



DIGITAL CITIES CHALLENGE

Strategy Definition Report for the City of Rijeka

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Digital Cities Challenge

Strategy Definition Report for the City of Rijeka

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Executive Summary: Rijeka's digital transformation

The City of Rijeka is 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 Rijeka through the integration of advanced technologies. The initiative fosters complementarities and synergies between existing policies, involving digital priorities (e.g. city development strategy, Smart Specialisation, Rijeka Smart City, etc.) and the newly planned policy actions supporting digital transformation.

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

Mission and Vision statements

The mission and vision statements on the digital transformation of Rijeka is the main output of the first step of the digital transformation strategy. It is based on the results of a self-assessment by stakeholders, a review of current strategy and policy documents, an assessment visit including interviews with 25 stakeholders, and a vision and ambition workshop with 15 selected stakeholders. The intention is to create a clean, safe, thriving urban environment where people can reach their full potential through education, commerce, culture, recreation and wellness. The digital transformation of the city of Rijeka is focused on mindset and cultural shifts in business and civil service delivery; from analogue to digital. While, such a technologically aided shift is desirable, it is of equal importance to all that the uniqueness of the city is preserved.

Mission statement

The mission of the city of Rijeka is *to efficiently transition from an industrial city to an economically diverse one that attracts, nurtures and retains digital talent, for sustainable economic development and improved quality of life.*

Vision and ambition statements

The future direction and aspirations of the city are elaborated in three key areas:

1. To further develop a digitalised and horizontally integrated public administration system that provides better public services.

- Rijeka is in the early stages of dealing with the challenge of simplifying complicated bureaucratic processes and inefficient service delivery, via deployment of cutting-edge digital tools. Despite having many services already online (e.g. permits), two major challenges are the culture of working in silos and a general lack of awareness of the available possibilities on existing city platforms. Ensuring access to streamlined, horizontally integrated services would prevent time loss and frustration. The aim is to use digital solutions to release a portion of the daily burdens of citizens and businesses, by reengineering existing processes and procedures to increase speed and ease of use, resulting in improved information flows, coordination and governance.

2. To leverage digital technologies in the service of enterprise and community development by improving information flow among stakeholders.

- The community dimension was identified as the most lagging area in Rijeka after the initial assessment process. To encourage entrepreneurship and deal with the current fragmentation of the start-up and innovation ecosystem, Rijeka needs to establish a venue where business support organisations, digital and non-digital companies can collaborate for mutual growth and development - the Digital Factory. The fragmented ecosystem refers to: a) physical dispersion of organisations and (sometimes duplicating) initiatives across the city, b) lack of awareness of existing range or new products/services of other players, and c) lack of strategic product/service development among players that fill value chain gaps and unlock new opportunities. The Digital Factory would help with reducing fragmentation, and strengthening coordination so that cross-stakeholder linkages would enable a dynamic enterprise sector to emerge. The creative, inclusive and supportive environment created by such a platform would be very conducive to the growth of tech companies, by making experimentation

and prototype development infrastructure available. To move forward with this ambition and diminish information asymmetry, it would be necessary to promote the culture of collaboration and information sharing among businesses, knowledge organisations, and other stakeholders. The Digital Factory would cover broad sectors such as technology, healthcare, creative, tourism, education, services, etc., fostering an expansion of the knowledge ecosystem through proximity, competitiveness, and access to information and expertise.

3. To develop a culture of lifelong learning, focused on digital literacy and other relevant skills.

- Beyond the standard curricula, there is a lack of options for knowledge acquisition beyond the formal institutional framework such as universities. Digital education and talent management is a critical area in need of improvement in the city that would help tackle the prevalent issue of labour shortage and skills gap. With the increased integration of technology in society, digital literacy is becoming a valuable tool for equality of opportunity with lifelong learning being an essential part of it. Rijeka would need to establish skills training options at all levels and incite changes to educational curricula, in order to achieve its digital potential. Developing this area would expand learning opportunities in Rijeka to include informal settings, peer-to-peer learning, and vocational training as part of the DCC strategy. Such an increase in the pool of experts would lead to improvements in diversity of services, diversity of enterprise and business competitiveness.

Path to modernisation enabled by the use of advanced technologies

Key stakeholders of the city participated in assessment exercises, utilising the SAT, performance indicators, interviews and workshops, to determine the digital maturity level of Rijeka. The results highlighted the starting points of discussion on how to develop a robust digital transformation strategy.

The city of Rijeka is an active participant of all activities focused on digital urban transformation, and has been developing/executing projects that contribute to the concept of a smart city since 1993, before the concept became part of the strategic guidelines of the European Union. It has

established a centre of competence involving representatives of the City Administration, Utility Companies, and the City of Rijeka Institutions utilising modern Data Centre and Communication Hubs. The centre of competence envisages six research and development projects spanning energy, mobility, infrastructure and management systems that are aligned with the digital transformation objectives of the city. Expected outcomes include 36 new, high-tech, ready for the market products, and 52 new, high expertise jobs in the participating companies.

The main findings of the assessment show that Rijeka is in the early stages of its digital transformation journey, requiring improvement in the 8 key dimensions (infrastructure, access to data, digital skillset, digital competence of companies, governance and leadership, support services, finance, and especially, community).

The Digital Cities Challenge initiative is half-way through its implementation. Rijeka has already completed its assessment report and is currently finalising the definition of the strategy. The next steps will focus on the design of a roadmap and, finally, a monitoring framework.

The commitment of Mayors is key to the success of fostering economic growth, increasing prosperity, as well as wellbeing 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 that is tailored to the local context. Such activities need coordination to ensure that efforts undertaken by the city administration are translated to the most favourable outcome.

1. Introduction to the Digital Cities Challenge

According to the 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 receive support in the form of field advisory services to be provided by a group of high level experts and peer reviewers, and offer the possibility for city representatives to participate in a series of capacity building and networking seminars. These activities take place in four Academy seminars during which cities share practices, take advantage of peer to peer learning and work together and in thematic groups on the steps of their transformation trajectory.

This document has been developed in the framework of the field advisory services being delivered in the City of Rijeka. It represents the main output of the second step of the digital transformation strategy: definition of a digital transformation strategy. The strategy definition report has been developed by the Digital City team on the basis of:

- The results of the Self-Assessment Tool and collection of Key Performance Indicators at the city level which took place during July and August 2018. A total of 41 valid replies were collected through the SAT.
- A literature review of key documents provided by the local leadership team (cf. Appendix for full list of documents consulted).
- A vision and ambition workshop which took place on 7th September 2018 (cf. Appendix for the full list of ambition workshop attendees)
- Strategy workshops that took place on 20th of November, 13th December, and 20th December (cf. Appendix for the full list of ambition workshop attendees)

This document represents the key input to the work to be performed during the forthcoming phases of the digital transformation trajectory (i.e. roadmap development, monitoring and implementation).

2. Mission and Vision statements

The mission and vision statements of Rijeka is the result of active participation and collaboration of the local stakeholder community, within the framework of the DCC methodology. Ideas from the interviews got refined and articulated after the workshop with 15 carefully selected participants from a cross-section of the society. The unanimous interest is in assuring economic development without losing quality of life. A lively discussion on ways to create a digital transformation strategy that would positively impact the economy and social growth of Rijeka, is consolidated in the mission and vision statements.

