

The European Commission's
**INTELLIGENT CITIES
CHALLENGE**

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May 2022

Ioannina : Intelligent City Transformation Overview

ICC Final Deliverable



Executive summary

Health and Safety is the sector in which Ioannina city has the highest performance. It is perceived as being safe by most of its inhabitants and stakeholders, a significant part of the population has access to health-services. Municipality had an early reaction to the challenges created by the COVID pandemic, creating a holistic and solid plan. Also, road traffic is considered to be relatively safe, and the city has a general awareness of climate change. Its only low scores are the fact that the city has critical areas considered to be vulnerable to future climate risks.

But also, there were some sectors that there was a lag of performance like the digitizing Public Services waste Management circular economy and also the citizen participation. Based on this lag of performance and one vision statement, followed by ambitious statements were formulated as following:

“Improving the service of the citizens incorporating ICT, strengthening the collaborations of the Municipality with the local ecosystem, enhancing citizens’ participation”

- Upgrading of the electronic services of the Municipality
- Facilitating the participation of citizens in the daily life of the Municipality, but also in the selection of strategies
- Improving the digital skills of the citizens and staff of the Municipality

A total of 6 solutions were proposed. 2 related to the Smart Cities Application, 2 related to Digital Skills Enhancement, 1 related to Communication Strategy Plan and 1 related to Digital Services Provision. The achievements are related to 1 solution on Digital Skills Enhancement for citizens and an ongoing effort digitize services.

Our main goal for the next 3 years is to be able to provide results relevant to all solutions.

Mayor Foreword

As the Mayor of the city of Ioannina, from the very first day, I supported our participation in the 100 ICC Initiative, having the following expectations:

- Include different stakeholders from the local ecosystem,
- be able to learn from a best practices and
- create a useful network for different kind of collaborations in the future.

Since the September 2020 and despite of certain factors that hindered our solution to be fully achieved, such as the fatigue, the COVID pandemic, the lack of dedicated funding and delays due to legal procedures that arose during the procurement phase, as well as due to inclusion procedures of projects in the National Investment Programme, we still have a solid orientation to fulfill the obligation we have undertaken towards the 100 ICC initiative, believing the benefits of the solutions implemented will be visible in the near future.

The city of Ioannina pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document



1 Preparation & assessment

5 months:
September 2020 – January 2021



2 Ambition & roadmap

3 months:
February 2021 – April 2021



3 Implementation

15 months
May 2021 – July 2022



4 Review & way forward

2 months
August 2022 – September 2022

*Reported as
one section*

Summary

The initial city state: low level of citizen engagement, low number of 4th level electronic services, low level of digital literacy and skills

Roadmap of the deployment of 6 different initiatives:
1 for digital services provision
2 initiatives funded by the “smart cities programme”
2 initiatives for digital skills enhancement
1 initiative for the creation of communication strategy plan

Get “big moves”
1 out of 3 sub initiatives of digital service provision is completed (booking system)
1 initiative for citizen digital skills enhancement was launched (CISCO NetAcad)
1 initiative for civil servants initiated (National Centre of Public Administration launched a strategic partnership with MS)

There are no outcome or benefits to be measured yet

Section

1

September 2020 to January
2021

Ioannina : Preparation and assessment

ICC transformation



Introduction

Within the framework of the engagement of the Municipality of Ioannina in the 100 Intelligent Cities Challenge, the vision statement and the 3 ambitions statements were based on solid strategic goals. Specifically according to the strategic plan of the Municipality of Ioannina 2020-2023. There are 4 strategic goals relevant with the solutions which were undertaken, these are:

Strategic goal 1.1.4 Digital skills enhancement


Strategic goal 1.1.6 Utilization of Smart City applications in different sectors of productive activities of the Municipality


Strategic goal 4.1.1 Modernization of the functioning and services of the municipality and administrative operations enhancement


Strategic goal 4.3.2 Promotion of participation

City needs: State of the city overview

Significance of insight to what we want to do on the ICC

 Of critical importance to ICC journey and we should be working to change

 Of importance to ICC journey, and we should act to change this along the journey as opportunity presents

 Contextually relevant, but not major point of attention in ICC and unlikely to be impacted on the journey

The state of Ioannina today

Health and Safety is the sector that Ioannina city has the highest performance. It is perceived as being safe by most of its inhabitants and stakeholders, a significant part of the population has access to health-services. Municipality had an early reaction to the challenges created by the COVID pandemic, creating a holistic and solid plan. Road traffic is considered to be relatively safe and the city has a general awareness of climate change. Its only low scores are the fact that the city has critical areas considered to be vulnerable to future climate risks.

