Digital Transformation and Innovation

November 2020

**HELLENIC CORPORATION
OF ASSETS AND PARTICIPATIONS**

Digital Transformation: The companies in the HCAP portfolio should speed up their digital convergence

Within 2019, HCAP documented the status of the subsidiaries towards digital convergence through a **targeted questionnaire**.
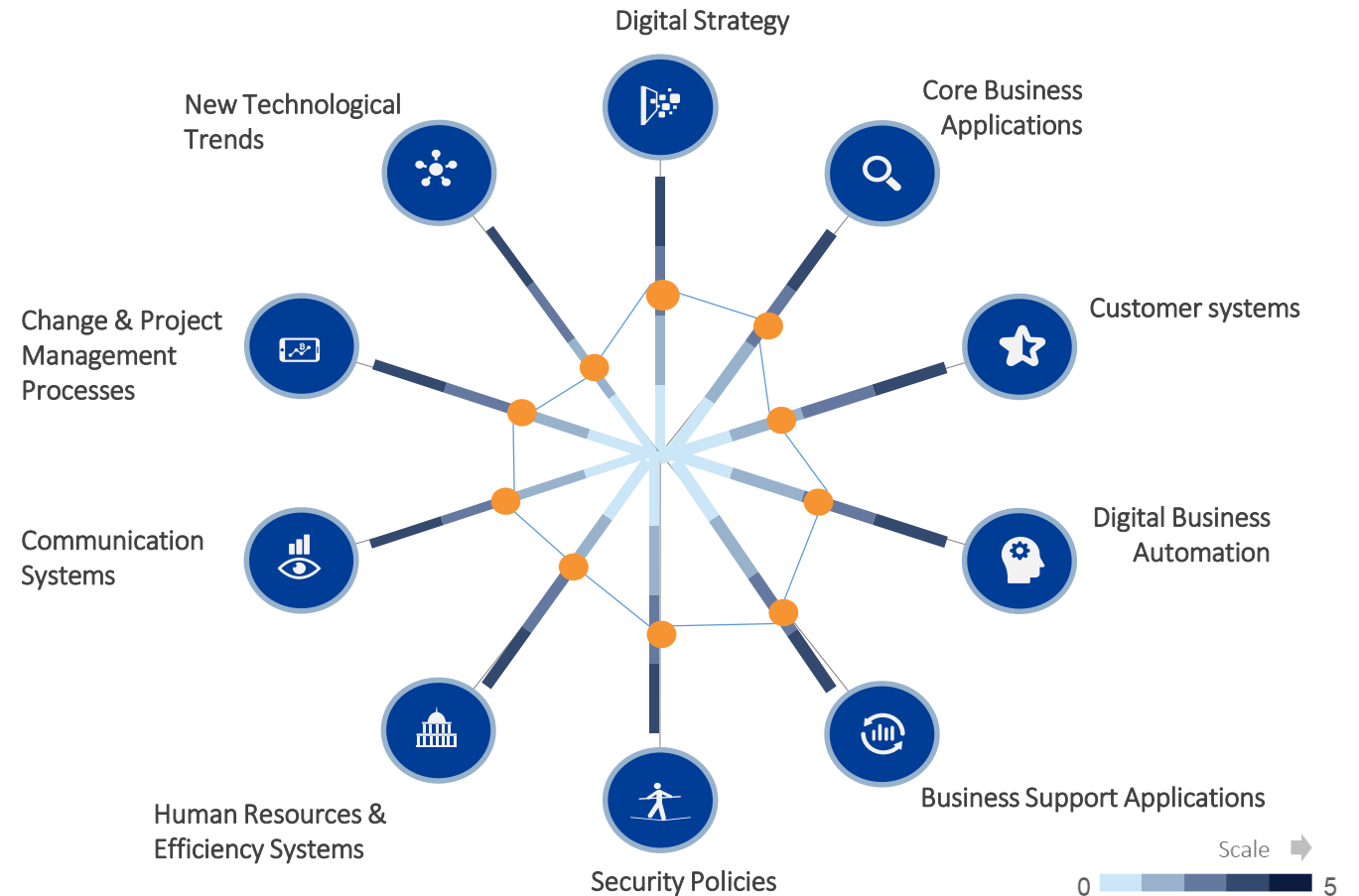
Overall, there is **ample room for technological upgrades and digital convergence** in the subsidiaries of HCAP.

