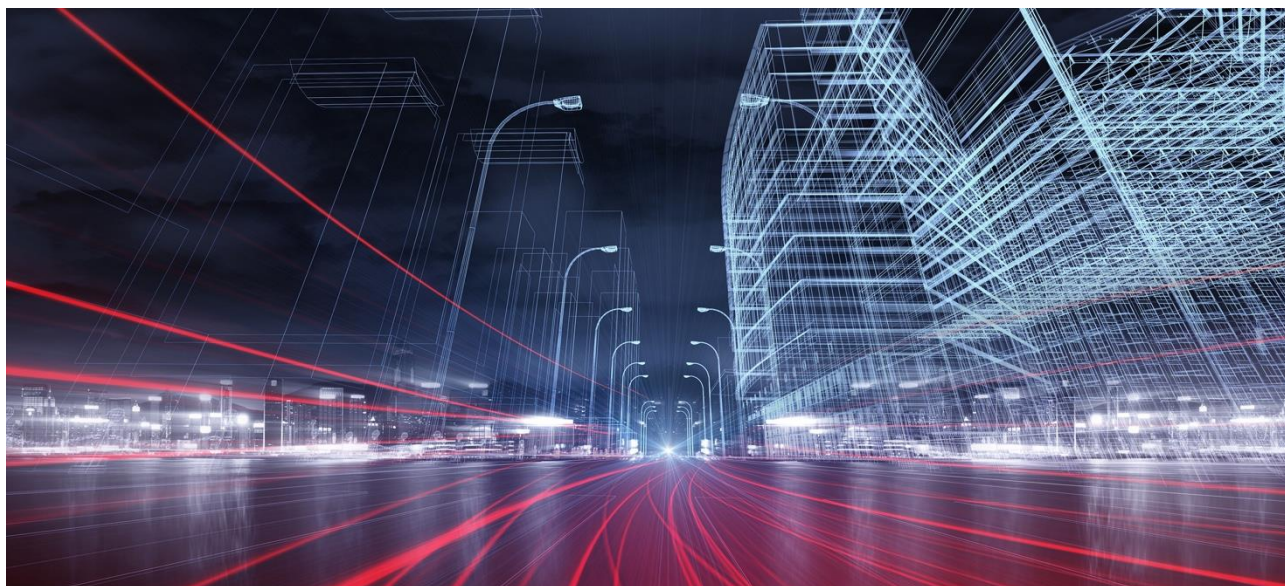




DIGITAL CITIES CHALLENGE

Digital Transformation Strategy for the city of Kavala *“City as a Platform”*

August 2019



Digital Cities Challenge

Digital Transformation Strategy
for the city of Kavala

Yannis Charalabidis - Lead Expert
Charalampos Papadopoulos – City Project Manager
Christina Kakderi - Local Expert
Paresa Markianidou - Support Consultant

with the contributions of the Kavala digital leadership team

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Executive Summary: Kavala's digital transformation

Kavala, 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 Kavala through the integration of advanced technologies. The initiative fosters complementarities and synergies between existing policies involving digital priorities (e.g. sustainable urban development, sustainable tourism development, digital growth, smart-city development, creative-city development, etc.) and the newly planned policy actions supporting digital transformation.

The ambition is that Kavala will act as a 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 digitization. It will showcase how to fill the gaps which are currently hindering Kavala to advance and capture the benefits of digital transformation.

The digital transformation strategy for Kavala: "City as a platform"

Mission

Kavala wants by 2030 to become a digitally advanced "City as a platform", fostering sustainable development in tourism, agriculture & food industry, coordinated logistics and ICT sectors, leveraging upon evolving citizens' and SME's digital skills and exploiting a state-of-the-art city and private sector digital infrastructure, successfully transforming the region into a vivid entrepreneurial ecosystem, and eventually providing a higher quality of life to its citizens and visitors.

Four Ambition Statements form the key axes of the digital strategy, realising the vision:

<i>Ambition Statement 1</i>	To create a state-of the art City Digital Infrastructure, able to act as an enabler for citizens and local businesses
<i>Ambition Statement 2</i>	To set up and implement a strategy that develops digital skills, promotes awareness and achieves the participation of citizens and SME's
<i>Ambition</i>	To achieve Entrepreneurship Acceleration via Digital Means,

<i>Statement 3</i>	contributing to the sectoral development plan of the City
<i>Ambition Statement 4</i>	To leverage the potential of Digital Marketplaces and Open Data for sectoral Development

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

OO 1.1	<i>Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)</i>
OO 1.2	<i>Develop new digital services for Citizens and Businesses (one-stop-shop, mobile, fully digital services provision)</i>
OO 2.1	<i>Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)</i>
OO 2.2	<i>Training for citizens and SME's in digital technologies</i>
OO 3.1	<i>Establish an Entrepreneurship Acceleration System, heavily utilising Digital Means, targeting the 4 sectors of the local economy</i>
OO 3.2	<i>Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)</i>
OO 3.3	<i>Digitize and market existing and new touristic services, including blue economy offerings</i>
OO 4.1	<i>Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services</i>

The strategy roadmap for the city of Kavala

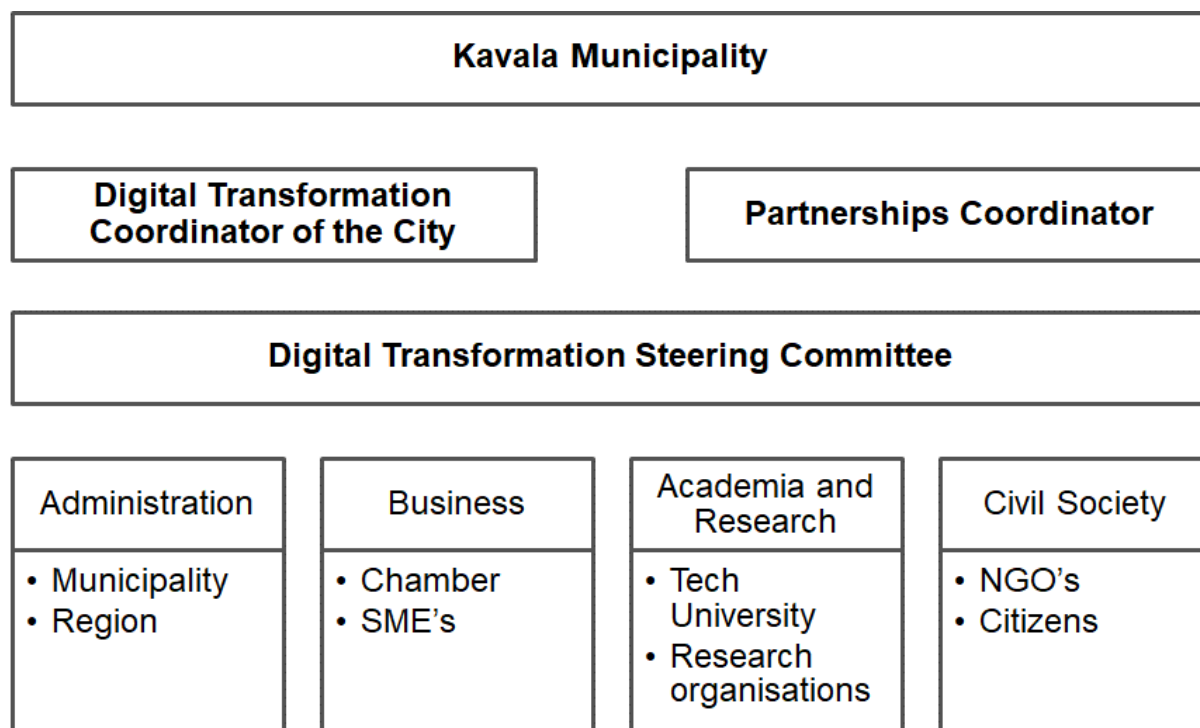
The city has identified, through a series of workshops and questionnaires with the local community of citizens and businesses, the list of activities to be implemented in the short, medium and long terms, in order to make its strategic mission and ambition a tangible reality.

As such, a total of 21 specific activities have been identified, under the different operational objectives of the strategy, as listed below. Possible pilot activities that can render a result within the next months are depicted in grey background.

OO #	Key Activity 1	Key Activity 2	Key Activity 3
OO 1.1	Networks planning and sharing (WiFi, Fiber, etc)	Sensors (Air, water, energy, etc) for generating real time open data	Sharing of the LHC Computing Grid - University of Kavala
OO 1.2	New Digital Services for citizens (administrative processes, complaints, e-payments, social media, mobile first principle, once only principles)	New Digital Services in the areas of: Health, Mobility, Parking, Elderly & Disabled	New Digital Services for businesses (malls, mobile apps, branding)
OO 2.1	Kavala e-participation. Platform and incentives programme for citizens and businesses	Kavala Open Collaboration platform and pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy)	
OO 2.2	Life-long learning platform and training programmes for citizens in ICT	Training of SME's in ICT, utilising digital plaforms	
OO 3.1	The Kavala Business Incubator (University - based and Virtual)	The Kavala Business Accelerator (Technology Park, AgroCenter, Funding, etc.)	Digitally coordinated competitions and events for new startup ideas (in focused sectors) and Networking activities (EEN, Greek startup ecosystem, etc.)
OO 3.2	Precision Farming Technology Centre	Agrofood branding and marketing hub & mall	Digital logistics management center (port/rail/airport/road)
OO 3.3	Kavala City Advisor (mobile app for tourists and citizens)	Tourism branding digital hub and mall for new touristic services (e.g. culture, conferences, religion, etc.)	Virtual trips and multimedia applications for local cultural sites
OO 4.1	Kavala Open Data Platform - Collection and curation	Kavala Open Data Platform -- Publishing (as datasets and API's) and charging model	

The outlines of the governance of the digital transformation strategy have also been defined, including the overall governance scheme, the key roles and the key processes that will

ensure the proper continuation of Kavala digital transformation. The following figure outlines the key players for Kavala's Digital Transformation strategy.