The sectors of Natural Environment, Green Economy and Economic Growth and Skills are already in a relevant good level, but with high dynamics and prospects of development, as Municipality is funded and participating in many projects in these sectors, during the current period and has scheduled more of them for the next years.

Concerning the sector of Government Services and Social Connectivity, it is clearly needed to be more developed. The city's services are providing predominantly face to face or are available offline. Although there are some digital services, citizens have little awareness of infrequently use e-government services. Due to pandemic, e-services are now accepted from more citizens than before. There is free wireless internet available in public spaces and most of the city is covered by 3G/4G networks, but mostly there is slow internet connection. There is a serious lack of open data availability and local policy on its usage. Concerning citizens participation some initiatives have been launched but they need to be strengthened.

The city must develop the sector of transport and urban infrastructure, as it has low scores too.

Key insights from city performance analysis

Higher performance observed

1 Health and Safety / Safety and Security


2 Health and Safety / Disaster Risk Reduction

3 Economic Growth and Skills / Growing Start-ups, SMEs and the social economy

4 Economic Growth and Skills / local economy

5 Government Services and Social Connectivity / Digital Connectivity

Lower performance observed

1 Government Services and Social Connectivity / Digitizing Public Services 

2 Green Economy / Waste Management

3 Green Economy / Circular Economy

4 Transport and Urban Infrastructure / Freight Transport

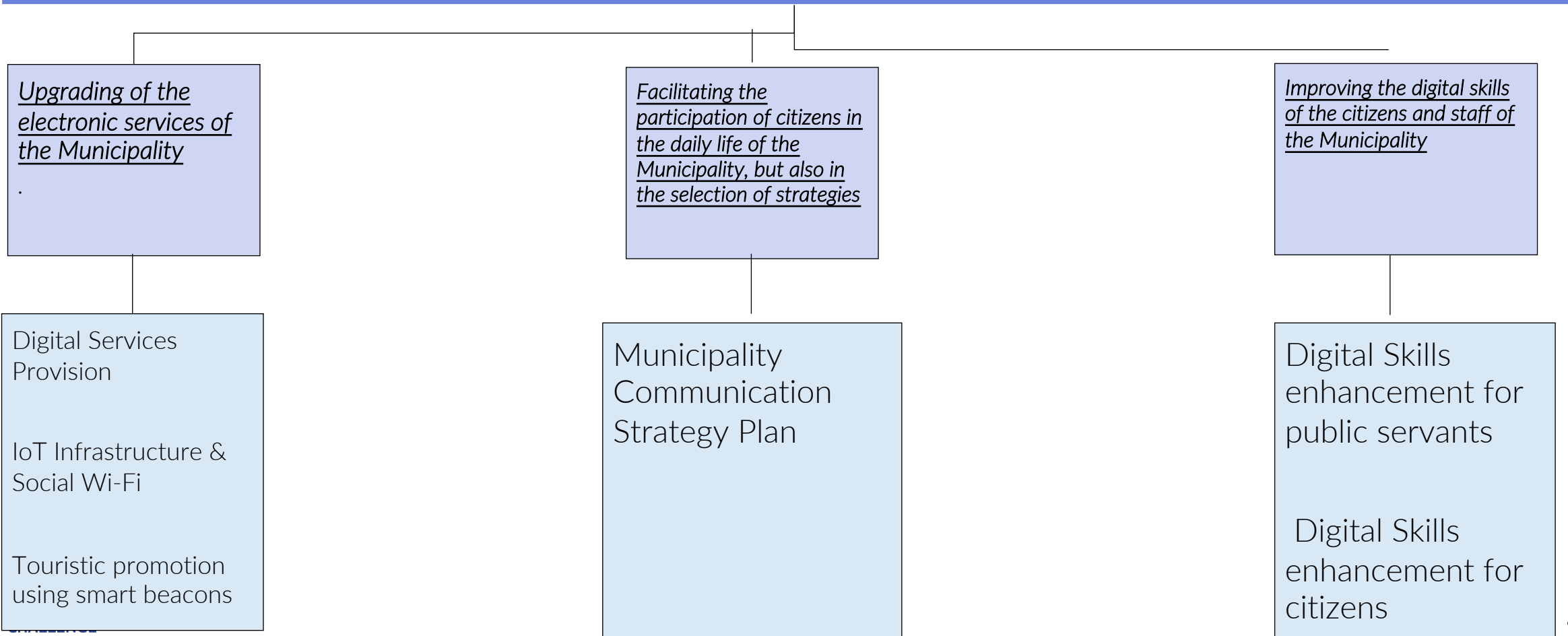
5 Government Services and Social Connectivity / Citizen Participation and Local Industry 

