



# DIGITAL CITIES CHALLENGE

## Digital Transformation Strategy for the city of Thessaloniki

### *A living lab for digitalisation*

July 2019



# Digital Cities Challenge

Digital Transformation Strategy for the city of  
Thessaloniki: A living lab for digitalisation

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## Executive Summary: Thessaloniki's digital transformation

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### **Thessaloniki, a central node in the Digital Cities Challenge network**

The Digital Cities Challenge an initiative of the European Commission helps to achieve sustainable economic growth in Thessaloniki through the integration of advanced technologies. The initiative fosters complementarities and synergies between existing policies involving digital priorities (e.g. the city's digital strategy, the Resilient Thessaloniki strategy, Central Macedonia's smart specialisation strategy and Operational Programme) and the newly planned policy actions supporting digital transformation.

The ambition is that Thessaloniki will act as model for other Greek and European cities. By developing and testing novel policy levers in a collaborative approach with the involvement of other cities as peers it will demonstrate how to reap the benefits offered by the transformative power of digitisation. It will showcase how to fill the gaps which are currently hindering Thessaloniki to advance and capture the benefits of digital transformation.

### **The digital transformation strategy for Thessaloniki: A living lab for digitalisation**

The vision and the strategy of the city is the outcome of an assessment and consultation process which involved key stakeholders of Thessaloniki. It builds on existing efforts and reflects the strengths, weaknesses and opportunities of the city which were identified through individual interviews with the main actors and analysis of the literature. The main findings and initial ideas for the vision and ambitions of the city, the strategy and the operational objectives were put together by the city core team and discussed with stakeholders in various meetings and workshops. Peer cities further reviewed the vision and ambition statements during Academy seminars organised in Brussels and Thessaloniki before their finalisation.

On this basis, the city of Thessaloniki has defined the following **mission**:

Thessaloniki turns into a resilient city which relies on digital transformation, its human capital and institutions to boost economic growth and improve quality of life.

In order to reach this goal, Thessaloniki will pursue the following ambitions:

- To support the digitalisation of companies focusing on activities that are critical to the local economy (e.g. tourism, ICT, wholesale and retail, transport and logistics).

- To become a living lab for the development of innovative digital services and products.
- To exploit its data by encouraging its use by businesses with the aim of economic growth and evidence-based sustainable policies.
- To use its talents for the digital transformation of the economy.

The roll-out of this strategy will be guided by the implementation of eight operational objectives:

- OO1. Development of a sustainable urban supply chain that cross-cut main economic activities.
- OO 2. Digitalisation of experience tourism List all of your operational objectives without mentioning links to ambition statements.
- OO3. Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations.
- OO4. Digitalisation of G2C and G2B services and interactions of the municipality of Thessaloniki.
- OO5. Open public data and ensure that they are accurate and offered in standard format and at real time.
- OO6 : Support the development of digital services and products relying on open data and utilisation of open data by local companies.
- OO7. Support the upskilling of the human resources in companies (digital and non-digital).
- OO 8. Support the upskilling of new entrants in the labour market.

### **The strategy roadmap for the city of Thessaloniki**

The city has identified the list of activities to be implemented in the short, medium and long terms, in order to make its strategic mission and ambition a tangible reality. As such, a total of 22 specific activities have been identified, under the different operational objectives of the strategy. Examples of key activities to be implemented as part of the strategy include: The consolidation of the logistics within the metropolitan area by creating a connectivity platform and an urban consolidation centre; the upgrading the digital infrastructure necessary for opening of data, the improvement of the quality of the existing data sets and supporting the development of applications based on open data with events that bring together the developers and the users; the improvement and expansion of the pre-incubation services currently offered

by OKThess; the creation of a fab-lab and the development of a knowledge hub for matching companies' need for training on digital subjects with high quality trainers.

The setting up of an Open Data Steering Committee, the modernisation and upgrading of the technical infrastructure for Open Data, and the organisation of events to increase the engagement of data consumers and producers has been identified by the local working group as pilot activities for immediate implementation, in order to launch the implementation phase of the digital transformation strategy and start generating immediate results.

The outlines of the governance of the digital transformation strategy have also been defined:

- The **City Council of Thessaloniki**, which represents the citizens of the city and has the legal responsibility to oversee the operation of the city administration and the decisions of the executive bodies is the owner of the strategy.
- The **Strategy Steering Committee** is the executive body responsible for making decisions regarding the implementation and the revision of the strategy. The Deputy Mayor with responsibilities on e-governance Chairs the body. Members of the body are the stakeholders who have the responsibility of implementing the activities of the Strategy.
- The day-to-day work is coordinated by the **Coordination Office** which is set up within the Municipalities e-Governance Office and acts as the liaison between the strategy implementation structure and the municipality administration.

Last but not least, a performance framework for the strategy has also been designed in light of conducting regular monitoring and appraisal of strategy implementation.

# 1. Introduction to the Digital Cities Challenge

According to recent data, 72% of the EU's population lives in cities, towns and suburbs, making them the engines of the continent's economy. Cities generate 85% of Europe's GDP, they also face multiple, interconnected challenges, including energy and climate change, employment, migration, social inequality, and water, air and soil pollution.

However, through advanced digital technologies, Europe has the opportunity to re-invent the way we manage our cities' development and respond to the big societal challenges, such as efficient health management, cleaner environment, green mobility, and offering great-value jobs. Due to their high density, cities are put in a very good position to create innovative ecosystems made up of a wide array of different stakeholders from government, industry, finance, academia, communitarian organisations, social partners, etc. Cities have the capacity to make policies become reality.

In this context arises the **Digital Cities Challenge**, an initiative of the European Commission with the main purpose to support the cities in their path to digital transformation. DCC offers policy advice and support to 15 cities in Europe, namely **Alcoy**, **Algeciras** and **Granada** in Spain, **Arad** and **Iasi** in Romania, **L'Aquila** in Italy, **Kavala**, **Patras** and **Thessaloniki** in Greece, **Sofia** in Bulgaria, **Ventspils** in Latvia, **Grand-Orly Seine Bièvre** in France, **Pori** in Finland, **Rijeka** in Croatia, and **Guimarães** in Portugal. The support to be offered will speed up the digital transformation and the industrial modernisation of cities in order for them to take full advantage of the 4th industrial revolution.



This initiative draws inspiration on the recommendations set out in the "Blueprint for cities as launch pads for digital transformation". In addition, it will reinforce the networking among model

cities, facilitate their participation in on-going European initiatives in similar policy fields, strengthen stakeholder collaboration, cross-regional partnerships and stimulate investments.

The selected Digital Cities received support in the form of field advisory services provided by a group of high-level experts and peer reviewers, and offered the possibility for city representatives to participate in a series of capacity building and networking seminars. These activities took place in four Academy seminars during which cities shared practices, took advantage of peer to peer learning and worked together and in thematic groups on the steps of their digital transformation trajectory.

The commitment of Mayors is key to the success of fostering economic growth, increasing prosperity as well as well-being across European cities. The engagement of political leadership will be of much value to achieving digital transformation in European cities, providing strategic orientations and ensuring that the process of developing and operationalising the strategy supporting digital transformation is translated into a portfolio of relevant actions supporting each other towards achieving a common goal and tailored to the local context. Such efforts need coordination to ensure that effort and dedication undertaken by the city administration is directed to best effect.

As a result of this, the Digital Cities Challenge has directly engaged with the Mayor of the supported cities. In December 2029, the on Mayors Conference was organized in Brussels to reflect upon the ongoing work and co-design the technological transformation trajectory of European cities.

This digital transformation strategy presented in this document has been developed in the framework of the field advisory services delivered in the Thessaloniki. It represents the main output linked to the participation of the city in the Digital Cities Challenge. The strategy will be the main guiding document for the city to embark on its journey to unleash the power of digital transformation for growth and competitiveness.

## 2. Overview of the digital maturity assessment for Thessaloniki

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The city of Thessaloniki is on the path of digital transformation, achieving an overall maturity score of 2 out of 4 according to the assessment of 41 stakeholders who participated in the Self-Assessment exercise during the period February-March 2018.

The relative **strengths** of the City are the existence of a vibrant digital community, skilled workforce and the digital competences of the local ICT companies.

A significant **weakness** of the city is the access to finance, which reflects the tight public budget and the unfavourable conditions for bank loans available to companies. Another significant drawback is the low level of digital skills in the non-digital sector and the absence of training on ICT provided by companies to their employees.

Some progress is observed in the upgrading of the communication infrastructure with the spread of fibre optics and improvements in the mobile network with the 4G coverage reaching 100%. However, the indoor coverage is lagging behind, reaching 83%. Currently, broadband access to the internet is relatively low, reaching 67% of the households, while the average speed for internet connections is a modest 15-16Mbps. An important drawback is the absence of wi-fi hotspots in public spaces in the city.

Progress has also been observed in governance, support services and open data, although significant challenges need to be addressed. The existence of the digitalisation strategy and a plan for the implementation and monitoring are undoubtedly substantial steps forward, which however are hindered by the low progress in the implementation, lack of coordination and a shared vision among the local communities namely business, academia and citizens. For the support services, the main strength is the existence of innovation labs and incubators. However, there are significant opportunities for improvements by increasing the portfolio and the depth of the support services. Regarding open data, despite the efforts of the city to open the data, they are not usable yet, as they are still offered in non-standard formats, they are not updated, and their quality is not controlled.

A separate assessment report has been produced for the city of Thessaloniki as part of the Digital Cities Challenge.

### 3. Mission and Ambition statements

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The vision of the city is the outcome of an assessment and consultation process which involved key stakeholders of Thessaloniki. It builds on existing efforts and reflects the strengths, weaknesses and opportunities of the city which were identified through individual interviews with the main actors and the analysis of the literature. The main findings and initial ideas for the vision and ambitions of the city were put together by the city core team and discussed with stakeholders in the Vision and Ambition Workshop. Peer cities further reviewed the vision and ambition statements during the Academy seminar organised in Brussels before their finalisation as follows:

**Mission Statement:** Thessaloniki turns into a resilient city which relies on digital transformation, its human capital and institutions to boost economic growth and improve quality of life.

**Vision and ambition statements:**

**Vision Statement 1 : Thessaloniki to support the digitalisation of local companies focusing on activities that are critical to the local economy (e.g. tourism, ICT, wholesale and retail, transport and logistics)**

- For the impact to be visible and set an example for the rest of the economy, the interventions will focus on important economic areas which retain interlinkages with other sectors. In doing so, the focus will be not only on few selected sectors but also on exploiting synergies and solving common problems along the value chain.
- The efforts will capitalise on the existing talents and the local ICT sector to provide advanced digital services and competitive products to address main challenges of local companies.

**Vision Statement 2: Thessaloniki to become a living lab for the development of innovative services and products by the ICT sector — experimentation in new areas and disruptive technologies**

- The digitalisation of the economy provides significant opportunities to the local ICT companies to develop their capabilities and learn in close collaboration with the users before they enter the international market. The experimentation could include new

emerging areas such as the circular economy and disruptive technologies such as IoT and blockchain.

