Summarizing report of elaboration of Concept in Jelgava and Siauliai
within ERDF co-financed project LLI152 «Improvement of services available by citizen card in Jelgava and Siauliai»
e-Card

2020

1. Introduction

Project LLI-152 «Improvement of services available by citizen e-Card in Jelgava and Siauliai» (e- Card), that is co-funded by European Regional Development Fund (ERDF co-funding 496 595.70 EUR), foresees common challenge - necessity to improve the functionality of citizen e-Cards to make their use more functional and available for citizens and one of the planned activities within this project was Concept.

Project includes work package "Cross-border experience based research and concept" with specific objectives:

- To get the necessary data about potential development and improvements necessary for citizens and administration staff / departments, as well as other focus groups;
- In SmartCity concept to define development of city cards with analyses of alternatives, feasibility study, short - term and long terms tasks and results;
- To provide exchange of best case experience between project partners and specific groups of specialists.

Research was first part of this work package was done with the aim to find out the attitude of citizens from Jelgava and Siauliai towards e-Cards and **Concept** was second part of this work package with **aim** to define development of city cards with analyses of alternatives, feasibility study, short - term and long terms tasks and results, including the situation analyses based on research, feasibility study including vision, long term and short term objectives, analyses of alternatives etc.

Concept Subject: to prepare a concept on how to improve the efficiency and administration of public and private services provided to the residents of Siauliai and Jelgava by strengthening the capacity of municipal institutions and structures using IT solutions.

Both project partners had used the similar **Concept structure** – An introduction describing a brief description of the concept and the purpose of the document, Evaluation of the current situation and description of the existing problems, Objectives of the measures included in the concept, which describe what is to be achieved as a result of the implementation of the measures included in the concept; Description of conceptual solutions, in which the content and operation of each function to be included in the population map are detailed and the content and organizational structure necessary for the improvement of functions is described and schematically depicted; a vision of short-term and long-term goals, analysis of alternatives that would meet the wishes of the population, etc.

Concept elaboration in Jelgava was organized from February 2018 till May 2018, while in Siauliai Concept was done in from January 2019 till November 2019.

2. Jelgava

In order to achieve the overarching goal of the concept, the goal of the Smart City management system is set - to ensure the availability of services offered to the residents of Jelgava and cross-border cooperation partners in order to:

• promote the loyalty of citizens and businesses,

• promote the business of Jelgava city,

• ensure operative (real-time) decision-making of the municipality,

• attract residents and visitors to the city of Jelgava,

• promote the efficiency and transparency of the work of local government institutions,

• improve the quality and availability of services offered by the municipality,

• reduce administrative burdens,

• reduce the costs of administering various benefits.

One of the most important tasks of the city development work in the context of the concept was to implement the management of the Smart City system, which will provide a digital economy platform in the city of Jelgava. Various tools are used for this purpose, including potential improvements to the future functionality of the population card, and development scenarios need to be developed in the context of the Smart City management system to be implemented.

Description of the functionality of the planned solutions

In order to achieve the goal set by the concept, the following solutions are offered:

• to develop "Smart Tools": mobile application, e-Telpa.lv, VISA / MasterCard - with the possibility to add and identify accounts of various credit institutions and payment institutions;

• integrate "Smart Places": cash registers, bank terminals, video cameras, access readers, etc .;

• Integrate "Smart Tools" and "Smart Places" to provide communication and autonomous service methods:

    o identification and authentication of citizens and businesses;

    o Processing of interactive documents using "Smart Tools" and "Smart Places";

    o making payments and managing the content of the check;

• create a system and an open interface:

    o management of autonomous service rules, incl. relief for calculation from check content, identification, events;

    o accounting and execution of autonomous services during identification, communication and payments;

    o Registration and initialization of different types of "Smart Tools" and "Smart Places".

• digital platform loyalty program (event tickets with a different tariff): mobile application;

• Real-time analysis and reporting of SmartCity status:

o data collection from Smart Tools, Smart Places and digital platform systems;

o processing of collected data according to the developed data models and generation of platform reports;

o Interaction with received data and messages using interactive documents.