City Ecosystem

- <Lack of people with the proper competences to handle the subject matter as well as the project management>
- <Lack of motivation/interest of the local civic society/citizens to participate>
- <Lack of maturity to handle PPP at a local level>
- <Lack of flexible legal framework for the local society to make decisions>
- <Lack of funding from the central state>
- <Lack of personnel with capabilities to handle complex/flexible procurement procedures>

ICC strategy: Vision and ambition statements

Improving the service of the citizens incorporating ICT, strengthening the collaborations of the Municipality with the local ecosystem, enhancing of citizens' participation.



City strategy: justification

First of all if we were to boil down our strategy into in 2-3 thoughts we would like to mention that above all we have to invest in people, second we would like to have improved the efficiency and effectiveness of our processes and third we would like to provide our services in a way that is easy to access and acceptable to all.

We aimed to have synergies between different solutions. For example we consider that the base of all things is the enhancement of digital skills either of citizens or of civil servants. This is the foundation for everyone to be able to implement and use Digital Services.

We have a strong belief that the community engagement is the main drive to help the people to participate on the strategic level or on different tactical levels where the citizens would play a key role on which and how different initiatives will be put into practice. As far as the success factors is concerned, they can't be the same for all the solutions. Different solutions have different success factors for example we should raise awareness and motivate people to participate in different educational programs for digital skills either they are citizens or civil servants. Concerning the two initiatives of the Smart Cities programme, they should be reliable, they should be available and easy-to-use and be promoted by the city's authorities to all the people. Digital Services should be provided in a uniform way, recommended by the new legislation, for example there should be a single sign-on authentication scheme. The Communication Strategy Plan should be completed, promoted and awareness raised using different approaches.

Section

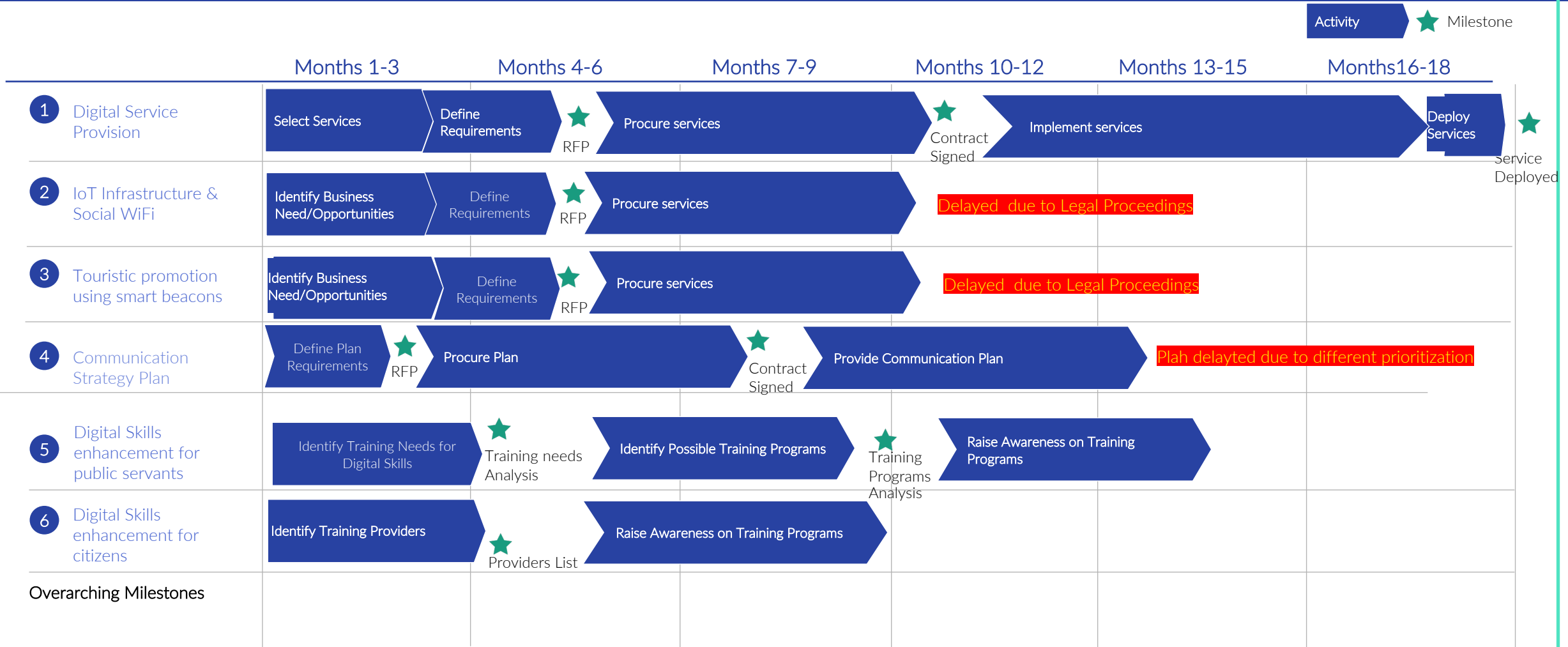
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Ioannina : Ambition and roadmap