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*The starting point for modernization is the **establishment of a "Digital Strategy"** for each company, taking into account best practices globally and in alignment with HCAP's Strategy*

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2019 Survey Results

Digital Strategy

New Technological Trends

Core Business Applications

Change & Project Management Processes

Customer systems

Communication Systems

Digital Business Automation

Human Resources & Efficiency Systems

Security Policies

Business Support Applications

Scale

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HCAP has undertaken a series of initiatives aiming at the digital transformation of its subsidiaries

Initiatives in progress

Digital Strategy

- Working meetings with the subsidiaries focusing on digital convergence
- Methodological framework for the establishment of a digital strategy in the subsidiaries
  - Appointment of representatives in the SOEs
  - Evaluation of digital maturity via questionnaires
  - Mid- to long- term plan design
  - Formation of digital transformation working groups
- Constant dialogue with the Ministry of Digital Governance
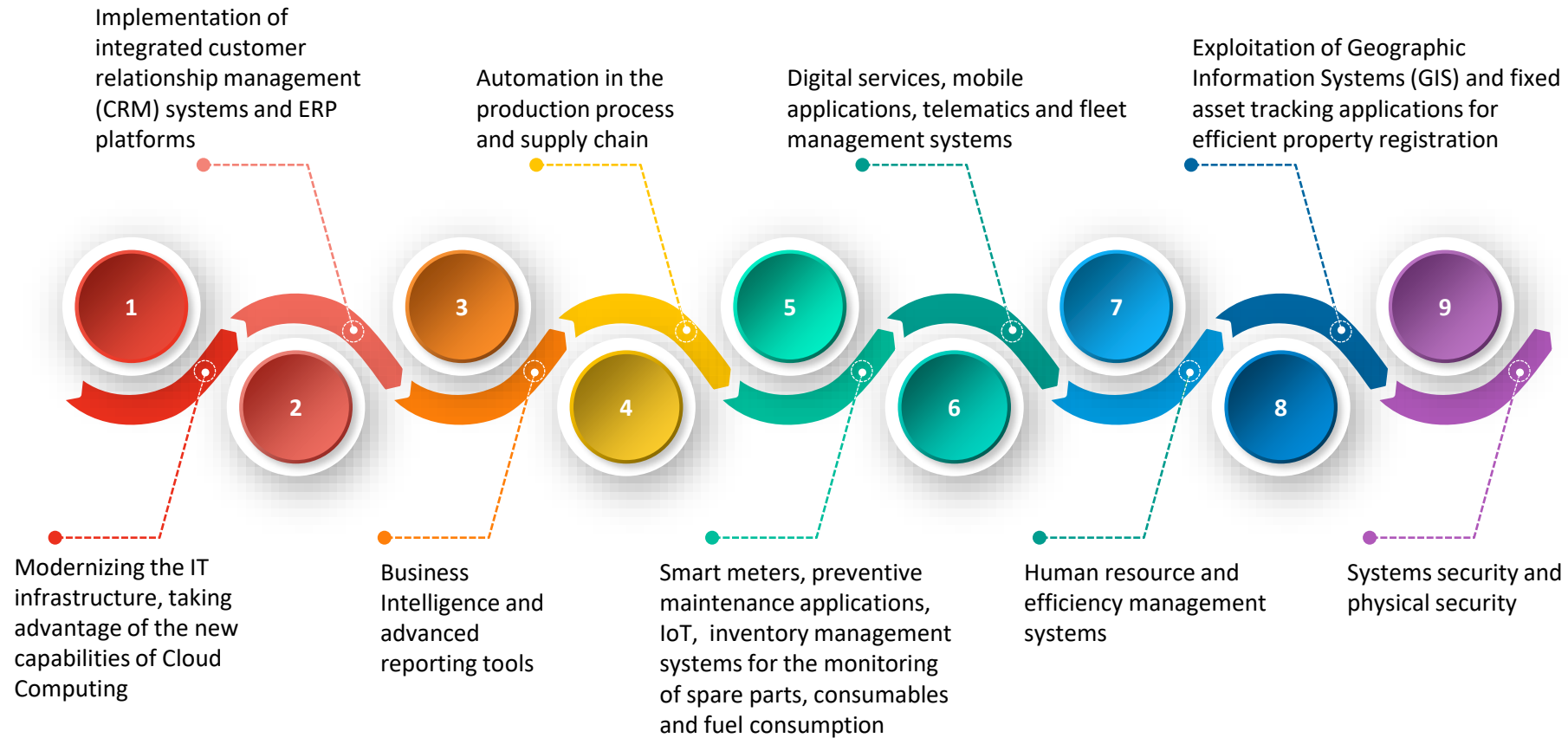
Innovation Network

