Ικανότητες στελεχών έξυπνων πόλεων –
Το έργο DevOps

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Πανεπιστήμιο Θεσσαλίας

Defining a smart city

Smart city is an ecosystem

- Offers a variety of services to citizens
- Ensure information exchange between subsystems
- Enables analysis of information, creation of statistics for optimizing resource utilization

Smart City- Things to consider

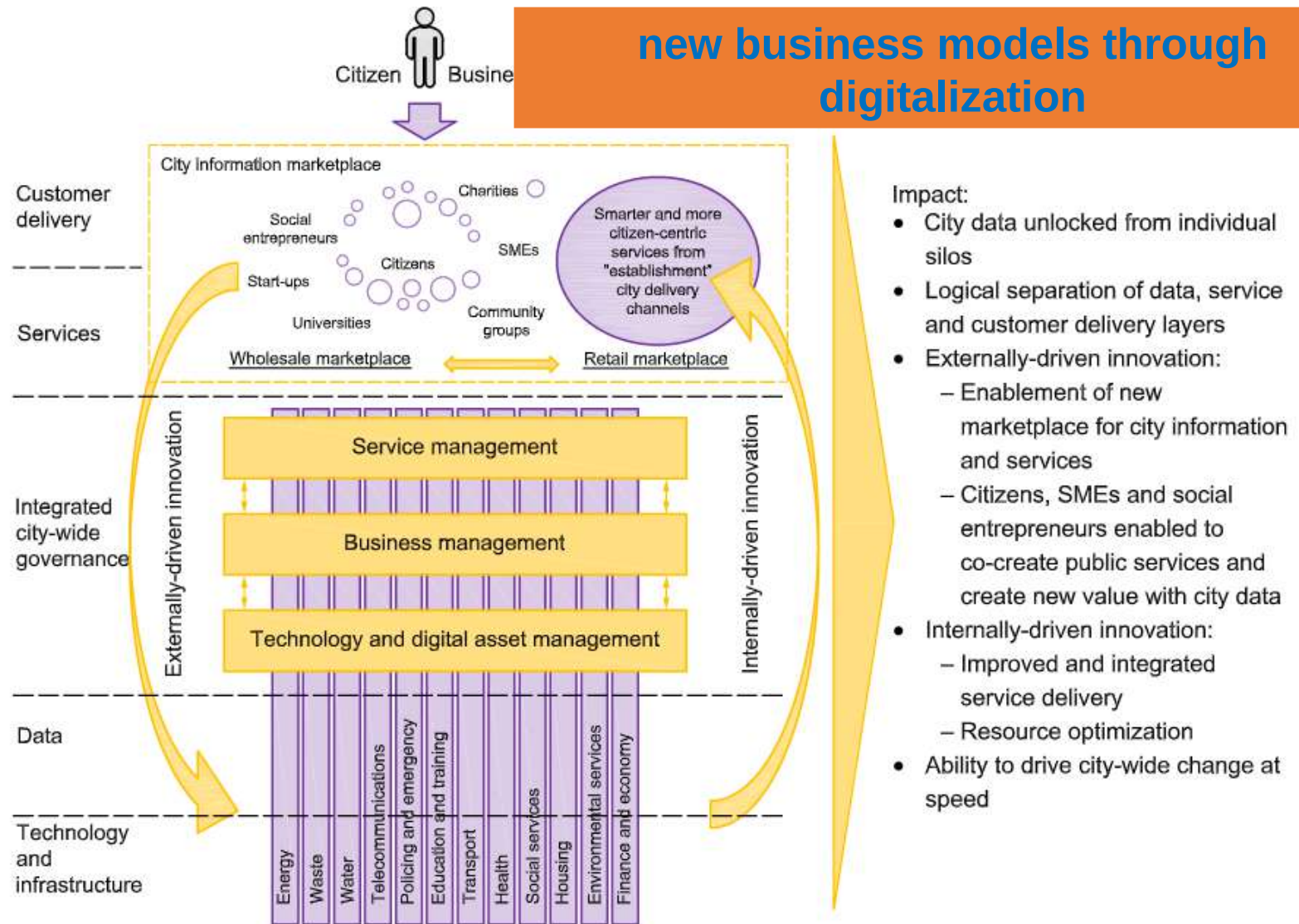The digital transformation (Serviceation of smart cities)