ICC Transformation

February 2021 to May 2021

High level implementation roadmap for solution (“10000m plan”)



Rationale to road map












The team supporting the ICC Project for Ioannina city has proposed a portfolio of solutions which are achievable within the Municipality environment. Our approach was to describe each solution in such a level of detail that every solution consists of one initiative.

Each initiative is either appointed to a different functional unit of the Municipality, or is in different project stage. By this way a high degree of parallelism is achieved, without having to pay much attention to initiative prioritization.












1 Initiative charter <Digital Services Provision>

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts	
<p>Description</p>  <p><i>What:</i> This solution aims to the increase of the number of 4th level digital services provided by Municipality's Portal</p> <p><i>Why:</i> Low number of services provided digitally</p> <p><i>How:</i> Easy pay (e-payment system)</p> <p>System for E-transactions for different services</p> <p>E-booking system for appointments with officials, as well as various events</p>	<p>Solution lead: ICT Department</p>  <hr/> <p>Solution working team: A team of Municipality staff members will be defined, as project.</p> 	<p>Source of funding and estimated cost</p> <p>60,000 € euros from National Investment Programme</p> 	<p>Solution maturity outputs</p> <p><i>E-booking System - completed</i></p> <p><i>E-transtactions systems - ongoing process / modeling processes and applicarions template</i></p> <p><i>E-payment system - pending</i></p> 
<p>Link to vision</p>  <p>Improving the service of the citizens incorporating ICT</p>	<p>Contributors: Municipality, Citizens, Businesses</p> 	<p>City performance outcomes and impacts</p> <p>There are no outcomes and impact yet</p> 	
<p>Link to ambition statement</p>  <p>Upgrading of the electronic services of the Municipality</p>	<p>Risks and mitigation</p>  <p>Legal Provisions.</p> <p>E-commerce activation from bank</p> <p>Staff capability to administer the necessary backoffice processes.</p>		
<p>Expected impact and timing</p>  <p>Increased number of citizens using the digital services at the end of 2022</p>			











2 Initiative charter <IoT Infrastructure & Social Wi-Fi>

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p>Description </p> <p><u>What:</u> This solution aims to the expansion of WiFi Network and to the support for Internet of Things (IoT) functions with wireless modules LoRaWAN data covering smart city actions horizontally.</p> <p><u>Why:</u> Lack of appropriate wireless infrastructure of the Municipality areas</p> <p><u>How:</u> Receive Equipment for gathering IoT data</p> <p>Receive Access Points</p> <p>Integration, Implementation and Network expansion</p>	<p>Solution lead:  Which entity (at organization level) is accountable for delivering the solution & initiatives?</p> <hr/> <p>Solution working team:  Team entities (at organization level) tasked with delivering this solution & initiatives</p> <hr/> <p>Contributors:  Municipality, Citizens, Tourism Businesses</p>	<p>Source of funding and estimated cost  40,000 € from "Smart Cities Applications" Project</p> <hr/> <p>Solution maturity outputs  <i>Halted due to legal proceedings</i></p>
<p>Link to vision  Improving the service of the citizens incorporating ICT</p>	<p>Risks and mitigation  Procurement delays due to sustained objections</p>	<p>City performance outcomes and impacts  There are no outcomes and impact yet</p>
<p>Link to ambition statement  Upgrading of the electronic services of the Municipality</p>		
<p>Expected impact and timing  Enhance the WiFi infrastructure of the Municipality area at the end of 2022</p>		





