and ensure high innovation of these solutions. Investments involving several processes in companies using cutting edge technologies that meet the expert-defined list of advanced technologies are expected to have a greater impact on manufacturing companies than many small, low-innovation e-solutions funded by the E-business instrument. It is very important to ensure the

financing of small and large projects by implementing the policy instrument "Industrial Digitization LT", ensuring the support for manufacturing companies seeking to apply advanced e-commerce solutions to their sales activities and thus increasing their access to markets. The aim of the new instrument is to make bigger effect on digitization processes in the companies including high tech innovative e-business solutions, thus making bigger impact for SMEs competitiveness.

Because of this policy instrument change Lithuanian Innovation Centre concentrated its efforts into the policy instruments „Industry digitization LT" and "Digital innovation centres", to achieve the coordinated and collaborative result together with all stakeholders meeting the industry needs and addressing systemic economic problems. This action plan is a document to address those problems.

Part I – General information

Project: Future Ecom
Partner organisation: LIC (Lithuanian Innovation Centre)
Other partner organisations involved (if relevant):
Country: Lithuania
NUTS2 region: Lithuania
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The Action Plan aims to impact:	X	Investment for Growth and Jobs programme
	□	European Territorial Cooperation programme
	□	Other regional development policy instrument

Name of the policy instrument addressed:

1) Industry digitization LT, Structural Funds Operational Programme, priority axis no3 (SMEs competitiveness) (further – Industry digitization LT)
2) Digital Innovation Hubs, Structural Funds Operational Programme, priority axis no3 (SMEs competitiveness) (further – Digital Innovation Hubs)

ACTION 1

Increasing SMEs competitiveness and productivity investing into industry cutting-edge technologies

1. The background

The structure of Lithuanian manufacturing output is rather diverse. The food industry is the biggest sector of Lithuanian manufacturing in terms of production output, generating a fifth (22%) of the total output of the Lithuanian manufacturing sector. Other key sectors in terms of their size (measured as production output) are the manufacturing of chemical products; furniture; wood products; plastics and rubber. These 5 sectors combined generate more half (59%) of the total output of the Lithuanian manufacturing sector.

In terms of growth in output, during the last 5 years, the highest rates of output growth were achieved in the following segments: electronics and optical products; manufacture of fabricated metals, machinery and equipment; manufacture of vehicles and parts thereof, and the manufacture of paper and paper products. Most of these segments (with the exception of paper products) are highly export-orientated. Thus, export was the biggest catalyst behind the growth in these segments. In regard to growth in manufacturing output during the last 10 years, the highest percentage growth numbers were achieved in the segments of machinery and electrical equipment; furniture manufacturing; pharma products and paper products.

In general, an increase in labour costs is not dangerous, per se – as long as the labour costs do not rise faster than productivity. In Lithuania last 5 years manufacturing is experiencing drastic increase in labour costs, but increase in productivity is rather slow. This phenomenon could be dangerous, resulting in a loss of business competitiveness. This is due to lagging productivity; the state of Lithuanian manufacturing from the innovation point of view (i.e. the dominance of low-tech sectors in production output) and the rising automatization of EU industrial businesses.

In last 5 years, wages in Lithuanian manufacturing rose by 42%, while productivity in the manufacturing sector rose by only 14%. Therefore, although productivity in Lithuanian manufacturing is on the rise, the rate of increase in productivity is unfortunately lagging behind the rapid increase in labour costs. This, in turn, puts a direct pressure on business competitiveness. Despite the fact that, during the last 5 years, productivity in Lithuanian manufacturing rose by 14%, Lithuania still lies third from bottom in the whole EU in regard to the gross value added per person employed in the manufacturing sector.

The aggregation of the Lithuanian manufacturing sector based on Eurostat methodology shows that the Lithuanian manufacturing sector is dominated by the low and medium-low technology sectors, which generate ¾ of the total output of the Lithuanian manufacturing industry. 85 percent of all employees of the Lithuanian manufacturing sector work in low and low and medium technological development manufacturing companies. The share of low and medium-low tech sectors in the structure of Lithuanian manufacturing has been stable in last 10 years. The dominance of low-tech sectors in Lithuanian manufacturing,

coupled with a rapid increase in labour costs, poses a significant threat to business competitiveness in the future, since the ability to control labour costs is critical for low-tech manufacturing businesses.