Smart cities ecosystem complexity

Lack of systematic training
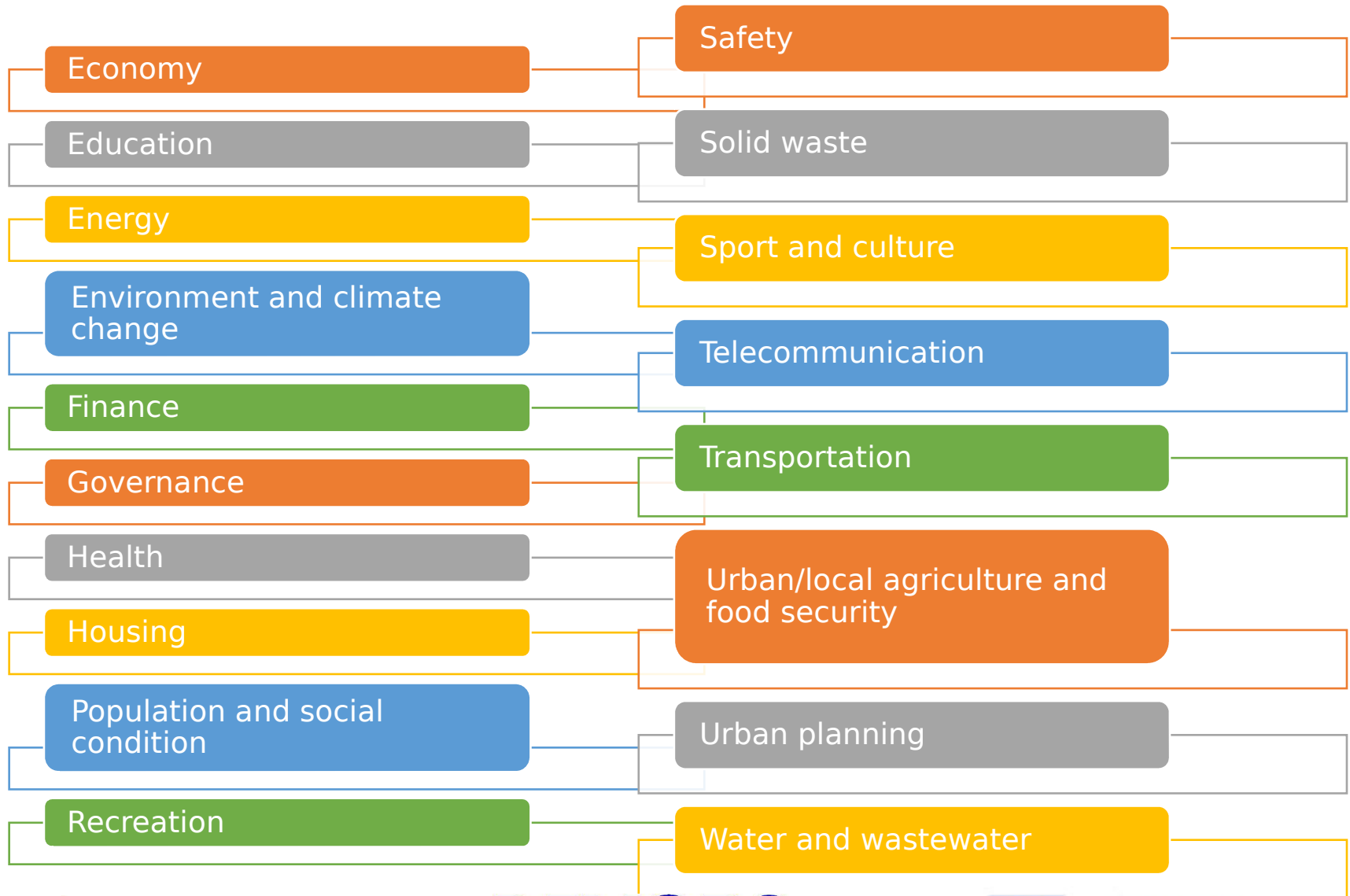
New ways to develop software

Resilience in smart cities

1. The digital transformation - Serviceation

new business models through digitalization

2. Smart city complexity
So smart city covers everything (ISO 37120:2018)

Economy	Safety
Education	Solid waste
Energy	Sport and culture
Environment and climate change	Telecommunication
Finance	Transportation
Governance	Urban/local agriculture and food security
Health	
Housing	
Population and social condition	Urban planning
Recreation	Water and wastewater