3 Initiative charter <Touristic promotion using smart beacons>

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p>Description</p>  <p><u>What:</u> This solution implements an innovative and interactive thematic tourist packages that include walking and not only routes,</p> <p><u>Why:</u> This solution tries to solve the problem of touristic promotion of the town,</p> <p><u>How:</u> Receive Equipment for gathering IoT data Receive Access Points Integration and Implementation</p>	<p>Solution lead: ICT Department</p>  <hr/> <p>Solution working team: A team of Municipality staff members will be defined, as project team for this solution</p> 	<p>Source of funding and estimated cost 30,000 € from "Smart Cities Applications" Project</p>  <hr/> <p>Solution maturity outputs <i>Halted due to legal proceedings</i></p> 
<p>Link to vision</p>  <p>Improving the service of the citizens incorporating ICT</p>	<p>Contributors: Municipality, Tourism businesses</p> 	
<p>Link to ambition statement</p>  <p>Upgrading of the electronic services of the Municipality</p>	<p>Risks and mitigation</p>  <p>Procurement delays</p> <p>Basic risks related to the execution phase of the project (time, costs, scope)</p>	
<p>Expected impact and timing</p>  <p>Enhance the experience of tourists visiting Ioannina at the end of 2022</p>		<p>City performance outcomes and impacts</p>  <p>There are no outcomes and impact yet</p>












4 Initiative charter < Municipality Communication Strategy Plan >

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p>Description</p>  <p><u>What:</u> The creation of a coherent communication strategic plan which will provide guideline for the promotion of different actions and activities of the Municipality, as well as for the citizens ' awareness to local issues.</p> <p><u>Why:</u> Low citizen engagement and involvement to the design and implementation of projects and initiatives</p> <p><u>How:</u> RfP creation Strategic Plan creation</p>	<p>Solution lead: Mayor's Administration Office</p>  <p>Solution working team: ICC core team with allocated municipality staff</p> 	<p>Source of funding and estimated cost</p>  <p>Approximately 7,000 € from the Municipality Budget</p>
<p>Link to vision</p>  <p>Enhancing of citizens' participation</p>	<p>Contributors: Municipality, Citizens, University of Ioannina, Communication Consultant</p> 	<p>Solution maturity outputs</p>  <p><i>Halted due to new priorities</i></p>
<p>Link to ambition statement</p>  <p>Facilitating the participation of citizens in the daily life of the Municipality, but also in the selection of strategies</p>	<p>Risks and mitigation</p>  <p>Successful Communication Strategy implementation Citizen acceptance and contribution</p>	<p>City performance outcomes and impacts</p>  <p>There are no outcomes and impact yet</p>
<p>Expected impact and timing</p>  <p>Enhanced involvement of citizens and local ecosystem in the design and implementation of important projects and initiatives</p>		

5 Initiative charter <Digital Skills enhancement for public servants>

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p>Description </p> <p><u>What:</u> label of the solution and corresponding initiative(s)</p> <p><u>Why:</u> Problem(s) the solution addresses</p> <p><u>How:</u> National Centre of Public Administrations / External Provider</p> <p>Identify Training Needs</p>	<p>Solution lead: HR Department </p> <hr/> <p>Solution working team: ICC core team with allocated municipality staff</p>	<p>Source of funding and estimated cost </p> <p>Cost per training for the expert, in case the training is outside the scope of the National School of Public Administration programme</p>
<p>Link to vision </p> <p>Improving the service of the citizens incorporating ICT, strengthening the collaborations of the Municipality with the local ecosystem</p>	<p>Contributors:  Trainers, National School of Public Administration, Technical Experts</p>	<p>Solution maturity outputs </p> <p><u>National Centre of Public Administration</u></p> <p>E-Government</p> <p>Programming Languages</p> <p>Networks-Servers</p> <p>Office Automation</p>
<p>Link to ambition statement </p> <p>Improving the digital skills of the citizens and staff of the Municipality</p>	<p>Risks and mitigation </p> <p>Number of annual programs approved</p> <p>Number of Attendees that are willing to follow the programs</p>	<p>MS Strategic Partnership</p> <p>Microsoft 365 Fundamentals</p> <p>Microsoft Power Platform</p> <p>Microsoft Power BI</p> <p>Azure</p>
<p>Expected impact and timing </p> <p>Enhanced digital capabilities by the end of 2020</p>		<p>City performance outcomes and impacts </p> <p>There are no outcomes and impact yet</p>

