Addressing the Urban-Town-Rural Divide: The Digital Town Readiness Assessment Framework

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Presented By Theo Lynn (theo.lynn@dcu.ie) and Pierangelo Rosati (pierangelo.rosati@dcu.ie)

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Presenter Bio

Professor Theo Lynn

Full Professor of Digital Business
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About Theo Lynn

Professor Theo Lynn is (Full) Professor of Digital Business at DCU Business School and is Associate Dean (Strategic Projects) at DCU Business School. Professor Lynn specializes in the role of digital technologies in transforming business processes. His main teaching areas are strategy and digital marketing.

Prof. Lynn was Centre Director at the Irish Institute of Digital Business (2018-2019), Principal Investigator of the Irish Centre for Cloud Computing and Commerce, an EI/IDA funded Cloud Computing Technology Centre (2011-2018), Associate Dean (Industry Engagement and Innovation) at DCU Business School (2015-2017), Business Innovation Platform Director for DCU (2015-2016) and Director of the Leadership, Innovation and Knowledge Research Centre at DCU (2009-2011). He has won over 200 grants representing over €20m in total project funding. He was a PI on the Horizon 2020 CloudLightning Project (2015-2017) and Horizon 2020 RECAP Project (2017-2019); he is currently a PI on the Horizon 2020 RINNO project (2020-2023).

Presenter Bio

Dr. Pierangelo Rosati

Asst. Professor of Business Analytics

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About Pierangelo Rosati

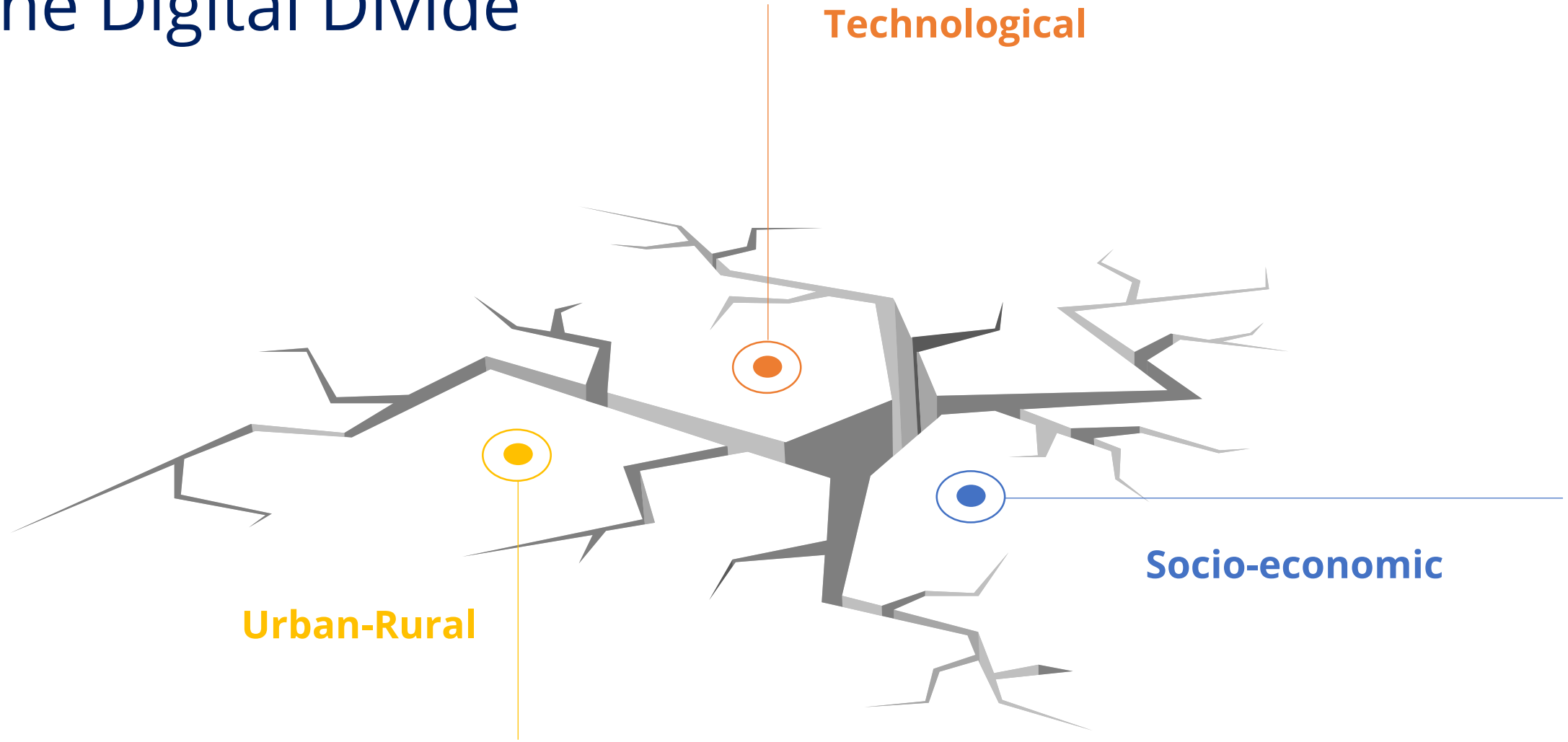
Dr. Pierangelo Rosati is Assistant Professor in Business Analytics at DCU Business School, Director of Industry Engagement at the Irish Institute of Digital Business (IIDB), and Deputy CEO at European Capital Markets CRC (ECMCRC). He previously worked as Post-Doctoral Researcher of the Irish Centre for Cloud Computing and Commerce (IC4). He is Co-PI on H2020-RINNO.