ΕΕΛΛΑΚ
Οργανισμός Ανοιχτών Τεχνολογιών

DEVOPS
DEVOPS COMPETENCES FOR SMART CITIES

Co-funded by the
Erasmus+ Programme
of the European Union

3. Lack of systematic training

The making of a smart city:
best practices across Europe

Small example 21 lighthouse projects Training is not part of any

ot sufficient citizen engagement
acking digital skills
ot focused on citizens
it focused on developing employee skills
ulture

**https://smartcities-infosystem.eu/sites/default/files/document/
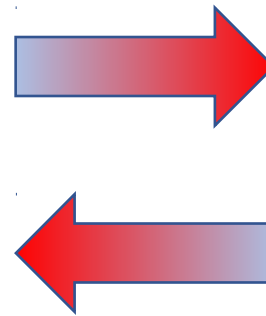the_making_of_a_smart_city_-_best_practices_across_europe.pdf**

4. New ways to develop software / DevOps

DevOps is a set of practices that combines

- software development (**Dev**) and
- information-technology operations (**Ops**)

which aims to shorten the systems development life cycle and provide continuous delivery with high software quality.

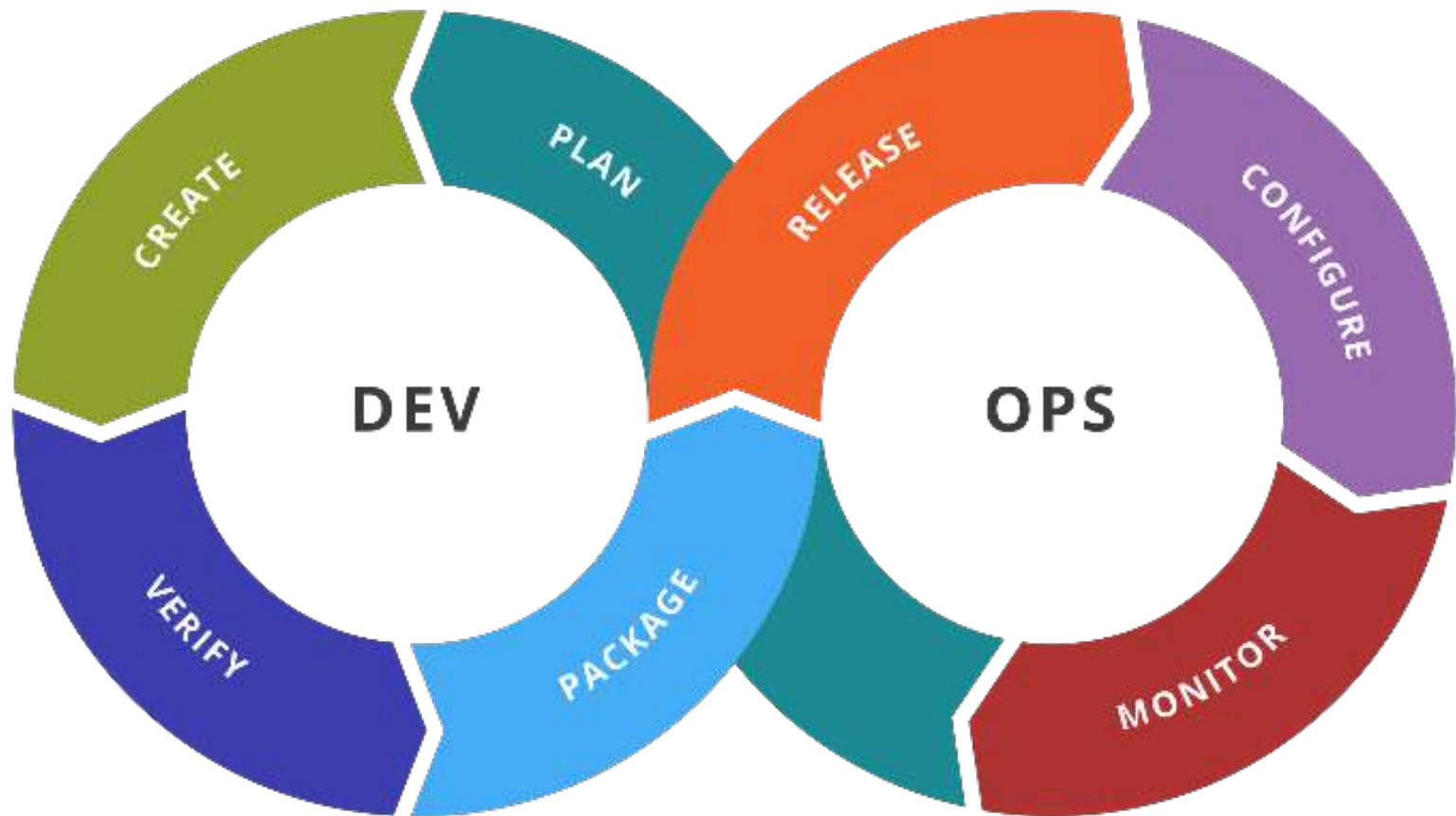DevOps is a cross-functional mode of working and uses a toolchain for delivering software
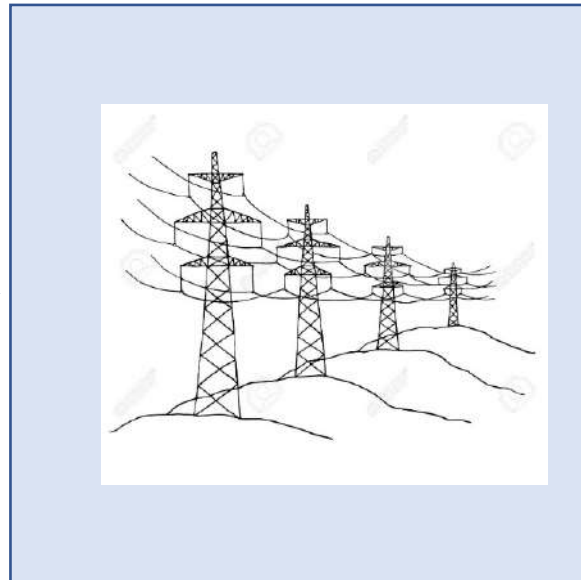
Different Views on Change