6 Initiative charter <Digital Skills enhancement for citizens>

Strategy	Stakeholders involved	Inputs, outputs, outcomes and impacts
<p>Description</p>  <p><u>What:</u> The ultimate goal is to provide information and training on new technologies for citizens.</p> <p><u>Why:</u> Problem(s) the solution addresses</p> <p><u>How:</u> CISCO Academy Certified (Digital Skills Programme)</p> <p>Identify Training Needs</p> <p>Organize Classes</p>	<p>Solution lead: Life long Learning Department</p>  <hr/> <p>Solution working team: ICC core team with allocated municipality staff</p> 	<p>Source of funding and estimated cost</p>  <p>Cost per Training for the expert (The 3 specific seminars were held with no cost)</p>
<p>Link to vision</p>  <p>Strengthening the collaborations of the Municipality with the local ecosystem</p>	<p>Contributors: Trainers, Ministry of Education, Ministry of Digital Governance, University of Ioannina, Experts</p> 	<p>Solution maturity outputs</p>  <p><u>Municipality of Ioannina E-Academy:</u> Intro to CyberSecurity –Course completed Network Essentials-Course ongoing CyberSecurity Essentials-Course open for applications (30 citizens participated in each)</p>
<p>Link to ambition statement</p>  <p>Improving the digital skills of the citizens and staff of the Municipality</p>	<p>Risks and mitigation</p>  <p>Number of annual programs approved</p> <p>Number of Attendees that are willing to follow the programs</p> <p>Lack of consistent information about the availability of the programs</p> <p>Lack of Funding</p>	<p>City performance outcomes and impacts</p>  <p>There are no outcomes and impact yet</p>
<p>Expected impact and timing</p>  <p>Increased digital skills to the citizens</p>		

Key Performance indicators - overview

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
Digital Service Provision	%Funding committed by city authority Schedule Variance (SV)	# of digital services implemented Service availability levels	Citizens satisfaction using digital services # of people used each service per month Civil servants satisfaction levels
IoT Infrastructure & Social WiFi	%Funding committed by city authority Schedule Variance (SV)	Area coverage of access points Service availability levels % of devices Up	Citizens satisfaction levels # of active users per month
Touristic promotion using smart beacons	%Funding committed by city authority Schedule Variance (SV)	Area coverage of beacons #of touristic routes provided Service availability levels	Tourists' satisfaction levels # of tourists used the routes per year
Citizen Engagement StrategicPlan	%Funding committed by city authority Schedule Variance (SV)	Policy/Strategy awareness activities	Citizens awareness on communication strategy # of policy sectors implemented
Digital Skills enhancement for public servants	Schedule Variance (SV)	# of raising awareness activities % of personnel received digital skills training until the end 2022	Civil servants awareness on training programs
Digital Skills enhancement for citizens	Schedule Variance (SV)	# of raising awareness activities % of seats filled in every digital skills training program	Citizens awareness on training programs