Dr. Rosati holds a PhD in Accounting and Finance from the University of Chieti-Pescara (Italy) and an MSc in Management and Business Administration from the Alma Mater Studiorum University of Bologna (Italy).

Dr. Rosati has been working on a number of research projects on data analytics, business value of IT, FinTech, Blockchain, cloud computing, and cyber security, many of them in direct collaboration with industry. His research has been published in leading academic journals and international conferences.

The Digital Society is one whose social structures and activities are organised around digital information networks that connect people, processes, things, data and networks (Lynn et al, 2018).

The Digital Divide



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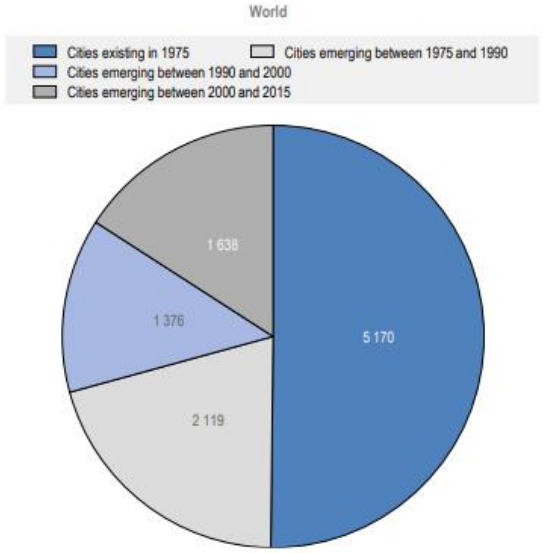
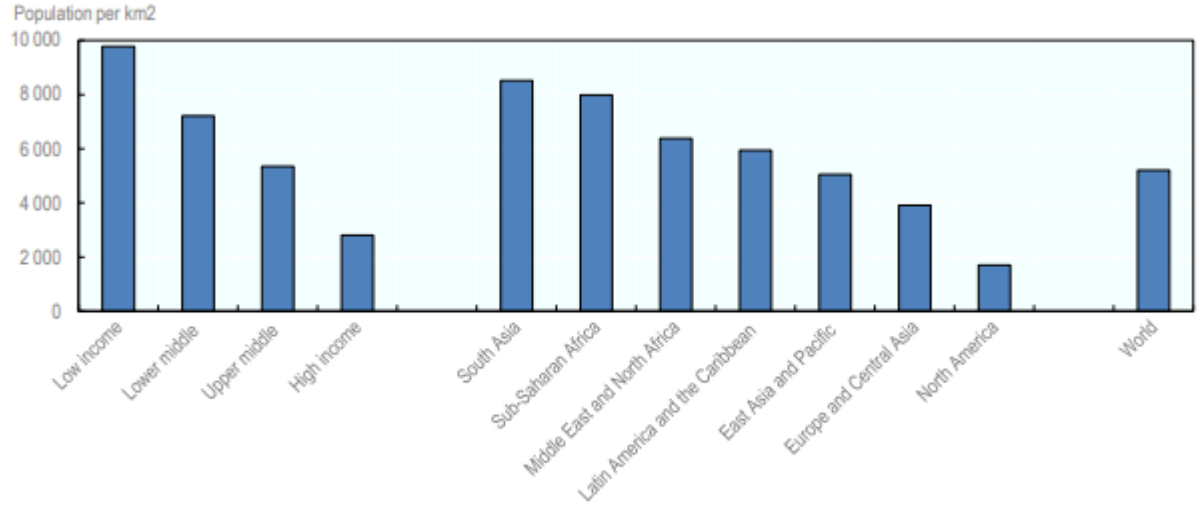
There are more cities and more people living in cities than ever before. By 2050, over 55% of the population worldwide will live in urban areas.