The combination of the rapid increase in labour costs and lagging productivity, together with the dominance of low-tech sectors in the Lithuanian manufacturing structure (which typically depend on the ability of businesses to control labour costs) puts a significant pressure on the competitiveness of the Lithuanian manufacturing sector. However, a very important external trend that is gathering pace in the EU: i.e. the rapid automatization of the EU manufacturing businesses.

2018 The low-tech manufacturing sector produced more than half of the total output of the Lithuanian manufacturing industry, while the low- and medium-tech sector produced 19%. total production. The share of the medium and high technological development sector in the production was 22 percent. Lithuania is failing to grow the high-tech manufacturing sector, which currently produces only 3.6% of production.

At the same time, the increase in productivity of Lithuanian manufacturing, although positive, is insufficient to maintain its competitiveness. Therefore, additional investment in productivity, automatization and process efficiency is clearly needed in the Lithuanian manufacturing sector. While Lithuanian manufacturing has achieved some progress in regard to increases in productivity, data from Eurostat shows that, in general, Lithuanian manufacturing businesses tend to under-invest.

2. Learning experience and stakeholder involvement

Implementing Future Ecom project through interregional cooperation project partners could identify, share and transfer some processes and good practices, inspiring examples in creating and developing digitisation policy instruments in the regions, targeting the selected particular issue in the country.

Learning experience was transferred in several ways:

1) Interregional workshops and study visits, which were held in Coventry (UK 2019), Kotka (Finland 2019), Detmold (Germany 2019), Volos (Greece 2019), Aalborg (Denmark 2019), Bologna (Italy (online) 2020). In those meetings we addressed specific topic within digitisation and its influence for B2B sector and visited companies using successfully digital tools in the study visits.
2) Sharing of good practices. Project partners selected good examples in their region of policy instruments successfully addressing different digitisation issues or using digital tools and shared with all the partners submitting them and publishing in the Policy Learning Platform in Interreg Europe programme portal.

Local stakeholders involvement into the process was critical explore stakeholders' views on existing problems and challenges within the industry, ministry and support agencies, based on that valuable inputs for actions were gathered. Stakeholder meetings were a useful way for different organisations to interact on regular basis and create a stable collaboration and exchange of information and ideas. Besides stakeholder meetings, project team was involved into work groups addressing the changes of policy instrument as well as he the stakeholders and it served as an extension of stakeholder involvement process.

Besides the organised local stakeholder meetings, project team has held one-on-one meetings with some of the stakeholders, also industry companies to gather the needed information and have full overview of the situation in the industry, to create policy instrument change addressing the needs of SMEs, addressing the challenges of the industry and government strategic goals.

During stakeholder meetings the business representatives and ministry were introduced with a lot of good practices implemented in different European countries. Smart factory topic addressed in study visit and workshop in Detmold was selected as a good example and learning experience for the policy instrument we were addressing. After constructive discussion with Lithuanian innovation experts and stakeholders, it was decided that SmartFactoryOWL presented and visited in Detmold (Lemgo city) Germany is a good example how to transition the industry into high-tech manufacturing and transform digitisation processes in SMEs. SmartFactoryOWL demonstrated how converging different technologies can result into innovation drivers and the impact it is making on innovative technological solutions in industry, making German industry a leader in the technological innovations. Cutting edge technologies are implemented in the companies with a help of consultants working closely with universities and companies, research institutes like Fraunhofer. Consistent digitisation of companies results in the leading industrial positions, effective manufacturing and high labour productivity.

This learning experience of SmartFactoryOWL inspired policy change to concentrate investment funds available in the policy instrument "Industry digitization LT" for cutting edge technologies, to make substantial improvement in those companies which will participate in the call for applications and this way to increase the share of high-tech manufacturing.

3. Main features of the policy instrument "Industry digitization LT"

Lithuanian innovation centre addressed policy instrument „Industry digitization LT". Policy instrument is supporting industrial SMEs to undertake technological audits to help them assess the potential and prospects of digitization of production processes, thus ensuring the purposefulness, efficiency and benefits of their investment in digitalisation of production processes. Policy instrument is also supporting investment into new technologies which would result into the growth of labour productivity in enterprises, as well as encourage the transformation of SMEs for digitization manufacturing processes.