Inventors focus on change

Mechanics focus on stability

DevOps approach

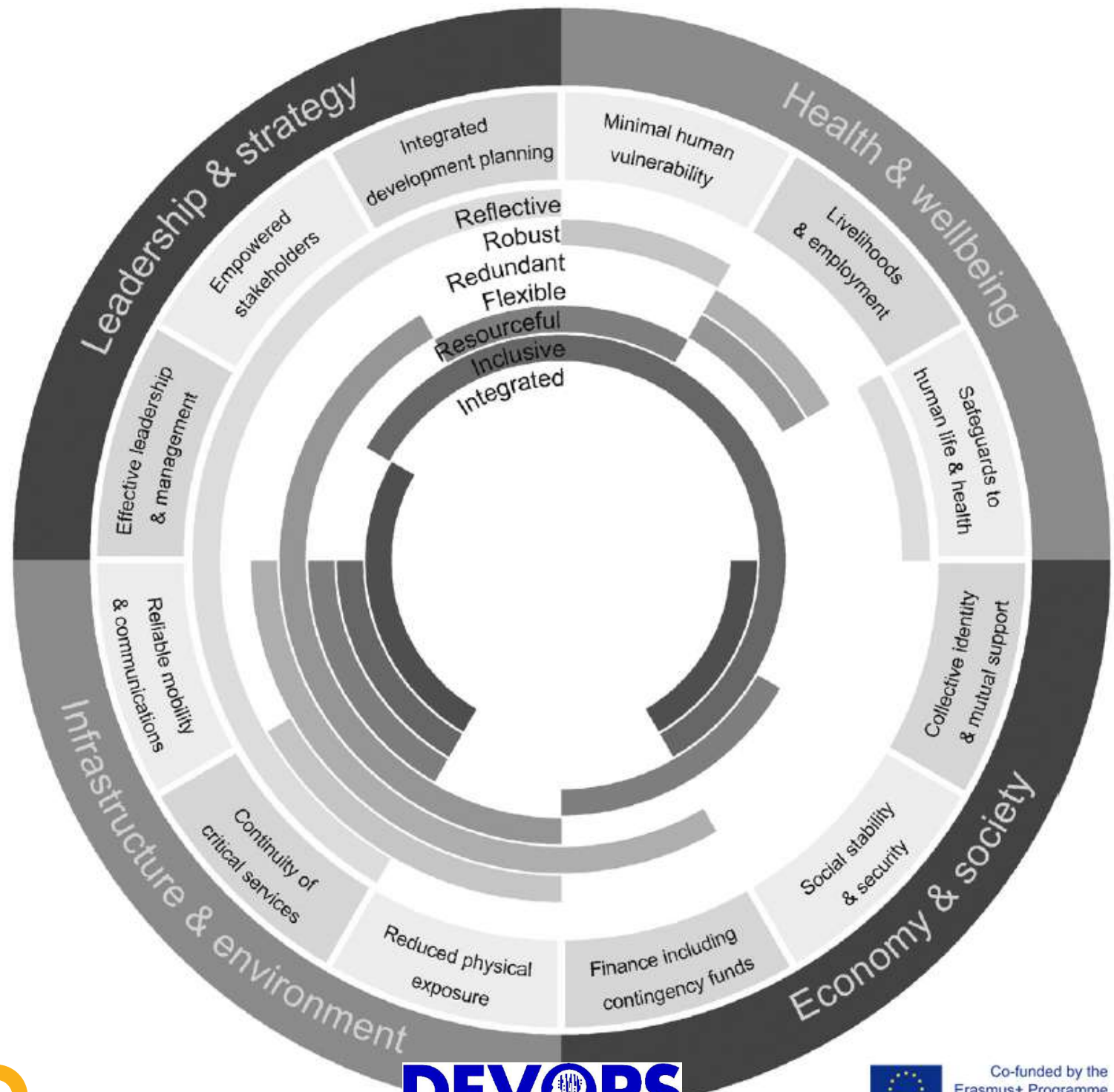# The evolution

20th century

Software enabled society

21th century

5. Definition of resilient city

A Resilient City is a city that is able to manage, adapt, maintain and ensure city services and enhance quality of life in the face of hazards, shocks and stresses.

This includes the capacity to resist, absorb, accommodate, adapt to, transform, and recover from the effects of hazards and disasters in a timely and efficient manner, including through the preservation and
restoration of essential basic structures and services in a sustainable way, and through risk management practices.

Leadership & strategy

Health & wellbeing

Integrated development planning

Minimal human vulnerability

Empowered stakeholders

Livelihoods & employment

Reflective
Robust
Redundant
Flexible
Resourceful
Inclusive
Integrated

Effective leadership & management

Safeguards to human life & health

Reliable mobility & communications

Collective identity & mutual support

Infrastructure & environment

Economy & society

Continuity of critical services

Social stability & security

Reduced physical exposure

Finance including contingency funds

DevOps project