The mission statement is characterised by the metamorphosis needed for effective digital integration.

Mission statement

To efficiently transition from an industrial city to an economically diverse one, that attracts, nurtures and retains digital talent, for sustainable economic development and improved quality of life.

Vision and ambition statements

1. To further develop a digitalised and horizontally integrated public administration system that provides better public services.

- Rijeka is in the early stages of dealing with the challenge of simplifying complicated bureaucratic processes and inefficient service delivery, via deployment of cutting-edge digital tools. Despite having many services already online (e.g. permits), two major challenges are the culture of working in silos and a general lack of awareness of the available possibilities on existing city platforms. Ensuring access to streamlined, horizontally integrated services would prevent time loss and frustration. The aim is to use digital solutions to release a portion of the daily burdens of citizens and businesses, by reengineering existing processes and procedures to increase speed and ease of use, resulting in improved information flows, coordination and governance.

2. To leverage digital technologies in the service of enterprise and community development by improving information flow among stakeholders.

- The community dimension was identified as the most lagging area in Rijeka after the initial assessment process. To encourage entrepreneurship and deal with the current fragmentation of the start-up and innovation ecosystem, Rijeka needs to establish a venue where business support organisations, digital and non-digital companies can collaborate for mutual growth and development i.e. the Digital Factory. The fragmented ecosystem refers to: a) physical dispersion of organisations and (sometimes duplicating) initiatives across the city, b) lack of awareness of existing range or new products/services of other players, and c) lack of strategic product/service development among players that fill value chain gaps and unlock new opportunities.

The Digital Factory would help with reducing fragmentation, and strengthening coordination so that cross-stakeholder linkages would enable a dynamic enterprise sector to emerge. The creative, inclusive and supportive environment created by such a platform would be very conducive to the growth of tech companies, by making experimentation and prototype development infrastructure available. To move forward with this ambition and diminish information asymmetry, it would be necessary to promote the culture of collaboration and information sharing among businesses, knowledge organisations, and other stakeholders. The Digital Factory would cover broad sectors such as technology, healthcare, creative, tourism, education, services, etc., fostering an expansion of the knowledge ecosystem through proximity, competitiveness, and access to information and expertise.

3. To develop a culture of lifelong learning, focused on digital literacy and other relevant skills.

- Beyond the standard curricula, there is a lack of options for knowledge acquisition beyond the formal institutional framework such as universities. Digital education and talent management is a critical area in need of improvement in the city that would help tackle the prevalent issue of labour shortage and skills gap. With the increased integration of technology in society, digital literacy is becoming a valuable tool for equality of opportunity with lifelong learning being an essential part of it. Rijeka would need to establish skills training options at all levels and incite changes to educational

curricula, in order to achieve its digital potential. Developing this area would expand learning opportunities in Rijeka to include informal settings, peer-to-peer learning, and vocational training as part of the DCC strategy. Such an increase in the pool of experts would lead to improvements in diversity of services, diversity of enterprise and business competitiveness.

Hence, the vision of a digitally transformed Rijeka rests on the three main pillars outlined above. Activities to operationalise each of the vision statements could have a broad societal impact. It would also equip Rijeka with a strategic outlook on its digital transformation by providing a structure and an overarching objective to the various ongoing and future activities.

3. Digital Ri-Wave: the digital transformation strategy of the city of Rijeka

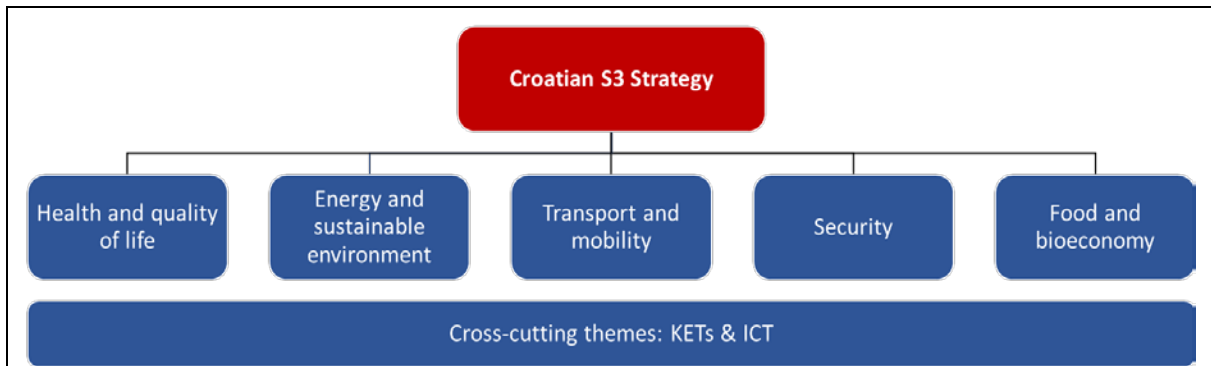
3.1. Strategy orientation

Given its mission objectives, the digital transformation strategy of Rijeka aims to consolidate disparate agendas with digital components into an integrated, robust whole. The strategy thus allows for the interconnectivity among all stakeholders, thereby creating benefit from both their diverse and complementary perspectives, to set the course towards the achievement of the set objectives.

The focus of the strategy is on future-proofing the city by leveraging its digital technological potential for economic growth and wellbeing. Strategic research & development, social innovation, digitalised arts and culture, ICT integration, etc., become drivers of ecosystem development, with positive impacts on local businesses (mainly SMEs), local talent and general wellbeing.

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

The strategy is linked to other existing national and city strategies. It is aligned with both the Smart Specialisation Strategy (S3) and the Croatian National Development Strategy 2030, which aims to transform the economy by building capacities in areas of greatest potential i.e. knowledge and innovation. The S3 of Croatia was prepared in 2016 and revealed the challenging task that is the identification of industrial and technological sectors with comparative advantages. Priorities were set on the basis of entrepreneurial development process supported by strategic intelligence about the country's challenges, competitive advantages and potential for excellence. The diagram below shows the national priorities and the role of ICT in the transformation of the industries therein.



Source: Smart Specialisation Strategy of the Republic of Croatia (2016 – 2020).

The National Development Strategy 2030 envisions digitalisation as both horizontal and vertical priorities, as shown in the diagram below.



Image source: Croatian Ministry of Regional Development and EU Funds.

The priorities in both national strategies show an overarching focus on turning around the economy. This DCC strategy expands on the digital agenda in the Development Strategy of the City of Rijeka (based on the EU 2020 strategy) for the period 2014 to 2020. It is envisioned as a key component in the Strategic Plan of Rijeka Smart City for the period 2019-2020 in addition to digital infrastructure and the centre of competence (Smart Ri). The centre of competence is focused on research commercialisation in the priority areas of energy & sustainable environment, and transport & mobility.

In conclusion, the digital transformation strategy of Rijeka focuses on economic development and competitiveness by working to overcome the fragmentation of the innovation value chain, and bridging the gap between the research and business sectors. It also focuses on smart skills development, setting the foundation for clustering.

3.2. Operational objectives

Operational objectives reflect the means through which the city of Rijeka aims to achieve its ambition statements. They are called operational because they are of an actionable nature. They represent the 'how' behind the high level strategic vision which has been developed by the local working group. As demonstrated in the following figure, operational objectives are linked to one or several ambition statements. The city of Rijeka has identified six operational objectives for its digital transformation strategy.