Source: Calculated by EC, based on the Urban Centre Database GHS-UCDB R2019A, Florczyk, A. et al. (2019[11]), *GHSL Data Package 2019 (database)*, http://dx.doi.org/10.2760/06297.



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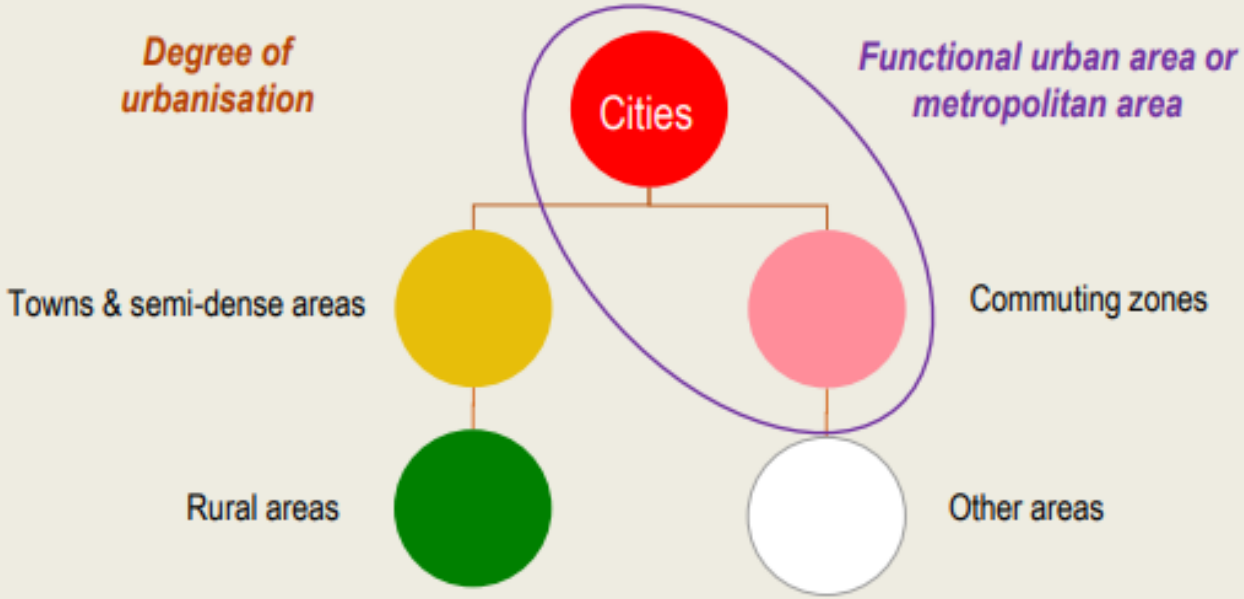
Our definitions and understanding of “urban” and “rural” are changing. This requires a re-examination of digital society policy, strategies, and how we measure progress.



Dijkstra, L., H. Poelman and P. Veneri (2019)

Research Questions

What is a Digital Town?

01

Definitions and rationales for a digital town.

How do we measure digital readiness?

02

Existing frameworks for measuring and benchmarking digital adoption and use.