Devops.uth.gr

Key information

Official name of the project: DevOps competences for Smart Cities

Acronym: DevOps

Funding Programme: Erasmus+ (European Commission)

Key Action: Cooperation Cooperation for innovation and the exchange of good practices - Sector Skills Alliances

Project Number: 601015-EPP-1-2018-1-EL-EPPKA2-SSA

Agreement Number: 2018 – 3137 / 001 – 001

Starting date: 1 January 2019

Ending date: 31 Dec 2021

Duration: 36 months

Project website: devops.uth.gr

Consortium members

UNIVERSITY OF THESSALLY (UTH), the Coordinator

HELLENIC OPEN UNIVERSITY - Greece,

Hellenic Standarization Organization - Greece(ELOT),

DIGITAL CITIES OF CENTRAL GREECE – Greece (CITIESNET),

EDEX - EDUCATIONAL EXCELLENCE CORPORATION – Cyprus (EDEX),

CENTRO STUDI CITTA DI FOLIGNO ASSOCIAZIONE - Italy (CSF),

NICOSIA DEVELOPMENT COMPANY – Cyprus (ANEL),

ASSOCIAZIONE STATI GENERALI DELL'INNOVAZIONE – Italy (SGI),

European Association of Institutes for Vocational Training(EVBB),

University Of Applied Management – Germany (HDWM),

FEDERAL ASSOCIATION VET PROVIDERS – Germany (BBB),

ALL DIGITAL – European ,

13. K-DIGITALE - Italy (KDIGIT),

Aims and objectives

Identify Europe-wide emerging job profiles for smart cities DevOps professionals.