• digital platform loyalty program (discount program management, customer and user group management, reflection, calculation and provision of discount amounts);

• one-way communication of the digital platform, i.e. city news, tourist guide, discount catalog, self-delivery notifications (push notification): mobile app, e-Space profile;

• digital platform interactive communication, i. reporting, surveys, electronic correspondence: mobile application, e-Space client profile (Fig. 1)
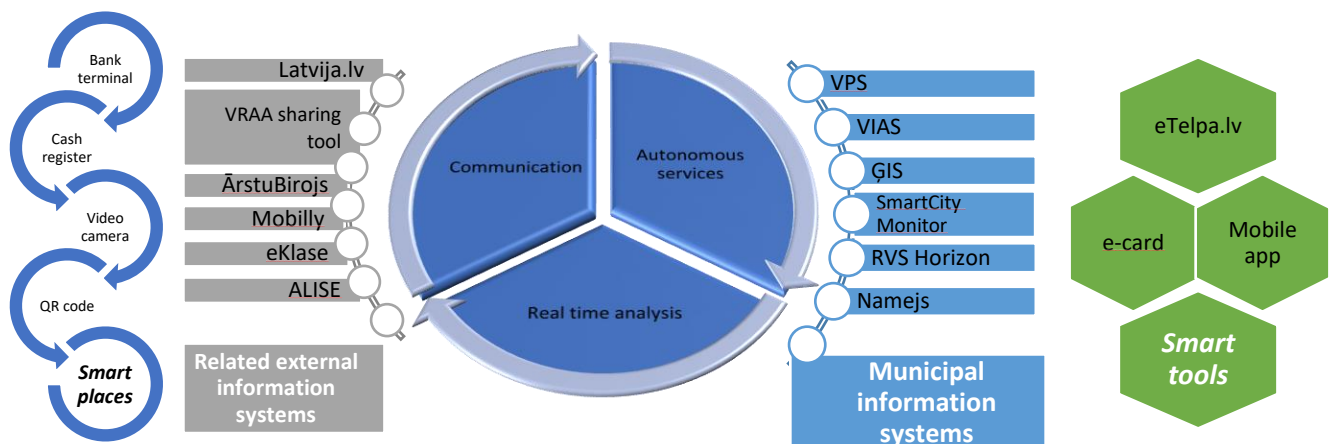
Impact of the concept on short-term (1-3 years) achievable goals

• Use in the city loyalty program:

o Communication - labels with square code;
o Autonomous services - automatic payment and provision of discounts with cash registers and non-cash transfers.

• City ISO 37120 data collection, storage and analysis model Design and development of SmartCity Monitor provides:

o integration of VIAS with data systems of various suppliers (utilities companies, etc.)
o Integration with VPS / VIAS / SmartCity Monitor.

• The development of autonomous services envisages:

- o   Implementation of customer and merchant group functionality;
- o   Development of autonomous service calculation functionality using a check content;
- o   Integration with online systems of various service providers (Latvija.lv, epakalpojumi.lv, Mobilly.lv).

• Creation and development of smart tools (development of resident e-card) provides for:

- o   Resident profile of e-Telpa.lv, as a resident and a company loyalty program management tool, as well as a smart tool and smart place, residents' submissions to VIAS, access to epakalojumi.lv and mobilly.lv;
- o   Citizen's mobile app as a travel and city guide citizen loyalty program management tool, population applications to VIAS, access to mobilly.lv services;

• The introduction of smart places involves:

- o   Labels with square code placement for the city loyalty program;
- o   Labels with square codes for tourist attractions / services;
- o   Labels with square code placement for online information access (eg online broadcast, transport information);
- o   Placement of identification means in libraries.

Impact of the concept on long-term (3-7 years) goals

• City loyalty program through communication - labels with square code and / or NFC chip, Bluetooth beacon;

• City ISO 37120 data collection, storage and analysis model Design and Development of SmartCity Monitor: VIAS integration with various supplier data systems (utilities, etc.).