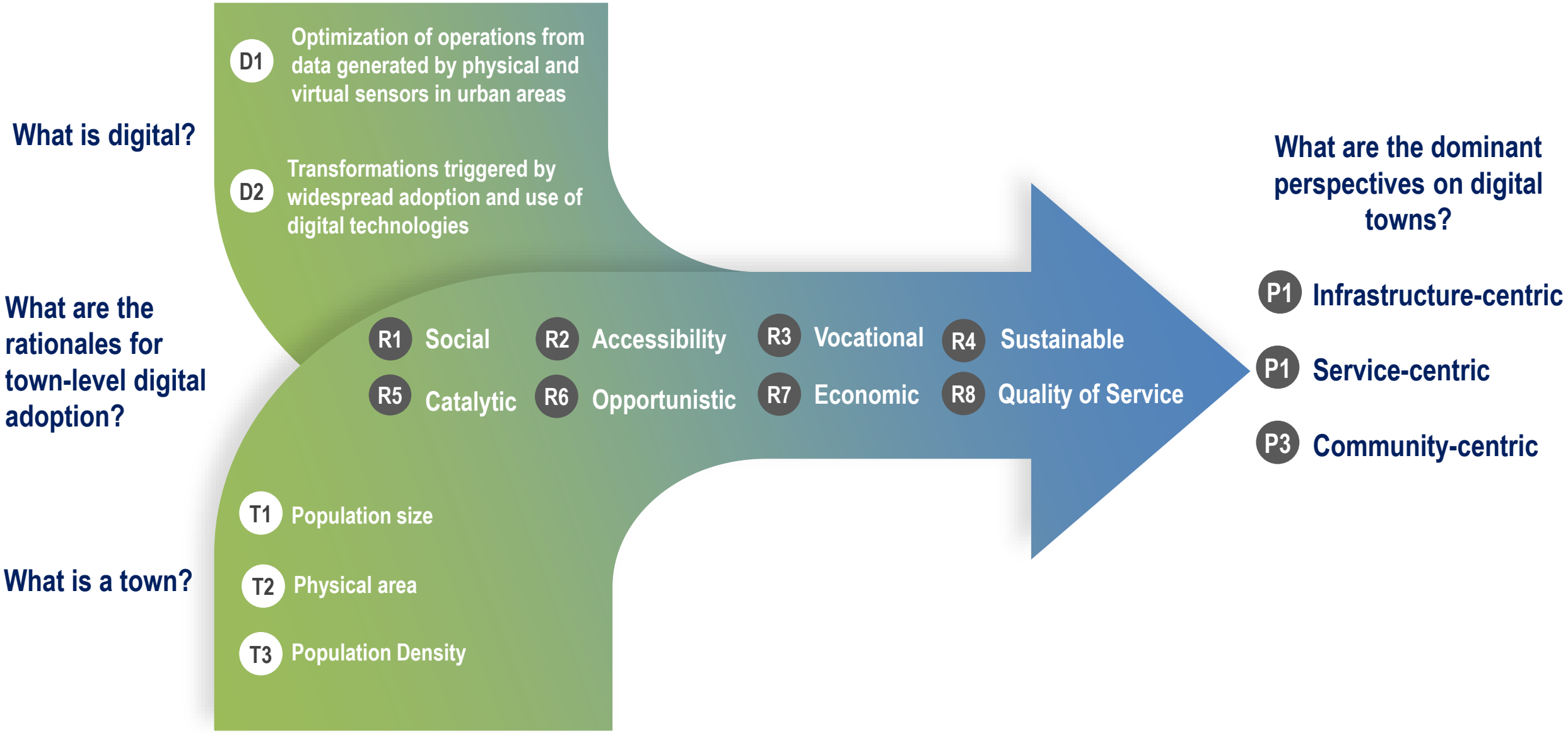
What should be in a framework for measuring the digital readiness of towns?

03

What dimensions and sub-dimensions should be included in a digital town context.

WHAT IS A DIGITAL TOWN?

A review of academic and grey literature, and digital town projects, highlighted a lack of consistent definitions and perspectives



A DIGITAL TOWN IS:

- A GEOGRAPHIC AND INFORMATION SPACE
- THAT ADOPTS AND INTEGRATES INFORMATION & COMMUNICATION TECHNOLOGIES
- IN ALL ASPECTS OF TOWN LIFE

(Hervé-Van Driessche, 2001)

WHERE A TOWN IS DEFINED AS:

- CONTIGUOUS GRID CELLS WITH A DENSITY OF AT LEAST 300 INHABITANTS PER KM^2
- IS AT LEAST 3% BUILT UP, AND
- HAS A TOTAL POPULATION OF AT LEAST 5,000.