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



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

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

Operational objectives and description	Link to ambition statements and key city challenges and opportunities	Key Success Factors
Operational objective 1: To further improve the digitalisation of the local administration by expanding the e-Governance platform.	Linked to ambition statement 1. It would improve transparency, encourage efficiency, and strengthen the coordination role of the City.	<ul style="list-style-type: none">○ Delivering the digital services required by local businesses and citizens.○ Internal leadership and capacity building of city personnel on design and consistent delivery of e-services within the city administration.○ Providing e-services that facilitate the digital transformation of core local industries and services.
Operational objective 2: To promote and initiate support activities aimed at ecosystem development through digital orientation and public/private/institutional collaboration.	Linked to ambition statement 1. Awareness raising about the possibilities of the Open Data portal for developing new business and services.	<ul style="list-style-type: none">○ Expanded datasets on the Open Data portal○ Supporting digital focused events and encouraging local, national and international collaboration.○ Facilitating easier access of firms to specialised equipment such as super computer, 3D printers, etc., to ease prototyping and experimentation.

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<p>Operational objective 3: To create a physical location for creative application of creative technology and IT industry, that would facilitate and accelerate knowledge exchanges between stakeholders, through repurposing of unused industrial legacies (such as factories), into knowledge centres.</p>	<p>Linked to ambition statement 2.</p> <p>This would deal with the challenge of ecosystem fragmentation, enable the development of IoT based solutions, and create opportunities for social innovation.</p>	<ul style="list-style-type: none"> ○ Centralised location for the incubators and accelerators that enable ideation, experimentation and access to shared resources. ○ Multi-sector collaboration and service integration. ○ Easier access to relevant information that could help in market development. ○ Easier access to technologies. ○ Easier access to funding and investment.
<p>Operational objective 4: To create a specific platform for digitalisation of wellness (such as sports), arts & culture, through flagship projects.</p>	<p>Linked to ambition statement 2.</p> <p>This would help Rijeka leverage its brand as European Capital of Culture 2020, to preserve its cultural heritage and boost its tourism offers through digital transformation.</p>	<ul style="list-style-type: none"> ○ Integration of new, digital work cultures such as data-driven decision making, resource management, performance management, etc. ○ Integrating physical fitness and wellbeing as both a cultural and smart touristic offer. ○ Improvement of the scope and diversity of artistic & cultural offerings. ○ Strengthen the capacities within the sector(s) and its linkage with other sectors.

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Operational objective 5: To popularise the participation of firms in projects aimed at building their digital competencies.	Linked to ambition statement 3. Encourage micro and small firms to use business support infrastructure such as coworking space, mentoring programs, professional events, etc., that would be made available to them.	<ul style="list-style-type: none">○ Definition of missing capacities within firms.○ Familiarity with the local IT community.○ Improved firm collaboration with universities for developing high skilled talent.○ Talent retention strategies to prevent brain drain.
Operational objective 6: To collaborate with learning institutions to support the creation of digital programs and encourage learning for all ages.	Linked to ambition statement 3. Creating upskilling and reskilling opportunities to build digital capacities of the general populace (workers, long-term unemployed, the elderly, people with disabilities, etc.).	<ul style="list-style-type: none">○ Providing the training identified by firms as missing, through customised programs.○ Clarity on the general level of learning needed (from basic to advanced).○ Expansion and unification of current learning initiatives to avoid duplication.

4. Major economic sectors and DCC focus

Key economic figures and sector indicators

The City of Rijeka is the third largest city in Croatia, the country's principal seaport, as well as the administrative centre of the Primorje-Gorski Kotar County. While the port, along with its accompanying activities, has historically been the key sector of the economy, the economic landscape has changed in the past two decades.

Credible data on economic figures is from the state Financial Agency (FINA)¹, which collects financial data on companies. For the purpose of this report, the entities considered are those with headquarters in the City of Rijeka. Notably, FINA data does not include entities registered as "crafts", and state institutions, however, according to the data of the Association of Craftsmen in the area of Rijeka and the surrounding area there are active about 2,500 craftsmen however, according to the data of the Association of Craftsmen in the area of Rijeka and the surrounding area there are active about **2,700 craftsmen, about 2.300** in City of Rijeka (91 in ICT). Given that data is processed annually, after the companies have submitted their end-of-year accounts by the end of April, processed data for a past business year becomes available in June of a current year. For example, in June 2019, FINA will have processed entrepreneurial data for 2018. Therefore, the latest available data for the economy of Rijeka is of 2017. Key indicators for the local entrepreneurship outputs are based on FINA data on the **number of enterprises, annual income and number of employees**.

Major sectors

The five main activities dominating the economic landscape of Rijeka, based on 2017 data from FINA, are:

- Trade,
- Manufacturing,

¹ <https://www.fina.hr/>

- Construction,
- Transport & Warehousing, and
- Professional, Scientific and Technical Services.

These five activities, according to the latest data, encompass 67% of local entrepreneurs, 82% of income and 74% of employees in the entrepreneurial sector.

Where DCC projects are concerned, a sixth area of activity tagged ICT would be proposed, for the inclusion of businesses involved in ICT related activities. The monitoring would be by the same indicators as the others (number of entrepreneurs, annual revenue and number of employees). Most recent available data shows that ICT businesses make up 4.8% of all entrepreneurial activity monitored by FINA and employ 3.3% of the total number of employees. They account for 3.7% of total revenues and 5.6% of total income of entrepreneurs in Rijeka. Indicators point to a significant increase in the business dynamics of entrepreneurs in this business area in 2017. Although the number of entrepreneurs increased by only 1% (from 217 to 220 entities) compared to 2016, the number of employees increased by 10%, total revenues increased by 103%, and profit for the period increased by 88%.

Key business challenges

Such challenges include, among others:

- Lack of adequately equipped premises in the wider centre of the city,
- Multiple fiscal burdens and
- Lack of skilled labour

These issues were highlighted by representatives of the local and regional economy, during the workshop for the improvement of business infrastructure in the Urban Agglomeration Rijeka, held on 6th December 2018.

Digital transformation and ICT development in Rijeka can help tackle the challenge of space as the operations are more streamlined, compared to the manufacturing industry or transport and warehousing. Secondly, tax burden is a systemic issue at the national level, but the introduction of the national bill tracking system has improved VAT collection and control. Finally, on the issue of increasing the numbers of skilled workforce, there is an urgent need for a pipeline of new/quality employees, both high skilled and in vocational training. It is clear that different models of youth education and general upskilling contribute to faster and increased numbers of employment in the ICT sector. STEP RI (an entity owned by the University of Rijeka) is making effort to educate young people interested in information programming.

Awareness of the necessity of skilled labour in economic development is why attracting, nurturing and retaining digital talent in Rijeka is the third digital transformation vision.

5. Digital maturity level of the city: outcomes of the Self-Assessment Tool and Key Performance Indicators

5.1. Outcomes of the Self-Assessment Tool

Major stakeholders in Rijeka participated in the assessment exercise, which helped determine the current level of digital maturity of the city and indicated the starting points for discussion on how to develop a digital transformation strategy. 41 people completed the Self-Assessment Tool (SAT) which focused on the role of city as an enabler of industrial transformation. The table below shows the cross-section of respondents in SAT.