Develop curriculum for these profiles

Design of training modules,

Provide pilot training

Develop a community of practice for smart city training needs

DevOps envisaged key profiles

Three new professions

- SC Planner
- SC IT head
- SC IT staff

SC planner

A Smart City Planner can be defined as a high-level official that is able to bridge the needs that arise from:

- Cities traditional development and operational needs
- Smart and sustainable cities frameworks, best practices, standards and technologies
- Strategic priorities of the city's political leadership.

Such persons need to have overall knowledge of the city strategic objectives and at the same time he/she knows the smart cities trends and best practices and is able to set up a strategy and a plan for the implementation of this vision.

At the same time, he is able to set specific KPI that are able to track the progress of the implementation of this strategic plan.

As such he has to be able to combine different skills steaming from different disciplines, and backgrounds e.g. strategic, management, communication, technological, legal.

SC IT head

A SC IT can be defined as an ICT Consultant with responsibilities that include:

- Setting objectives and strategies for the IT department of the municipalities
- Deciding on and implementing suitable technology to organize all internal operations and help optimize their strategic benefits
- Designing and customizing the IT systems, frameworks and platforms to improve citizen experience
- Plan the implementation of new systems and provide guidance to IT professionals and other staff within the organization
- Decide on procurement of technological equipment and software and establish partnerships with IT providers
- Manage the technological infrastructure (networks and computer systems) in the smart city to ensure the performance
- Manage IT-related projects

An SC IT head must have strong IT background and consistently keep up-to-date with advancements in technologies at SC subject area. Apart from technical skills and experience, he/she must transversal skills such as have leadership, communication and teamworking skills and being able to align SCs strategical objectives with IT development, deployment and operation strategy, so IT services maximize the value offered to city's citizens.

SC IT officer

A SC IT officer are IT technical experts that should be able to:

- Analyse cities' organizationals data
- Determine information system requirements and defining project objectives
- Use software development process, development environments, tools and techniques
- Make recommendations, for necessary IT system components e.g. hardware, software and systems
- Design, implement, deploy, new IT services
- Operate IT systems and services
- Provide support and training to various types of users

Apart from technical skills and experience, he/she must have transversal skills such as teamworking, social skills, ability to learn, etc.

DevOps Competences groups

Transversal (16)

Smart city related (9)

General IT Knowledge (9)

DevOps related (6)

Transversal skills

Creativity

Entrepreneurial Thinking

Ability to work in a Team

Social Skills

Ambiguity Tolerance

Motivation to Learn

Emotional Intelligence

Strategic Vision

Intercultural Skills

Project and Process Management

Design Thinking

Decision Making and Problem solving

Leadership and Management Skills

Stakeholder management

Advanced Presentation Skills

General IT knowledge

Software development life cycles and agile methods

IT Quality Assurance

IT security

System and software architecture

Introduction to Cloud computing

Basic concepts of Internet of things

Basic concepts of data analytics

Introduction to Artificial Intelligence

Introduction to ITIL

DevOps competences

Intoduction to DevOps

Repository management

Continuous integration

Configuration management

Deployment tools

Using Build, Deployment and monitoring tools

Code Analysis and Continuous testing tools

Smart city competences

Smart cities platforms

Smart cities business models and financial management

Smart cities operating procedures

Smart cities standards and legal issues

Smart city sustainability

Smart city resiliance

Urban management

Smart cities services

Citizen Orientation

Smart city procurement

Key benefits

Focuses smart city public sector

Develop three modular European VET curriculum (composed of a MOOC, eLearning modules, in presence training and work based learning)

Standardize VET offerings.

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Thank you for your attention!

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ΕΛΟΤ
Hellenic Organisation for Standardisation

CitiesNet
Digital Cities Central Greece S.A

ANEL
Nicosia Development Agency

HOCHSCHULE DER WIRTSCHAFT FÜR MANAGEMENT
UNIVERSITY OF APPLIED MANAGEMENT STUDIES

ALL DIGITAL
ENHANCING DIGITAL SKILLS ACROSS EUROPE

BBB
Bundesverband der Träger beruflicher Bildung (Bildungsverband) e.V.

K DIGITALE
DIGITAL TRANSFORMATION INSIGHT