- Establishment of the Innovation Network, that is comprised of members of the Boards of Directors from the subsidiaries and executives with academic background and/or experience in technology and informatics
- Prospecting for international best practices, business models and innovation examples
- Exploration of synergies' potential within the subsidiaries
- Overlooking of the digital strategy of each company

Technology Synergies
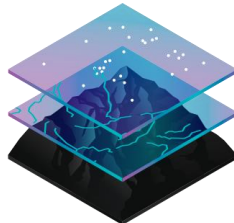
- Synergy potential: Real estate
- Implementation of a portal for the presentation of GIS data, fed with input data from the subsidiaries. Implemented in collaboration with GAIAOSE and ETAD that have significant experience in the development of GIS systems
- Common representation of real estate assets and infrastructure
- Such a system can be used as a tool for applying a unified exploitation strategy of the real estate assets in the public sector
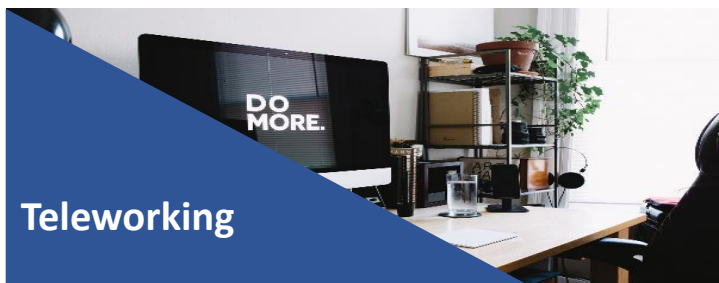
Initial directions on digital transformation provided by HCAP to its subsidiaries

Implementation of integrated customer relationship management (CRM) systems and ERP platforms

Automation in the production process and supply chain

Digital services, mobile applications, telematics and fleet management systems

Exploitation of Geographic Information Systems (GIS) and fixed asset tracking applications for efficient property registration

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Modernizing the IT infrastructure, taking advantage of the new capabilities of Cloud Computing

Business Intelligence and advanced reporting tools

Smart meters, preventive maintenance applications, IoT, inventory management systems for the monitoring of spare parts, consumables and fuel consumption

Human resource and efficiency management systems

Systems security and physical security

Indicative initiatives in progress by the subsidiaries, monitored by HCAP

Sector

NETWORKS

REAL ESTATE

URBAN TRANSPORT

SERVICES

Initiatives by sector

- Sensors for remote control of utilities' networks
- Smart meters for water supply and electricity networks
- Mobile apps to inform customers about consumption

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- Auctions through an electronic platform
- Use of Business Intelligence applications
- Adoption of blockchain technology for real estate contracts

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- Wireless connectivity within transport vehicles
- Application of IoT technology to preventively identify fleet damages
- Integrated passenger information system
- Integrated information system to support the target of corporate grouping (e.g. ERP, BI)

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- Digital fleet management and automated logistics
- Traceability and parcel classification systems
- Smart mail boxes

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Cross sector

Implementation of a Geographical Information System (GIS) for the depiction of selected real estate assets, accompanied by water supply & sewerage networks, public transport networks, and other points of interest, for the design and implementation of a unified real estate exploitation strategy

The pandemic has necessitated the adaptation of our subsidiaries to a new reality

Teleworking

Teleworking can substantially contribute to business continuity and the development of a sense of security by the employees.