Policy instrument is addressing main problem of Lithuanian Industry sector, slow investment pace in the Industry resulting the sector working mostly in low-tech manufacturing. Fostering technological changes in the companies should be not incremental, but substantial and concentrated into cutting edge technologies to transform SMEs digitisation processes and the industry into high-tech production. To address the problem and to ensure that funding is effective into high-tech manufacturing technologies, LIC initiated discussions with experts and stakeholders to create list of technologies which would be financed under this instrument and prevent distribution of funds into low-tech technologies.

The digitisation process is unimaginable without subsidy, financial sources or other types of public support. Therefore, various public support measures and instruments exist to reduce the risk of implementation of new competencies, technologies and processes in

the structure of companies. “Industry digitization LT” policy instrument should encourage businesses to take a riskier strategy – to invest into new digitisation solutions.

4. Action

In order to increase SMEs competitiveness and productivity investing into industry cutting edge technologies all triple helix actors should be involved into implementation process

1. First of all, Lithuanian Innovation Centre which communicate with actors from various sector should initiate discussions on the Platform industry 4.0 in Lithuania, involving experts from academia, industry and public (policy makers).
2. As a result of discussion, the group of experts should be formed including academia, industry and public sector. Expert group will analyse other European countries digitisation roadmaps, overview Lithuanian Industry Digitisation Roadmap 2019 - 2030 and Industry Digitisation Guidelines.
3. The group of experts will form a list of technologies for industry digitisation evaluating other countries technological investment priorities, Lithuanian industry needs, cutting technologies tendencies in the world, technological influence on productivity and impact on industry competitiveness. The technology list for industry digitisation will be set within the Lithuania smart specialization strategy, to facilitate public investment priorities.
4. The technology list for industry digitisation will be integrated into policy instrument “Industry digitisation” and the call for application will be launched for companies to invest into two directions: conducting a technological audit to assess the opportunities and prospects for the digitization of the production processes of these companies; investing into industrial SME production process equipment with integrated digitization technologies.
5. After the announcement of the call and submission of the applications by SMEs to perform the evaluation of the investments in the technology directions, if necessary, to initiate the discussions on updating the list of technologies.

5. Players involved

Ministry of Economy and Innovation – responsible for approving policy instrument, launching the call, organising work group meetings, evaluation of the policy change impact on the results.

LVPA (Lithuanian Business Support Agency) - responsible for managing the process of funding the SMEs, approving applications.

SME – beneficiaries of the policy instrument “Industry digitisation”, responsible for generating ideas and applying for investment to increase productivity and competitiveness

Research institutions – responsible for delegating experts to the technology group, participating in evaluation process.

LIC - responsible for participating in work groups, learning exchange process, consulting SMEs.

6. Timeframe

The implementation process starts from July of 2019 and it will be finished with the funding of the applications and monitoring of the results in 2022.

July – November 2019 discussions with experts, analysis; forming a list of technologies for industry digitisation evaluating other countries technological investment priorities;

March 2020 the technology list for industry digitisation integration into policy instrument "Industry digitisation LT";

March 2020 – July 2020 launching the call for applications;

December 2020 evaluation of applications;

December 2021 – February 2022 the evaluation of the results of the call for application "Industry digitisation LT" ;

7. Costs (if relevant)

Additional costs not required.

8. Funding sources (if relevant):

Policy instrument is financed under policy instrument Industry digitization, Structural Funds Operational Programme 2014-2020, priority axis no3 (SMEs competitiveness), available funds for companies in the 2nd call of application 15 350 382 Eur, it is estimated that implemented projects for this policy instrument call for applications will get private investment of 26-27 mln Eur.

ACTION 2

Strengthening human resources competence and qualifications in compliance with changing technological industry digitisation requirements

1. The background

Demographical changes create challenges for the labour market. Business are creating new jobs at a much faster pace than those jobs are occupied. For example, new jobs created in the Lithuanian economy in 2017, compared to 2012, rose by 91%, while the number of occupied jobs rose by only 8.5 %. More than 3500 vacant jobs remain unoccupied in the Lithuanian manufacturing sector – more than any other economic sector in Lithuania, as almost 20% of new jobs are created by manufacturing companies. Companies find it very difficult to fill vacant jobs with adequate personnel.