(OECD, 2020)

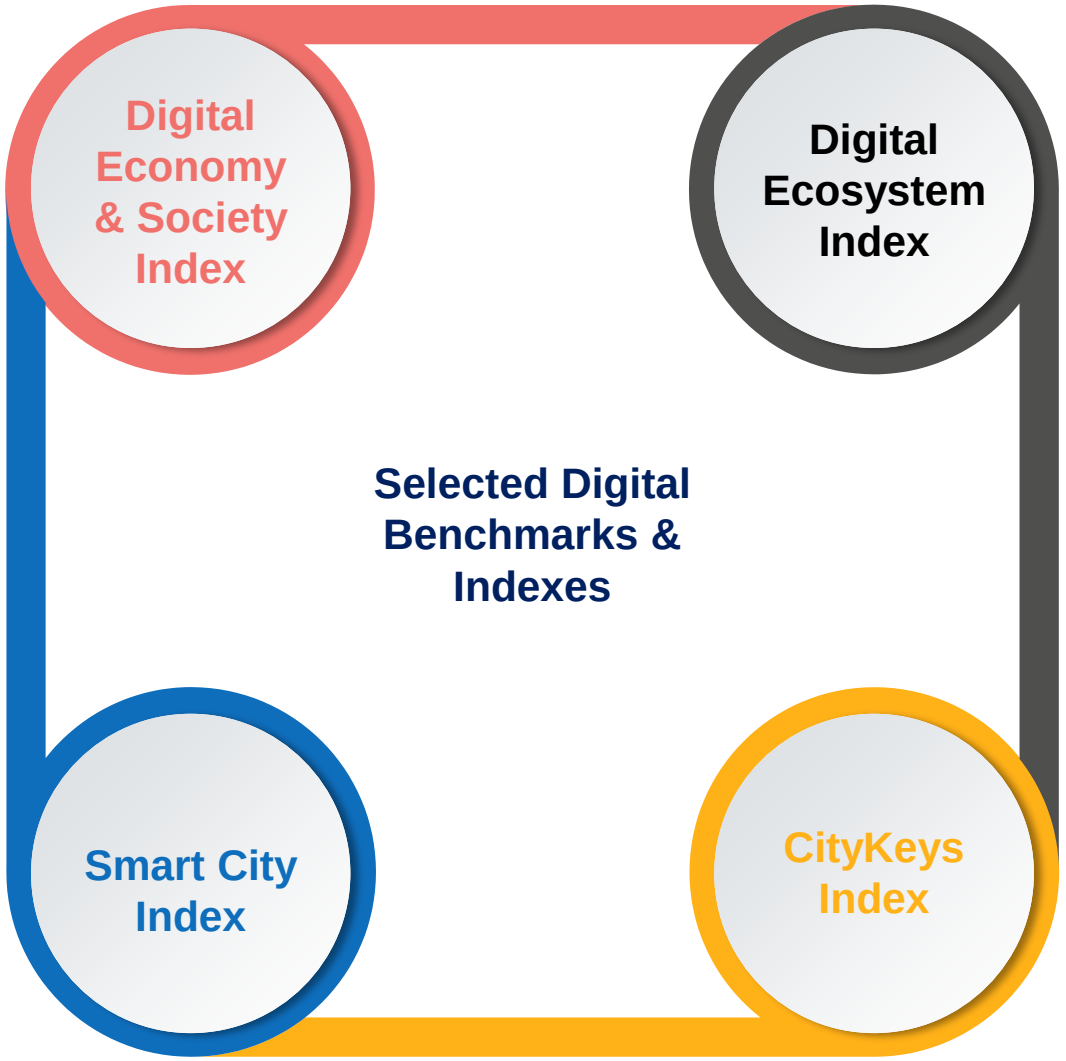
The emergence of frameworks for assessing digital adoption and use emerged in the mid-nineties and tend to focus on countries and cities.

Digital Economy & Society Index (EU, 2019-2020)

Country-level index with 5 dimensions – Connectivity, Human Capital, Citizen Use of Internet and Online Transactions, Business Digitisation and E-commerce, Digital Public Service

Smart City Index (IMD, 2019)

City-level index with two pillars, Structures and Technology. Each pillar is evaluated from 5 perspectives - Health & Safety, Mobility, Activities, Opportunities, and Governance.



Digital Ecosystem Index (Katz & Callorda, 2018)

Country-level index with 64 indicators organised in to eight pillars – Institutional & Regulatory, Connectivity, Infrastructure, Factors of Production, Household Digitization, Competition, Digitization of Production, and Digital Industries.

CityKeys Index (Bosch et al. 2017)

City-level index organized around 5 themes – People, Planet, Prosperity, Governance, and Propagation.