Priorities for its **successful application**:
- Adherence to regulations and corporate policies, according to best practices
- Protection of personal data and sensitive information, especially for employees with authorization for remote access to sensitive data and/or critical IT systems
- Preserving contact between team members and managing deadlines
- Availability of appropriate equipment
- Health and well-being of employees remains of high ιμπορτανψε

Physical Security and Cybersecurity

HCAP companies are expected to increase their infrastructure security levels both in terms of **physical security and cybersecurity**:

- Evaluation of the physical and cybersecurity architecture
- External and internal penetration testing for the enterprise infrastructure
- Emulation of Advanced Persistent Threat (APT) attacks

The infrastructure under security audits includes both Information and Operational Technologies infrastructure elements.

With regards to cybersecurity in particular, modern attacks showcase the enterprise users as the **weakest link**.

Continuous training

Employees should be constantly trained, using distance learning educational programs and e-learning platforms, on added-value topics that extend their knowledge and strengthen their competencies.

Continuous training is absolutely necessary for them to develop **resilience in crisis management as well as adaptation skills** in a constantly changing environment

HCAP recognizes the increased importance of continuous training and has developed modern solutions, including an **on-line training platform** that provides access to educational programs of various contemporary topics, to all employees of the portfolio companies.

Other digital initiatives in HCAP, under consideration

Innovation Hub
A multi-dimensional partnership between public - private sector and universities

A concerted effort to stimulate digital transformation within the HCAP SOEs' ecosystem and related economy sectors.

It targets collaboration with universities, research centers and private sector companies, incl. startups and SMEs, with best of breed experts on cutting edge technologies (AI, blockchain, IoT etc.) and digital upskilling.

Investments can exceed 2 million euros annually during the Hub establishment, with multiplicative prospects during its operations.

Potential activities may include:
- 'Test before invest' and showcases
- Upskilling, traineeships, hosting of research
- Networking at national and international level, with private and public sector

Smart Cities
Resilience and sustainability requires partnerships with local authorities

HCAP's SOEs size of networks and know-how, combined with digital governance and citizen services' digitization needs, offers a spectrum of opportunities for collaboration.

Already HCAP has kicked off dialogue for collaboration with e-Trikala, the technology entity of the municipality of Trikala, targeting the areas of smart transport, water and sewerage, smart postal services and city open data.

Current times, demand from municipalities and regional authorities to invest in new technologies to deliver added value services, make optimal use of scarce resources and improve safety and quality of life.

The contribution of the local authorities, especially through PPPs or partnerships, is crucial in shaping a resilient and sustainable economy.

5G VC
Exploring the opportunities of the future into real services to boost competitiveness

A 5G investment fund will seed specialized 5G applications and services of local/ national value, both in public sector but also in industry and private sector services.

5G technology features high speed, low power and low latency for data communications, for massive IoT, tactile internet and robotics.

Where applicable, HCAP SOEs' infrastructure /networks may serve as 5G application trial/deployment fields or early adopters.

It is a pioneering initiative to explore new opportunities for economic growth and competitiveness, while minimizing the impact of disruption on traditional business models and customer experience means and tools.

The potential of an innovation hub

Innovation Network

HCAP has established in 2020 the **Innovation Network,** with the purpose of:

✓ Examining possible digital synergies among HCAP SOEs and promoting an innovation culture

✓ Mapping new technology solutions that could be promoted

✓ Investigating international best practices, business models and innovation standards, through also exploring alliances and partnerships.

This is the first attempt to map out best practices from around the world in targeted sectors, in an organized way and through a team of experts (the Innovation Network) and see how can be implemented in our own subsidiaries. Such innovation is essential in order to redefine SOEs revenue and business models, introduce new and better services for Greek citizens, while rationalizing costs, controls and decision making procedures..

Evolution into an Innovation Hub

Speeding up the digital evolution of HCAP SOEs requires active engagement in extended collaborations, that will leverage industry expertise and will allow development of pilot solutions and field trials.