European ManuFuture platforms setting the vision of industry, science and innovation until 2030 it is stating that advanced technologies and new production process management practices have created a need for new skills. This shows that the nature of operators' work in manufacturing plants has changed, from a lot of manual labour to much less manual labor, a wider use of technology, management and maintenance. This trend will only become more pronounced in the future and will require highly qualified staff, who will need to keep their knowledge up to date with technological changes in the equipment, materials and production processes used.

In Lithuania the change in vocational education and higher education systems is too slow, not in pace with technological change. As technology advances, the transformation of education systems needs to be accelerated, and new teaching methods, such as Training Factories, Hybrid Laboratories, and other methods need to be introduced. Technological developments challenge educational institutions to update frequently vocational training and study programs, create new programs that are accessible not only at the initial training stage, but also for retraining or retraining workers at all levels in companies to keep pace with technological evolution. Education policy-makers need to encourage educational institutions to establish and develop regular contacts with industry and technology developers in order to maximize the quality of programs, teaching materials and lecturers' knowledge, and to obtain primary information directly from technology developers.

A paradox is emerging when many young people in many parts of Europe are unemployed and the industry needs more and more skilled people.

According to the experts of the Human Resources Thematic Working Group, this paradox has become even more pronounced in Lithuania - here, due to intensive industrial digitization, machines are increasingly used in the production process, which require more complex knowledge and practical skills to operate.

The core of a successful industry ecosystem is innovative companies with a qualified workforce. During the Industry 4.0 revolution, enterprises have need of skilled employees with relevant competencies in order to overcome the challenges created by the revolution. Companies must adapt to the changing environment, which requires creating and controlling automated and digitized mechanisms. Academic institutions are forced to establish more study programs related to automation processes, robotics and ICT solutions, because there is a growing demand from innovative industry sectors. There are plenty of companies in Lithuania that represent both sides of the Industry 4.0 revolution: companies that provide innovative digitization solutions, and companies that apply those solutions in their manufacturing, trading or service activities.

Public support institutions are also an essential part of the development of the Industry 4.0 education ecosystem. These institutions provide consultancies and trainings for companies that lack knowledge to implement new solutions in the most effective way. Organizations such as the Lithuanian Innovation Centre, Enterprise Lithuanian, Science and Technology parks etc. could offer their expert advice, help to find a required partner or technology, and provide relevant information about existing financial support agencies.

2. Learning experience and stakeholder involvement

Implementing Future Ecom project through interregional cooperation project partners could identify, share and transfer some processes and good practices, inspiring

examples in creating and developing digitisation policy instruments in the regions, targeting the selected particular issue in the country.

Lithuanian Innovation Centre organised local stakeholder groups to explore the views of the stakeholders and to get full information from the market, to find out existing problems in the industry and educational institutions. It was also important to involve ministry and support agencies to be on the same page with the industry facing existing needs and addressing the challenges. Stakeholder groups was a good method to foster collaboration between business, public sector and education institutions to exchange the ideas on a regular basis.

Project team also organised a lot of one to one meetings with different players involved in the process of acquiring competence and qualification, including industry companies to gather needed information and to ensure the full scope of problems and challenges is addressed creating the plan of measures for industry digitisation, particularly paying attention to the human resources needs and gaps in the market.

During stakeholder meetings the business representatives and ministry were introduced with a lot of good practices implemented in different European countries. Smart factory topic addressed in study visit and workshop in Detmold was selected as a good example and learning experience for the policy change, we were addressing. After constructive discussion with Lithuanian innovation experts and stakeholders, it was decided that good practices Weidmuller academy and training programme for transfer mediators to promote innovation should be explored and some inspiring segments of those good practices could be used drafting the plan of measures for Roadmap of industry digitization. Weidmuller academy good practice demonstrated how important are skills of workers in the process of company transformation implementing digital processes also what are the technological possibilities for education of the workers along the way, presenting needed educational material right on the spot. Using most innovative education methods ensures the smooth process of new technologies deployment into the company. In the preparation of the plan of measures for Roadmap of industry digitization inspired by this good practice stakeholders and working group ensured that all the elements in the acquiring competence and raising qualifications process are fostered and none of the links are left out, all the players are included and there are all possibilities to cover the existing gaps in the market.