Key Performance indicators - Cross cutting indicators

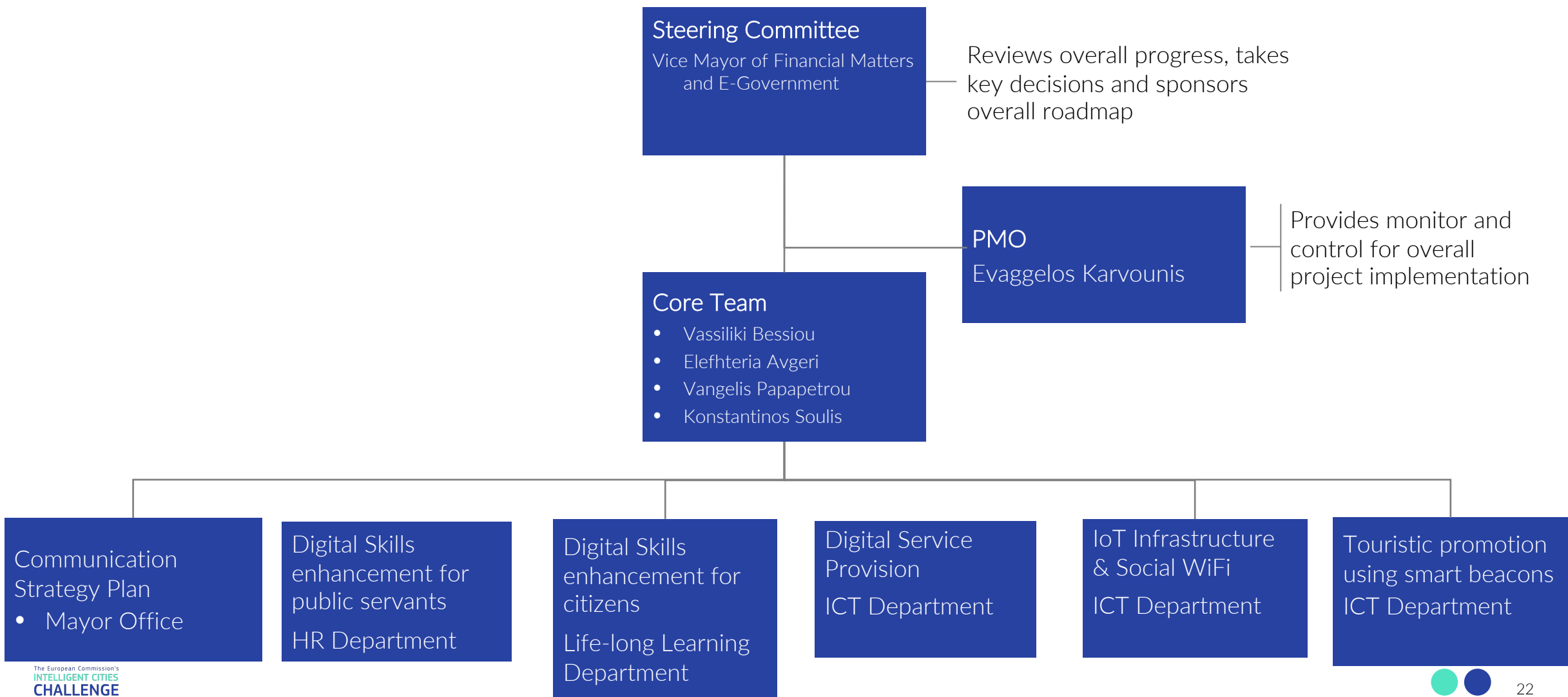
Cross cutting indicators (measured for the prefecture)

Active population, in thousands of people

Average annual population growth past 10 ten years

Average annual GDP growth past 10 ten years

4 Governance structure for roadmap implementation -



The European Commission's
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Section

3+4

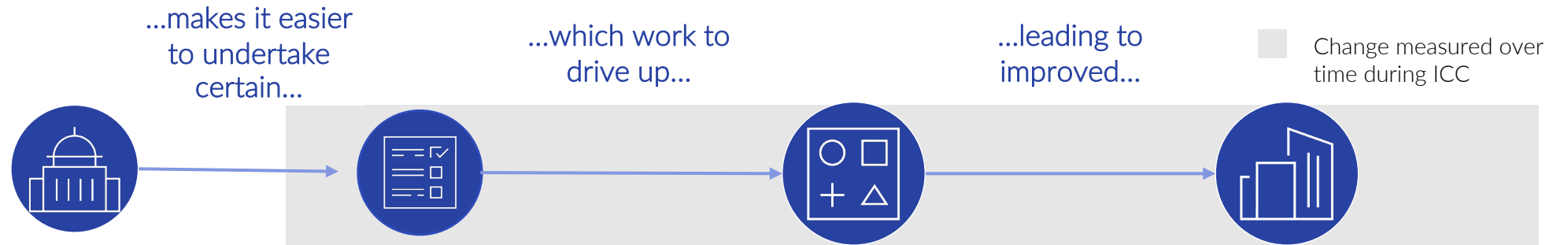
Ioannina : Impact



Impact executive summary

- Since the September 2020 and despite of certain factors that hindered our solution to be fully achieved, such as the fatigue, the covid crisis, the lack of dedicated funding and delays due to legal procedures that arose during the procurement phase, as well as due to inclusion procedures of projects in the National Investment Programme, we still have a solid orientation to fulfill the obligation we have undertaken towards the 100 ICC initiative, believing the benefits of the solutions implemented will be visible in the near future.
- Throughout the ICC journey the Municipality of Ioannina came across some major successes but also faced some major issues.
- A) The major successes were the creation of a Digital Academy so that the digital capabilities of the citizens to be enhanced as well as the creation of a new scalable platform on which a booking system was built and an e-payment and e-application systems are expected to be built.
- B) The Commitment to participate in seminars to enhance the digital capabilities of the Municipality's employees, especially participate in relevant seminars organized by the National Centre of Public Administration
- C)The major issues the had to be tackled were the halt of 2 "Smart Cities" projects were halted due to legal reasons
- D)The commitment of the Municipality of Ioannina for the next 2 years is to enhance the major successes and find a response in order for the 2 projects to be unblocked.