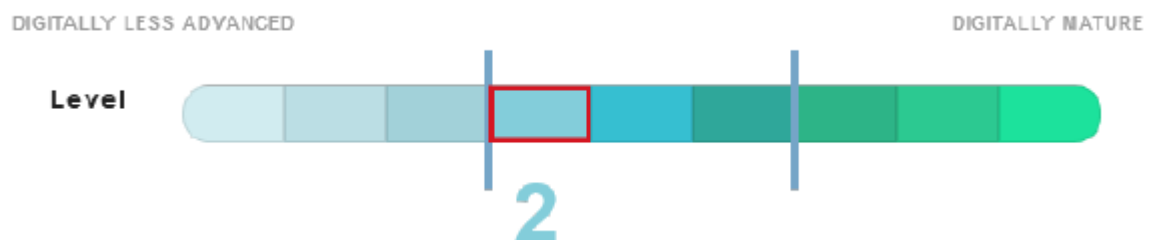
Figure 2 Stakeholder responses by group

City	Education	Financial	Industry	Utilities
13	10	2	8	8

Level of digital maturity

Overall assessment results show that Rijeka is on its path to digital maturity, as shown in the figure below. The city can take advantage of the digital transformation process to tackle its economic and social challenges.

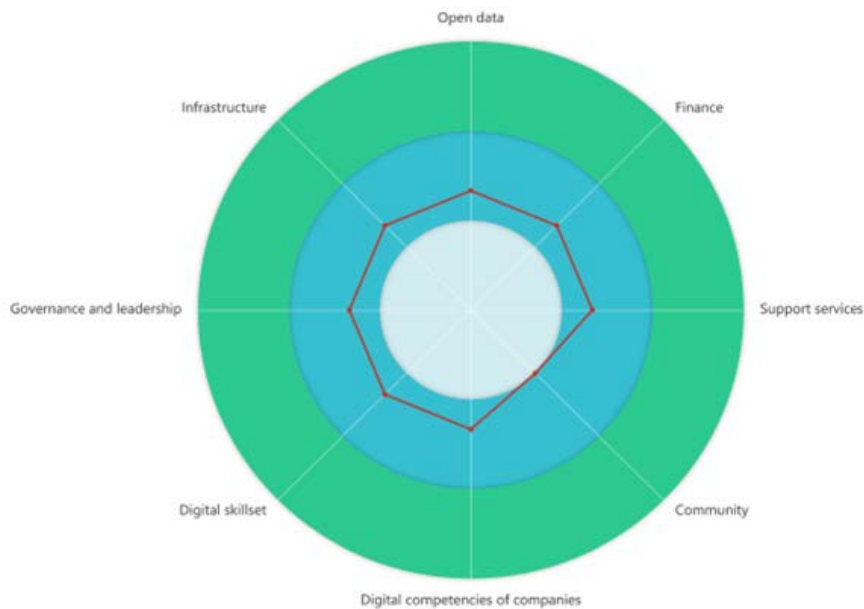
Figure 3 Digital maturity level of the city of Rijeka



A closer look at the 8 dimensions of the SAT reflects the particular areas where such

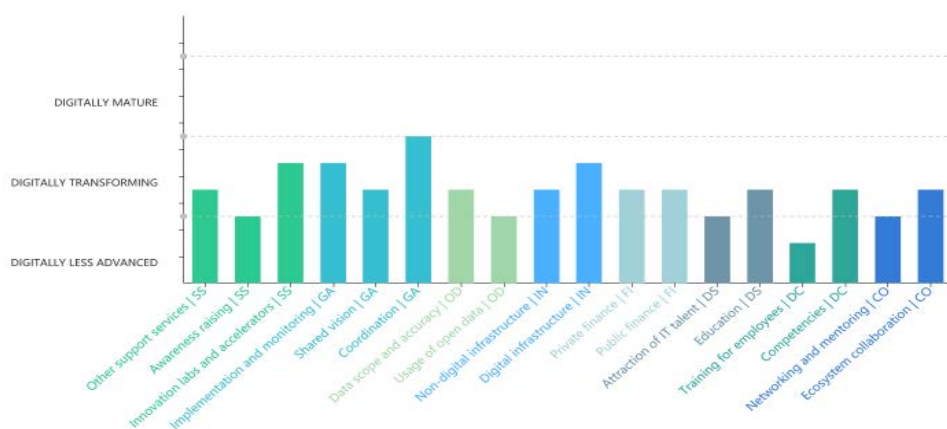
improvements would be needed and the red line in the figure below indicates the current position of Rijeka. An effective digital transition would place the City at the heart of a new digital ecosystem of innovation and entrepreneurship.

Figure 4 SAT results per dimension



While improvement is required in all eight dimensions, it is more so in the community dimension, highlighting an overall need for digital improvement. This assessment is fully validated by the interviews and the vision/ambition workshop. The prevalent opinion of stakeholders is that the city of Rijeka can and should be so much more. Since the desired transformation is horizontal, ecosystem development is of primary focus, as reflected in the Smart Ri project, among others.

Figure 5 SAT results per subdimension



The most optimistic stakeholder group are from the financial industry, which is not surprising, as the nature of their activities requires constant innovation in digital offerings and financial technology (fintech), and the offerings for commercial loans are widely available. A constraint, however, from non-financial industry perspective, is the capacity for individual access to available financial instruments, as loans from commercial banks have high interest rates, while venture capital or other financial instruments are not readily available locally.

In order to stimulate new employment and self-employment, increase the quality of tourist accommodation capacities and stimulate entrepreneurial competitiveness in 2018, the City Department of Entrepreneurship launched the Interest Subsidy Program. The aim of the Program is to provide entrepreneurs with more favourable financing conditions for investing in the initial phase of economic activity, investment projects and investment projects in the tourist infrastructure of the city of Rijeka.

A key strength is the awareness and acceptance of the essential role digital development plays in the future, while a key weakness is the rigidity and natural inclination to preserve existing (familiar) practices. Managing the change process effectively is one of the intentions behind the transition focused mission statement.

5.2. Key Performance Indicators

Performance indicators are intended to monitor progress. In order to monitor the actualisation of the city's ambitions, the KPIs are grouped per vision statement.

KPIs for Vision 1

Vision 1 aims to tackle the SAT dimensions of **open data, governance and leadership**. To achieve that, the City of Rijeka will monitor the following internal indicators:

1. Number of visits to the web portal and the Electronic Services portal of the City,²
2. Number of Registered Users of the Electronic Services of the City,
3. Number and maturity level of the Electronic Services of the City of Rijeka,
4. Number of datasets published on the Open Data Portal,³

² <http://gov.rijeka.hr/>

³ <http://data.rijeka.hr/>

5. Integration of the City's Electronic Services with the National Identification and Authentication System (NIAS),⁴
6. Number of Intranet users in the City administration,
7. The number of electronic documents signed by the advanced electronic signature created in the City of Rijeka.