- Supporting the start-ups is an efficient way to direct the creativity of young people towards productive activities with a high return to the economy. There are already good practices in the city that need to be further supported and expanded.
- The city of Thessaloniki has set an ambitious digital strategy that will digitalise a significant number of its activities and its services to the citizens. The implementation of the strategy will enable ICT companies to learn and develop internationally competitive products.
- The experimentation and the collaborative product design can be facilitated through the development of infrastructures, such as fab-labs, and crowdsourcing initiatives (Hackathons).

**Vision Statement 3: Thessaloniki to exploit its data by encouraging their use by businesses with the aim of economic growth and evidence-based sustainable policies.**

- The city has set an example in the opening of the data by offering already 112 datasets. The aim is to double them shortly.
- For the data to be usable, the quality of data sets should be improved, through open standards, in machine-readable and real-time formats.
- The city needs to continue encouraging and facilitating the use of open data by ICT companies (local and other) to develop commercial applications. However, there are also opportunities for non-digital companies, as the open data could add value to their products or services and allow them to make informed business decisions.
- Open-data-based applications can be replicated for other cities and thus create an essential market for local ICT companies.

**Vision Statement 4: Thessaloniki to use its talents for the digital transformation of the economy**

- The existence of a high-quality skilled workforce and high ICT literacy of citizens are at the cornerstone of the digital transformation. Despite the high-level education provided in the local HEIs, still, skill shortages are observed (soft skill and technology specific skills). Besides, the rapid change of the technologies demands flexible systems of training.

- The city should undertake a coordinating role and facilitate the development of supportive services and structures for the development of skills, within digital and non-digital companies.
- To empower the graduates from the local HEIs, and young people entering in the labour market with new skills and knowledge that is needed by local companies, the city needs to build on the existing good practices. The city should coordinate the cooperation between the industry, HEIs and other stakeholders to develop lifelong learning programs in new technologies.

## **4. Thessaloniki - A living lab for digitalisation: the Digital Transformation Strategy for the city of Thessaloniki**

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### **4.1. Strategy orientation**

The strategy aims at contributing to the digital transformation of key economic activities in the city, while at the same time creating a favourable environment for the dynamic local ICT industry by providing opportunities to develop their capabilities and exploit early entry advantages in emerging market niches.

To achieve the strategic objectives, the strategy addresses both the supply and the demand side. On the demand side, the emphasis is on increasing the demand for digital technologies and services in the area of tourism, transport and logistics and the public administration. On the supply side, the opening of data, the experimentation of digital companies on developing new products and services, the support of digital start-ups and development of innovation infrastructures will be supported. Both the supply and demand side will benefit from the development of skills (technical and non-technical) and the update of digital knowledge of human resources.

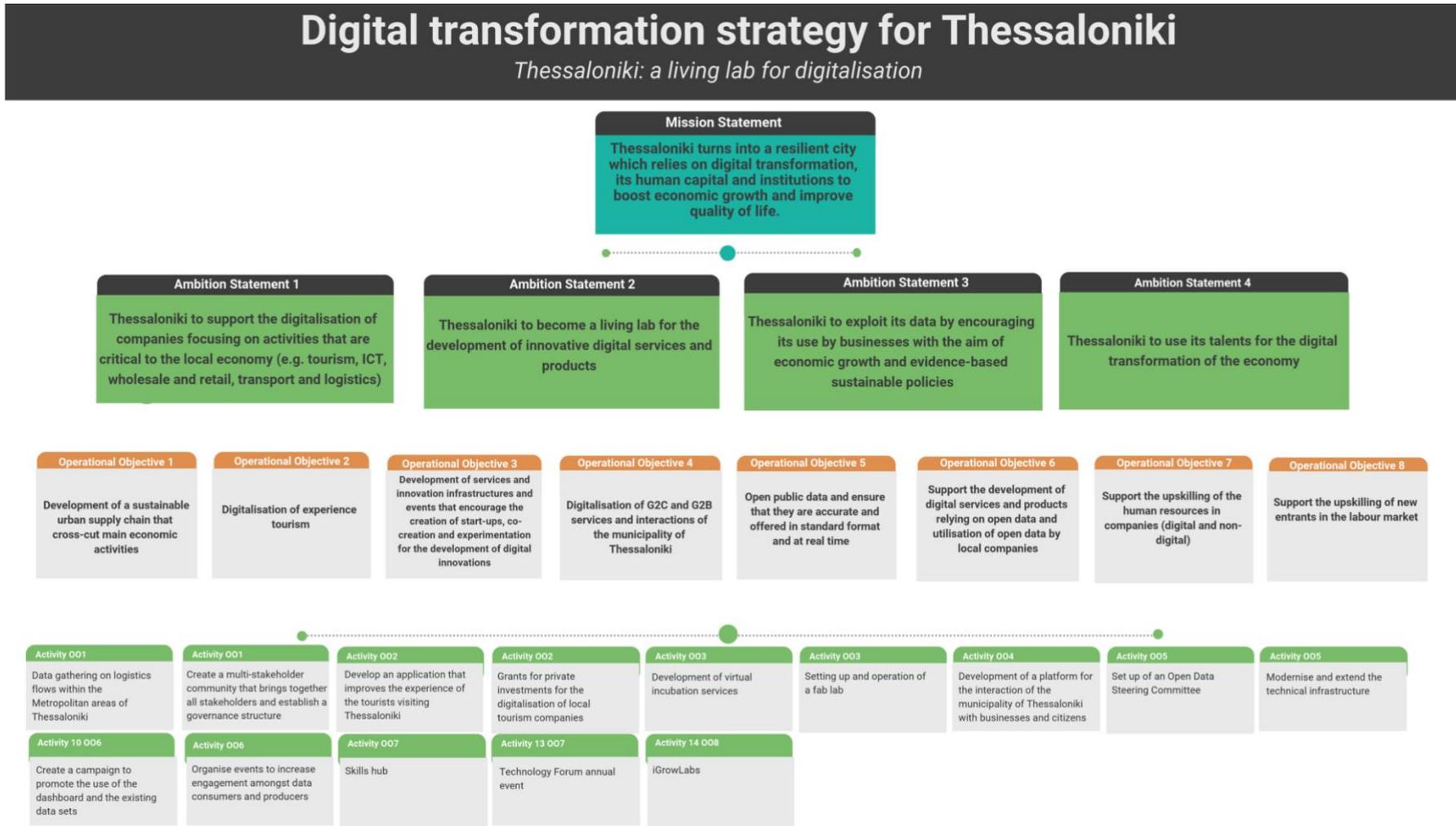
Due to the restricted financial resources, emphasis will be given to soft measures while the development of the necessary telecommunication infrastructures will rely mainly on the investments of the main telecom players.

*Box 1 The links to other existing strategies at the city level*

- The existing Digital Strategy of the city focuses on the digitalisation of the governance and the improvement of the quality of life of the citizens, improvement of the interaction with citizens and businesses, and reduction of the administration cost. The Digital Cities Challenge (DCC) Strategy will complement the existing strategy by building on and where necessary expanding the infrastructures foreseen in the Digital Strategy. Also, the former integrates the digitalisation of the interaction of the municipality with businesses into a broader framework of digital services.
- The focus of the DCC Strategy on tourism, transport/logistics and ICT is aligned with the Smart Specialisation Strategy priorities.
- The DCC strategy adopted one of the priorities of Thessaloniki's Resilience Strategy, to develop a sustainable urban supply chain, and provides the means for achieving the objectives of that priority.
- The operational objectives of the DCC Strategy are aligned with the investment objectives of the Regional Operational Programme for Central Macedonia, and it is expected that several of the activities of the former will be financed by the latter.

The following figure provides an overview of the full digital transformation strategy for the city of Thessaloniki. The individual components are described in further detail in the following sections and sub-sections.

Figure 1 Overview of the Digital Transformation Strategy for the City of Thessaloniki



## **4.2. Operational objectives**

Operational objectives reflect the means through which the city of Thessaloniki will achieve its ambition statements. They represent the ‘how’ behind the high-level strategic vision which has been developed by the local working group. As demonstrated in the following table, operational objectives are linked to one or several ambition statements. The city of Thessaloniki has identified eight operational objectives for its digital transformation strategy.

The selected operational objectives are the outcome of a consultation process which was concluded with a workshop in Thessaloniki. On the ground of the contribution of the stakeholders, the local team prepared a short list of operational objectives for each of the four ambitions, which were discussed and finalised in the workshop.

The following table provides a more detailed presentation of each of the operational objectives.

*DIGITAL CITIES CHALLENGE – Digital Transformation Strategy*

Table 1 Presentation of the operational objectives of the Digital Transformation Strategy for the city of Thessaloniki

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Rational
<p><b>Operational objective 1.1: Development of a sustainable urban supply chain that cross-cut main economic activities</b></p>	<p>Linked to ambition statement 1 (secondary link to ambition statement 2)</p>	<p>The city of Thessaloniki has reached its limits regarding traffic. Logistics which is an essential part of city’s economic activity, including third-party logistics providers, the local port and the logistics of the local manufacturers, retail and wholesale companies established in the city, are one of the contributors to the problem while at the same time they are negatively affected by it.</p> <p>In addition to the environmental problems and the negative impact on the quality of life of the citizens, the congestion has a significant negative impact on the logistics industry and all the sectors relying on transportation for the supply of their inputs and the delivery of their products.</p> <p>Consolidation and digitalisation of the supply chain could increase the logistics performance and productivity resulting in less traffic, and lower cost for businesses.</p>
<p><b>Operational objective 1.2: Digitalisation of experience tourism</b></p>	<p>Linked to ambition statement 1 (secondary link to ambition statement 2)</p>	<p>The municipality of Thessaloniki has already a very successful strategy in place for attracting tourist and improving the quality of the offered services. Therefore, the focus of the digital strategy is not to increase the number of visitors, but instead on increasing the spending per tourist and the average number of days tourists stay in Thessaloniki. To achieve the objective, the strategy focuses on the development of services (by the municipality and businesses) that improve the experience and satisfaction of tourists.</p>
<p><b>Operational objective 2.1: Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and</b></p>	<p>Linked to ambition statement 2 (secondary link to ambition statement 1)</p>	<p>In order to support the supply side of innovations infrastructures supporting experimentation and development of prototypes such as fab-labs and maker spaces will be set up and existing infrastructures that proved to be effective are supported for improving their services and expand their client base.</p> <p>Also, subsidies to ICT companies for developing innovations are provided:</p>

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Rational
experimentation for the development of digital innovations		
<b>Operational objective 2.2: Digitalisation of G2C and G2B services and interactions of the municipality of Thessaloniki</b>	Linked to ambition statement 2	The municipality could play an important role in the development of the local market for digital services by increasing its spending on high value-added services that improve the quality of life of citizens and reduce the transaction cost of companies. The development of the local market will also increase opportunities for local ICT companies to provide new products and services that could also be sold in the European market.
<b>Operational objective 3.1: Open public data and ensure that they are accurate and offered in standard format and at real time</b>	Linked to ambition statement 3 (secondary link to ambition statement 2)	The organisations and that could provide data will be mobilised and encourage to open their data. In doing so a central coordination structure will be established for setting the specifications, identify, collect and open of data within the municipality. Feedback loops will be developed to inform the mechanism collecting and opening of data about the need of companies and citizens.
<b>Operational objective 3.2: Support the development of digital services and products relying on open data and utilisation of open data by local companies</b>	Linked to ambition statement 3 (secondary link to ambition statement 2)	Options for business models for the offering open data to companies for commercial use will be developed. Also activities to increase the awareness of digital and non-digital companies about the available data and potential use and benefits and good practices will be demonstrated. Finally incentives for encouraging ICT companies to develop applications based on open data will be provided.