Another good practice that stakeholders took into the account was “Training programme for transfer mediators to promote innovations” (Detmold, Germany). Technology implementation in the company requires high competence of technical staff in the company, understanding of management and also strong consulting experts. This good practice is addressing this issue and it has good possibility to be transferred as a policy measure in the plan, aiming at the qualification of innovation managers and technology consultants.

3. Main features of the policy change

In cooperation with the representatives of the thematic working groups of the Industry 4.0 platform, the Ministry of Economics and Innovation has prepared a roadmap for the digitization of Lithuanian industry in 2019–2030. The roadmap should be complemented with a plan of measures setting out the tasks, deadlines and the procedure

for their implementation and agreed with all stakeholders. This ambitious plan will serve as a guide for industrial digitization initiatives stemming from the Industry 4.0 programs across Europe to create a more productive and competitive manufacturing sector.

Lithuanian Innovation Centre inspired by the learning experience in Detmold (Germany) visit and other partners, joined thematic working groups to bring to the plan full scope of measures to increase human resource competence and qualification in different levels and various positions in the company facing digitisation challenges. The policy instruments should address the problem in vocational schools and other education institutions addressing the teachers' qualification, needed infrastructure and new technologies in learning process, new study programmes corresponding to the needs of the market. Other group of policy instruments addressing the problem should be targeted to acquiring needed specific qualification from manager level to the manufacturing workers in the companies. Since digitization is continuous process some policy instruments will be dedicated to create the lifelong learning system.

The plan of measures will address also other problems of digitisation processes in Lithuanian companies.

4. Action

It is important to create political background for designing policy instruments to help industry increase competence and qualification of the workers matching the technological tendencies to achieve all-encompassing improvement in the industry.

1. First of all, Lithuanian Innovation Centre which communicate with actors from various sector should initiate discussions on the Platform industry 4.0 in Lithuania, involving experts from academia, industry and public (policy makers) to understand the needs of the industry and opportunities in the industry and training institutions.
2. The group of experts will be formed to overview Lithuanian Industry Digitisation Roadmap 2019 – 2030 and create plan of measures for policy instruments focusing on aspects drafted in the roadmap, especially strengthening industrial competence and qualification measures.
3. Drafted plan of measures will be discussed in stakeholder groups, public discussions, included suggested changes.
4. Plan of measures will be confirmed as a political basis for creating policy instruments to help industry to improve and acquire lacking qualification and competence of workers due to changing technological processes in the companies.

5. Players involved

Ministry of Economy and Innovation – responsible for Lithuanian Industry Digitisation Roadmap 2019 – 2030 Plan of Measures approving, coordinating with other ministries, initiating working group meetings.

SME – the companies which will be able to benefit from plan of measures, responsible for generating ideas, ensuring feedback from industry, participating in the work group.

Research and training institutions – responsible for delegating experts to the working group, participating in drafting process.

LIC - responsible for participating in work groups, learning exchange process, consulting with stakeholders.

6. Timeframe

The discussion about this plan of measures starts from July of 2019 and it will be finished in 2020, with an approved draft of plan of measures.

7. Costs (if relevant)

Additional costs not required.

8. Funding sources (if relevant):

Lithuanian Industry Digitisation Roadmap 2019 – 2030 Plan of Measures at this moment does not require funding sources, but as a political basis it will influence a number of policy instruments and a substantial amount of public funds.

ACTION 3

Fostering DIH services to increase SME competitiveness and productivity

1. The background

A Digital Innovation Hub (DIH) embodies an ecosystem that consists of SMEs, large industries, start-ups, researchers, accelerators, and investors. DIH is a support facility that helps companies to become more competitive by improving their business/production processes and products and services, by means of digital technology. DIHs provides technical expertise and experimentation tools as equipment or software to businesses and helps them to evaluate the aspects of digitisation. In general, they help customers to address their challenges in a business-focused way and with a common service model, offering services that would not be readily accessible elsewhere.