⁴ <https://nias.gov.hr/>

KPIs for Vision 2

Vision 2 aims to tackle the broader issue of ecosystem fragmentation reflected in the SAT dimensions of **community, support services, and companies' competencies**. To achieve that, City of Rijeka will combine internal indicators in the city administration and collaborate with partners such as the Development Agency of Rijeka – Porin, Start Up Rijeka, Ri Hub, Step Ri, Fipro Foundation, Rijeka University Foundation, University of Rijeka's Technology Transfer Centre, Digital Innovation HUB -Poslovna Akademija Rijeka, Digital Innovation HUB - Croatian Chamber of Economy, the Association of Craftsmen of Rijeka and the Centre of Technical Culture to monitor:

1. The number of users and start-ups in all incubators and institutions supporting ICT in Rijeka (ICT clustering),
2. Number of participants in digital themed and industry transformation events,
3. The number of digital themed meetings and events in a given period.

KPIs for Vision 3

Vision 3 aims to broadly tackle the SAT dimensions of **community and digital skillsets & education**. To achieve that, the city of Rijeka will monitor, with inputs from partners, the following indicators:

1. Number of participants in ICT workshops and trainings in Rijeka,
2. The number of companies and partners involved in the Energana and the "Hala 14" projects,⁵
3. Number of vocational, informal and peer-to-peer learning opportunities in a given period.

Rijeka is a frontrunner on KPIs dealing with Vision 1, and lagging with those related to Vision 3. It should be noted that due to unavailability of the data it is not possible to directly monitor the business activities of companies within the ICT sector, or the availability of new forms of

⁵ The Energana Project, currently in the preparatory stage, encompasses the reconstruction and revamping of the energy plant of a former Rijeka paper mill. It is among other things, an accelerator and start-up incubator for creative technologies and the IT industry. <https://www.rijeka.hr/gradska-uprava/gradski-projekti/aktualni-projekti-2/energana-startup-inkubator-za-kreativne-tehnologije-industriju/>

The « Hala 14 » Project is a technology-educational and manufacturing incubator for entrepreneurs, which, in addition to educational, infrastructure and mentoring support, will provide users with access to advanced technology. <https://www.rijeka.hr/gradska-uprava/eu-projekti/aktualni-projekti/rekonstrukcija-prenamjena-hale-14-u-tehnolosko-edukacijski-poduzetnički-inkubator-proizvodni-park-torpedo/>

funding (through venture capital funds or business angels), or systemic benefits for entrepreneurs. Furthermore, the city of Rijeka currently has no specially developed system of incentives for entrepreneurs in the ICT sector. However, that is being considered in the preparation of the new strategic documents for the period of 2021 to 2027.

6. The local digital ecosystem: leadership and governance

The city of Rijeka has been making efforts geared towards developing a shared vision for its future. The leaders recognise that the digitalisation megatrend goes beyond a collection of individual projects and the DCC project offers an opportunity for articulation and strategic integration. During the interviews and vision & ambition workshop, most of the stakeholders share the vision of Rijeka being a competitive, intelligent and sustainable city. There is a strong commitment from the rest of the stakeholders (digital ecosystem) with the DCC project. They expressed interest and willingness to participate in the digitalisation agenda.

Although a formal digital development plan is not yet in existence, aspects of digitalisation are outlined in the 2014 – 2020 development strategy of the city. The strategic direction envisioned by the city leadership is reflected in the document, specifically in the second of three strategic objectives, which states “economic development based on knowledge society and new technologies,” as its target. Additionally, a roadmap with milestones and indicators to enable monitoring is included. The city’s interest in digitalisation is also apparent in its participation in many initiatives such as the Open and Agile Smart Cities, coordinating its Centre of Competences for Smart Cities, and in its recent announcement of a list of project proposals which contain a digital component, that is planned to be implemented in the next two years (2019 — 2020), in line with the current City of Rijeka Strategy. First on that list is the Digital Cities Challenge, which has been linked with the second strategic goal of the city i.e. leveraging knowledge based on integrating new technologies, to develop a competitive economy.⁶

A key strength of the governance and leadership for digital transformation is in the clear vision of the city regarding its digital development. However, the leadership challenge is in figuring out how best to invest in intelligent infrastructure and connectivity to deliver long-term value. That challenge is worsened by the lack of a national level digital agenda, depicting clear governmental and institutional policies/initiatives and the implementation.

⁶ <http://ekonzultacije.rijeka.hr/nacrt-prijedloga-strateskog-plana-rijeka-pametani-grad-za-razdoblje-2019-2020-godine/#more-2735>

7. The use of digital solutions by local companies

Most private sector actors invest in the necessary digital technologies and solutions that would enable them secure sources of competitive advantage in their chosen areas of operation. Market pressures force such investments, resulting in better access to software and hardware in the private sector.

Sectors most engaged in digital transformation in Rijeka and Croatia at large include banking and financial industry, pharmaceutical industry, retail and distribution, telecommunications services, and media. Deficiency in availability of digital solutions is often due to financial constraints of individual companies, rather than a lack of knowledge or interest.

Major improvements to encourage wider private sector utilisation of digital solutions in Rijeka include:

- Attracting sufficient numbers of skilled staff, especially in ICT
- Improving the digital/technological capacities of companies, especially SMEs
- Allocating physical space for high-tech companies
- Encouraging development of the start-up ecosystem, especially in the creation of new digital solutions
- Enhancing communication flows within the community to raise awareness of the possibilities of incorporating new technologies in their operations, such as machine learning, IoT, blockchain, etc.

Companies that have been most successful in applying digital solutions are from sectors that are inherently innovative, such as the pharmaceutical & biotechnological, financial, telecommunications and ICT sectors. Such companies invest heavily in knowledge and technology acquisition in a bid to secure or maintain their competitive advantage.

An example of the use of digital solutions to create a digital solution is the local company LogIN d.o.o. Their project "Adapting and commercializing HATCH! Solutions for Business Processes Innovation" was recently approved for co-financing via European Structural and Investment Funds (ESIF). HATCH! is a digital customer reward program designed for retail and service customers to track consumer habits and customer segmentation with the aim of creating more

loyal customers, better results and controlled marketing budget management.⁷ The company already received grants through the "Support to the Competitiveness of Small and Medium-Sized Entrepreneurship in Croatia" under the EU IPA Program for their "LoginCloud" project in 2012, which included the formation of its own Data Center as the base for application of technologies that enable cloud operations.⁸

There are many financial instruments and public funded incentives available to companies in the form of grants, subsidies, loans, etc. Another example of such measure in Rijeka is "Subsidies for the implementation of IT system in the SMEs business activity." managed by Department of Entrepreneurship in the city administration.

Accessing these financial supports can be challenging for firms, for reasons such as the convoluted process, long evaluation periods, heavy time investments for unpredictable outcomes, etc. Often for smaller firms there is a lack of available human resources to simultaneously run the daily business operations and go through the process of applying for public financial support measures.

Commercial banks, on the other hand, are very willing to provide loans to any viable project, digital or otherwise. This option implies that the entrepreneur fully bears the risk of default. Despite the challenges, there is an opportunity for digital solutions to be deployed in support of local companies on their own path of digitalisation.

⁷ https://www.youtube.com/watch?time_continue=9&v=hxWKgiA9SFI

⁸ <http://novilist.hr/Vijesti/Rijeka/Izlegao-se-rijecki-Hatch!-Dobili-europske-milijune-za-razvoj-inovativnog-loyalty-programa>

8. Community engaged in digital transformation

Rijeka is a city with digitalisation high on its agenda and has made efforts to foster a digital ecosystem. The tech community currently consists of SMEs in the ICT sector and the university along with its science and technology park. Project-based collaborations exist between digital and non-digital companies from various sectors. However, such collaborative efforts are mostly personal, based on common interests.