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Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Rational
<b>Operational objective 4.1: Support the upskilling of the human resources working in digital jobs in companies (digital and non-digital)</b>	Linked to ambition statement 4 (secondary link to ambition statements 1, 2 and 3)	The objective is to address the shortage of soft and hard skills and product development skills by expanding the existing successful infrastructures and practices, develop mechanism for reliable identification of companies' needs and do the bridge with experienced trainers.
<b>Operational objective 4.2: Support the upskilling of new entrants in the labour market</b>	Linked to ambition statement 4 (secondary link to ambition statements 1 and 2)	The objective is to link the provided academic knowledge on digital technologies to graduates from the local universities and young professionals by supporting existing successful practices in the city.

## 5. Digital strategy roadmap and planned activities

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The roadmap is the component of the digital transformation strategy that describes the practical implementation of the strategy, including priority activities and governance. Priority activities refer to the specific actions through which the strategy will be implemented. An activity can be described as a tangible and concrete action, which has a beginning and an end, accompanied by a specific objective and resources for its implementation. The results of activities (**i.e. outputs**) are meant to contribute to reaching the operational objectives identified in the previous section.

### 5.1. Overview of proposed activities

The digital transformation strategy for the city of Thessaloniki will be implemented through a group of activities, identified in the framework of the Digital Cities Challenge. Activities are meant to contribute to reaching the operational objectives defined in the framework of the strategy, which in turn will contribute to the city's ambition and mission. The list of priority activities may be expanded with time. For now, the city has decided to implement 22 activities, as described in the following table.

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<b>Activity name</b>	<b>Link to Operational Objectives</b>	<b>Main implementing partner (i.e. owner of the activity)</b>	<b>Brief description and goals</b>
Activity 1.1.1: Data gathering on logistics flows within the Metropolitan areas of Thessaloniki	1.1	Greek International Business Association (SEVE)	Gather and integrate data on freight flows in the metropolitan area of Thessaloniki (inbound – outbound – intra). There are already data available through former studies and initiatives which need to be integrated and updated.
Activity 1.1.2: Create a multi-stakeholder community that brings together all stakeholders and establish a governance structure	1.1	Greek International Business Association (SEVE)	Setting up an inclusive multi-stakeholder community and establishment of an independent entity which will coordinate the activities represent the community, keep open the dialogue and operate the infrastructures.
Activity 1.1.3: Development of a connectivity platform	1.1	Greek International Business Association (SEVE)	Setting set up a logistics community system, connecting all actors with a state-of-the-art platform on which (static, off line) information can be shared.
Activity 1.1.4: Development of an urban consolidation centre covering the metropolitan area of Thessaloniki	1.1	Greek International Business Association (SEVE)	The urban consolidation centre provides the physical place for the consolidation of the freight transports.
Activity 1.1.5: Support for private investments to increase the digitalisation of logistics within local companies	1.1	Greek International Business Association (SEVE) and Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)	Awareness activities and grants for the encouragement of private investments on the digitalisation of logistics in local SMEs and logistics companies
Activity 1.2.1: Develop an application that improves the experience of the tourists visiting Thessaloniki	1.2	Municipality of Thessaloniki – Tourism Department	Application that provides tailored plan of activities, places of interest to visit and entertainment opportunities based on personalised criteria and preferences of the user.

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<b>Activity name</b>	<b>Link to Operational Objectives</b>	<b>Main implementing partner (i.e. owner of the activity)</b>	<b>Brief description and goals</b>
Activity 1.2.2: Multimedia showroom	1.2	Municipality of Thessaloniki and Thessaloniki Convention Bureau	A show room equipped with high tech multimedia and virtual reality equipment to provide a wide range of experience such as museum exhibitions, music performance, history events etc.
Activity 1.2.3: Grants for private investments for the digitalisation of local tourism companies	1.2	Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)	Increase the experience of tourist by encouraging private investment in tourism and digital companies aiming at the development of applications and services covering all aspects of tourist experience.
Activity 2.1.1: Development of virtual incubation services	2.1	OKThess	The pre-incubator OKThess will extend its geographical coverage and dealflow by developing and delivering virtual services based on bundle of online tools and on premises events
Activity 2.1.2 Improvement of OKThess services	2.1	OKThess	OKThess will improve: the coaching services by attracting retired entrepreneurs as coaches; Creation of a business angels network; organisation of events
Activity 2.1.3: Setting up and operation of a fab lab	2.1	OKThess	A fab-lab and maker space will be developed within the premises of OKThess to offer services to start-ups and to existing companies which want to develop new digital products
Activity 2.1.4: Grants for private investments in local digital companies for developing new products	2.1	Association of ICT companies of Northern Greece (SEPVE) Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)	The development of new products and applications by the local digital companies will be supported by grants.
Activity 2.2.1: Development of a platform for the	2.2	Municipality of Thessaloniki – e-Government Department	The IT system will provide to companies and citizens access to vital information and will allow them to do transactions

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<b>Activity name</b>	<b>Link to Operational Objectives</b>	<b>Main implementing partner (i.e. owner of the activity)</b>	<b>Brief description and goals</b>
interaction of the municipality of Thessaloniki with businesses and citizens			such as: payments, requests and delivery of documents, access to public procurements. The accounts of businesses and citizens will summarize all the interaction with the municipality.
Activity 3.1.1: Set up of an Open Data Steering Committee	3.1	Municipality of Thessaloniki, e-Government Department	The Steering Committee will supervise and facilitate the process of opening the city's data. Its members will represent organisations in the city with a significant interest in data, including data producers who could contribute additional data sets to the open data platform.
Activity 3.1.2: Modernise and extend the technical infrastructure	3.1	Municipality of Thessaloniki, e-Government Department	The existing open data technical infrastructure will be upgraded to accelerate the provisioning of new open datasets, to facilitate the use of open data from third-party organisations and to improve the functionality for the citizens, companies and stakeholders.
Activity 3.1.3: Increase the quality of open datasets	3.1	Municipality of Thessaloniki - e-Government Department	The municipality will work to improve the accessibility of the existing open datasets. A Data Quality Framework will be created to be used for the evaluation of the existing datasets. Based on the assessment a quality improvement plan will be developed and applied.
Activity 3.2.1: Create a campaign to promote the use of the dashboard and the existing data sets	3.2	Municipality of Thessaloniki - e-Government Department	A campaign will promote the use of the dashboard and the use of the datasets. The campaign will include a launching event, new letter, social media presence, collaboration with local TV channel.
Activity 3.2.2: Organise events to increase engagement amongst data consumers and producers	3.2	Municipality of Thessaloniki, e-Government Department with the support of SEPVE and cities universities	The current activity is complementary to Activity 15, and focus on the producers of data and business community who could develop applications and services based on open data. The activities include the organisation of meet-ups,

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Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
			design thinking workshops, hackathons and annual summits, as well as rewards for the those developing applications.
Activity 3.2.3 Establish a prestigious thesis programme for skilled students in partnership with academia	3.2	Municipality of Thessaloniki - e-Government Department in collaboration with city's universities.	Establishment of a formal partnership between the municipality and the universities for students to work on priority open data projects
Activity 4.1.1: Skills Hub	4.1	OKThess	The Skills hub will address the existing gap of skills on cutting-edge technologies and on soft skills by setting up a flexible training mechanism that will be able to respond fast to companies' requests. The hub will set the specifications for the training courses and do the matching between the demand and supply of training
Activity 4.1.2 Technology Forum annual event	4.1	Technology Forum	The Technology Forum annual conference in Thessaloniki bring together business, researchers and academia to discuss and be updated on main technological trends and the latest development in the digital world. Keynote speakers are well known members of the international business and academic world.
Activity 4.2.1: iGrowLabs	4.2	Association of ICT companies of Northern Greece (SEPVE)	iGrowLabs is a 36 months program (3 annual cycles) offering the opportunity to companies to work closer with the University and attract new talent and students to find opportunities for employment right after their graduation. iGrowLabs provide coworking space for graduates and postgraduates and mentoring by companies in order to finish their thesis on subject that is of the interest of the coaching company.

A detailed presentation of each activity is presented in the Appendix I.

## 5.2. The pilot activities

In order to begin the implementation of the strategy, the city of Thessaloniki has decided to carry out three pilot activities that will test the readiness of the city to proceed with the exploitation of open data:

### **Activity 3.1.1: Set up of an Open Data Steering Committee**

The formation of the Open Data Steering Committee will be the first test of the readiness of the stakeholders to be involved in the opening and exploitation of the data produced in the city. As soon as the strategy is agreed the municipality will send a request to selected stakeholders to participate in the Steering Committee. It is expected that the Committee will be ready within the first three months of the roadmap. More information about the role and the mandate of the Committee can be found in Annex III.

### **Activity 3.1.2: Modernise and upgrade the technical infrastructure for Open Data**

A small number of the data sets Thessaloniki has already opened, are in a form that allows the direct use by applications or their demonstration to the public. In order to do this the existing technical infrastructure needs to be upgraded by developing Application Programming Interfaces (APIs) and upgrading the existing dashboard with new features that improve the visualisation. The upgrade of the infrastructure will allow the demonstration of the possibilities offered by the opening of the data at a very early stage and thus benefiting and accelerating the implementation of the other related activities. The city will start the implementation for a few high-quality data sets. For those the city will develop the necessary APIs and as soon as the infrastructure of the dashboard is ready the data will be visualised. The activity will be implemented within seven months under the supervision of the e-Government Department of the Municipality of Thessaloniki.

### **Activity 3.2.2: Organise events to increase engagement amongst data consumers and producers**

In parallel with activity 15, the first event for attracting developers and users of open data will be organised. It will have the form of a meet-up with developer communities and universities, to demonstrate and discuss platform features, solicit input on improvements and share best practices.

As soon as the API for the selected data sets are ready a hackathon aiming at developing ideas for applications that could use the selected data sets will be organised. The rewards the

city intends to offer will also be tested. The activity will be performed from March to December 2019.

### **5.3. Timetable for implementation**

It is foreseen the strategy will be implemented for the next four years. Activities will be gradually implemented, on the basis of the following indicative timetable.