• Development of autonomous services:

- o   Extension of autonomous services from calculation and execution of payments to standalone services using different event types, integration with interactive documents;
- o   Integration with online systems of various service providers (eveselibaspunkts.lv etc.).

• Creation and development of smart tools (resident e-cards development):

- o   Resident profile e-Telpa.lv as a means of integration with the external supplier online services;
- o   Resident mobile app as billing and communication tool using interactive documents;
- o   Registration of various cards as a resident e-card;
- o   Creation of a universal resident card that can be used identification, communication and payment of various settlements accounts.

• Introduction of smart places:

- o   City loyalty program label with square code and / or NFC chip;
- o   Placement of a Bluetooth beacon for the city loyalty program;
- o   Bluetooth beacon placement for tourism and others objects / services;
- o   Placement of means of identification in schools, clinics, hospitals, interest education groups, etc .;

o   Integration with various sales network cash registers and non-cash payment terminals;
o   Integration with camcorders, Internet of Things IoT (Internet of Things) sensors and other devices and web resources.

3. Siauliai

Siauliai City Municipality Administration, within boundaries of LLI-152 project "E-card" developed a Smart City Concept, the solutions of which are to be adapted and implemented in the city.

Theoretical premises of the smart city were covered, experiences of other cities were discussed.

Initially the level of "smartness" of the city was assessed by the concept developers:

Siauliai was assessed by six criterions:

1. smart residents,

2. smart economics,

3. smart environment,

4. smart governance,

5. smart transport,

6. smart life.

Each of criterions had five levels of achievement formed. It was discovered that Šiauliai is actually still on the first level.

Picture 1. Diagnostic levels of implementing smart city dimensions in Šiauliai

Later on, focus groups' interviews with interested parties, city residents, representatives of the municipality were organized during which the "weak" points as well as expectations were gathered.

Focus groups

Discussions within focus groups revealed that the most important area under the criterion of smart residents in Siauliai is education. Education-related ideas were put forward after all focus groups' meetings: electronic registration of children to schools, database of pedagogical specialists, establishment of the STEAM centre and information system for publicity of non-formal education. Under the criterion of smart governance, online service offerings received the most support: complete transition to digital documents and integrated payments for services.

Under the criterion of smart transport, road safety received the most votes. Two proposals were put forward in this area: smart traffic lights and automatic fining.

Under the criterion of smart life, the most important solution offered was a unified calendar of the city events. Alongside it, in the field of culture and well-being, a unified system of sports bases was proposed.

To continue, city-wide wireless internet access received the most support during the focus groups' discussion under smart environment criterion. In addition to this infrastructure, smart sensors for electricity and other utilities were offered.

Under the criterion of smart economics, participants were most in favour of local and international relations. The Urban Living Lab solution was highly praised.

Based on these results, the solutions were offered that could be made to meet the needs of the city residents and other interested parties as much as possible

SMART TRANSPORT

Currently information on public transport and urban traffic flows is not collected automatically, flows are not optimized based on data analysis, and are not monitored in real time. Siauliai lacks ecological transport alternatives, transport sharing services, multimodal transport planning solutions. If certain technologies were introduced in Siauliai, they would help to manage and automate public transport and urban transport flows. Transport professionals and residents would receive real-time information on traffic conditions, be able to make decisions, take actions that would ensure opportunities to move around the city more safely, faster and with less pollution.
Optimized transport system would contribute to the improvement of the quality of life for Siauliai residents, as well as to the implementation of the sustainable urban mobility plan and the strategic goals of the White Paper.

SMART ENVIRONMENT

Existing urban infrastructure and urban assets are not inventoried digitally, so their management, maintenance and development are not optimized. Long-term investment and strategic planning are not based on advanced data analysis techniques.

Consumption of urban resources (heat, electricity, water, gas) is not monitored and analyzed by automated information systems, therefore their consumption is not optimized. It is proposed to consolidate the data of the municipality administration and its subsidiaries (assets, available infrastructure) in one asset management system, then the status of the assets would be monitored in real time and displayed in the GIS mapping system.