Digital innovation hubs act as a one-stop-shop, serving companies within their local region and beyond. Under the DEI initiative, the goal is to ensure that any business in Europe has access to a Digital Innovation Hub at 'a working distance' (i.e. in a form and location convenient for their day-to-day business). The services provided should be available to firms in any industry sector, with a specific focus on SMEs, mid-caps and low-tech companies.

The services available through a DIH enable any business to access the latest knowledge, expertise and technology for testing and experimenting with digital innovations

relevant to its products, processes or business models. DIHs provide connections with investors, facilitate access to financing for digital transformations, and help connect users and suppliers of digital innovations across the value chain. They also foster synergies between digital and other key enabling technologies (such as biotech, nanotechnologies, and advanced materials). These services are of particular relevance to companies that currently have a relatively low level of digitization and which do not have the resources or personnel to address the digitization challenge.

DIHs in Lithuania started developing only in last years, they are working as a competence centres in cooperation on regional and international levels, collaborating with associations, universities, training centres, incubators, regional and national development agencies. The most successful DIHs are those where business involvement is direct and intense. The involvement of businesses in DIH's activities ensures a well-based business model, private capital investment and the real business needs of the services developed in DIH.

The DIH Catalogue is a "yellow pages" of self-declared DIHs. The purpose of the catalogue is to support networking of Digital Innovation Hubs and to provide an overview of the landscape of Digital Innovation Hubs in Europe, supported by Regional, National and European initiatives for the digitalisation of industry. There are 17 DIHs registered in this catalogue in Lithuania, in the manufacturing, food, ICT, space, laser, life sciences, maritime sectors.

Learning experience and stakeholder involvement

Implementing Future Ecom project through interregional cooperation project partners could identify, share and transfer some processes and good practices, inspiring examples in creating and developing digitisation policy instruments in the regions, targeting the selected particular issue in the country.

Lithuanian Innovation Centre organised local stakeholder groups to understand how Digital innovation hubs are operating in Lithuania and what are the needs and challenges in their performance, how public sector is involved in the process and what can be done to ensure the services for the companies in the digital transformation process. It was important to involve business, support agencies, universities and public sector to have a common understanding and vision of Digital innovation hubs operation in Lithuania.

Project team also organised a lot of one to one meetings with companies in the need of various digital services, operating digital innovation hubs, science parks, industry associations, public sector bodies to gather the information about business models, the scope of services and different sectors interconnection, especially technological infrastructure issues.

During stakeholder meetings the business representatives and ministry were introduced with a lot of good practices implemented in different European countries. Smart factory topic addressed in study visit and workshop in Detmold (Germany) was selected as a good example and learning experience for the policy change, we were addressing. After constructive discussion with Lithuanian innovation experts and stakeholders, it was decided that good practice presented in the study visit Innovation Campus Lemgo is very good example for formation of Digital innovation hubs, especially their infrastructure. Innovation

Campus Lemgo was set up as technology and education campus to cooperate and innovate based on technology and education using the proximity of all entities and networking. Those qualities are important for Digital innovation hubs performing similar function of technology implementation and was considered and discussed creating the policy instrument "Digital innovation hubs". Innovation Campus Lemgo is orientated to local excellency for innovation ecosystems in different sectors such as food technology, health, energy. Digital hubs in Lithuania are forming as competence centres for various sectors, they need to create the local ecosystems to have best performance using the technology infrastructure and high competence of consultants. Innovation Campus Lemgo was also great example of public private partnership model working very effectively, this model could be used by hubs in the future in their growth and development of services.

Another good practice presented during the same visit that has good potential is SmartFactoryOWL and it was transferred to Lithuania. SmartFactoryOWL uses Fraunhofer technology infrastructure and technology experts to solve different industry problems. SmartFactoryOWL provide services to the industry based on their competence and technologies available, operating business model can be transferred to Digital innovation hubs to build the required competence and services. Project SmartFactoryOWL objective is „Empowering SMEs in NRW for efficient and effective processes along the entire value chain through digitization and networking in line with Industry 4.0", approach delivering the services: broad-based but targeted approach to SMEs; increased digitization of products, processes and services; partly needs-based support offers along the qualification chain. This approach was transferred to the policy instrument "Digital innovation hubs"

The third practice which inspired the new policy instrument was Training programme for transfer mediators to promote innovations" (Detmold, Germany). The programme is aiming to raise the competence of experts working with implementation of technologies. The importance of technology transfer and investment partners are doing into the development of this ecosystem inspired to consider the financing not only infrastructure investment but also subsidise delivery of services for the duration of the project implementation.