**DIGITAL CITIES CHALLENGE – Digital Transformation Strategy**

Table 2 Timetable for the implementation of the digital transformation strategy for the city of Thessaloniki

Activity	Jan-Jun 2019	Jul-Dec 2019	Jan-Jun 2020	Jul-Dec 2020	Jan-Jun 2021	Jul-Dec 2021	Jan-Jun 2022	Jul-Dec 2022
3.1.1(pilot): Open Data Steering Committee								
3.1.2 (pilot): Modernise the technical infrastructure								
3.2.2 phase 1 (pilot): Events for increasing engagement								
3.2.2 phase 2: Events for increasing engagement								
1.1.1 Data gathering on logistics flows								
1.1.2 Create multi-stakeholder community and governance structure								
1.1.3 Development of a connectivity platform								
1.1.4 Development of an urban consolidation centre								
1.1.5 Support digitalisation of logistics in local companies								
1.2.1 Develop application that improves the experience of tourists								
1.2.2 Multimedia showroom								
1.2.3 Private investments for the digitalisation of tourism companies								
2.1.1 Development of virtual incubation services								
2.1.2 Improvement of OKThess services								
2.1.3 Setting up and operation of a fab lab								
2.1.4 Support private investment in digital companies								
2.2.1 Development of a platform for the interaction of the municipality with businesses and citizens								
3.1.3 Increase the quality of open datasets								
3.2.1 Campaign to promote the use of the datasets								
3.2.3 Establish a thesis programme for skilled students								
4.1.1Skills Hub								
4.1.2 Technology Forum annual events								
4.2.1 iGrowLabs								

## 6. Strategy governance

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The city adopts a lean governance structure that works in parallel with the municipality's administrative structure.

The **City Council of Thessaloniki**, which represents the citizens of the city and has the legal responsibility to oversee the operation of the city administration and the decisions of the executive bodies is the owner of the strategy. The Council will approve the strategy and review the implementation yearly on the base of an annual review report prepared by the Strategy Steering Committee.

The **Strategy Steering Committee** is the executive body responsible for making decisions regarding the implementation and the revision of the strategy. The Deputy Mayor with responsibilities on e-governance Chairs the body. Members of the body are the stakeholders who have the responsibility of implementing the activities of the Strategy. Also, the Steering Committee will invite other stakeholders that are instrumental for the successful implementation of the strategy to participate in this body. The Steering Committee will hold meetings every two months.

The day-to-day work is coordinated by the **Coordination Office** which is set up within the Municipalities e-Governance Office. The Coordination Office is the liaison between the strategy implementation structure and the municipality administration. It monitors and coordinates the implementation of the various activities and ensures that the overall schedule is respected. It prepares regular short bi-monthly progress reports to the Steering Committee and presents recommendations on actions that need to be taken for the smooth implementation of the strategy. Besides, it acts as the secretariat to the Strategy Steering Committee and supports the Steering Committee in its reporting to the City Council.

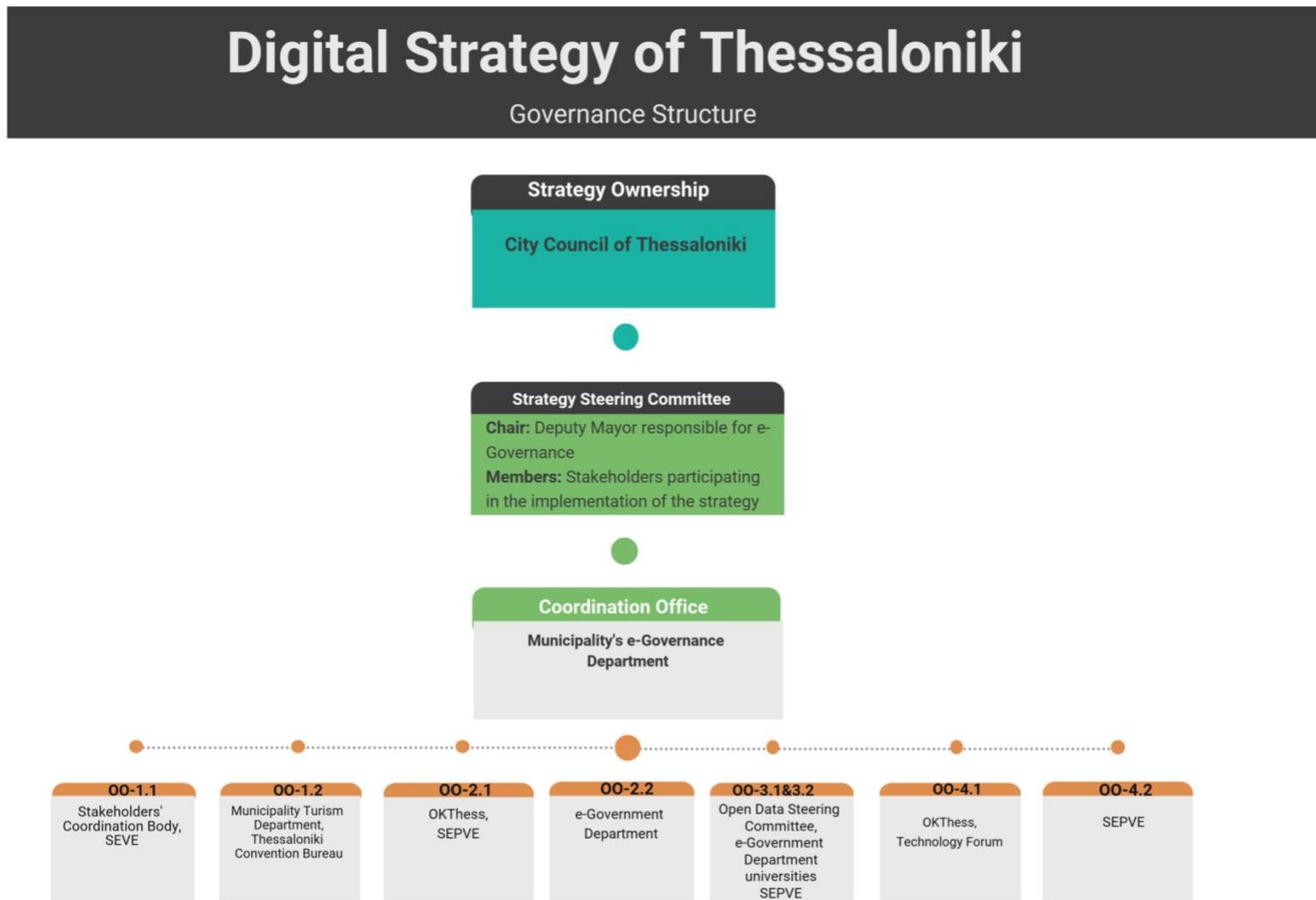
Due to the small number of activities, there is no need for a coordinator per Operational Objective except the Operational Objectives 1.1, 3.1 and 3.2.

For the OO 1.1, a multi-stakeholder governance structure will be set up which is expected to have also a legal identity (see Activity 2 in Annex III). The mandate of the structure is to coordinate the logistics and transport community of the metropolitan area of Thessaloniki although his coordination role goes beyond the scope of the Strategy it is expected to play an instrumental role in the coordination of the activities of OO 1.1.

Operational Objectives 5 and 6 aims at the opening and commercial exploitation of data. The coordination of the activities will be the responsibility of the Open Data Steering Committee (see Activity 3.1.1, Annex III).

The Governance structure is presented in **Error! Reference source not found.**

Figure 2 Governance Structure of the Digital Strategy of Thessaloniki



## 7. Monitoring and evaluation of the Digital Transformation Strategy

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In order to monitor and assess progress achieved as part of the digital transformation strategy, a performance assessment framework has been developed by the city team. In addition, the team has outlined preliminary evaluation plans and resources as part of an early evaluation plan.

### 7.1. Performance assessment framework

Strategy implementation and results monitoring will be conducted by the Coordination Office on the basis of the performance assessment framework presented in Appendix IV. Three levels of monitoring indicators and targets have been defined:

- **Outcome indicators** have been established at the level of the Ambition Statements
- **Intermediate outcome** indicators have been established at the level of operational objectives
- **Output indicators** have been established at the level of activities

The Municipality of Thessaloniki will be in charge of collecting data on all strategy monitoring indicators. However, it's expected that activity implementing partners will also play a key role in generating, collecting and sharing performance data. This information will be used for internal monitoring and reporting purposes. As such it will be communicated to the Strategy Steering Committee on a regular basis.

The performance assessment framework will surely evolve as the city enters the full strategy implementation phase. The regularity and depth of monitoring will also be further specified by the steering bodies.

### 7.2. Strategy evaluation plan

In addition to monitoring the progress of strategy implementation, the Digital Transformation Strategy for Thessaloniki will undergo an internal mid-term evaluation within the next two years. The objective of the evaluation will mainly be to verify the extent to which expected strategy results have been achieved, review the relevance of selected strategy priorities and

objectives, and review the efficiency of strategy implementation and governance schemes. The evaluation questions guiding the evaluation will be defined by the Coordination Office with the support of the Strategy Steering Committee.

An additional impact evaluation may be conducted at least six years after the start of the implementation of the strategy. The impact evaluation will be mainly focused on assessing strategy outcomes and likelihood of impact.

When relevant, individual activity managers will be encouraged to conduct activity-specific evaluations and assessments. The information drawn from activity evaluations and assessment will feed into the general strategy evaluations.

## 8. Results achieved and next steps

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Although the implementation of the strategy is at a very early stage, some benefits can already be identified. The Digital Transformation Strategy opened a new dimension in the municipality's policy agenda with a direct focus on the economy. Although the new approach is complementary to previous efforts to improve the quality of citizens life and the governance through investments on digital technologies, focusing on the growth of the local economy is an entirely new approach for the municipality. Therefore, efforts and time for learning are necessary as well the required human resources.

During the design of the strategy, several stakeholders, from the business community to universities and the research community, were mobilised and engaged in the development of the strategy. Even more, the strategy brought together existing fragmented digitalisation initiatives and new policy measures under the same policy mix with a shared vision and roadmap.

The anticipated change in the leadership of the municipality due to the local elections slowed down the implementation but is expected to catch up when the new administration is in place. In the meantime, some of the activities are already under implementation:

- The pilot measure 3.1.2 aiming at the modernisation of the existing infrastructure and the development of APIs for the open data. All procedures for the procurement of the equipment and the development are ready, and soon, the tenders will be published.

- The procurement of the digital platform for the interaction with businesses and citizens (measure 2.2.1) is also ready to be published.
- The Thessaloniki City Guide (mobile and web), measure 1.2.1, is in beta – version.
- The annual event of the Technology Forum was organised in April.

When the new leadership of the municipality is in place, the following steps will be implemented:

- Briefing of the new administration about the Strategy and the Roadmap.
- Approval of the Strategy and the Roadmap by the new Municipality Council.
- Set-up of the strategy's governance structure.
- Set-up of the Open Data Steering Committee and the kick-off of the Open Data activities.