Urban maintenance and development investments would be planned through Big Data Analyst and artificial intellect (AI) solutions. The city resources would be used optimally: the network of remote utility service sensors would allow optimizing the consumption of heat, electricity, water and gas; big data analytics and AI forecasts would ensure asset sustainability and energy efficiency. City maintenance and development would be carried out in a transparent manner: city residents and businesses would be able to use open city property inventory data, get acquainted with the justification of planned investments.

SMART RESIDENTS

Lifelong learning and the development of highly competent specialists are the strategic goals of the city of Siauliai, but the current education system does not provide opportunities for lifelong learning. Currently, there is a lack of technological literacy development initiatives in Siauliai. Digital technologies are not used to promote the community of the population.

According to the concept, residents of Siauliai would live more comfortably with the help of technology: a smart resident could use the required services in the most convenient way for him. Resident communities would be active and contribute to the wellbeing

of the city. Residents of Siauliai city would have opportunities
to effectively retrain and acquire new skills. The integration of formal
and non-formal education would create opportunities for Siauliai
residents to learn and improve throughout their lives.

It was noted that the existing management processes and services provided require too much time of employees and residents, insufficient use is made of the possibilities to collect and use data about the city for decision-making. Involvement of the city population in the management and decision-making of the city is low, residents are not provided with attractive conditions for involvement.
In this regard, it is important that data and digital technologies are used in the municipality administration to optimize management processes and decision-making. Residents would then have the opportunity to express their views on changes in the city that are important to them and to become more involved in decision-making in the city.
Citizens and businesses would have the opportunity to provide their feedback on public services, thus helping to improve the quality of services. Citizens and businesses would receive public services without wasting time and effort in a way that is convenient
for them.
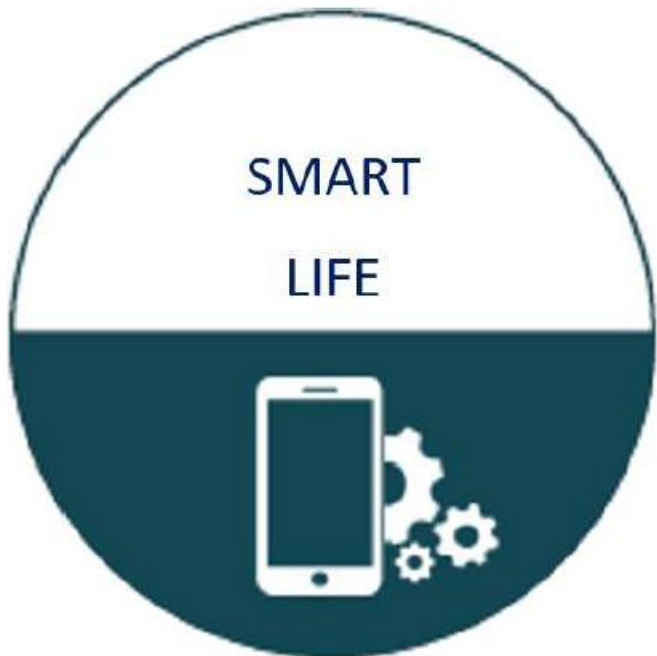
The public security system does not provide comprehensive security, and its servicing and maintenance requires the involvement of many employees. The system is segmented by individual locations in the city.
The provision of information and services on cultural and sporting events and disease health prevention is insufficient, inconclusive and inconvenient.
There is a need for fully automated public security, intelligent cyber security as well as the ensured high-quality and inclusive management and publicity of personal disease prevention, sports and cultural events. Feedback opportunities should be provided so that residents and

businesses have the opportunity not only to receive information relevant to them, but also to give their opinion on events that are important to them in the city.

SMART ECONOMICS

There is a lack of initiatives in Siauliai that promote the development of a new innovative business. Respondents want business support structures to work more efficiently and help businesses grow. City residents would experiment and create new ideas, existing businesses would expand their activities and create new products. And the city of Siauliai would actively use the status of a smart city and business support activities carried out in the city to attract marketing and investments.