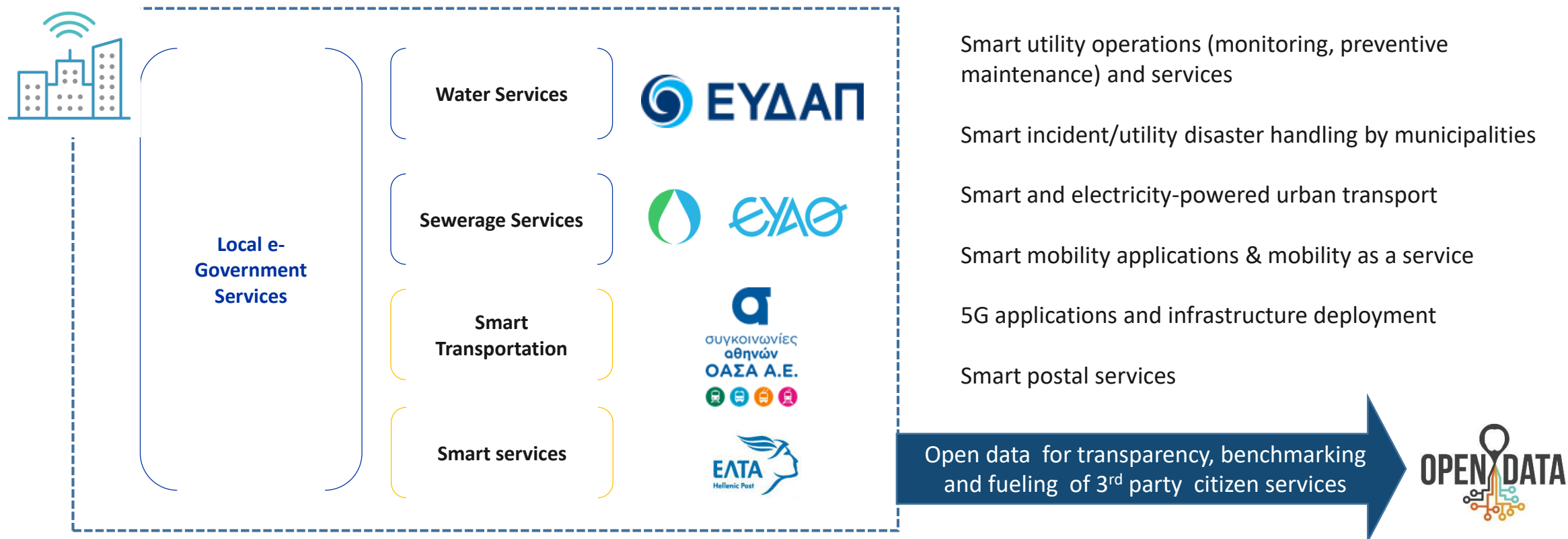The evolution of the Innovation Network into an Innovation Hub denotes:

✓ Digital transformation **showcases** are identified

✓ The SOEs infrastructure and resources are reinforced and utilized

✓ **Experimentation facilities** are deployed

✓ **Early-stage support** for SOEs' advanced digital projects is delivered

✓ **Novel technologies** (i.e. blockchain, AI, IoT, big and open data) enter the delivery chain

✓ SOEs' **workforce is upskilled** for the adoption of innovative technologies and the delivery of enhanced services

Innovation Hub activities will include:

✓ Infrastructure and 'test before invest' services through the hosting of open data repositories, deployment of smart and IoT devices, 5G-enabled testbeds etc., while at the same time utilizing the operational data, infrastructure and knowhow of HCAP's SOEs

✓ Delivery of trainings and short-term educational programs in digital skills, as well as hosting of trainings, traineeships, placements and postgraduate research

✓ Systematic networking and establishment of innovation ecosystem through connections with the industry, the research community, startups and SMEs that can offer digital transformation solutions for the SOEs' operations and services.