## Appendix I: Detailed presentation of activities

Activity 1.1.1: Data gathering on logistics flows within the Metropolitan areas of Thessaloniki	
<b>Link to operational objective</b>	1.1 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	<p>Correct and accurate data on freight flows are crucial in the exploring phase. Adequate and reliable data is a necessary factor for setting up a sustainable multi-stakeholder platform that connects various stakeholders.</p> <p>A four months project will gather and integrate data on freight flows in the metropolitan area of Thessaloniki (inbound – outbound – intra). There are already data available through previous studies and initiatives which need to be integrated and updated.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 4 months</li> <li>• Start: Q2 2019, Planned completion: Q3 2019</li> </ul>
<b>Indicators to be achieved</b>	1 study completed
<b>Estimated cost and source of funding</b>	€40,000 Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Greek International Business Association (SEVE)

Activity 1.1.2: Create a multi-stakeholder community and establish a governance structure	
<b>Link to operational objective</b>	1.1 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	<p>Setting up an inclusive multi-stakeholder community is essential for building trust among the companies and actors involved in logistics. The community will be formalised with the establishment of an independent entity which will coordinate the activities represent the community, keep open the dialogue and operate the infrastructures.</p> <p>The broad dialogue among the stakeholders should include the logistics market players (both shippers, logistics providers, retailers, branch organisations) citizen organisations, shoppers, environmental and mobility organisations, need to be involved.</p> <p>The following tasks will implement the objective of the activity:</p>

<b>Activity 1.1.2: Create a multi-stakeholder community and establish a governance structure</b>	
	<ul style="list-style-type: none"> <li>• Publicity measures that will raise awareness among the stakeholders</li> <li>• Setting up a legal entity and designing the modus operandi</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 4 months</li> <li>• Start: Q1 2019, Planned completion: Q4 2019</li> </ul>
<b>Indicators to be achieved</b>	Establishment of the legal entity
<b>Estimated cost and source of funding</b>	There is no cost The cost will be undertaken by the stakeholders
<b>Organisation / unit in charge of delivery</b>	Greek International Business Association (SEVE)

<b>Activity 1.1.3: Development of a connectivity platform</b>	
<b>Link to operational objective</b>	1.1 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	<p>The objective of the activity is to set up a logistics community system, connecting all actors with a state-of-the-art platform on which (static, offline) information can be shared.</p> <p>The platform consists of three layers:</p> <ul style="list-style-type: none"> <li>• Layer 1: Connectivity platform; It provides the necessary digital infrastructure for the development of the other two layers</li> <li>• Layer 2: Applications to monitor and optimise; The users develop the applications and connect them to the platform. At this layer, all users' systems can be connected independently of the platform they use.</li> <li>• Layer 3: Market place: matching demand and supply. It is the layer where users post requests for delivery and availabilities for transport.</li> </ul> <p>The existence of layers allows a step-wise implementation. The first layer is developed and administered centrally while the layers 2 and 3 are the responsibility of the users. The development of applications for Layer 2 can be supported by Activity 5.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 11 months</li> <li>• Start: Q3 2019, Planned completion: Q2 2020</li> </ul>
<b>Indicators to be achieved</b>	1 platform installed and running
<b>Estimated cost and source of funding</b>	€120,000 Regional Operational Programme of Central Macedonia or EPANEK
<b>Organisation / unit in charge of delivery</b>	Greek International Business Association (SEVE)

<b>Activity 1.1.4: Development of an urban consolidation centre covering the metropolitan area of Thessaloniki</b>	
<b>Link to operational objective</b>	1.1 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	The Urban Consolidation Centre provides the physical place for the consolidation of the freight transports. It will be established within the boundaries of the metropolitan area of Thessaloniki. The centre will provide facilities whereby deliveries can be consolidated for subsequent shipment into the city in an appropriate vehicle with a high level of load utilisation.
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 24 Months</li> <li>• Start: Q4 2019, Planned completion: Q42021</li> </ul>
<b>Indicators to be achieved</b>	1 Urban Consolidation Centre ready for operation
<b>Estimated cost and source of funding</b>	TBD Regional Operational Programme of Central Macedonia or EPANEK
<b>Organisation / unit in charge of delivery</b>	Greek International Business Association (SEVE)

<b>Activity 1.1.5: Support for private investments to increase the digitalisation of logistics within local companies</b>	
<b>Link to operational objective</b>	1.1 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	<p>Private investments for the digitalisation of logistics in local SMEs and logistics companies will be encouraged by organising an awareness campaign and providing grants.</p> <p>The supported investments should focus on the following:</p> <ul style="list-style-type: none"> <li>• Installation of new or update and upgrade existing digital infrastructure in companies</li> <li>• development of applications that will be connected on the Connectivity Platform (Activity 3).</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 30 months</li> <li>• Start: Q2 2019, Planned completion: Q4 2021</li> </ul>
<b>Indicators to be achieved</b>	10 companies developed applications for the connectivity platform 20 companies digitalised or upgraded, if already digital, their logistics infrastructures
<b>Estimated cost and source of funding</b>	€500,000 Regional Operational Programme of Central Macedonia

<b>Activity 1.1.5: Support for private investments to increase the digitalisation of logistics within local companies</b>	
<b>Organisation / unit in charge of delivery</b>	Greek International Business Association (SEVE) and Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)

<b>Activity 1.2.1: Develop an application that improves the experience of the tourists visiting Thessaloniki</b>	
<b>Link to operational objective</b>	1.2 Digitalisation of experience tourism
<b>Description</b>	Development of an application accessible from mobile phones, tablets and web browsers that provides tailored guidance to the visitors of Thessaloniki according to their preferences. The application suggests activities (e.g tours and walks) , places to visit (e.g. museums, antiquities, architectural monuments, information points etc.) and entertainment based on several criteria such as, the location of the visitor, available time to spend on activities, profile of the visitors, preferences.
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>Length: 6 months</li> <li>Start: November 2018, Planned completion: June 2019</li> </ul>
<b>Indicators to be achieved</b>	1 application available in the Apple and Google Play app stores
<b>Estimated cost and source of funding</b>	€30,000 Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery</b>	Municipality of Thessaloniki – Tourism Department

<b>Activity 1.2.2: Multimedia showroom</b>	
<b>Link to operational objective</b>	1.2 Digitalisation of experience tourism
<b>Description</b>	Development of a showroom with high tech multimedia and virtual reality equipment and high definition wall screens which are able to provide a wide range of experiences to the visitors. Indicative activities that can be supported are museum exhibitions, music streaming, art exhibitions, fashion shows, video games etc. The objective is to host shows that tell the story of Thessaloniki offering a unique journey through time. The room could also be a creative factory providing a place of experimentation or exhibition for digital companies,
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>Length: 7 months</li> </ul>

<b>Activity 1.2.2: Multimedia showroom</b>	
	<ul style="list-style-type: none"> <li>Start: November 2019, Planned completion: June 2020</li> </ul>
<b>Indicators to be achieved</b>	1 room with the equipment installed and operational
<b>Estimated cost and source of funding</b>	€800,000 Donors
<b>Organisation / unit in charge of delivery</b>	Municipality of Thessaloniki and Thessaloniki Convention Bureau

<b>Activity 1.2.3: Grants for private investments for the digitalisation of the local tourism companies</b>	
<b>Link to operational objective</b>	1.2 Development of a sustainable urban supply chain that cross-cut main economic activities
<b>Description</b>	<p>Provision of grants for the mobilisation of private investments on digitalisation in companies active in the tourism sector (e.g. hotels, tourism agencies, catering and entertainment companies) and the development of application for tourists by digital companies.</p> <p>The supported investments will focus on applications and services covering all aspects of tourist experience and stages of the tourism value chain.</p> <p>Emphasis on mobile and gaming applications and related services.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>Length: 30 months</li> <li>Start: Q2, Planned completion: Q4 2022</li> </ul>
<b>Indicators to be achieved</b>	20 companies supported
<b>Estimated cost and source of funding</b>	€600,000 Operational Programme of Central Macedonia or EPANEK
<b>Organisation / unit in charge of delivery</b>	Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)

<b>Activity 2.1.1: Development of virtual incubation services</b>	
<b>Link to operational objective</b>	2.1 Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations
<b>Description</b>	<p>The pre-incubator OKThess aims at increasing its dealflow and therefore its viability, by providing virtual and on-premises pre-incubation services to the whole north Greece.</p> <p>The virtual services will include:</p> <ul style="list-style-type: none"> <li>• audio visual modules of coaching</li> <li>• webinars with Q&amp;As</li> </ul> <p>On-premises services:</p> <ul style="list-style-type: none"> <li>• boot-camp weekend in Thessaloniki for the remote participants</li> <li>• participation in the annual demonstration days for the presentation of the ideas in front of investors as part of the annual.</li> </ul> <p>The activity includes only the development of the on-line services, the content and the design and the infrastructure for the on-premises services. The delivery of the services is part of the operation of OKThess.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 12 months</li> <li>• Start: Q2 2019, Planned completion: Q4 2020</li> </ul>
<b>Indicators to be achieved</b>	<ul style="list-style-type: none"> <li>• Development of virtual coaching courses</li> <li>• Development of webinars</li> </ul>
<b>Estimated cost and source of funding</b>	€80,000 Donations, OKThess
<b>Organisation / unit in charge of delivery</b>	OKThess

Activity 2.1.2: Improvement of OKThess services	
<b>Link to operational objective</b>	2.1 Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations
<b>Description</b>	<p>OKThess will improve the quality of the services and the attraction of investors by organising the following activities:</p> <ul style="list-style-type: none"> <li>• Entrepreneurial residence: Successful retired entrepreneurs from all the world will be invited for a short period as mentors for the coaching programme. OKThess will cover only the travel expenses and the leaving expenses</li> <li>• Organisation of an annual matching event for attracting investors. In parallel to the matching event an open Jamboree event will be organised which will create the necessary visibility</li> <li>• Development of business angels' network</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 48 months</li> <li>• Start: Q1 2019, Planned completion: Q4 2022</li> </ul>
<b>Indicators to be achieved</b>	<ul style="list-style-type: none"> <li>• Mobilise 12 mentors</li> <li>• Organise 4 matching events</li> <li>• Organise one business angels' network</li> </ul>
<b>Estimated cost and source of funding</b>	<p>€ 100,000 Sponsors, participation fees</p>
<b>Organisation / unit in charge of delivery</b>	OKThess

<b>Activity 2.1.3: Setting up and operation of a fab lab</b>	
<b>Link to operational objective</b>	2.1 Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations
<b>Description</b>	<p>The fab-lab will provide space and equipment to new entrepreneurs and companies for designing and developing their prototypes. The list of equipment includes:</p> <ul style="list-style-type: none"> <li>• 3D printer</li> <li>• Machin shop for the development small equipment, cases and the packaging of applications</li> <li>• Equipment for PCBs</li> </ul> <p>The fab lab will provide also technical assistance for the use of the equipment. It will be hosted in the premises of OKThess.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 36 months</li> <li>• Start: Q1 2020, Planned completion: Q4 2022</li> </ul>
<b>Indicators to be achieved</b>	<ul style="list-style-type: none"> <li>• Establishment and operation of the fab-lab</li> </ul>
<b>Estimated cost and source of funding</b>	€ 100,000 Sponsors
<b>Organisation / unit in charge of delivery</b>	OKThess