The lack of an integrated digital community and culture of working in silos is reflected in the SAT results and initial assessment. Since it has been identified that the fragmented ecosystem and lack of sharing platforms that would bring various entities together and enable existing champions of innovation to thrive is a main issue, community development has become a major building block on Rijeka's journey to digital transformation.

Collaboration between digital and non-digital companies exists, but it depends on the willingness of the entities in the various sectors. An instance of formal collaboration among various entities is the City of Rijeka's Centre of Competence for Smart Cities, managed by Smart Ri, a strategic development company owned by the city⁹. Their main activity is linking private sector actors with research institutions and R&D projects aimed at addressing the challenges cities face e.g. in the areas of mobility, energy, ecology and so forth. Smart Ri is intended to be a test and demonstration centre for "smart" technologies/innovative services, to be piloted in preparation for commercialisation. Within this format, there is collaboration between the government, research institutions and businesses in different sectors.

Further development of such collaborative efforts as the centre of competence is being encouraged within the Smart Specialization Strategy of the Republic of Croatia. Strategic clustering of digital and non-digital entities will enhance the dynamism of the ecosystem and enable the creation of intellectual property.

⁹ <http://smart-ri.hr/>

9. The state of local digital and physical infrastructure

The Electronic Information Infrastructure of the city is based on a unique data model and technological platform, which creates prerequisites for improving business processes in the city administration.¹⁰ A wireless MESH network (RIJEKA-FREE ACCESS) was established based on Wi-Fi technology, in areas of the city spanning 0.21 square kilometres, which allows free public wireless internet access.

An analysis of the functionality of the existing Communication Infrastructure of the City of Rijeka follows the guidelines of the "National framework program for the development of broadband infrastructure in areas of insufficient commercial investment interest", aimed at achieving the national strategic goals set in the "Broadband access development strategy of the Republic of Croatia 2012-2015", and the fulfilment of the European Union Strategy, "Europe 2020".

A point of improvement in the current digital infrastructure is in rural access. However, that is being dealt with through the Rural Network Project (RUNE) implemented by RUNE-ADRIA Telecommunication Infrastructure d.o.o., which was launched with the aim of providing ultra-fast broadband fibre infrastructure for users in rural areas of Croatia (Primorje-Gorski Kotar and Istrian Counties) and Slovenia. Building on areas currently not covered by fibreoptic infrastructure, RUNE will help local government units achieve the goals of the Digital Agenda for Europe 2020 by providing connectivity to a new fibreoptic access network that will enable speeds greater than 1 Gbps. This concept of network construction also enables the liberalisation of the electronic communications services market.¹¹

Ensuring availability and connectivity of all residents and visitors of the City of Rijeka to a fast, broadband infrastructure would be a step towards fulfilling the European strategy 2020, which is aimed at fostering the development of knowledge and innovation-based economies across the EU. Such economies are greener, efficiently utilise resources, and tend to be more

¹⁰ Strategy of the City of Rijeka 2014 - 2020, September 2013

¹¹ <https://www.ruralnetwork.eu/hr.html#projekt>

competitive. Furthermore, social and territorial connectivity enables activities that result in higher employment rates.¹²

All these aspirations require connection to fast, reliable internet infrastructure. Stakeholders favourably assessed the maturity of the digital infrastructure, except for a couple of respondents from the utilities who took a grim view. The general consensus is that the digital infrastructure in Rijeka is good but should continue being developed. There is also a call for the launch of more initiatives aimed at increasing access to specialised communication networks.

¹² Broadband Infrastructure Development Plan of the City of Rijeka, 2017

10. Digital solutions enabling the modernisation of the business environment

The City of Rijeka has defined its strategic objectives to include ICT and entrepreneurial development in order to support the creation of new businesses.¹³ To actualise that, annual, non-refundable grants are awarded to all entrepreneurs in the territory through a General Program of Measures to incentivise Entrepreneurship in the City of Rijeka.¹⁴

Of the nine existing measures on this topic, the most important is the **subsidies for the introduction of IT systems and applications in business**. It serves to encourage entrepreneurs to introduce ICT systems and applications in decision-making, management and adoption of digital business processes that lead to increased efficiency e.g. in marketing information system, fleet management, business intelligence systems, business software, website design, and all types of web and mobile applications. The city also implemented several e-Services, including a GIS business space directory.¹⁵



The Register of Business Areas of the City of Rijeka is published online. Contracted amounts and available business premises can be seen.

The green dots on the map indicate free business spaces in real time. This is a model on which city services would be developed in the future.

¹³ Strategy of the City of Rijeka 2014 - 2020, September 2013

¹⁴ https://www.rijeka.hr/announcement/javni-poziv-za-podnosenje-prijava-za-dodjelu-nepovratnih-subvencija-poduzetnicima-grada-rijeke/?preview_id=88827

¹⁵ <http://gis.rijeka.hr>

The goal of digital transformation is to deliver better public services with less resources. This means that technology needs to be integrated into many aspects of work. Digital transformation projects require a change in the way the services are organised, produced and delivered, and are more about managing people, processes, and organizational structure. Culture and lack of digital competence are the biggest barriers to digital transformation projects.

Successful examples of digital services in the City of Rijeka are paperless services provided online via the e-Government portal, which is fully integrated with business processes and allows electronic transmission of all information to central administration. For example, applications for grants for community-based organizations, small businesses and individuals, for culture focused projects, sport, innovative projects, enrolment applications for kindergartens, reporting of communal problems, insights into accounts, tax returns, location permits, social services and welfare calculator, etc.

The digital solutions that could be adopted by the public sector to further promote the creation of a friendlier business environment include:

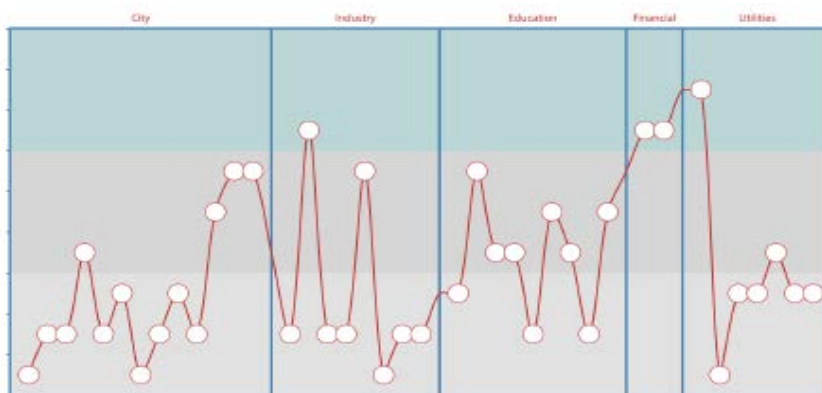
- Increasing the number of online public services
- Enabling easier dealing with taxes and fiscal responsibilities
- Easing the process of land and property acquisition
- Easier licensing, permits and other requirements
- Providing Open Data services, which can in turn foster value-added services
- Improving the scope, quality, and range of Open Data
- Improving the quality and range of services provided
- Engaging with all stakeholders and encouraging the use of Open Data

11. Data driven innovation

The city of Rijeka is aware of the critical role digital solutions and Open Data in particular play in developing the business environment. It has an open data portal with 125 datasets currently available that enable the collection, categorization and distribution of city, utility companies and institutional data.¹⁶ Public data managed by the city of Rijeka can be a useful input for local innovation and digitalisation of businesses.