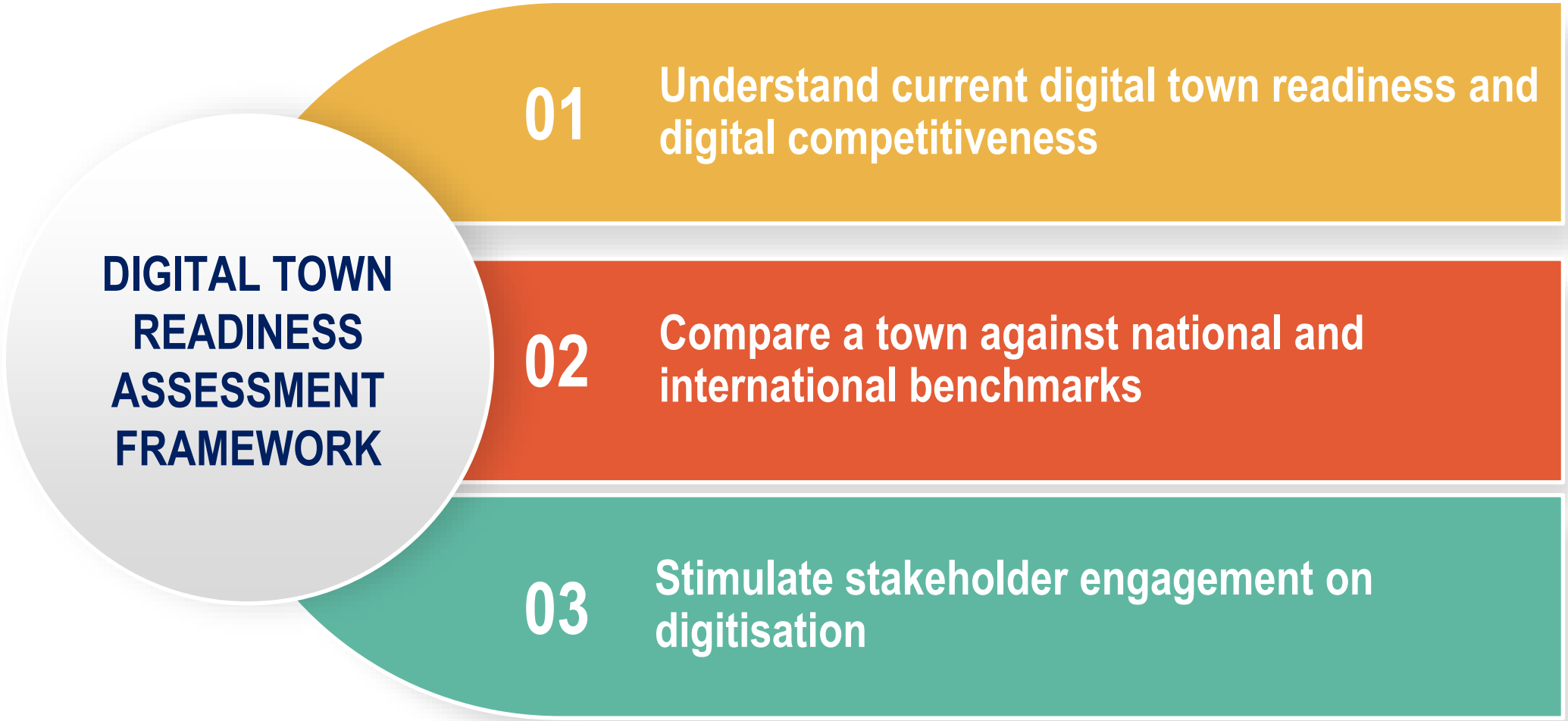
These benchmarks and indexes are not appropriate for towns for at least three reasons:

1. Many of the indicators are not within the control of local communities or municipal authorities at a town-level.

2. The discussion of smart cities and related technologies, including the limited smart town literature, is often conflated or combined with environmental sustainability and associated outcomes.

3. Data may not easily be available or required at regional or national levels and therefore are not collected or easily accessible for town stakeholders.