<b>Activity 2.1.4: Grants for private investments in local digital companies for developing new products</b>	
<b>Link to operational objective</b>	2.1 Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations
<b>Description</b>	Provision of grants to local IT companies for the development of new products and services. The grants will decrease the risk for the companies for experimenting and developing innovative products. The activity will also provide support to companies for the development of products under other Operational Objectives such as applications using Open Data (OO6).
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 47 months</li> <li>• Start: Q2 2019, Planned completion: Q4 2022</li> </ul>
<b>Indicators to be achieved</b>	10 companies supported
<b>Estimated cost and source of funding</b>	€ 500,000 Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery</b>	Association of ICT companies of Northern Greece (SEPVE) Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)

<b>Activity 2.2.1: Development of a platform for the interaction of the municipality of Thessaloniki with businesses and citizens</b>	
<b>Link to operational objective</b>	2.2 Digitalisation of government to customer and Government to businesses services and interactions of the municipality of Thessaloniki
<b>Description</b>	<p>The objective of the project is to set up a "smart" platform for the interaction of business and citizens with the services of the Municipality and the provision of integrated electronic services.</p> <p>The system will be web-based and modular to allow future extensions and upgrades. It will interoperate with the existing Integrated Financial Services Information System, the Geospatial Infrastructure (GIS) and the OpenData Portal.</p> <p>The services provided by the platform will replace the existing paper and off-line based services. The offered services will include:</p> <ul style="list-style-type: none"> <li>• Administrative Information Services: decisions of administrative and policy bodies; application for participation in programmes organised by the municipality (e.g. lifelong learning programmes);</li> <li>• Financial services: the history of the financial transactions of the company/ citizen with the municipality; outstanding payments to the municipality; payment for depts, permits, fines.</li> <li>• Public procurements: Access to planed and awarded procurements; participation in tenders.</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 17 months</li> <li>• Start: February 2019, Planned completion: July 2020</li> </ul>
<b>Indicators to be achieved</b>	All modules of the system are installed and operate
<b>Estimated cost and source of funding</b>	€ 370,000 Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery</b>	Municipality of Thessaloniki – e-Government Department

<b>Activity 3.1.1 Set up of an Open Data Steering Committee</b>	
<b>Link to operational objective</b>	3.1 Open public data and ensure that they are accurate and offered in standard format and at real time
<b>Description</b>	<p>Although the Municipality is the major provider of open data in the city, there are also other stakeholders that can significantly contribute in open data movement. Thus, it is necessary to have a body that will supervise and facilitate the process. The Steering Committee will guide the open data strategy development and adoption. Its members will represent organisations in the city with a significant interest in data, including data producers who could contribute additional data sets to the open data platform.</p> <p>The Steering Committee will provide a focal point for citizens and organisations to engage with the open data initiatives. It will identify areas where open data can help the City and bring these ideas to both City leaders and external stakeholders with their own data sets. Although the Steering Committee does not have direct authority over the implementation of City’s open data policy (as City employees do not report to it), it will provide citizens and members a forum to express their opinions directly to the City’s authorities.</p> <p>The Steering Committee will provide input and guidance to the relevant Municipality’s department to support the development of the open data infrastructure, the identification and solicitation of data, the internal and external communications on the benefits and ongoing development of open data. In this way, the data literacy within the Municipality will be improved along with the internal publishing practices and the broader public sector culture around data.</p> <p>The committee will engage key players from the Municipality, the Aristotle University and University of Macedonia, the local open data community, the local ICT companies’ association (SEPVE) and the local research organisations.</p> <p>The Deputy Mayor responsible for the e-government will be the chair of the Committee. Its members should be appointed by the City Council so that they are perceived as representing the entire city and not any particular Mayor or agenda.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 3 months</li> <li>• Start: March 2019, Planned completion: May 2019</li> </ul>
<b>Indicators to be achieved</b>	1 Steering Committee
<b>Estimated cost and source of funding</b>	No budget is needed as the members of the Steering Committee will participate voluntarily.
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Municipality of Thessaloniki - e-Government Department

<b>Activity 3.1.2: Modernise and upgrade the technical infrastructure</b>	
<b>Link to operational objective</b>	3.1 Open public data and ensure that they are accurate and offered in standard format and at real time
<b>Description</b>	<p>The existing open data technical infrastructure will be upgraded to accelerate the provisioning of new open datasets, to facilitate the use of open data from third-party organisations and to improve the functionality for the citizens, companies and stakeholders.</p> <p>Application Programming Interfaces (APIs) will be developed to pull data automatically from existing services and store them in the open data portal. A side effect of this automatic process will be the improvement in the quality of datasets as their creation could follow existing standards. Initially a small number of APIs will be developed for the most usable datasets (based on usage statistics and also on developers' opinion gathered in the previous actions).</p> <p>To improve the functionality of open data the existing dashboard will be upgraded with new features that facilitate the visualisation of datasets. The existing bugs and malfunctions will be also addressed.</p> <p>The generation of requirements needed for the infrastructure upgrade will be a joint process of the Municipality's related departments (IT, Diavgeia, DGIS and eGovernment), academia, and the local ICT companies' association (SEPVE), which should assess the existing IT infrastructure. The assessment will be based on best practices from other cities worldwide.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 7 months</li> <li>• Start: March 2019, Planned completion: September 2019</li> </ul>
<b>Indicators to be achieved</b>	4 API developed
<b>Estimated cost and source of funding</b>	€30,000 Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Municipality of Thessaloniki - e-Government Department

<b>Activity 3.1.3: Increase the quality of open datasets</b>	
<b>Link to operational objective</b>	3.1 Open public data and ensure that they are accurate and offered in standard format and at real time
<b>Description</b>	<p>One of the greatest challenges facing data users when trying to use open data has been the extraordinary diversity in data types, formats, quality, and other attributes of the data. In the majority of cases the open data published in the municipality's portal are not machine-readable, or up to date. The municipality will work to improve the accessibility of the existing open datasets.</p> <p>A Data Quality Framework will be created to be used for the evaluation of the existing datasets. The framework will be based on Tim Berners-Lee's 5 five-star scheme. It will evaluate both the resource quality and the data quality:</p> <ul style="list-style-type: none"> <li>• Resource quality: <ul style="list-style-type: none"> <li>– <i>Availability</i> – can it be machine downloaded.</li> <li>– <i>Processability</i> – Is it in a convenient format – one that can be machine processed into structured form?</li> </ul> </li> <li>• Data Quality <ul style="list-style-type: none"> <li>– <i>Completeness</i> – extent to which the expected attributes of data are provided.</li> <li>– <i>Accuracy</i> – data reflect real world state.</li> <li>– <i>Credibility</i> – extent to which the data is regarded as true and credible.</li> <li>– <i>Timeliness</i> (age of data) – extent to which the data is sufficiently up-to-date for the task at hand.</li> </ul> </li> </ul> <p>Moreover, the opinions of the existing data consumers and the users from academia regarding the quality of the existing datasets will be also considered.</p> <p>The evaluation will reveal the weaknesses of the datasets in the above-mentioned criteria. The quality improvement plan will include the actions that are required for each dataset. The plan will prioritise the most popular datasets.</p> <p>The improvement of the quality will increase the use of open datasets from the developer's community.</p> <p>The success of the action depends on the collaboration between the team that has been undertaken the quality improvement task and the departments of the Municipality that produce the open data.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 6 months</li> <li>• Start: April 2019, Planned completion: September 2019</li> </ul>
<b>Indicators to be achieved</b>	30 % of the open data sets satisfy the necessary requirements
<b>Estimated cost and source of funding</b>	8.000€ Regional Operational Programme of Central Macedonia
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Municipality of Thessaloniki, e-Government Department

<b>Activity 3.2.1: Create a campaign to promote the use of the dashboard and the existing the data sets</b>	
<b>Link to operational objective</b>	3.2 Support the development of digital services and products relying on open data and utilisation of open data by local companies
<b>Description</b>	<ul style="list-style-type: none"> <li>• The Municipality’s open data portal (<a href="https://opendata.thessaloniki.gr">https://opendata.thessaloniki.gr</a>) is not widely known in the city.</li> <li>• The proposed action will increase the use of the dashboard and the existing datasets. It contains the following activities:</li> <li>• Creation and execution of a communications campaign to promote the expansion and use of the dashboard.</li> <li>• Creation of a number of infographics that explain the open data concept and identify its purpose and practices in Thessaloniki.</li> <li>• Organisation of a launch event to present the new open data technical infrastructure.</li> <li>• Organisation of media activities on a regular basis to communicate how the open data portal and the dashboard are being used or could be used and to present their new features. These could include video explaining visualisations and a newsletter promoting updates, new features and activities. These activities are technical and target mainly the app developers’ communities and the ICT companies.</li> <li>• Creation of a newsletter to present the City’s open data efforts. The City should share its progress in publishing open data through a quarterly email newsletter to all stakeholders.</li> <li>• Partnership with the local TV station (TV100) to promote data journalism.</li> <li>• Building of a strong social media presence regarding the use of open data in Thessaloniki. Sharing of the open data initiative’s progress, letting the public know which data sets have been published and how frequently. Sharing of images or links to the dashboard showing visualisations of each data set and the insights that visualising the data brings.</li> </ul> <p>This action will increase the awareness about open data. The sharing of success stories will foster innovative ideas about the use of open data. The campaign will instil a broadly shared understanding on open data for more-effective action. Moreover, it will encourage citizen support to increase political willingness to facilitate the City’s open data movement. In order to succeed, the campaign must target not only the developers and ICT companies but also the stakeholders and citizens.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 48 months.</li> <li>• Start: March 2019, Planned completion: December 2022</li> </ul>
<b>Indicators to be achieved</b>	<ul style="list-style-type: none"> <li>• 4 yearly campaigns</li> <li>• 1 launch event</li> <li>• 1 newsletter</li> <li>• 1 infographics</li> </ul>
<b>Estimated cost and source of funding</b>	€40.000 for preparing the communication materials and the newsletters and for organising the events.
<b>Organisation / unit in charge of delivery (i.e.</b>	Municipality of Thessaloniki – e-Government Department

Activity 3.2.1: Create a campaign to promote the use of the dashboard and the existing the data sets	
ownership of the activity)	

Activity 3.2.2: Organise events to increase engagement amongst data consumers and producers	
Link to operational objective	6. Support the development of digital services and products relying on open data and utilisation of open data by local companies
Description	<p>The Municipality’s open data portal (<a href="https://opendata.thessaloniki.gr">https://opendata.thessaloniki.gr</a>) is not widely known between the city’s ICT companies and app developers. The datasets are not used in third-party applications. Moreover, the city’s organisations that could contribute their datasets are not aware of the Municipality’s efforts regarding open data. The proposed action will increase the engagement of data consumers (developers and ICT companies) and data producers (stakeholders). It contains the following activities:</p> <ul style="list-style-type: none"> <li>• Organisation of meet-ups with third-party organisations, such as developer communities and universities, to demonstrate and discuss platform features, solicit input on improvements and share best practices.</li> <li>• Utilisation of Design Thinking workshops to identify data sets and visualisations most valuable to stakeholders that should be prioritised for inclusion on the dashboard.</li> <li>• Hosting of events (e.g. hackathons) to foster data sharing and use rewards to incentivise participation. In partnership with local IT groups, businesses and investor organisations, continue hosting at least one hackathon-type event per year. These should be organised to celebrate and promote the opening of new data sets from the City. Except from the money prize, it is essential to have additional incentives for the participants. Such incentives could be the commitment of the Municipality or the other stakeholders in the use of the rewarded application.</li> <li>• Organisation of an annual summit to celebrate progress and invite external speakers to share case studies from other cities and regions.</li> <li>• Rewarding of data owners and users by sharing applications that use City data prominently on the City’s website; sharing successes and challenges at a meeting with the Mayor, and sharing success stories with the open data Steering Committee.</li> </ul> <p>The action will increase the use of existing datasets, will improve the quality of existing datasets, will increase the number of datasets from other stakeholders and will improve the dashboard’s features by:</p> <ul style="list-style-type: none"> <li>• using incentives to drive behavioural changes needed to make diverse groups work together;</li> <li>• bringing together diverse groups towards a common objective;</li> <li>• using ideas from the tech, academic, business and investor communities.</li> </ul> <p>In order to succeed, the action must embrace the City’s data providers and consumers on a regular basis.</p>
Timeframe	<ul style="list-style-type: none"> <li>• Length: 45 months.</li> </ul>

<b>Activity 3.2.2: Organise events to increase engagement amongst data consumers and producers</b>	
	<ul style="list-style-type: none"> <li>Start: March 2019, Planned completion: December 2022</li> </ul>
<b>Indicators to be achieved</b>	4 meet-ups 3 annual summits, 4 hackathons 2 design thinking workshops (every 2 years)
<b>Estimated cost and source of funding</b>	40.000€ for the organisation of the events. The money prizes for the hackathons should come through donations.
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Municipality of Thessaloniki – e-Government Department with the support of the Association of ICT companies of Northern Greece (SEPVE) and the City's universities and research centres.