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. The performance framework includes KPI's for all the Operational Objectives and Key Activities of Kavala Digital Transformation Strategy,

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 Academic seminars during which cities shared practices, took advantage of peer to peer learning and worked together 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, the Digital Cities Challenge has directly engaged with the Mayor of the supported cities. In December 2019, 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 Kavala. 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 Kavala









The perception that the city lies at the threshold between less digitally mature and digitally transforming was confirmed during the assessment stage. Some key findings:

- The 43.40% of households has broadband internet at home with an average speed of 13Mbps, not adequate for most bandwidth consuming services. The city's 4G coverage is 80,4% and the average cost of mobile internet is 0,10€/MB at national level. There are no intelligent sensors in the city while there are 4100 unique devices connected to wireless internet that is freely available at public spaces, during September 2018.
- There is an integrated mobility platform to travel across transport modes, a real-time transport monitoring system and fibre network at the main business park of the city. However, there is neither a one-stop shop nor a system for online permits application and the percentage of tickets purchased online is very low (4.68%).
- As there is an absence of internet statistics at city level (an indication of the level of sophistication of the existing ICT infrastructure), the percentage of individuals who used the internet for interaction with the public authorities is not clear (the average for North Greece being 46%).
- There are 17 “Open data” sets offered by the public authorities of the city and 17 % of them provide real time information through APIs, while the city is at the process of collecting the number of downloads of those datasets. Non-digital companies could make use of open data in 27 cases, mainly for data needed to conduct technical studies and to support their business operation.
- In “Digital skillset and education” area, 30% of people bought or ordered goods or services over the internet (EUROSTAT, Northern Greece). According to the statistical data provided by the career office of EMaTTech, 13,17% of its students, studied in digital subjects but only 5,58% of them employed in the city over the last 5 years.

- Public Financing indicators are all very low, as there are not any grants / tax incentives provided at city level to support entrepreneurship. On the contrary, there are private business angels for digital start-ups active in the area.
- There are not any innovation labs / accelerators in the city yet, although the number of 85 participants in events organised within the framework of digital transformation indicates that the local ecosystem is aware of the important role of digitalization to the development / growth of local economic sectors.

The following figure depicts the digital strengths and weaknesses of Kavala.

CITY: _Kavala

	Strengths	Weaknesses
 Infrastructure	<ul style="list-style-type: none"> > 4G coverage in the city (industry/utilities) > City care, transportation platform, e-participation (e-gov) > ICT facility – public WiFi, optical fiber broadband (public building, GRID) 	<ul style="list-style-type: none"> > Healthcare to offer e-health services > Using ICT to increase the effectiveness and efficiency for utility providers > Broadband accelerates the digitalization of local industry > Low exploitation of existing MAN (fiber network)
 Access to data	<ul style="list-style-type: none"> > Public sector institutions & organisations in the city involved in open data contribution (mainly edu) > Policy making (ELSTAT population, employment) 	<ul style="list-style-type: none"> > Open data used in business development of non-digital companies > Business development of digital companies (including start-ups) > Standards
 Digital skillset	<ul style="list-style-type: none"> > Digital training level offered in higher education related to non-digital subjects in the city > digital mind-set of children triggered at school (children's university initiative) > young people apply for higher education institutes in digital subjects 	<ul style="list-style-type: none"> > Companies in city able to attract local IT talent > individuals obtain digital training through courses organized by private companies or non governmental organizations
 Companies' digital competencies	<ul style="list-style-type: none"> > Access to relevant local IT solution providers > Digital processes in companies being driven by senior management > Companies using cybersecurity solutions and privacy procedures 	<ul style="list-style-type: none"> > Digital training offered by companies to their employees > manufacturing companies embracing Industry 4.0 concepts
 Community	<ul style="list-style-type: none"> > Collaboration amongst digital and non-digital stakeholders from various sectors 	<ul style="list-style-type: none"> > Networking events for digital companies organized in the city > Networking events that bring together digital and non-digital companies
 Finance	<ul style="list-style-type: none"> > Private investors are willing to invest in digital companies and in non-digital companies for digital projects > Banks are willing to provide bank loans to digital companies 	<ul style="list-style-type: none"> > City encouraging digital start-ups by providing grants / tax incentives > City encouraging digital development of non-digital companies by providing grants / tax incentives for digital projects
 Support services	<ul style="list-style-type: none"> > Create awareness about the importance of digital development for SMEs through testimonials or case studies (TEDx, open coffee, start up w/e) 	<ul style="list-style-type: none"> > Innovation labs / accelerators / fablabs for non-digital companies (open labs planned) > Support services to its non-digital companies to foster digitalization
 Governance & leadership	<ul style="list-style-type: none"> > Authority responsible for overall planning and implementation of a digital development plan (tech committee consisting of members of public, task force) 	<ul style="list-style-type: none"> > Clear and defined measurable goals to monitor progress of a digital development plan > Shared vision on digital development

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

3. Mission and Ambition statements

Mission Statement

“Kavala wants by **2030** to become a digitally advanced “**City as a platform**”, fostering sustainable development in **tourism, agro-food, logistics and ICT** sectors, leveraging upon evolving citizens’ and SME’s **digital skills** and exploiting a state-of-the-art city and private sector **digital infrastructure**, successfully transforming the region into a vivid **entrepreneurial** ecosystem, and eventually providing a **higher quality of life to its citizens and visitors**”

The mission of the digital transformation of the city of Kavala is to leverage ICT in order to digitally transform the city and the broader region: a) by improving the digital services provided to its citizens but also to its visitors, b) achieving sustainable development and a high level of quality of life and c) by fostering a vibrant environment for skills creation, entrepreneurial collaboration and new business development especially in key sectors of the local economy such as tourism and the agro-food industry.

Ambition statements

Four Ambition Statements form the key axes of the digital strategy, realising the vision:

<i>Ambition Statement 1</i>	To create a state-of the art City Digital Infrastructure, able to act as an enabler for citizens and local businesses
<i>Ambition Statement 2</i>	To set up and implement a strategy that develops digital skills, promotes awareness and achieves the participation of citizens and SME's
<i>Ambition Statement 3</i>	To achieve Entrepreneurship Acceleration via Digital Means, contributing to the sectoral development plan of the City
<i>Ambition Statement 4</i>	To leverage the potential of Digital Marketplaces and Open Data for sectoral Development

Ambition Statement 1 : “To create a state-of the art City Digital Infrastructure, able to act as an enabler for citizens and local businesses”

This strategic orientation aims to improve existing and create new digital **infrastructures** in the city in order to create a baseline for the city’s digital transformation. Furthermore:

- To achieve substantial embellishment of the City’s digital infrastructures, especially towards interoperability, open data, e-participation, one-stop service provision, red-tape reduction, covering the needs of all actors of the local ecosystem and providing a technological base that will boost economic growth and new service development.
- To invest on new reality technologies (mobile guides and AR/VR applications) for improved information delivery and interaction as well as visualization in order to increase cultural comprehension and inclusiveness.
- To invest on other technologies that offer valuable solutions for tourism (e.g. location-based services, web-based platforms etc.).

Rationale

- Stakeholders acknowledge the importance of digital services, to be provided by an interconnected local government infrastructure.
- The proper operation of the public sector (at municipality and regional level), via automated, one-stop, paperless services is an essential factor for private sector development.

Expected outcomes

- Effective development and promotion of new digital services.
- High exploitation of existing infrastructures, via interoperability-enabled interconnection.
- Attract investments and boost development.
- Direct Investments on the development of 5G, LoRa, FTTH and WiFi networks, IoT etc.
- Available buildings and infrastructures should be offered to the most productive sectors of the local economy, as an incentive to attract investment and boost development.

Ambition Statement 2: “To set up and implement a strategy that develops digital skills, promotes awareness and achieves the participation of citizens and SME’s”

This ambition statement focuses on **ICT skills creation**, for all stakeholders of the local ecosystem (the public sector, local enterprises and citizens) aiming to improve e-readiness:

- To utilize digital infrastructures in order to boost the digital skills of citizens, practitioners and SMEs in the region improving the readiness for e-services usage and/or development.
- Promote collaboration between local academic community and research institutions with the business community with the aim to identify the actual needs of the market in terms of knowledge.
- To adopt new technologies in agriculture and the agro-food sector and integrate these efforts with other key economic activities of the city (e.g. logistics, tourism) [e.g. make Kavala a pioneer in high precision agriculture and irrigation of local products].

Rationale

- There is a lot of potential within the local population that needs orientation towards digital training.
- Limited number of organized networking events for digital companies, or digital and non-digital companies.
- Post-secondary education programs should further be adapted to current digital needs.
- Citizens must have access to basic digital literacy training.
- Developing and highlighting an entrepreneurial culture for SME’s.

Expected outcomes

- Life-long training modules, on essential digital skills, for youth and SME’s.
- Systems and incentives programs for promoting active citizenship and collaboration.
- Attracting local and global digital talents parallel to discouraging brain drain.
- Talents would be leading the development process in both their workplace and innovation labs and networks.

Ambition Statement 3: “To achieve Entrepreneurship Acceleration via Digital Means, contributing to the sectoral development plan of the City”

This set of actions aims to enhance **innovative entrepreneurship** with the use of digital tools and create a sustainable and innovative ecosystem focusing at the same time on the establishment of a **collaboration culture**. More detailed objectives are the following:

- To establish a startup ecosystem able to generate and scale up new SME's, digital by default (the Kavala accelerator).
- To digitize existing touristic services (e.g. Online booking of tickets for all local travel services) in order to improve management efficiency, monitoring, and quality of the touristic offerings in the area and develop other ICT-enabled, sustainable and diversified touristic offerings, increasing tourist satisfaction and enlarging the touristic period while offering multiplying effects to local complementary economic sectors.
- To provide funding opportunities for e-services and ICT start-ups.
- To achieve a cross-sectoral fertilization with ICT offerings (e.g. e-marketplaces, collaborative platforms) in Tourism, Agro-Food Sector, Logistics, Quality of Life, etc.