2. Main features of the policy instrument

The objective of the policy instrument is to encourage companies to invest in digital innovation by providing industry with up-to-date information, expertise and infrastructure and technology to test digital innovations with their products, processes or business models, thus enabling companies to carry out research, experimental development and innovation activities, increased access to technology and equipment. The policy instrument is designed to create ecosystems for various sectors where companies can find highly skilled experts and needed services in the process of creating new products, solving manufacturing problems, testing, transferring technologies.

Activities which are going to be financed by this policy instrument: 1) investments in the development of infrastructure for a digital innovation centre that is not publicly available or in clusters; 2) company innovation processes for their innovations, test products or process; operation of the innovation group; 3) innovation consulting and innovation support services.

3. Action

To ensure for SMEs access to DIH services, to foster the wider use and establishment of DIHs there has to be involved in the process all stakeholders: public sector, industry associations, SMEs, academia experts, support agencies.

1. First of all, Lithuanian Innovation Centre which communicate with actors from various sector to initiate discussions in the Commission Industry 4.0 in Lithuania, involving experts from academia, industry and public (policy makers).
2. As a result of discussion, the group of experts should be formed including academia, industry and public sector. Expert group will prepare the concept of the new policy instrument "Digital Innovation Hubs", outlining the activities to be fostered and evaluation criteria for new application projects.
3. Ministry of Economy and Innovation will prepare the guidelines to financing "Digital Innovation Hubs" and submit it to the public discussion and validation in the expert group according to the policy instrument concept.
4. The group of experts will evaluate the guidelines to financing, public discussion results and issue the recommendations for the policy measure.
5. Ministry of Economy and Innovation will do the needed amendments to the guidelines according to the suggestions form group of experts and public hearings;
6. New policy instrument "Digital Innovation Hubs" call for application will be launched for DIHs, to create the needed infrastructure and services for SMEs in the process of digitisation.
7. After the announcement of the call and submission of the applications by DIHs to perform the evaluation of the new policy instrument, initiate discussion about needed changes.

4. Players involved

Ministry of Economy and Innovation – responsible for approving policy instrument, launching the call, organising work group meetings, evaluation of the policy instrument results.

LVPA (Lithuanian Business Support Agency) - responsible for managing the process of funding the DIHs, approving applications.

DIHs – beneficiaries of the policy instrument "Digital Innovation Hubs", responsible for generating ideas and applying for investment to deliver services to SMEs to increase productivity and competitiveness

SME – indirect beneficiaries of the policy instrument "Digital Innovation Hubs", responsible for participating in discussions,

Research institutions – responsible for delegating experts to the work group, participating in discussions process.

LIC - responsible for participating in work groups, learning exchange process, consulting SMEs.

5. **Timeframe**

The implementation process starts from July of 2019 and it will be finished with the funding of the applications and monitoring of the results in 2022.

January – March 2019 discussion with experts, outlining the activities to be fostered and evaluation criteria for new application projects;

March – June 2019 preparation of the guidelines for financing "Digital Innovation Hubs" and submitting it to the public discussion and validation;

December 2019 launching the call for applications;

August 2020 evaluation of applications;

December 2021 – March 2022 evaluation of the new policy instrument, initiation discussion about needed changes.

6. **Costs (if relevant)**

Additional costs not required.

7. **Funding sources (if relevant):**

Policy instrument is financed under policy instrument Industry digitization, Structural Funds Operational Programme 2014-2020, priority axis no3 (SMEs competitiveness), available funds for companies in the call of application 18 322 815 Eur, it is estimated that implemented projects for this policy instrument call for applications will get private investment of 15-16 mln Eur.

Date	
Signature	
Stamp of organisation (if available)	LIETUVOS RESPUBLIKA Viešoji įstaiga LIETUVOS INOVACIJŲ CENTRAS VILNIUS