Despite the city of Rijeka being one of the most advanced in Croatia in data collection as input for innovation, the SAT assessment in this dimension shows a highly varied response from stakeholders, as seen below.

Figure 6 SAT result on data utilisation



Stakeholders from industry clearly stated during the interviews that more could be done on their end to utilise the possibilities enabled by an Open Data platform.

Private sector innovations (such as in mobility management and smart infrastructures) that can be developed on the basis of public data are many, and could positively affect quality-of-life through management improvements, while providing quality datasets for research purposes. However, innovation via open data models is not part of current business practices.

One major barrier to innovation activities through the use of open data is a lack of understanding of the applicability of open data in creating innovative products and services for private and public-sector actors. Efforts could be made to increase awareness, promote the creation of new products/services, and explore interoperability and integration for competitiveness.

¹⁶ <http://data.rijeka.hr/>

12. Skills and entrepreneurial culture

The City of Rijeka has a low digital skills capital. The situation is more or less the same on the national level. Croatia is currently developing a strategy to address its digital skills challenges and is planning to set up a national coalition of relevant stakeholders, bringing together industry, education and employers to further improve digital skills. Digital skills are locally developed by the university of Rijeka Department of Informatics and University of Rijeka Faculty of Engineering.

The number of ICT specialists in Croatia increased from 2.7 percent in 2017 to 3.3 percent in 2018, along with the share of graduates in Science, Technology, Engineering and Mathematics (STEM) in the 20-29 years age bracket.









Figure 7 Ranking of Croatia compared with EU peers

	Croatia				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
2a1 Internet Users	NA		71%	22	81%
% individuals	2017		2016		2017
2a2 At Least Basic Digital Skills	NA		55%	13	57%
% individuals	2017		2016		2017
2b1 ICT Specialists	3.3% ↑	17	2.7%	18	3.7%
% individuals	2016		2015		2016
2b2 STEM Graduates³	17.1 ↑	16	15.7	20	19.1
Per 1000 individuals (aged 20-29)	2016		2014		2015









Source: Digital Economy and Society Index - Country Report Croatia, 2018

The main industry experiencing difficulties in hiring specialised workforce is the ICT sector, as it is a horizontal industry, dealing with cutting-edge digital technologies. To attract talent, companies typically provide internships to IT students during their study years and are willing to offer them employment after graduation. Given the scarcity of quality IT professionals, most companies are willing to invest in further development of their experts. The shortage of qualified labour is increasingly reflected in nearly every sector and industry. With the incubators and accelerator programmes being developed, Rijeka is on the way to simultaneously bridge the skills gap and develop the entrepreneurial ecosystem.

13. Digital transformation SWOT analysis

	Strengths	Weaknesses
 Infrastructure	<ul style="list-style-type: none"> > Free Wi-Fi > Good mobile broadband 	<ul style="list-style-type: none"> > Free <u>WiFi</u> is only available in a fraction of the territory > Fixed infrastructure is bad
 Access to data	<ul style="list-style-type: none"> > Good availability of data 	<ul style="list-style-type: none"> > Open data sets are not structured > Poor quality data from other providers e.g. the chamber of commerce > Unavailable financial data
 Digital skillset	<ul style="list-style-type: none"> > Digital literacy is promoted by the city > People are aware of the necessity 	<ul style="list-style-type: none"> > No culture of lifelong learning > Lack of formal institutions dedicated to digital education for non-university students > Investment in digital skills is out-of-pocket
 Companies' digital competencies	<ul style="list-style-type: none"> > Early adoption of tech is common > Companies across industries are on the path of digital transformation 	<ul style="list-style-type: none"> > Few companies are willing to adapt their processes > The ICT literacy of employees is very low compared to the EU average > The use of ICT for commercial activities and logistics is low
 Community	<ul style="list-style-type: none"> > A digital community consisting ICT companies, universities and research centers is present > Strong presence of NGOs 	<ul style="list-style-type: none"> > No critical mass > Fragmented ecosystem > Limited interaction between ICT and non-ICT entities
 Finance	<ul style="list-style-type: none"> > Lots of available funding options 	<ul style="list-style-type: none"> > Commercial lending terms of banks are unattractive > Pressure on tight public budgets > Startups and SMEs have difficulty accessing funds
 Support services	<ul style="list-style-type: none"> > City supports entrepreneurship and support infrastructures for start-ups are in place 	<ul style="list-style-type: none"> > Lack of business mentors and experts > Lack of experimentation and prototype development infrastructures (e.g. fab-labs)
 Governance & leadership	<ul style="list-style-type: none"> > Efforts at coordination and consensus building are being made > The city has a developed strategy with clear action plans 	<ul style="list-style-type: none"> > Complex relationship between national, regional and city governments > Working in silos

DIGITAL CITIES CHALLENGE

	Opportunities	Threats
 Infrastructure	<ul style="list-style-type: none"> > Digital infrastructure projects such as 5G and fixed infrastructure upgrades, are in the pipeline 	<ul style="list-style-type: none"> > Slow national government > Property rights and regulatory barriers
 Access to data	<ul style="list-style-type: none"> > Use for improving policy design > Use by businesses to improve their services and decision-making 	<ul style="list-style-type: none"> > Lack of political will > Obsolete worldview of key decision makers > Fear of transparency could thwart the development of useful applications
 Digital skillset	<ul style="list-style-type: none"> > Private institutions could develop new training services > Mobilising and coordinating training initiatives to stimulate demand 	<ul style="list-style-type: none"> > Lack of funding > Curriculum design process is too long
 Companies' digital competencies	<ul style="list-style-type: none"> > Digitalisation of processes in key economic sectors > Opportunities for exploiting synergies among sectors across the value chain > Knowledge development in Smart Cities technologies and services of local ICT companies 	<ul style="list-style-type: none"> > Brain drain of highly capable employees > Financial constraints > Prioritisation issues > Sluggish adaptation to global trends
 Community	<ul style="list-style-type: none"> > European capital of culture 2020 > Systematic development of the ecosystem 	<ul style="list-style-type: none"> > Lack of sharing culture; reluctance to pass on knowledge > Lack of accountability
 Finance	<ul style="list-style-type: none"> > Utilising innovation procurement and pre-competitive procurement methods for securing digital applications > Innovative funding methods e.g. ICOs 	<ul style="list-style-type: none"> > Regulatory constraints > Tough competition in claiming funding > Government resistance to new procurement methods
 Support services	<ul style="list-style-type: none"> > Digitalisation of G2B and G2C processes and services > Strengthening existing innovation support infrastructures 	<ul style="list-style-type: none"> > Inability to attract and retain experts
 Governance & leadership	<ul style="list-style-type: none"> > EU funds for regional cooperation > Strengthening the coordination role of the City 	<ul style="list-style-type: none"> > Politically motivated blockage of project implementation in the city council

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 throughout 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.