Rationale

- Stakeholders acknowledge the importance of digital services, to be provided by an interconnected local government infrastructure.
- The proper operation of the public sector (at municipality and regional level), via automated, one-stop, paperless services is an essential factor for private sector development.

Expected outcomes

- Activation of Innovation labs / accelerators / fablabs (innovative environment)
- Basis for a shared vision and a commonly agreed digital strategy
- Strengthened role of the city as a coordinator/facilitator/launchpad
- Achieve social intelligence i.e. the capacity and desire of the community to manage the change

Ambition Statement 4: “To leverage the potential of Digital Marketplaces and Open Data for sectoral Development”

This ambition aims at improving existing and creating new **digital platforms** that will promote digital transformation and will support all the key sectors of the local economy through entrepreneurship creation. This will be mainly supported by the utilization of public and private sector open data at the spatial level, building upon them a series of services. Furthermore, key priorities include:

- To establish a collaborative ecosystem through common infrastructure utilization (such as marketplace platforms) for the development of new products and services.
- To invest in e-commerce/auction platforms for the promotion of small producers' agro-food products allowing also for greater collaboration among them.

Rationale

- Valid and reliable data need to be produced and access to them should be much improved.
- Low utilization of existing open data sets by either digital or non-digital companies.
- Required support in understanding the use of data to create business application.

Expected outcomes

- Data treated as the fuel of the digital, knowledge-based economy.
- Production and contribution of valid and reliable, efficiently accessible (i.e. APIs) open data by public and private sector organizations.
- Application development and solutions based on open data sets.

4. «City As A Platform» : the Digital Transformation Strategy for the city of Kavala

4.1. Strategy orientation

As presented in the previous section, both the Digital Strategy Mission as well as the key Ambition Statements, delineate the overall strategic orientation of Kavala to develop on four key areas of services to be offered as a platform:

- Infrastructures
- Skills
- Entrepreneurship
- Open Data and marketplaces

Services of this platform are then to be utilized and embedded in products and services, by the four key sectors of the local economy:

- Tourism
- Agriculture and food industry
- Logistics (coordination hub of port, rail, airport and road transport)
- Information and Communication Technologies

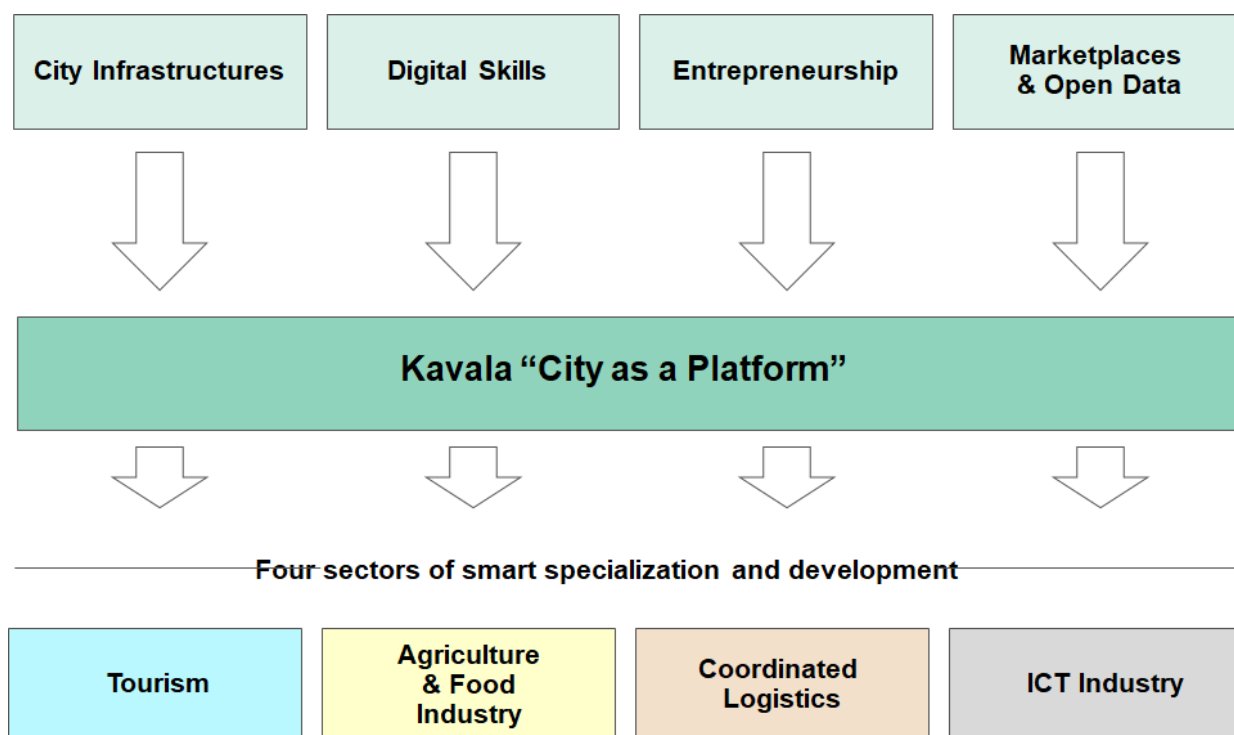
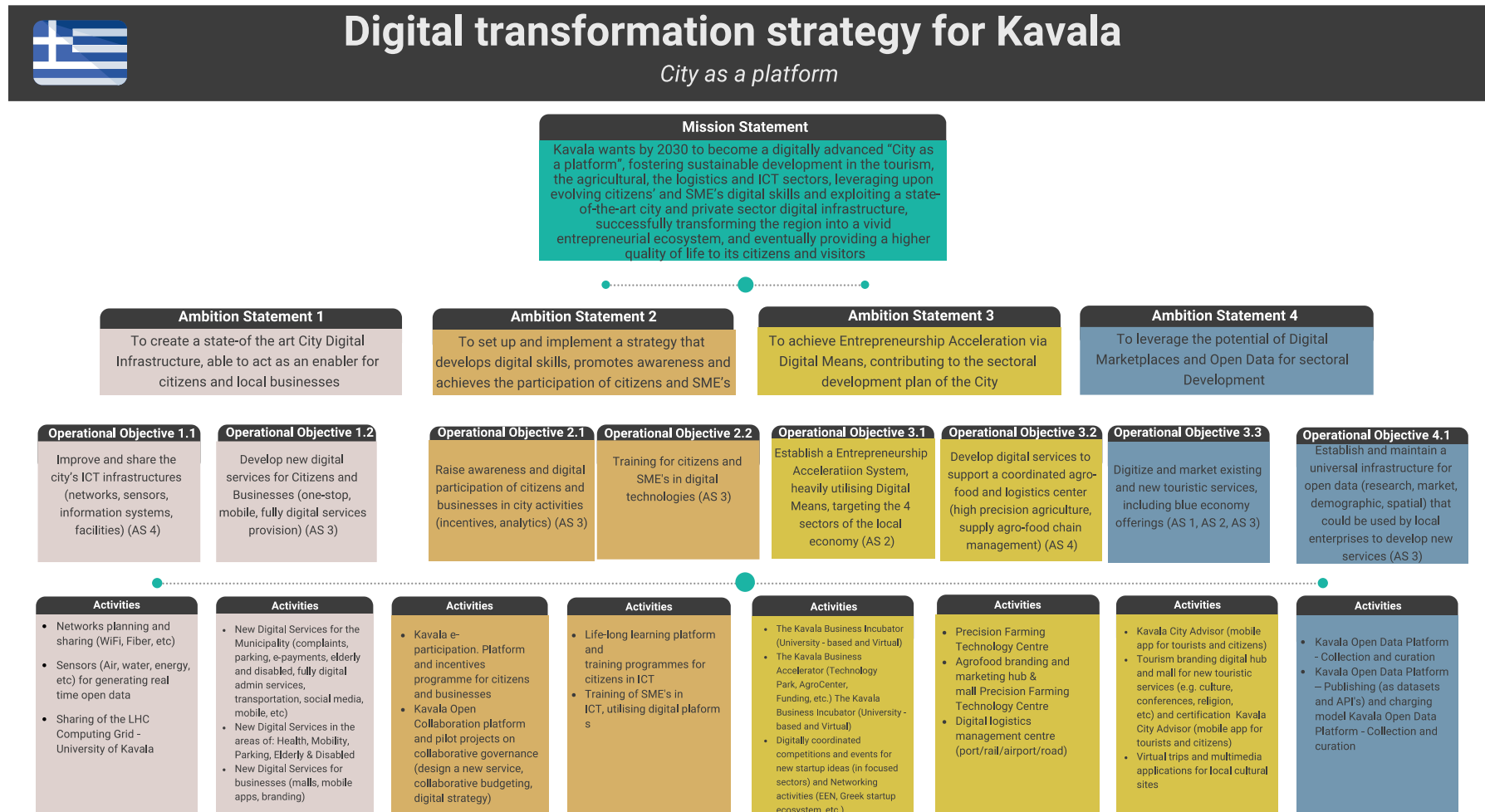


Figure 1 Kavala's Ambition Statements and Key Sectors of the economy

Box 1 Links to other existing strategies at the city level

The presented digital strategy orientation is based upon and extending the Kavala 1 Operational Program (KOP) 2015-2019. The current Digital Strategy will also form the basis of the ICT-related parts of the new Operational Programme 2020-2024, which is currently under preparation. Provisions have been made, so that the current strategy is also inline with the Community Support Financing (CSF) funding scheme for the City and the Broader East Macedonia & Thrace Region (2016-2021).