Smart Cities – An opportunity for the cities of the future

Modal shift for increased energy and resource usage efficiency, improved transport management

Local e-Government Services

Water Services

Sewerage Services

Smart Transportation

Smart services

Smart utility operations (monitoring, preventive maintenance) and services

Smart incident/utility disaster handling by municipalities

Smart and electricity-powered urban transport

Smart mobility applications & mobility as a service

5G applications and infrastructure deployment

Smart postal services

Open data for transparency, benchmarking and fueling of 3rd party citizen services

Technical expertise and test facilities allocated by HCAP subsidiaries along with 5G infrastructure and partnership with local authorities can improve the citizen's experience and leverage important investments

Smart Cities – Areas to explore with Trikala Municipality
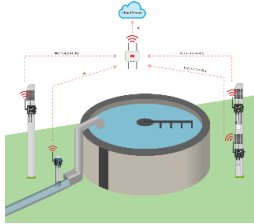
- Collaboration with EYDAP/EYATH on remote/smart metering and remote/preventive maintenance in network and sewerage networks (sensors, AR/VR systems) with emphasis on leakage and loss minimization
- Sensors and response applications regarding natural disasters (e.g. flooding) affecting water utilities and their handling by municipal services
- Smart applications such as smart watering for public places
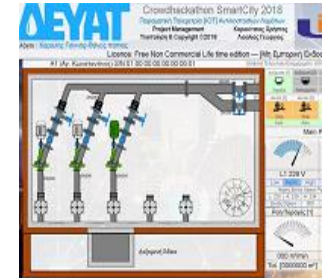
- Collaboration with OASA for development/field trials of electric buses/public transport vehicles and management of charging stations
- Dynamic bus routing enabled by AI
- Vehicle to everything communication (e.g. with traffic lights) trials
- Pilot application for Mobility-as-a-Service offering, combining different public and private transport means to deliver on-demand transport services for citizens

Smart postal services

- Pilot application of the 5G neutral host model in Trikala, relying upon the Municipal fiber network (slicing and allocation to providers)
- Delivery of 5G infrastructure slices for the trial deployment of the solutions/applications emerging from HCAP's 5G Investment fund
- Deployment and trial operation of original 5G Smart City applications (such as intelligent mobility, intelligent public buildings)

The 5G opportunity

5G technology features high speed, low power and low latency for data communications, to allow for massive IoT, tactile internet and robotics

A 5G investment fund will help develop the 5G ecosystem of applications and services. It will act as an effective bridge between State & Private investments, combine best of the two worlds and offer unique capabilities that are expected to boost national economic growth.

Primarily affected industries:

- Transportation – Logistics - Supply Chain
- Automobile - Rail
- Manufacturing.
- Utilities - Grids.
- Health Care
- Travel/Tourism

Main benefits:

o Drive country's **digital transformation** & competitiveness.

o Boost /attract private **investments** in an "Economy Multiplier" like the 5G ecosystem.

o Facilitate **growth** for relevant local businesses in a tangible & substantial way.

o Take State **services at the forefront** of market's benchmarks.
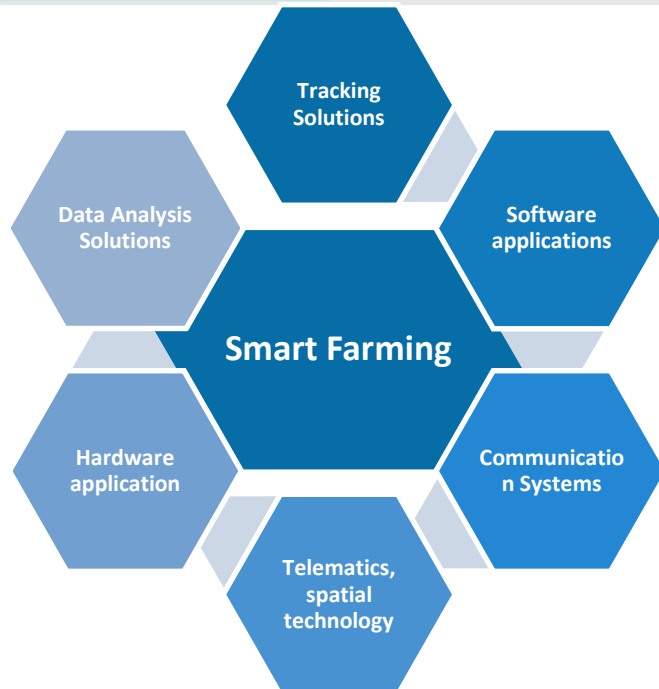
Rural development and Smart Farming
A pilot project to replicate