<b>Activity 3.2.3: Establish a prestigious thesis programme for skilled students in partnership with academia</b>	
<b>Link to operational objective</b>	6. Support the development of digital services and products relying on open data and utilisation of open data by local companies
<b>Description</b>	Collaboration with academia is deemed necessary for the municipality to seize the opportunities offered by advances in science and technology regarding the use of open data. The main activities are the following: <ul style="list-style-type: none"> <li>Establishment of a formal partnership between the municipality and the universities for students to work on priority open data projects.</li> <li>Identification of the most appropriate undergraduate and postgraduate studies programs where a number of theses will be devoted to activities related to open data (i.e. evaluation of the quality, applications development, dashboard new features development, etc.).</li> <li>Collaboration with university leaders to open appropriate data sets on the student population and academic programmes available.</li> <li>Allocation of undergraduate and postgraduate students to work on the improvement of the quality and accessibility of the available open datasets. This activity could be part of relevant courses where the students apply data cleaning and enhancing techniques.</li> <li>Starting with Aristotle University and the University of Macedonia, this programme should allocate three to five undergraduate and postgraduate students during 2019 to work on the existing datasets and improve their quality.</li> </ul>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>Length: 46 months (6 months preparation phase and one academic year for the actual implementation).</li> <li>Start: April 2019, Planned completion: December 2022</li> </ul>
<b>Indicators to be achieved</b>	3 students start theses on open data applications per year
<b>Estimated cost and source of funding</b>	No budget is needed as the universities will participate voluntarily.

<b>Activity 3.2.3: Establish a prestigious thesis programme for skilled students in partnership with academia</b>	
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Municipality of Thessaloniki – e-Government Department in collaboration with Aristotle University and the University of Macedonia.

<b>Activity 4.1.1: Skills Hub</b>	
<b>Link to operational objective</b>	7. Support the upskilling of the human resources working in digital jobs in companies (digital and non-digital)
<b>Description</b>	<p>The assessment has identified a gap in digital skills especially in cutting-edge technological areas and in soft skills.</p> <p>The Skills hub will address the problem by setting up a flexible training mechanism that will be able to respond fast to companies' requests.</p> <p>The hub will develop specifications for courses in several areas and specification for trainers. The list of courses and trainers will be updated regularly under a consultation process with experts and companies. The trainers could be individuals or training organisations.</p> <p>The hub will receive requests for training by companies, and it will provide the courses and the trainers.</p> <p>A matchmaking platform will facilitate the matching between the requests and the supply of courses.</p> <p>The business model of the hub is that the company and the trainees cover the cost plus the commission of the hub.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 40 months</li> <li>• Start: September 2019, Planned completion: December 2022</li> </ul>
<b>Indicators to be achieved</b>	TBD
<b>Estimated cost and source of funding</b>	<p>The development cost TBD</p> <p>The operational cost will be covered by the users (companies and trainees) of the service</p>
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	OKThess

Activity 4.1.2: Technology Forum annual event	
<b>Link to operational objective</b>	7. Support the upskilling of the human resources working in digital jobs in companies (digital and non-digital)
<b>Description</b>	Technology Forum, a coalition of 20 companies from the ICT sectors local universities and research centres, organises an annual conference in Thessaloniki on main technological trends and latest development in the digital world. Keynote speakers are well known members of the international business and academic world. The annual conference provides the opportunity to companies and researchers to be updated on cutting edge issues but also to present their work.
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 48 months</li> <li>• Start: January 2019, Planned completion: December 2022</li> </ul>
<b>Indicators to be achieved</b>	Annually: <ul style="list-style-type: none"> <li>• Audience: 500</li> <li>• Submitted speeches: 25</li> </ul>
<b>Estimated cost and source of funding</b>	€48,000 The events are funded by sponsors, participation fees and the contribution of the organisers.
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	Technology Forum

<b>Activity 4.2.1 iGrowLabs</b>	
<b>Link to operational objective</b>	8. Support the upskilling of new entrants in the labour market
<b>Description</b>	<p>iGrowLabs is a 36 months program (3 annual cycles) aiming at preventing the brain drain by offering the opportunity to companies to work closer with the University and attract new talent and student to find opportunities for employment right after their graduation.</p> <p>In a state of the art coworking space, students (under and post graduate) can be accommodated and use common-use facilities and equipment (3D printers, rapid prototyping equipment, digital fabrication, etc). Companies provide additional mentoring to students in order for them to complete their PhD dissertation on a commonly agreed with the professors' subject and also provide resources so that the final product is as close to the market needs as possible.</p>
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Length: 36 months</li> <li>• Start: May 2019, Planned completion: May 2022</li> </ul>
<b>Indicators to be achieved</b>	<p>36 Post graduate students follow the programme                      120 Undergraduate students follow the programme</p>
<b>Estimated cost and source of funding</b>	<p>€880,000                      Public and EU Funds, Grants from Organizations, Corporate Social Responsibility funds from corporations.</p>
<b>Organisation / unit in charge of delivery (i.e. ownership of the activity)</b>	<p>Association of ICT companies of Northern Greece (SEPVE)</p>

## Appendix II: Performance assessment framework

### 1. Strategy outcomes

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
<b>Ambition statement 1</b>	Thessaloniki to support the digitalisation of local companies focusing on activities that are critical to the local economy (e.g. tourism, ICT, wholesale and retail, transport and logistics)	Monitoring indicator 1.1: Share of companies investing on digitalising their processes or developing digital innovations	Not Available. Survey within the business population of the metropolitan area of Thessaloniki.	Increase by 10%	2022-2025	A survey within the business population of the metropolitan area of Thessaloniki is necessary
<b>Ambition statement 2</b>	Thessaloniki to become a living lab for the development of innovative services and products by the ICT sector — experimentation in new areas and disruptive technologies	Monitoring indicator 2.1: Share of ICT companies in the metropolitan area of Thessaloniki systematically developing product/service innovations (based on CIS definition)	Not Available. Survey within the population of ICT companies in the metropolitan area of Thessaloniki.	Increase by 10%	2022-2025	Survey within the population of ICT companies in the metropolitan area of Thessaloniki.
<b>Ambition statement 3</b>	Thessaloniki to exploit its data by encouraging their use by businesses with the aim of economic growth and evidence-based sustainable policies	Monitoring indicator 3.1. Number of products or services based on open data that have successfully entered the market	0	10	2022-2025	Survey among the companies that requested access to the open data sets retained by the municipality of Thessaloniki and the other public organisations participating in the initiative.

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
<b>Ambition statement 4</b>	Thessaloniki to use its talents for the digital transformation of the economy	4.1 Share of companies in the main sectors of Thessaloniki (including ICT) that successfully hired ICT professionals with the required qualifications from the local employment market.	Not available. Survey among the companies of the metropolitan areas of Thessaloniki.	Increase by 30%	2022-2025	Survey among the companies of the metropolitan areas of Thessaloniki.

## 2. Strategy intermediate outcomes

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
<b>Operational objective 1.1</b>	Development of a sustainable urban supply chain that cross-cut main economic activities	Monitoring indicator 1.1.1: Share of logistics companies serving Thessaloniki using both the connectivity platform and the urban consolidation centre.	0	60%	2022-2025	Data provided by the entity operating the urban consolidation centre and the connectivity platform
<b>Operational objective 1.2</b>	Digitalisation of experience tourism	Monitoring indicator 1.2.1: Number of digital applications related to tourism	Currently not available. Count the number of applications in the app stores (Apple, Google Play, Amazon)	Increase of the number by 30%	2022-2025	Count the number of applications in the app stores (Apple, Google Play, Amazon)
<b>Operational objective 2.1</b>	Development of services and innovation infrastructures and events that encourage the creation of start-ups, co-creation and experimentation for the development of digital innovations	Monitoring indicator 2.1.1: Average number of start-ups successfully graduated from the local pre-incubators/incubators	No currently available. Survey among the local pre-incubators/incubators	Increase the number by 30%	2022-2025	Survey among the local pre-incubators/incubators
		Monitoring indicator 2.1.2: Annual average number of companies that use the services of the supported created/infrastructures	0	20	2022-2025	Counting the number of customers in the supported/created infrastructures

*DIGITAL CITIES CHALLENGE – Digital Transformation Strategy*

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
<b>Operational Objective 2.2</b>	Digitalisation of G2C and G2B services and interactions of the municipality of Thessaloniki	Monitoring indicator 2.2.1: Reduction of the average transaction cost of companies interacting with Municipality services estimated in person hors. The waiting time should be also factored in the estimation.	Not available. Estimation of the person hours necessary for completing each of the transactions before their digitalisation.	Reduction by 70%	2020	Estimation of the person hours necessary for completing each of the digitalised transactions after their digitalisation.
<b>Operational objective 3.1</b>	Open public data and ensure that they are accurate and offered in standard format and at real time	Monitoring indicator 3.1.1: Number of downloads of data from the Open Data portal per year	TBD	TBD	2022	Data provided by the Open Data Steering Committee
<b>Operational objective 3.2</b>	Support the development of digital services and products relying on open data and utilisation of open data by local companies	Monitoring indicator 3.2.1: Number of requests for commercial use of the opened data	0	50	2022	Data provided by the Open Data Steering Committee
<b>Operational objective 4.1</b>	Support the upskilling of the human resources working in digital jobs in companies (digital and non-digital)	Monitoring indicator 4.1.1: Share of ICT professional who participated in upskilling activities found job matching their upgraded qualifications, or upgraded their position in their existing job after six months of their upskilling	0	100%	2022	Survey among those participated in upskilling activities.