Figure 2 Overview of the Digital Transformation Strategy for the City of Kavala



4.2. Operational objectives

Operational objectives reflect the means through which the city of Kavala will achieve its ambition statements. They represent the ‘how’ behind the high-level strategic vision which has been developed by the local working group. The city of Kavala has identified 8 (eight) operational objectives for its digital transformation strategy, grouped in three stages (core infrastructure, awareness and training, innovation and entrepreneurship) are shown below.

INFRASTRUCTURE and BASIC SERVICES

OO 1.1	<i>Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)</i>
OO 1.2	<i>Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)</i>
OO 4.1	<i>Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services</i>

AWARENESS and SKILLS

OO 2.1	<i>Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)</i>
OO 2.2	<i>Training for citizens and SME's in digital technologies</i>

INNOVATION and ENTREPRENEURSHIP

OO 3.1	<i>Establish a Entrepreneurship Acceleratiion System, heavily utilising Digital Means, targeting the 4 sectors of the local economy</i>
OO 3.2	<i>Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)</i>
OO 3.3	<i>Digitize and market existing and new touristic services, including blue economy offerings</i>

As demonstrated in the following figure, operational objectives are linked to one or two ambition statements (XX – primarily and X – secondary).

#	Operational Objective	Ambition Statement			
		AS1 : A state-of the art City Digital Infrastructure	AS2: Digital Skills, awareness and participation for citizens and SME's	AS3 : Entrepreneurship Acceleration via Digital Means	AS 4 : Open Data and Digital Marketplaces
OO 1.1	Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)	XX			X
OO 1.2	Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)	XX		X	
OO 2.1	Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)		XX	X	
OO 2.2	Training for citizens and SME's in digital technologies		XX	X	
OO 3.1	Establish a Entrepreneurship Acceleration System, heavily utilizing Digital Means, targeting the 4 sectors of the local economy		X	XX	
OO 3.2	Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)			XX	X
OO 3.3	Digitize and market existing and new touristic services, including blue economy offerings			XX	X
OO 4.1	Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services			X	XX

The above Operational Objectives were formulated through a series of workshops, questionnaires and presentation in wider audiences and experts, in the city and within the DCC project. Initially twelve (12) OO's were formulated, but further analysis and deliberation led to the merging of some into the final eight (8), that lead to a more manageable project, at the Roadmap stage.

A more detailed description of the Operational Objectives is the following.

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

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Key Success Factors
OO 1.1 Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)	Linked to ambition statements 1 and 4	<ul style="list-style-type: none"> • Secure political commitment in terms of securing funding for public infrastructure expansion • Provide incentives to local enterprises to develop and offer solutions on top of these infrastructures • Encourage public authorities to develop and offer solutions on top of these infrastructures • Combine the offering of such spaces with other services related to common infrastructure usage (3d printers, laser machines) • Develop mechanisms to create open data from the use of such services
OO 1.2 Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)	Linked to ambition statements 1 and 3	<ul style="list-style-type: none"> • Adapting parts of the municipality's organizational structure and operation processes. • Encourage the use of ICT technologies and new solutions from the staff of the municipality • Coordination with other local service providers for better and more integrated solutions • Encourage collaboration with other municipalities through digital means (e.g. data sharing via web-based platforms)

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Key Success Factors
OO 2.1 Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)	Linked to ambition statements 2 and 3	<ul style="list-style-type: none"> • Elaborate a long-term strategy for stakeholder engagement • Create mechanisms (training, digital-physical services) for the participation of enterprises and citizens with low level of ICT skills • Focus first on key problems affecting the quality of life in Kavala • Develop trust between the local government and the citizens • Engage the youth of the city
OO 2.2 Training for citizens and SME's in digital technologies	Linked to ambition statement 2 and 3	<ul style="list-style-type: none"> • Explore the potential of online tools for ICT training • Create physical and digital networks of interested parties in order to increase collaborative problem solving • Collaborate with the local HEIs and schools
OO 3.1 Establish a Entrepreneurship Acceleration System, heavily utilising Digital Means, targeting the 4 sectors of the local economy	Linked to ambition statements 3 and 2	<ul style="list-style-type: none"> • Provide high level mentoring, training, evaluation, matchmaking and support for new business creation and ICT exploitation (growth hacking support, access to data) via conventional and digital services • Create a common digital infrastructure for ICT adoption and collaboration in the key sectors of the local economy, with research and industry, able to nurture new enterprises in the area
OO 3.2 Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)	Linked to ambition statements 3 and 4	<ul style="list-style-type: none"> • Provide incentives to SME in order to increase their engagement and participation in this center • Offer training to participating enterprises in order to maximize access and use of the services due to low ICT skills level • Explore new business models on top of this center allowing new ways of value

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Key Success Factors
		creation from local enterprises
OO 3.3 Digitize and market existing and new touristic services, including blue economy offerings	Linked to ambition statement 3,2,1 and 4	<ul style="list-style-type: none"> • To develop new offerings (products and services) in the tourism and blue economy sector (tourism, fisheries, transportation, sea logistics) • Create synergies among enterprises operating in these sectors aiming at the development of innovative products and services • Utilize the potential of digital platforms for collaboration • Ensure the collaboration and engagement of local stakeholders responsible for the selected services
OO 4.1 Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services	Linked to ambition statements 4 and 3	<ul style="list-style-type: none"> • Create awareness about the collected data not only to local enterprises but also to other stakeholders (youth community, public organizations etc.). • Organize competitions (e.g. hackathons) to provide opportunities for data usage in new services/apps • Provide incentives to SME for higher engagement and participation • Create mechanisms to allow access and use due to low ICT skills level

5. Digital strategy roadmap and planned activities

5.1. Overview of proposed activities

The digital transformation strategy for the city of Kavala 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 further plan and manage the implementation of 24 activities, as described in the following table.

	Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
1.1.1	Networks planning and sharing (WiFi, Fiber, etc.)	OO1.1	Municipality, Prefecture	The development and exploitation of networks infrastructure (e.g. Metropolitan Area Optic Fabric Network, City Center Public Wi-Fi Network in city squares, shopping/touristic streets, parks, harbor, new applications LoRa and 5G) is expected to increase ICT adoption and the creation of new ICT-based service offerings.
1.1.2	Sensors (Air, water, energy, etc.) for generating real time open data	OO1.1	Municipality, Prefecture, Independent Organisations and NGO's	Examples here include urban water automation systems (system for detection and control of water leakage, telemetry and automation systems for the water supply networks, digital hydrometers), air pollutants monitoring stations, management of energy consumption on Municipal buildings. All these will generate open data in real time and will allow better management of public services.
1.1.3	Sharing of the LHC Computing	OO1.1	Municipality, University,	Deployment and exploitation of the LHC Computing GRID for complex

	Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
	Grid - University of Kavala		Chamber of Commerce	computational application development both from companies and researchers
1.2.1	New Digital Services for citizens (administrative processes, complaints, e-payments, social media, mobile first principle, once only principles)	OO 1.2	Municipality, ICT SME's	New Digital Services for the citizens of Kavala (administrative processes, complaints, e-payments, fully digital admin services, social media, mobile, etc.) will increase municipal accountability and citizens' trust.
1.2.2	New Digital Services in the areas of: Health, Mobility, Parking, Elderly & Disabled	OO 1.2	Utility providers, Municipality	New Digital Services in the areas of health, mobility, elderly and disabled will increase quality of life in the city of Kavala.
1.2.3	New Digital Services for businesses (malls, mobile apps, branding)	OO 1.2	Chamber of Commerce, ICT SME's	A digital mall, for example, for all businesses in Kavala will increase participation of businesses in digital services provision. Also, social media adoption and exploitation, mobile apps development could contribute to the city's branding
2.1.1	Kavala e-participation Platform and incentives programme for citizens and businesses	OO 2.1	Municipality, Chamber of Commerce	A platform informing businesses and citizens on issues of interest and providing a space for discussion is expected to increase participation levels of local businesses and citizens.
2.1.2	Kavala Open Collaboration platform and pilot projects on collaborative governance (design a new service, collaborative	OO 2.1	Municipality, Chamber of Commerce	The establishment of an Open Collaboration platform and the development of pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy) will raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)

	Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
	budgeting, digital strategy)			
2.2.1	Life-long learning platform and training programmes for citizens in ICT	OO 2.2.	Municipality, University	Online platforms with open modules on ICT usage will increase ICT adoption and e-participation
2.2.2	Training of SME's in ICT, utilizing digital platforms	OO2.2	Chamber of Commerce	Training of SME's in ICT, utilising digital platforms (Commerce Chamber) will increase ICT adoption and ICT-based service offerings
3.1.1	The Kavala Business Incubator (University - based and Virtual)	OO 3.1	Municipality, University, Chamber of Commerce, selected SME's, NGO's	A virtual, early incubator for ICT-related mentoring and support
3.1.2	The Kavala Business Accelerator (Technology Park, AgroCenter, Funding, etc.	OO 3.1	Municipality, University, Chamber of Commerce, selected SME's, NGO's	The development of an Entrepreneurship Acceleration System, heavily utilising Digital Means, targeting the 4 sectors of the local economy will facilitate the digital transformation of the local enterprises
3.1.3	Digitally coordinated competitions and events for new startup ideas (in focused sectors) and Networking activities (EEN, Greek startup ecosystem, etc.)	OO 3.1	Municipality, University, Chamber of Commerce, selected SME's, NGO's	Organisation of start up competitions to identify promising ideas and innovative offerings that match/exploit the territorial competitive assets of Kavala. Also, networking activities will create a collaboration culture among local enterprises and entrepreneurs for new firm/innovative products development

	Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
3.2.1	Precision Farming Technology Centre	OO 3.2	Municipality, University, Agrofood Institute	Exploit the practices of precision agriculture with the aim of improving product quality and saving resources as well as branding. Examples of relevant projects include producer information system with geographic, meteorological data interconnection through innovative sensors and models etc. The creation of such a technology center could inform producers about what is commercially and technically (per soil and microclimate) viable to cultivate, agricultural work / proposals based on meteorological or other conditions (GIS based). It could also inform about networking, collaboration and funding opportunities.
3.2.2	Agrofood branding and marketing hub & mall	OO 3.2	Municipality, University, Agrofood Institute, SME's	Development of digital platforms for cooperation between small (local) catering, food processing, agri-food / local products producers and fishermen for more coordinated promotion of their products. Examples of relevant services include the use of e-platforms for a digital basket of local products, B2B / B2C eShop Service for local producers of agricultural or food standard or bulk products with the option of participating at a low monthly cost.
3.2.3	Digital logistics management centre (port/rail/airport/road)	OO 3.2	Municipality, Port Authority, Railway, Chamber of Commerce, Prefecture	Development of an integrated management system of supply chain of agro-food products (port/rail/airport/road)
3.3.1	Kavala City Advisor (mobile app for tourists and citizens)	OO 3.3	Municipality	A mobile application informing tourists for all local places of interest, events, shops and businesses, health and mobility services, etc. Loyalty schemes, payments, cc's
3.3.2	Tourism	OO 3.3	Municipality,	Digitisation and marketing of existing

	Activity name	Link to Operational Objectives	Main implementing partner (i.e. owner of the activity)	Brief description and goals
	branding digital hub and mall for new touristic services (e.g. culture, conferences, religion, etc) and certification		Cultural organisations, SME's	and new touristic services, including blue economy offerings and the development of mobile applications, informing tourists for all local places of interest, events (e.g. culture, conferences, religion, etc), shops and businesses, health and mobility services, etc. aims to increase tourism and visitors' satisfaction
3.3.3	Virtual trips and multimedia applications for local cultural sites	OO 3.3	Municipality, Cultural organisations, SME's	Utilise new reality (augmented/virtual) technologies and geolocated information to provide personalised guides to touristic sites and enhance the experience of tourists providing a new way of sharing, inviting or promoting Kavala's touristic offerings
4.1.1	Kavala Open Data Platform - Collection and curation	OO 4.1	Municipality Chamber of Commerce, University	Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial)
4.1.2	Kavala Open Data Platform -- Publishing (as datasets and API's) and charging model	OO 4.1	Municipality, CoC, SME's	Provide open data and explore ways of exploiting such data from local enterprises to develop new services. The platform will also raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics).

A detailed presentation of each activity is included in the Appendix.

5.2. The pilot activities

In order to begin the implementation of the strategy, the city of Kavala has decided to carry out a number of pilot activities:

A pilot activity by the title **“Integrated information and information system for visitors and citizens of the Municipality of Kavala”** is composed by two sub activities by the name “City Center Public Wi-Fi Network” which is going to support the “Advanced multimedia information and e-guide tour system” and the sub activity “Innovative Multimedia Information point”. The above activity was chosen as a pilot project, because first of all its part of the agreed Sustainable Urban Development Strategy of the Municipality of Kavala 2014-2020 by the title **“Kavala 2023: Creative city - tourist destination of excellence”**. Secondly this activity has secured funding by EU and finally because it is a matured project regarding the technical and administration processes. The overall implementation period is 12 months (expected to be in operation by the end of 2020). The Municipality of Kavala is in charge of the implementation. The activity is linked to Kavala’s Operational Objectives #1.1 “Improve and share the city’s ICT infrastructures (networks, sensors, information systems, facilities)” and #3.3 “Digitize and market existing and new touristic services, including blue economy offerings”

A second pilot activity would be the **“Entrepreneurship and Innovation Centre in the sector of Tourism and Culture”** the aim of the activity is to improve skills and modernize the entrepreneurial views of those involved in Tourism and Culture. It is a flexible structure that is characterized as a virtual business incubator, as the usual high-cost physical infrastructure for business is lacking and emphasis is placed on providing specialized support services. The above activity was chosen as a pilot because like the previous its part of the agreed Sustainable Urban Development Strategy of the Municipality of Kavala 2014-2020 by the title “Kavala 2023: Creative city - tourist destination of excellence”, it has secured funding by EU and it is a matured project regarding technical and administration processes. The structure will run in annual education and development cycles. Each of the two cycles, includes 25 beneficiaries and has four (4) phases. Participants may include either individuals or business groups (individuals who work collaboratively). The Chamber of Commerce & Industry of Kavala is in charge of the Implementation. The activity is linked to Kavala’s Operational Objective #3.1 “Establish a Entrepreneurship Acceleration System, heavily utilizing Digital Means, targeting the 4 sectors of the local economy”.

A third activity is the one by the title **“SNF Fellowships for assisting young scientists in prototyping innovative products by using cutting-edge technology”**. Stavros

Niarchos Foundation (SNF) has made a donation to Eastern Macedonia and Thrace Institute of Technology (EMaTTech) in order to provide Fellowships to help mitigate brain drain from Greece. Young Greek scientists (less than 40 years old) who have know-how on developing a product that may attract commercial interest are invited to apply for a grant. Based on project requirements, up to 15 Fellowships of up to €60,000 each will be issued as follows: a prize of €5,000 for the idea and a grant of €55,000 for developing it. The above activity was chosen as a pilot because is very much linked with the Kavala's Operational Objective #3.1 "Establish an Entrepreneurship Acceleration System, heavily utilizing Digital Means, targeting the 4 sectors of the local economy". Eastern Macedonia and Thrace Institute of Technology (EMaTTech) is in charge of the Implementation.

Finally a pilot activity would be the **"Training programs for vulnerable social groups (Graphic Arts, Digital Marketing)"**. The purpose of implementing the proposed act is to provide entrepreneurship, professional training and certification of knowledge and skills to vulnerable social group of the unemployed. In particular, it aims at the development of business activities in the fields of tourism and culture. The above activity was chosen as a pilot because like the previous its part of the agreed Sustainable Urban Development Strategy of the Municipality of Kavala 2014-2020 by the title "Kavala 2023: Creative city - tourist destination of excellence", it has secured funding by EU and it is a matured project regarding technical and administration processes. The trained beneficiaries will be almost 40 people. Municipality of Kavala is in charge of the Implementation. The activity is linked to Kavala's Operational Objective #2.2 "Training for citizens and SME's in digital technologies".

5.3. Timetable for implementation

It is foreseen the strategy will be implemented for the next 4 years. Activities will be gradually implemented, on the basis of the following indicative timetable.

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

Table 2 Timetable for the implemenation of the digital transformation strategy for the city of Kavala

#	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
1.1.1	Networks planning and sharing (WiFi, Fiber, etc)		PILOT						
1.1.2	Sensors (Air, water, energy, etc) for generating real time open data								
1.1.3	Sharing of the LHC SuperComputing Grid - University of Kavala								
1.2.1	New Digital Services for citizens (administrative processes, complaints, e-payments, social media, mobile first principle, once only principles)								
1.2.2	New Digital Services in the areas of: Health, Mobility, Parking, Elderly & Disabled								
1.2.3	New Digital Services for businesses (malls, mobile apps, branding).								
2.1.1	Kavala e-participation Platform and incentives programme for citizens and businesses								

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

#	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
2.1.2	Kavala Open Collaboration platform and pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy)								
2.2.1	Life-long learning platform and training programmes for citizens in ICT		PILOT						
2.2.2	Training of SME's in ICT, utilising digital plaforms								
3.1.1	The Kavala Business Incubator (University - based and Virtual)		PILOT						
3.1.2	The Kavala Business Accelerator (Technology Park, AgroCenter, Funding, etc)								
3.1.3	Digitally coordinated competitions and events for new startup ideas (in focused sectors) and Networking activities (EEN, Greek startup ecosystem, etc)								
3.2.1	Precision Farming Technology Centre								
3.2.2	Agrofood branding and marketing hub & mall								

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

#	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
3.2.3	Digital logistics management centre (port/rail/airport/road)								
3.3.1	Kavala City Advisor mobile application, informing tourists for all local places of interest, events, shops and businesses, health and mobility services, etc. Loyalty schemes, payments, cc's								
3.3.2	Tourism branding digital hub and mall for new touristic services (eg. culture, conferences, religion, etc) and certification								
3.3.3	Virtual trips and multimedia applications for local cultural sites		PILOT						
4.1.1	Kavala Open Data Platform - Collection and curation								
4.1.2	Kavala Open Data Platform -- Publishing (as datasets and API's) and charging model								

6. Strategy governance

6.1. Governance scheme and partners

Strategy Owner, Partner Coordinator and **Management Authority** of the Digital Transformation Strategy will be the Municipality of Kavala, with Legal Representative the Mayor of Kavala. The City Council will approve the strategy, as well as the **Steering Committee** and a **Digital Transformation Coordinator of the City**.

Kavala will engage stakeholders from all four aspects of the quadruple helix in order to form a **Steering Committee** to operationalize the strategy of digital transformation: Academia & Research, Industry, Government and Civil Society. The members of the Steering committee will be approved by the City Council. The key members of the Committee will come from:

Administration	Municipality of Kavala, which is at the heart of the strategic planning process and has all the necessary resources (funding, infrastructure, personnel) to support the initiative. Additional representatives from government organizations will participate, coming from Water Supply and Sewerage Company, Dimofelia (public benefit organization of the Municipality of Kavala) and Prefecture of Kavala.
Business	The industry is going to be represented by the most successful innovative local companies (Prisma Electronics, OTE Group, Kavala Port Authority S.A. etc) but also from their institutional associations (Hoteliers, Technical Chamber, Chamber of Commerce & Industry, etc).
Academia and Research	EMaTTech and DUTH which are the leading academic and research institutions in the area and have the infrastructure and human

resources to devote to the initiative. This is also true for FRI, especially in the blue growth field.