The Farm to Fork Strategy is at the **heart of Europe's Green Deal**

- **Budget: 1mln for the pilot phase**
- **Selection of cultivation based on smart criteria**
- **Initial development area: ~100k square meters**
- **Extend to 1mln square meters by the third year**
- **Land to be used: either public (ETAD, ELGA, etc) or leased**

- ✓ Scalable to millions of square meters of unused land, owned by several public or private entities.

- ✓ Can be used as a benchmark for the Government's strategy on the agriculture sector

Smart Farming

- Tracking Solutions
- Software applications
- Data Analysis Solutions
- Communication Systems
- Hardware application
- Telematics, spatial technology

Benefits

- Optimum water resources management
- Lower use of fertilizers, pesticides and energy
- Product quality improvement
- Product flavor and nutrition facts improvement
- Real time export and analysis of production data
- Value chain can include farmers, supply chain, universities and research centers, local governments, etc

Next steps

- Shaping of working group: Public Administration, HCAP, Universities, Private Companies, etc
- Identification of the appropriate land based on the type and the size of the investment
- Assess different funding options
- Articulation of an initial Business Plan and expansion scenarios
- Assessment of legal status and governance issues
- Participation of local governments

Online training for all employees provided by HCAP utilizing modern tools

Interactive Presentations

HCAP pursues to create added value and strong dynamics by raising awareness on various important business matters and by offering continuous learning (reskilling and upskilling) to executives and employees of companies in its portfolio. To this end, HCAP has designed training workshops, tailored to the needs of each subsidiary, which are being carried out with the use of interactive tools (i.e. audience response clickers). Moreover, HCAP executives have delivered similar interactive presentations in collaboration with important organizations (i.e. Athens Stock Exchange, Federation of Industries in Greece, etc.) with the aim to promote the importance of embedding a modern business culture in Greek corporations of the wider public sector, but also of the private sector.


Online Training Platform

HCAP has developed modern training tools, addressing to all employees in HCAP and its portfolio companies, including its own online training platform providing courses on various important business topics. With the successful completion of each module, HCAP awards participants a certificate on their understanding of the course topic. Also, the overall training material is available on the platform so that every employee can access and consult the content of the trainings he has taken in the past, should this be required.

HCAP can become a Center of Excellence for the wider public sector in Greece

Online training for all employees provided by HCAP utilizing modern tools *(cont.)*
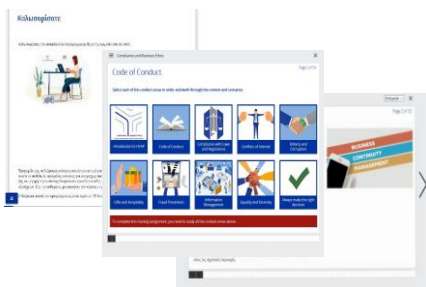
Training Courses

Compliance and Business Ethics: The course offers a solid understanding of core Compliance and Business Ethics issues and can help employees to effectively address the challenges faced in the course of business. Areas covered include: Code of Conduct, legal and regulatory compliance, avoid conflict of interest, bribery and corruption, gifts and hospitality, fraud prevention, information management, equality and diversity, make the right decision.

Business Continuity: This course prepares employees to appreciate the objectives of a Business Continuity Plan, to recognize how risks are identified and analyzed and also to understand what to include in a risk registry. Moreover, the training presents key elements of both Disaster Recovery Plan and Succession Planning, and also elaborates on the importance of effective communication and good PR when dealing with urgent incidents of force majeure and crises.

Work from Home: This module aims for participants to learn how to set up their homeworking environment while also adhering to best practices relating to confidentiality protection, including the protection of equipment they have been given by the company in order to work while at home. Guidance is also provided on how to maintain good communication among team members and how to meet expectations and deadlines, whereas the importance of well-being and health safeguarding is underlined (i.e. limit time spent on display screen equipment, appropriate chair height, etc.).