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Strategy of the city of Rijeka 2014 - 2020 (September 2013)

Appendix III: List of attendees in the strategy definition workshops

Working Group 1

Name	Title	Meeting date
Željko Jurić	Head of IT department, City of Rijeka	20/11/2018
Nataša Zrilić	Advisor to the Mayor for Economic Development, City of Rijeka	
Tatjana Perše	Head of eGovernment, IT department, City of Rijeka	
Jana Sertić	Head of Department of Entrepreneurship, City of Rijeka	
Damir Medved	Principal consultant – Ericsson Nikola Tesla	
Petra Karanikić	DCC Support Consultant	
Stephanie Trpkov	DCC Expert Consultant	

Working Group 2

Name	Title	Meeting date
Željko Jurić	Head of IT department, City of Rijeka	13/12/2018
Nataša Zrilić	Advisor to the Mayor for Economic Development, City of Rijeka	
Tatjana Perše	Head of eGovernment, IT department, City of Rijeka	
Petra Karanikić	DCC Support Consultant	
Stephanie Trpkov	DCC Expert Consultant	

Working Group 3

Željko Jurić	Head of IT department, City of Rijeka	20/12/2018
Nataša Zrilić	Advisor to the Mayor for Economic Development, City of Rijeka	
Tatjana Perše	Head of eGovernment, IT department, City of Rijeka	
Tina Ragužin,	Senior Advisor, for Development of Entrepreneurship, Department of Entrepreneurship, City of Rijeka	
Petra Karanikić	DCC Support Consultant	
Stephanie Trpkov	DCC Expert Consultant	

Appendix IV: List of participants at the Vision & Ambition workshop

	Name	Title	Meeting Date
1	Andrej Poropat	President of The Rijeka City Council, entrepreneur	07.09.2018.
2	Marko Filipović	Deputy Mayor, City of Rijeka	07.09.2018.
3	Nataša Zrilić	Advisor to the Mayor for Economic Development, City of Rijeka	07.09.2018.
4	Željko Jurić	Head of IT department, City of Rijeka	07.09.2018.
5	Jana Sertić	Head of Department of Entrepreneurship, City of Rijeka	07.09.2018.
6	Ivan Šarar	Head of Department of Culture, City of Rijeka	10.07.2018
7	Danko Venturini	CEO, Ventex d.o.o.	07.09.2018.
8	Boris Popović	CEO, Alarm Automatika d.o.o	07.09.2018.
9	Gordana Nikolić	Dean, PAR Business School	07.09.2018.
10	Ivan Roje	Cloud Specialist at Microsoft	07.09.2018.
11	Tina Ragužin	Senior Advisor for Development of Entrepreneurship, Department of Entrepreneurship, City of Rijeka	07.09.2018.
12	Tatjana Perše	Head of eGovernment, IT department, City of Rijeka	07.09.2018.
13	Vedran Kružić	Regional Development Agency of Primorje Goranska County	07.09.2018.
14	Danijel Antoni	IT Security Advisor, IT department, City of Rijeka	07.09.2018.
15	Nenad Lazarić	Head of Development, IT department, City of Rijeka	07.09.2018.

Appendix IV: List of interviewees in the first assessment visit

	Name	Title	Meeting Date
1	Anton Lucijanović	Director, Erste Bank	9.7.2018
2	Diego Marot	Sales director – Istria, Rijeka and Lika regions, PBZ Bank	9.7.2018
3	Robert Maršanić	Head of planning & design – Rijeka Promet d.d.	9.7.2018
4	Krunoslav Ivanović	Micro entrepreneur, CEO at KRK sistemi d.o.o.	9.7.2018
5	Sven Maričić	Faculty of Medicine, Assist. Professor, Rector adviser for new technologies, Startup 3D technologies in biotech	9.7.2018
6	Boris Popović	CEO, Alarm automatika d.o.o	9.7.2018
7	Saša Ukić	CEO, 3t. Cable d.o.o.	9.7.2018
8	Dario Dobrilović	Advisor, Department of Entrepreneurship, City of Rijeka	10.7.2018
9	Barbara Olenik Staničić	Senior expert associate at Croatian Chamber Of Economy, County Chamber Rijeka	10.7.2018
10	Mile Pavlić	CEO, RIS Software d.o.o.; Professor at UniRi	10.7.2018
11	Zlatan Car	Professor at UniRi Technical faculty & informatics	10.7.2018
12	Vojko Obersnel	Mayor – City of Rijeka	10.7.2018
13	Ivan Šarar	Head of Department of Culture – city of Rijeka	10.7.2018
14	Damir Medved	Principal consultant – Ericsson Nikola Tesla	10.7.2018
15	Andrej Poropat	President of The Rijeka City Council, entrepreneur	10.7.2018
16	Jana Sertić	Head of Department of Entrepreneurship, City of Rijeka	10.7.2018
17	Nenad Seifert	Regional director, Croatian employers association (HUP)	11.7.2018
18	Danko Venturini	CEO, Ventex d.o.o.	11.7.2018
19	Emil Priskiće	Deputy Mayor – City of Opatija	11.7.2018
20	Jadranko Novak	Owner, Nomen Software; university professor	11.7.2018
21	Gordana Nikolić	Dean, Business School PAR	11.7.2018
22	Srđan Škunca	Head of City Department of Development, Urban Planning, Ecology and Land Management, City of Rijeka	11.7.2018
23	Zeljko Juric	Head of IT department, City of Rijeka	11.7.2018
24	Boris Golob	CEO at STEP RI Science & Technology Park University of Rijeka	20.7.2018
25	Marko Filipović	Deputy Mayor, City of Rijeka	21.8.2018

Appendix V: Relevant Good practices

Good Practice 1: Open data portal¹⁷

The City of Rijeka has an Open Data portal that serves to collect, categorise and distribute the open data of the City of Rijeka, its utility companies and Institutions. Open data is published in a format that is computer-readable and open, meaning that the machine or computer can read and interpret it independently, regardless of the platform used.

The most frequently used data is from the Property Management Department of the City of Rijeka. The data provides clear insight into the list of available or leased properties owned by the City. It is linked with Google Maps so that users can visualise the location in addition to relevant information such as address, surface area, leaseholder's name, business activities performed, price, duration of the lease, ground plan for available properties for rent, etc. The list is updated daily.

Good Practice 2: Entrepreneurship grants¹⁸

To relieve funding constraints and support the innovation ecosystem, the city of Rijeka has introduced public calls for applications to receive grants under the General Program of Measures to Promote Development of Entrepreneurship.

Applications are accessible via the city's e-Services portal and information service, where detailed information on specific measures, the filing process, as well as information on the required documentation are contained in the text.

Possibilities for online application facilitate accessibility to the general populace. Additionally, the handy tutorial for use of the provided Internet service ensures as wide reach as possible and a reduction in error related disqualification.¹⁹

¹⁷ <http://data.rijeka.hr/>

¹⁸ <https://www.rijeka.hr/javni-poziv-za-podnosenje-prijava-za-dodjelu-nepovratnih-subvencija-poduzetnicima-grad-rijeke/>

¹⁹ http://gov.rijeka.hr/UserDocsImages/dokumenti/Tutorijal_Subvencije_za_poduzetnike.pdf

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