Civil Society Finally, civil society stakeholders that are going to participate are the Scientific group “Opsometha”, the software development Meet-up of Kavala and volunteering citizens.

The governance scheme of the Kavala Digital Strategy is illustrated in the following figure.

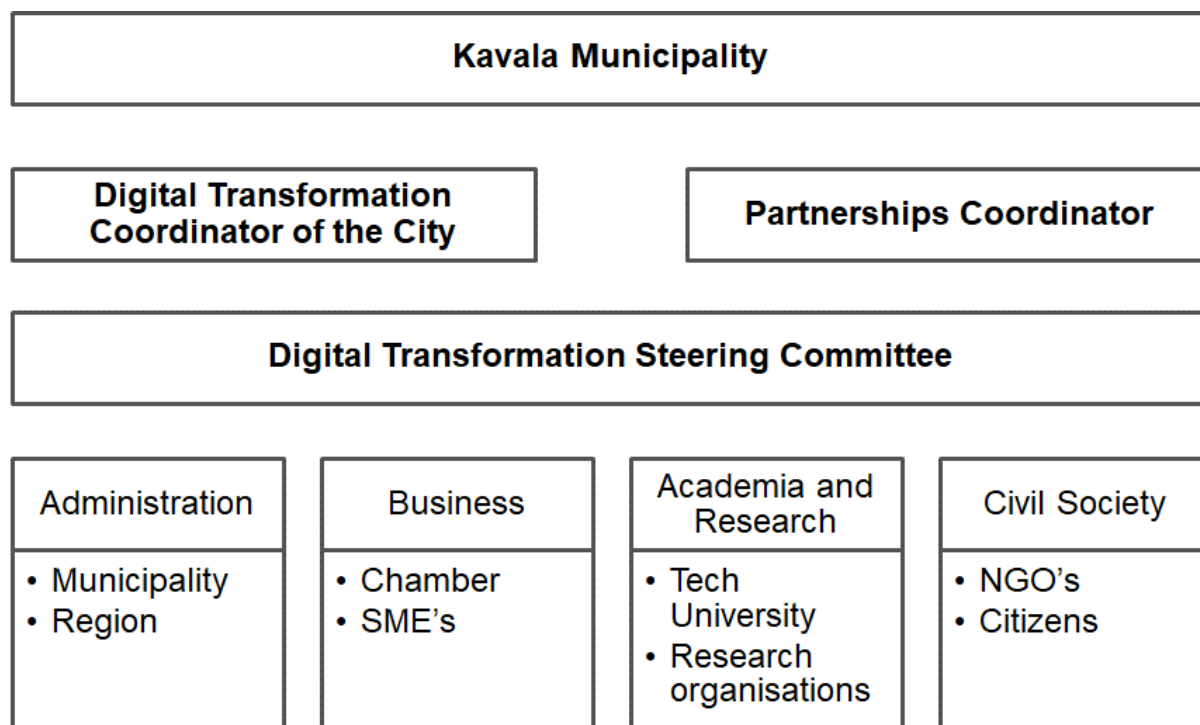


Figure 3 : Kavala's Governance Scheme

6.2. Key processes and roles

The Steering Committee is assembled at a meeting, after the invitation of the Legal Representative of Coordination Partner or the Digital Transformation Coordinator of the City and one-third of the members of the Committee. Regular meetings will be held **every three months**. The agenda of the meetings shall be notified to the members at least three working days before each meeting. The above deadline may be abbreviated in exceptional cases. The agenda includes in particular:

- Presentation of the progress of the actions implemented by each member,

- Reference to problems arising during the implementation of an action, proposals of possible solutions
- Exchange of views and decision-making for the best possible exploitation of know-how by each partner,
- Selecting best practices for implementing actions and information dissemination,
- Suggesting proposals for revising Digital Transformation Strategy
- Suggesting proposals on the annual and final progress report of the project
- monitoring and verifying the correct implementation and financial management of the approved actions, in accordance with applicable EU and national regulations, and

The responsibilities of the **Digital Transformation Coordinator of the City** will be to:

- coordinate the Corporate Partnership,
- monitor the overall progress and financial management of the Strategy, based on agreed indicators set by the Steering Committee
- have a full picture of all the projects being implemented, maintaining constant communication with the private/public organizations that are responsible for the implementation,
- ensure that the timetable for the implementation of the individual actions is respected,
- coordinate contacts between the members who have the responsibility of implementing the activities of the Strategy
- Draw up the Annual Progress Report, which will be sent to the Steering Committee for approval before the Municipal Council.

The invitation of each meeting shall indicate the date, time and place of convocation, as well as items on the agenda. The meetings are chaired by the Legal Coordinator of the Partner Coordinator, and in the absence of this, the Chief Coordinator. During the meetings of the Board of Directors minutes are kept, which will be communicated to all partners.

7. Monitoring and evaluation of the Digital Transformation Strategy

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 with the leading role of Kavala Municipality on the basis of the performance assessment framework presented below. 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

Kavala Municipality will be in charge of collecting data on all strategy monitoring indicators. However, it is 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 Advisory boards 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 committee bodies.

7.2. Strategy evaluation plan

In addition to monitoring the progress of strategy implementation, the Digital Transformation Strategy for Kavala will undergo an internal and external evaluation within the next 3 to 7 years. The objective of the evaluation is mainly 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 Kavala Municipality with the support of the steering committee bodies.

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

The participation of the city of Kavala in the Digital Cities Challenge initiative has led to the achievement of a number of results. More specifically:

- The assessment of the digital maturity of Kavala contributed for raising the awareness both internally in the Municipality and externally among local stakeholders for the need of digital transformation.
- The work performed by the DCC team, created a community of over 50 people, actively engaged in workshops and online assessments. There was a very high level of engagement from IT companies, SME's and public administration entities. These entities and people are a key element for the Digital Strategy implementation in the coming years.
- Due to the marketing efforts of the Kavala municipality team, there is now an increased overall awareness about the DCC project throughout the city, including city and national level officials.
- Through the DCC project, Kavala has now access to a broader network of cities with similar ambitions and barriers to overcome – a network that may prove essential during the next phases of the strategy implementation.

The Digital Cities Challenge initiative is the foundation for further work on Kavala's digital transformation. The next steps include:

- Official presentation and endorsement of the Strategy by City and Region officials, to be newly-elected after the local administration elections of early June 2019.
- Establishment of the governance schemas and operations for the Digital Strategy of Kavala.
- Identification of funding opportunities, to carry out the foreseen activities and pilot actions.
- Identification of opportunities for common projects with other cities in Greece and abroad, particularly from the DCC network. Such common proposals are under way, within the URBACT, INTERREG, ENI-CBC programmes.

Appendix I : Table of abbreviations and definitions

Digital Cities Challenge (DCC)

The Digital Cities Challenge initiative, was launched by the European Commission in November 2017 and scheduled to run until August 2018. It helps cities (The Digital Cities, referred as DC) develop and implement digital policies that can transform day to day life for residents, businesses, workers, and entrepreneurs.

Digital City Teams (DCT)

Each participating Digital City has a Digital City Team which will be in charge of managing and coordinating the involvement of the city in the Challenge. Digital City teams will include a) the core team which consists of one Lead Expert, one Local Expert, one Support Consultant as well as Thematic Experts; and the b) the Digital City leadership team which is made up of representatives of the city (i.e. local elected officials, local public servants, and the designated project management team).

Digital Transformation Trajectory (DTT)

The Digital Transformation Trajectory refers to the evolutionary path a city follows while taking part in the initiative, from the preliminary assessment of the digital potential of the City, to the definition of the City's digital transformation strategy and roadmap.

Field Advisory Services (FAS)

Field Advisory Services are services provided by the Digital Cities Challenge to Cities through-out the duration of the initiative. The Field Advisory Services include the organisation of one assessment visit and a number of local workshops, which will gather local stakeholders involved in defining the digital transformation strategy of the City.

Key Performance Indicators (KPIs)

The objective of the KPIs is to collect data that can diagnose the current status in terms of digital maturity and measure the progress made by cities during and at the end of the Digital Cities Challenge initiative. The KPIs will facilitate the activities of the policy makers and stakeholders of cities when identifying and addressing the bottlenecks and obstacles of the processes of digital transformation and industrial modernisation. They will also enable the

right identification of the key success factors of the different initiatives and actions undertaken.

Self-Assessment Tool (SAT)

The objective of the SAT is to identify the starting points for discussion on how to (further) develop, reshape and improve the digital transformation strategies of European cities. It is an online-tool developed by the project with a set of questions and corresponding response options to be filled in collectively by a set of stakeholders such as industry representation, utility companies, education and research and financial institutions. The SAT covers eight key dimensions: Infrastructure, Open data, Digital skillset, Digital competencies of companies, Community, Finance, Support services, Governance and leadership.