There are four types of measurable concepts that come together to drive success in the ICC



Idea	Local enablers – city characteristics	Activities – actions and inputs	Technology maturity – outputs	City performance – outcomes and impacts
Description	Municipality citizens, experts, Municipality executives	The need of a unique platform is the main driver for e-services to be provided	A fully scalable portal created to host 3 services e-payment, e-applications, booking system	As a result it will be able to enjoy 4 th level e-services
Description	Municipality citizens, experts, Municipality executives	The need of an comprehensive initiative to enable the citizens to be educated in digital skills	Ioannina Digital Academy was launched	As a result 3 programmes are already completed covering different aspects of digital skills

Assessment of city performance

Initiative	City performance – outcomes and impacts	Targets	Final Results
Digital Service Provision	Citizens satisfaction using digital services # of people used each service per month Civil servants satisfaction levels	More than 70% At least 20 More than 70%	Solution not fully implemented, The e-booking system is only working
IoT Infrastructure & Social WiFi	Citizens satisfaction levels # of active users per month	More than 70% 150-250	Initiative Not Implemented Yet
Touristic promotion using smart beacons	Tourists' satisfaction levels # of tourists used the routes per year	More than 70% at least 150	Initiative Not Implemented Yet
Communications Strategy Plan	Citizens awareness on communication strategy # of policy sectors implemented	More than 70% 5-8	Initiative Not Implemented Yet (due to different prioritization)
Digital Skills enhancement for public servants	Civil servants awareness on training programs	More than 60%	Overperformance. Training seminars of great demand
Digital Skills enhancement for citizens	Citizens awareness on training programs	55-60%	Difficulties in measuring

Assessment of solution maturity - progress against KPIs

	Where we started	Midway through the challenge	Final results
Digital Service Provision			
1	Number of digital services implemented	E-booking system implemented, e-payment and e-application system under development	
2	Service Availability Levels		Not measured
IoT Infrastructure & Social Wifi			
1	Area coverage of access points		Initiative Not Implemented Yet
2	Service availability Levels		Initiative Not Implemented Yet
3	% of devices up		Initiative Not Implemented Yet
Digital skills enhancement for citizens			
1	Number of raising awareness activities		3: internet, tv/radio, press releases
2	% of seats filled in every digital skills training program		100%

Assessment of solution maturity - progress against KPIs

	Where we started	Midway through the challenge	Final results
Digital Skills enhancement for public servants			
1	Number of raising awareness activities		1, held by the National Centre of Public Administration
2	% of personnel received digital skills training until the end 2022		Difficultiew in measuring
Touristic promotion using smart beacons			
1	Area coverage of beacons		Initiative Not Implemented Yet
2	Service availability Levels		Initiative Not Implemented Yet
3	% of devices up		Initiative Not Implemented Yet
Citizen Engagement Strategic Plan			
1	Policy/Strategy awareness activities		Initiative Not Implemented

5 key lessons

Lesson	Reflections
1	Comprehensive Risk Management Policy and Practise for the Programme
2	Contingency plans for not achievable planned initiatives
3	Authority delegation to Municipality executives to be able to ensure continuity in case of ICC team change
4	Effective management of stakeholders and peers
5	Proper expertise in KPIs setting and measuring

3 Year plan - ambitions

Building on the ICC, what would will the city aim to achieve in 3 years time?

We aim to achieve the completion of the Initiatives which were not implemented during duration of this specific programme and enhance their outcomes.

Possibility to initiate new solutions based on the local needs

What steps will you take over the next 3 years to achieve these goals?

Comprehend the reasons for the legal issues for the two initiatives stalled.

Find a solution to overcome them.

In case it is not possible, find alternative initiatives.

Complete the Municipality Communications Strategy Plan.

Discover the main engagement drivers for citizens.

Discover the main reasons for lack of motivation for the citizen's participation.

Enhance the collaboration with the local ecosystem, especially achieve a more active participation of Municipality's executives in the planning and implementation of the initiatives

Enhance the procurement and financial management capabilities of Municipality's executives