### 3. Strategy outputs

Activities	Expected result	Monitoring indicator	Target	Timeframe	Means of verification
<b>Activity 1.1.1: Data gathering on logistics flows within the Metropolitan areas of Thessaloniki</b>	Study with estimation of logistics flows	Monitoring indicator 1.1.1.1: Study completed	1	2020	Confirmation of the output by the Organisation commissioned the study (Greek International Business Association)
<b>Activity 1.1.2: Create a multi-stakeholder community and establish a governance structure</b>	Legal entity with the participation of all stakeholders which undertake the role of coordinator	Monitoring indicator 1.1.2.1: Legal entity established	1	2019	Legal documents of the entity.
<b>Activity 1.1.3: Development of a connectivity platform</b>	A connectivity platform which provides the necessary digital infrastructure for the exchange of logistics information	Monitoring indicator 1.1.3.1: Online platform with the required functionality is up and running	1	2020	Confirmation of the output by the Organisation commissioned the study (Greek International Business Association)
<b>Activity 1.1.4: Development of an urban consolidation centre covering the metropolitan area of Thessaloniki</b>	An Urban Consolidation Centre which provides the physical place for the consolidation of the freight transports.	Monitoring indicator 1.1.4.1: Urban Consolidation Centre ready for operation	1	2022	Acceptance of the project by the Managing authority of the OP of Central Macedonia or EPANEK
<b>Activity 1.1.5: Support for private investments to increase the digitalisation of logistics within local companies</b>	Logistics infrastructures in SMEs and logistics companies digitalised or upgraded, if already digital.	Monitoring indicator 1.1.4.1: Companies that received grants and successfully completed their investments	20	2022	Numbers provided by Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE).
	Applications that will be connected to the Connectivity Platform	Monitoring indicator 1.1.4.2: Number of logistics companies that received grants and successfully developed applications to be connected to the Connectivity Platform	10	2022	Numbers provided by Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE).

*DIGITAL CITIES CHALLENGE – Digital Transformation Strategy*

Activities	Expected result	Monitoring indicator	Target	Timeframe	Means of verification
<b>Activity 1.2.1: Develop an application that improves the experience of the tourists visiting Thessaloniki</b>	Application that provides tailored guidance to the visitors of Thessaloniki according to their preferences.	Monitoring indicator 1.2.1.1: Application available in the Apple and Google Play app stores	1	2019	Checking the app stores
<b>Activity 1.2.2: Multimedia showroom</b>	Multimedia showroom with high tech multimedia and virtual reality equipment and high definition wall screens which are able to provide a wide range of experiences to the visitors.	Monitoring indicator 1.2.2.1: Multimedia showroom completed and operational	1	2020	Confirmation by the Municipality of Thessaloniki and Thessaloniki Convention Bureau
<b>Activity 1.2.3: Grants for private investments for the digitalisation of the local tourism companies</b>	Investments on digitalisation of tourism companies and development of applications and services for tourists by digital companies.	Monitoring indicator 1.2.3.1: Number of tourism and ICT companies that received grants and successfully developed applications	10	2022	Data provided by the Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)
<b>Activity 2.1.1: Development of virtual incubation services</b>	Develop and deliver virtual coaching courses to start-ups	Monitoring indicator 2.1.1.1: Sets of virtual coaching courses	1	2020	Reporting by OK-Thess
<b>Activity 2.1.2: Improvement of OKThess services</b>	Successful retired entrepreneurs are working for a short period as mentors	Monitoring indicator 2.1.2.1: Use mentors	12	2022	Reporting by OK-Thess
	Matching events between start-ups and entrepreneurs are organised	Monitoring indicator 2.1.2.2: Organise matching events	4	2022	Reporting by OK-Thess
	Organise business angels' network	Monitoring indicator 2.1.2.3: Network of business angels is set up and operating	1	2022	Reporting by OK-Thess
<b>Activity 2.1.3: Setting up and operation of a fab lab</b>	A fab-lab that provides services for designing and developing of prototypes	Monitoring indicator 2.1.3.1: A fab-lab is set up and operating	1	2022	Reporting by OK-Thess
<b>Activity 2.1.4: Grants for private investments in local digital companies for developing new products</b>	Investments on developing new products and services in ICT companies	Monitoring indicator 2.1.4.1: Number of funded companies	10	2022	Data from the Intermediary Body of the Operational programme of the Region of Central Macedonia (EFEPAE)

*DIGITAL CITIES CHALLENGE – Digital Transformation Strategy*

Activities	Expected result	Monitoring indicator	Target	Timeframe	Means of verification
<b>Activity 2.2.1: Development of a platform for the interaction of the municipality of Thessaloniki with businesses and citizens</b>	Smart platform for the interaction of business and citizens with the services of the Municipality and the provision of integrated electronic services	Monitoring indicator 2.2.1.1: Platform is installed and operating	1	2020	Reporting by Municipality of Thessaloniki – e-Government Department
<b>Activity 3.1.1 Set up of an Open Data Steering Committee</b>	The Open Data Steering Committee is set up and operates	Monitoring indicator 3.1.1.1: Open data Steering Committee is set up and operates	1	2019	Reporting by the Municipality of Thessaloniki - e-Government Department
<b>Activity 3.1.2: Modernise and upgrade the technical infrastructure</b>	The technical infrastructure of hosting and provisioning of open data is upgraded	Monitoring indicator 3.1.2.1: Development of API	4	2019	Reporting by the Municipality of Thessaloniki - e-Government Department
<b>Activity 3.1.3: Increase the quality of open datasets</b>	Data sets that satisfy the criteria of open data according to Tim Berners-Lee's scheme	Monitoring indicator 3.1.3.1: Share of open data sets satisfying the requirements	40%	2020	Data provided by the Open Data Steering Committee
<b>Activity 3.2.1: Create a campaign to promote the use of the dashboard and the existing data sets</b>	Campaigns are organised yearly	Monitoring indicator 3.2.1.1: Yearly campaigns	4	2019-2022	Data provided by the Open Data Steering Committee
<b>Activity 3.2.2: Organise events to increase engagement amongst data consumers and producers</b>	Developer communities and universities participating in the meet-ups are better informed about best practices and the potential of open data.	Monitoring indicator 3.2.2.1: Organised Meet-ups	4	2019-2022	Data provided by the Open Data Steering Committee
	Data sets and visualisations that are valuable to stakeholders and should be prioritised for inclusion on the dashboard are identified	Monitoring indicator 3.2.2.2: Organised “Design Thinking” workshops	2	2020 2022	Data provided by the Open Data Steering Committee
	Demo applications are developed based on new open datasets	Monitoring indicator 3.2.2.3: Organised Hackathons	4	2019-2022	Data provided by the Open Data Steering Committee

*DIGITAL CITIES CHALLENGE – Digital Transformation Strategy*

Activities	Expected result	Monitoring indicator	Target	Timeframe	Means of verification
<b>Activity 3.2.3: Establish a prestigious thesis programme for skilled students in partnership with academia</b>	Students are familiarised with open data and open data applications	Monitoring indicator 3.3.3.1: Students start theses on open data applications per year	3	2020-2022	Data provided by the Open Data Steering Committee
<b>Activity 4.1.1: Skills Hub</b>	Employees graduated from the Knowledge Hub upgraded their skills and qualifications in digital edge technologies and soft skills necessary for the development of digital applications	Monitoring indicator 4.1.1.1: Employees graduate from the Knowledge Hub per year	TBD		OK-Thess
<b>Activity 4.1.2: Technology Forum annual event</b>	ICT experts participating in the Technology Forum annual event are informed about new developments in digital technologies and on new applications	Monitoring indicator 4.1.2.1: Number of participants per year	500	2019-2022	Technology Forum
<b>Activity 4.2.1 iGrowLabs</b>	MSc and PhD students developed their knowledge and research capabilities in areas of digitalisation that are important for local companies	Monitoring indicator 4.2.1.1: Post graduates following the programme	36	2019-2022	
	Undergraduates developed their knowledge in areas of digitalisation that are important for local companies	Monitoring indicator 4.2.1.2: Undergraduates following the programme	120	2019-2022	

## Appendix III: Relevant Good practices

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### Community

**SKGTech** is a non-profit organisation that embraces & brings together all the people who love technology with the ultimate goal to inspire, to create and to serve its members and the *society*.<sup>1</sup> The SKGTech coordinates and promotes the actions of city's technological communities mainly through physical events. Dozens of events are organised each year with the aim of empowering members' technical background and promoting their work.

**Technology Forum**<sup>2</sup> is an initiative that brings together most of the city's stakeholders (industrial and business associations, universities and research centres, governance bodies and professional associations). The aim of the Forum is to organise events that facilitate the collaboration between industrial bodies (ICT & other industries) and research organisations (Universities & Research Centres). The ultimate goal is to empower participants to develop innovative products and services with international perspective by combining knowledge with the right technological tools. Moreover, the initiative aims to promote Thessaloniki as a pole of attraction for the whole of Southern Europe in the fields of technology, education and innovation.

### Support services

**OKThess**<sup>3</sup> is a pre-incubator which provides space and technical support to young entrepreneurs with innovative ideas helping them to develop and validate a business model fast, and to meet, mix and connect with like-minded peers. OKThess also help the entrepreneurs to pitch their idea to potential funders. In the second semester of 2018 the investments on start-up incubated from the OKThess amounted to €1m and it is expected to reach €2-3m in 2019.

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<sup>1</sup> About SKGTech - <https://skgtech.io/about/>

<sup>2</sup> Technology Forum - <https://technology-forum.eu/>

<sup>3</sup> <https://okthess.gr/en/>

## Appendix IV: Bibliography

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## Appendix V: Stakeholders consulted

NAME	ORGANISATION
A. Tzikas	HELEXPO and SEPE
A. Vakali	Professor, IT Department, Aristotle University
C. Vamvalis	Technology Forum and Association of ICT companies of Northern Greece
E. Tambouris	Department of Applied Informatics, University of Macedonia
F. Konstas	Neuropublic
G. Alexiou	City of Thessaloniki, Head of Unit SPVE
G. Dimarelos	Vice Mayor
G. Kombatsiaris	EKETA
G. Zarotiadis	Dean of School of Economics and Political Sciences, Aristotle University
H. Kalogirou	Development Company of the Metropolitan Area of Thessaloniki
I. Tsamboulatidis	Infalia
K. Goula	Chair of the City Council
K. Kagelidis	President of the Association of ICT companies of Northern Greece
M. Pashalidou	COSMOTE
N. Fotiou	Vice Mayor
N. Komninos	Professor, URENIO, Aristotle University
P. Hatzimisios	Professor, Higher Technical Educational Institution
S. Alexandratos	City of Thessaloniki, Head of Direction EPSTPE
S. Bensasson	OKThess!
S. Ignatiadis	General Director Greek International Business Association
S. Kyriazi	COSMOTE
V. Tremopoulos	Start up Van4k
S. Siagas	Treasurer, SEPVE
D Stefanidis	HR Development Consultant
D. Aidonis	TEI Central Macedonia



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