Appendix II: Detailed presentation of activities

1.1.1 Networks planning and sharing (Wifi, Fiber, etc.).	
Link to operational objective	OO1.1: Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)
Description	The development and exploitation of networks infrastructure (e.g. Metropolitan Area Optic Fabric Network, City Center Public Wi-Fi Network in city squares, shopping/touristic streets, parks, harbor, new applications LoRa and 5G) is expected to increase ICT adoption and the creation of new ICT-based service offerings.
Timeframe	<ul style="list-style-type: none"> •Length: 12 months •Estimated date of implementation: End of 2020
Indicators to be achieved	Percentage of coverage for citizens (public wifi), businesses (fiber) and administration (fiber)
Estimated cost and source of funding	2.630.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Prefecture

1.1.2 Sensors (Air, water, energy, etc.) for generating real time open data	
Link to operational objective	OO1.1: Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)

Description	Examples here include urban water automation systems (system for detection and control of water leakage, telemetry and automation systems for the water supply networks, digital hydrometers), air pollutants monitoring stations, management of energy consumption on Municipal buildings. All these will generate open data in real time and will allow better management of public services.
Timeframe	<ul style="list-style-type: none"> •Length: 18 months •Estimated date of implementation: June 2021 Start: January 2020, Planned completion: June 2021
Indicators to be achieved	Number of measured quantities
Estimated cost and source of funding	5.695.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Prefecture, Independent Organisations and NGO's

1.1.3 Sharing of the LHC Computing Grid - University of Kavala

Link to operational objective	OO1.1: Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)
Description	Deployment and exploitation of the LHC Computing GRID for complex computational application development both from companies and researchers
Timeframe	<ul style="list-style-type: none"> •Length: 12 months •Estimated date of implementation: June 2021 Start: July 2020, Planned completion: June 2021
Indicators to be	Number of SME projects supported by the LHC Grid

achieved	
Estimated cost and source of funding	100.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University, Chamber of Commerce

1.2.1 New Digital Services for citizens (administrative processes, complaints, e-payments, social media, mobile first principle, once only principles)

Link to operational objective	OO1.2: Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)
Description	New Digital Services for the citizens of Kavala (administrative processes, complaints, e-payments, fully digital admin services, social media, mobile, etc.) will increase municipal accountability and citizens' trust.
Timeframe	<ul style="list-style-type: none"> •Length: 12 months • Estimated date of implementation: June 2021 Start: July 2020, Planned completion: June 2021
Indicators to be achieved	Percentage of services for citizens at levels 4 and 5 (one-stop shop)
Estimated cost and source of funding	657.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, ICT SME's

1.2.2 New Digital Services in the areas of: Health, Mobility, Parking, Elderly & Disabled	
Link to operational objective	OO1.2: Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)
Description	New Digital Services in the areas of health, mobility, elderly and disabled will increase quality of life in the city of Kavala.
Timeframe	<ul style="list-style-type: none"> • Length: 12 months • Estimated date of implementation: June 2021 Start: July 2020, Planned completion: June 2021
Indicators to be achieved	Number of new digital services deployed
Estimated cost and source of funding	1.460.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Utility providers, Municipality

1.2.3 New Digital Services for businesses (malls, mobile apps, branding)	
Link to operational objective	OO1.2: Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)
Description	A digital mall, for example, for all businesses in Kavala will increase participation of businesses in digital services provision. Also, social media adoption and exploitation, mobile apps development could contribute to the city's branding.
Timeframe	<ul style="list-style-type: none"> • Length: 18 months • Estimated date of implementation: June 2021

	Start: January 2020, Planned completion: June 2021
Indicators to be achieved	Number of enterprises supported by the programme
Estimated cost and source of funding	625.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Chamber of Commerce, ICT SME's

2.1.1 Kavala e-participation Platform and incentives programme for citizens and businesses

Link to operational objective	OO2.1: Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)
Description	A platform informing businesses and citizens on issues of interest and providing a space for discussion is expected to increase participation levels of local businesses and citizens.
Timeframe	<ul style="list-style-type: none"> •Length: 12 months • Estimated date of implementation: June 2021 Start: July 2020, Planned completion: June 2021
Indicators to be achieved	Number of e-participation initiatives performed (deliberations, forums), annually
Estimated cost and source of funding	250.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Chamber of Commerce

activity)	
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2.1.2 Kavala Open Collaboration platform and pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy)	
Link to operational objective	OO2.1: Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)
Description	The establishment of an Open Collaboration platform and the development of pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy) will raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)
Timeframe	<ul style="list-style-type: none"> •Length: 24 months • Estimated date of implementation: December 2022 Start: January 2021, Planned completion: December 2022
Indicators to be achieved	Number of open collaboration initiatives performed annually
Estimated cost and source of funding	250.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Chamber of Commerce

2.2. Life-long learning platform and training programmes for citizens in ICT	
Link to operational objective	OO2.2: Training for citizens and SME's in digital technologies
Description	Online platforms with open modules on ICT usage will increase

	ICT adoption and e-participation
Timeframe	<ul style="list-style-type: none"> • Length: 36 months • Estimated date of implementation: December 2022 Start: January 2020, Planned completion: December 2022
Indicators to be achieved	Number of citizens participated in training programmes
Estimated cost and source of funding	500.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University

2.2.2 Training of SME's in ICT, utilising digital plaforms

Link to operational objective	OO2.2: Training for citizens and SME's in digital technologies
Description	Training of SME's in ICT, utilizing digital platforms (Commerce Chamber) will increase ICT adoption and ICT-based service offerings
Timeframe	<ul style="list-style-type: none"> • Length: 36 months • Estimated date of implementation: December 2022 Start: January 2020, Planned completion: December 2022
Indicators to be achieved	Number of SME's participated in training programmes
Estimated cost and source of funding	500.000€ CSF and National Funds

Organisation / unit in charge of delivery (i.e. ownership of the activity)	Chamber of Commerce
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3.1.1 The Kavala Business Incubator (University - based and Virtual)

Link to operational objective	OO3.1: Establish an Entrepreneurship Acceleration System, heavily using Digital Means, targeting the 4 sectors of the local economy
Description	A virtual, early incubator for ICT-related mentoring and support
Timeframe	<ul style="list-style-type: none"> •Length: 36 months • Estimated date of implementation: December 2022 Start: January 2020, Planned completion: December 2022
Indicators to be achieved	Number of startup ideas / teams generated
Estimated cost and source of funding	1.810.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University, Chamber of Commerce, selected SME's, NGO's

3.1.2 The Kavala Business Accelerator (Technology Park, AgroCenter, Funding, etc).

Link to operational objective	OO3.1: Establish an Entrepreneurship Acceleration System, heavily using Digital Means, targeting the 4 sectors of the local economy
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Description	The development of an Entrepreneurship Acceleration System, heavily utilising Digital Means, targeting the 4 sectors of the local economy will facilitate the digital transformation of the local enterprises
Timeframe	<ul style="list-style-type: none"> • Length: 30 months • Estimated date of implementation: December 2022 Start: July 2020, Planned completion: December 2022
Indicators to be achieved	Number of new companies created
Estimated cost and source of funding	1.000.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University, Chamber of Commerce, selected SME's, NGO's

3.1.3 Digitally coordinated competitions and events for new startup ideas (in focused sectors) and Networking activities (EEN, Greek startup ecosystem, etc.)

Link to operational objective	OO3.1: Establish an Entrepreneurship Acceleration System, heavily using Digital Means, targeting the 4 sectors of the local economy
Description	Organisation of start-up competitions to identify promising ideas and innovative offerings that match/exploit the territorial competitive assets of Kavala. Also, networking activities will create a collaboration culture among local enterprises and entrepreneurs for new firm/innovative products development
Timeframe	<ul style="list-style-type: none"> • Length: 36 months • Estimated date of implementation: December 2022 Start: January 2020, Planned completion: December 2022
Indicators to be	Number of events organised

achieved	
Estimated cost and source of funding	200.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University, Chamber of Commerce, selected SME's, NGO's

3.2.1 Precision Farming Technology Centre	
Link to operational objective	OO3.2: Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)
Description	Exploit the practices of precision agriculture with the aim of improving product quality and saving resources as well as branding. Examples of relevant projects include producer information system with geographic, meteorological data interconnection through innovative sensors and models etc. The creation of such a technology center could inform producers about what is commercially and technically (per soil and microclimate) viable to cultivate, agricultural work / proposals based on meteorological or other conditions (GIS based). It could also inform about networking, collaboration and funding opportunities.
Timeframe	<ul style="list-style-type: none"> •Length: 24 months • Estimated date of implementation: December 2022 Start: January 2021, Planned completion: December 2022
Indicators to be achieved	Number of SME's supported by the centre
Estimated cost and source of funding	420.000€ CSF and National Funds
Organisation / unit in charge of	Municipality, University, Agrofood Institute

delivery (i.e. ownership of the activity)	
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3.2.2 Agrofood branding and marketing hub & mall	
Link to operational objective	OO3.2: Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)
Description	Development of digital platforms for cooperation between small (local) catering, food processing, agri-food / local products producers and fishermen for more coordinated promotion of their products. Examples of relevant services include the use of e-platforms for a digital basket of local products, B2B / B2C eShop Service for local producers of agricultural or food standard or bulk products with the option of participating at a low monthly cost.
Timeframe	<ul style="list-style-type: none"> •Length: 24 months • Estimated date of implementation: June 2022 Start: July 2020, Planned completion: July 2022
Indicators to be achieved	Number of SME's promoted
Estimated cost and source of funding	600.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, University, Agrofood Institute, SME's

3.2.3 Digital logistics management centre (port/rail/ airport/road)	
Link to operational objective	OO3.2: Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain management)

Description	Development of an integrated management system of supply chain of agro-food products (port/rail/airport/road)
Timeframe	<ul style="list-style-type: none"> •Length: 24 months • Estimated date of implementation: June 2022 Start: July 2020, Planned completion: July 2022
Indicators to be achieved	Number of businesses / logistics services consumers
Estimated cost and source of funding	250.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Port Authority, Railway, Chamber of Commerce, Prefecture

3.3.1 Kavala City Advisor mobile application, informing tourists for all local places of interest, events, shops and businesses, health and mobility services, etc. Loyalty schemes, payments, cc's

Link to operational objective	OO3.3: Digitize and market existing and new touristic services, including the economy offerings
Description	A mobile application informing tourists for all local places of interest, events, shops and businesses, health and mobility services, etc. Loyalty schemes, payments, cc's
Timeframe	<ul style="list-style-type: none"> •Length: 12 months • Estimated date of implementation: June 2021 Start: July 2020, Planned completion: June 2021
Indicators to be achieved	Number of users, annually
Estimated cost	200.000€

and source of funding	CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Cultural organisations, SME's