A framework to support stakeholders in towns outside of functional urban areas



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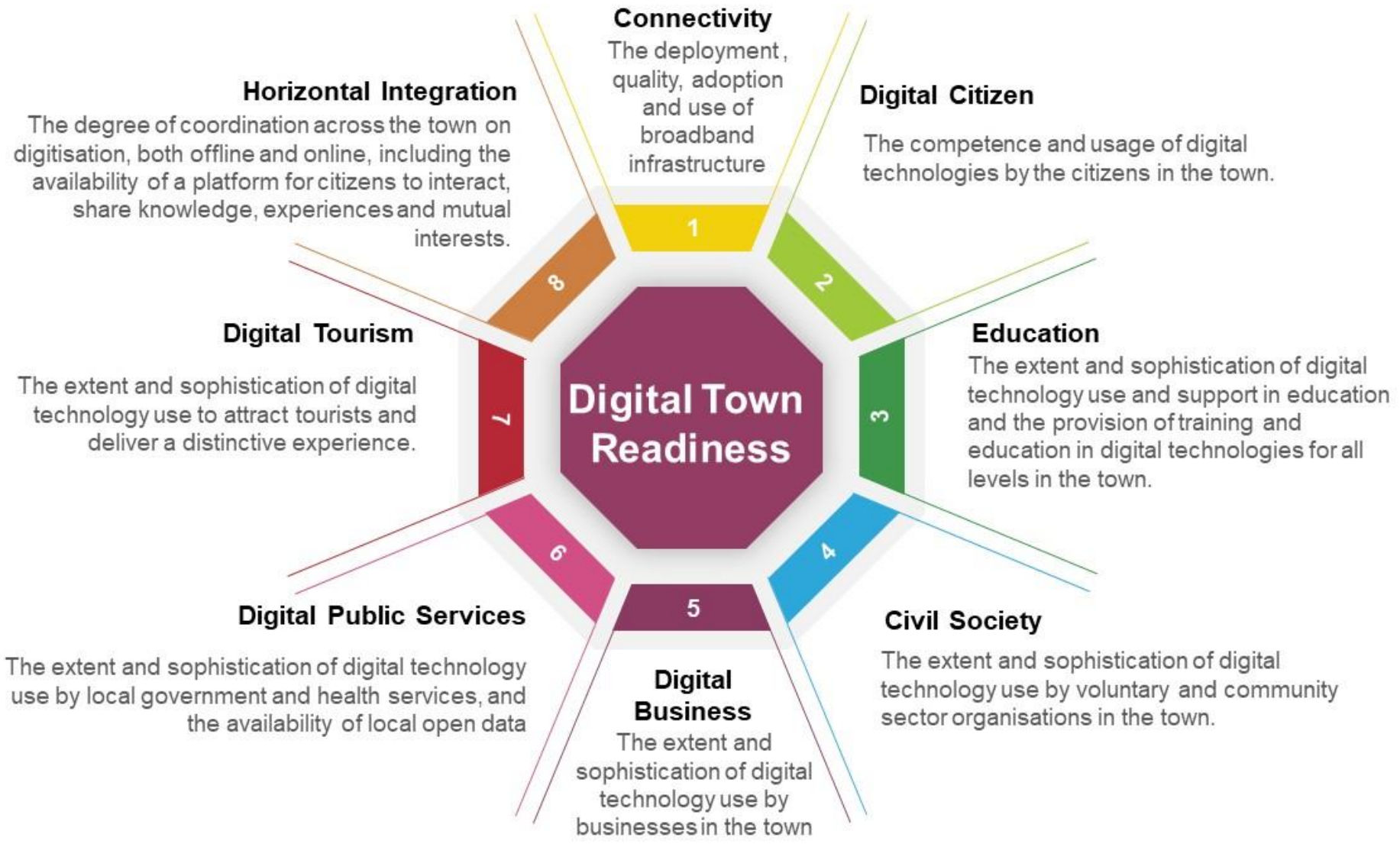
The DTMF comprises eight dimensions and is designed to be implemented by local stakeholders



Conclusions and Next Steps

- We propose a definition of a digital town and outline eight rationales for digital towns.
- Based on a review of extant literature, and digital benchmarking frameworks and indices, we present an initial framework for assessing the digital readiness of towns based eight dimensions.
- An easy-to-use checklist for self-assessment has been developed for use by towns, and a process and enabling workflow has been developed for a more comprehensive assessment.
- A rapid assessment version has been piloted in five towns in Ireland reflecting different regional contexts and population trends. Data was collected both pre- and post-COVID19 to enable an assessment of the short-term impact of the COVID19 pandemic on digital adoption and use in those towns.
- Further work is required on the weighting of dimensions, sub-dimensions and indicators before wider rollout.

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