3.3.2 Tourism branding digital hub and mall for new touristic services (e.g. culture, conferences, religion, etc.) and certification	
Link to operational objective	OO3.3: Digitize and market existing and new touristic services, including the economy offerings
Description	Digitisation and marketing of existing and new touristic services, including blue economy offerings and the development of mobile applications, informing tourists for all local places of interest, events (e.g. culture, conferences, religion, etc), shops and businesses, health and mobility services, etc. aims to increase tourism and visitors' satisfaction
Timeframe	<ul style="list-style-type: none"> •Length: 24 months • Estimated date of implementation: June 2022 Start: July 2020, Planned completion: June 2022
Indicators to be achieved	Number of touristic SME's promoted
Estimated cost and source of funding	250.000€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Cultural organisations, SME's

3.3.3 Virtual trips and multimedia applications for local cultural sites	
Link to operational objective	OO3.3: Digitize and market existing and new touristic services, including the economy offerings
Description	Utilize new reality (augmented/virtual) technologies and geolocated information to provide personalized guides to touristic sites and enhance the experience of tourists providing a new way of sharing, inviting or promoting Kavala's touristic offerings
Timeframe	<ul style="list-style-type: none"> • Length: 12 months • Estimated date of implementation: December 2022 Start: January 2020, Planned completion: December 2022
Indicators to be achieved	Number of sites promoted
Estimated cost and source of funding	1.846.500€ CSF and National Funds
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality, Cultural organisations, SME's

4.1.1 Kavala Open Data Platform - Collection and curation	
Link to operational objective	OO4.1: Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services
Description	Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial)
Timeframe	•Length: 24 months

	<ul style="list-style-type: none"> Estimated date of implementation: December 2021 <p>Start: January 2020, Planned completion: December 2021</p>
Indicators to be achieved	Number of datasets / API's maintained by the city
Estimated cost and source of funding	<p>2.853.000€</p> <p>CSF and National Funds</p>
Organisation / unit in charge of delivery (i.e. ownership of the activity)	Municipality Chamber of Commerce, University

4.1.2 Kavala Open Data Platform - Publishing (as datasets and API's) and charging model

Link to operational objective	OO4.1: Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to develop new services
Description	Provide open data and explore ways of exploiting such data from local enterprises to develop new services. The platform will also raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics).
Timeframe	<ul style="list-style-type: none"> Length: 24 months <ul style="list-style-type: none"> Estimated date of implementation: June 2022 <p>Start: July 2020, Planned completion: June 2022</p>
Indicators to be achieved	Number of datasets / API's downloaded (consumed) by citizens and businesses annually
Estimated cost and source of funding	<p>250.000€</p> <p>CSF and National Funds</p>
Organisation / unit in charge of	Municipality, CoC, SME's

delivery (i.e. ownership of the activity)	
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Appendix III: Performance assessment framework

1. Strategy outcomes

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Ambition statement 1	To create a state-of the art City Digital Infrastructure, able to act as an enabler for citizens and local businesses	The average level of sophistication of digital services provided to businesses and citizens (based on the DESI - Dimension 5 indicator: 1 to 5)	Currently around 1.5 in the 1-5 EU scale (basically information-only services)	Reach levels 4 and 5 (fully automated service provision) for the majority of services	7 years	Evaluation of service provision levels(Internet Desk Research assessment)
Ambition statement 2	To set up and implement a strategy that develops digital	Number of enterprises and numbers of citizens that will	A few hundreds	More than 5000 citizens and SME personnel	7 years	Operational data

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	skills, promotes awareness and achieves the participation of citizens and SME's	participate in ICT-related training.				
Ambition statement 3	To achieve Entrepreneurship Acceleration via Digital Means, contributing to the sectoral development plan of the City	The number of new startup companies that will be established, through the incubation and acceleration programs	Practically zero	More than 30	7 years	Operational data
Ambition statement 4	To leverage the potential of Digital Marketplaces	Number of datasets and API's that will be available and	7	At the level of 100 datasets and real-time API's	7 years	Operational data and online survey

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	and Open Data for sectoral Development	used by local SME's and citizens				

2. Strategy intermediate outcomes

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Operational objective 1.1	Improve and share the city's ICT infrastructures (networks, sensors, information systems, facilities)	% of services that are digitally provided	10%	80%	7 years	Internet Desk Research

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Operational objective 1.2	Develop new digital services for Citizens and Businesses (one-stop, mobile, fully digital services provision)	% of services that are digitally provided, in an one-stop shop mode by the city in collaboration with other organizations	5%	80%	7 years	Internet Desk Research
Operational objective 2.1	Raise awareness and digital participation of citizens and businesses in city activities (incentives, analytics)	% of citizens with a digital ID/profile, active on the internet	5%	50%	7 years	Platforms usability analytics
Operational objective 2.2	Training for citizens and SME's in digital technologies	Number of citizens and SME's trained	100	5000	7 years	Operational Data

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Operational objective 3.1	Establish a Entrepreneurship Acceleration System, heavily utilizing Digital Means, targeting the 4 sectors of the local economy	The number of new startup companies that will be established, through the incubation and acceleration programmes	0	30	7 years	Operational Data
Operational objective 3.2	Develop digital services to support a coordinated agro-food and logistics center (high precision agriculture, supply agro-food chain	Number of enterprises supported	0	50	7 years	Operational Data

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	management)					
Operational objective 3.3	Digitize and market existing and new touristic services, including blue economy offerings	Number of enterprises supported	0	100	7 years	Operational Data
Operational objective 4.1	Establish and maintain a universal infrastructure for open data (research, market, demographic, spatial) that could be used by local enterprises to	Number of datasets / API's published and maintained online	7	100	7 years	Online survey

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	develop new services					

3. Strategy outputs

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Activity 1.1.1	Networks planning and sharing (WiFi, Fiber, etc)	Percentage of coverage for citizens (public wifi), businesses (fiber) and administration (fiber)	10/10/50	50/80/90	7 years	Operational Data
Activity 1.1.2	Sensors (Air, water, energy, etc) for generating real time open data	Number of measured quantities	1	10	7 years	Operational Data
Activity 1.1.3	Sharing of the LHC SuperComputing Grid - University of Kavala	Number of SME projects supported by the LHC Grid	1	10	7 years	Operational Data

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
Activity 1.2.1	New Digital Services for citizens (administrative processes, e-payments, social media, mobile first principle, once only principle)	Percentage of services for citizens at levels 4 –Transaction and 5 – Proactive (one-stop shop)	5%	75%	7 years	Internet Desk Research
Activity 1.2.2	New Digital Services in the areas of: Health, Mobility, Parking, Elderly & Disabled	Number of new digital services deployed	0	10	7 years	Internet Desk Research
Activity 1.2.3	New Digital Services for businesses (malls, mobile apps, branding).	Number of enterprises supported by the programme	0	300	7 years	Operational Data
Activity 2.1.1	Kavala e-	Number of e-	2	10	7 years	Operational Data

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	participation Platform and incentives programme for citizens and businesses	participation initiatives performed (deliberations, forums), annually				
Activity 2.1.2	Kavala OpenCollaboration platform and pilot projects on collaborative governance (design a new service, collaborative budgeting, digital strategy)	Number of open collaboration initiatives performed annually	1	4	7 years	Operational Data
Activity 2.2.1	Life-long learning platform and training programmes for	Number of citizens participated in	100	2000	7 years	Operational Data

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	citizens in ICT	training programmes				
Activity 2.2.2	Training of SME's in ICT, utilising digital plaforms	Number of SME's participated in training programmes	20	100	7 years	Operational Data
Activity 3.1.1	The Kavala Business Incubator (University - based and Virtual)	Number of startup ideas / teams generated	10	300	7 years	Operational Data
Activity 3.1.2	The Kavala Business Accelerator (Technology Park, AgroCenter, Funding, etc)	The number of new startup companies that will be established, through the acceleration	0	20	7 years	Operational Data

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
		programmes				
Activity 3.1.3	Digitally coordinated competitions and events for new startup ideas (in focused sectors) and Networking activities (EEN, Greek startup ecosystem, etc)	Number of events organised	1	8	7 years	Operational Data
Activity 3.2.1	Precision Farming Technology Centre	Number of SME's supported by the centre	0	50	7 years	Operational Data
Activity 3.2.2	Agrofood branding and marketing hub & mall	Number of SME's promoted	0	50	7 years	Operational Data
Activity 3.2.3	Digital logistics management centre	Number of businesses /	0	50	7 years	Operational Data

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy for the city of Kavala

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	(port/rail/airport/road)	logistics services consumers				
Activity 3.3.1	Kavala City Advisor mobile application, informing tourists for all local places of interest, events, shops and businesses, health and mobility services, etc. Loyalty schemes, payments, cc's	Number of users, annually	0	10000	7 years	Online Survey
Activity 3.3.2	Tourism branding digital hub and mall for new touristic services (eg. culture, conferences, religion,	Number of touristic SME's promoted	0	200	7 years	Operational Data

	Expected result	Monitoring indicator	Baseline	Target	Timeframe	Means of verification
	etc) and certification					
Activity 3.3.3	Virtual trips and multimedia applications for local cultural sites	Number of sites promoted	1	20	7 years	Operational Data
Activity 4.1.1	Kavala Open Data Platform - Collection and curation	Number of datasets / API's maintained by the city	7	100	7 years	Operational Data
Activity 4.1.2	Kavala Open Data Platform -- Publishing (as datasets and API's) and charging model	Number of datasets / API's downloaded (consumed) by citizens and businesses annually	0	25	7 years	Internet Desk Research

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