

Improvement of local digital economy



City of Dubrovnik ACTION PLAN URBACT III - TechTown



IMPRESSUM

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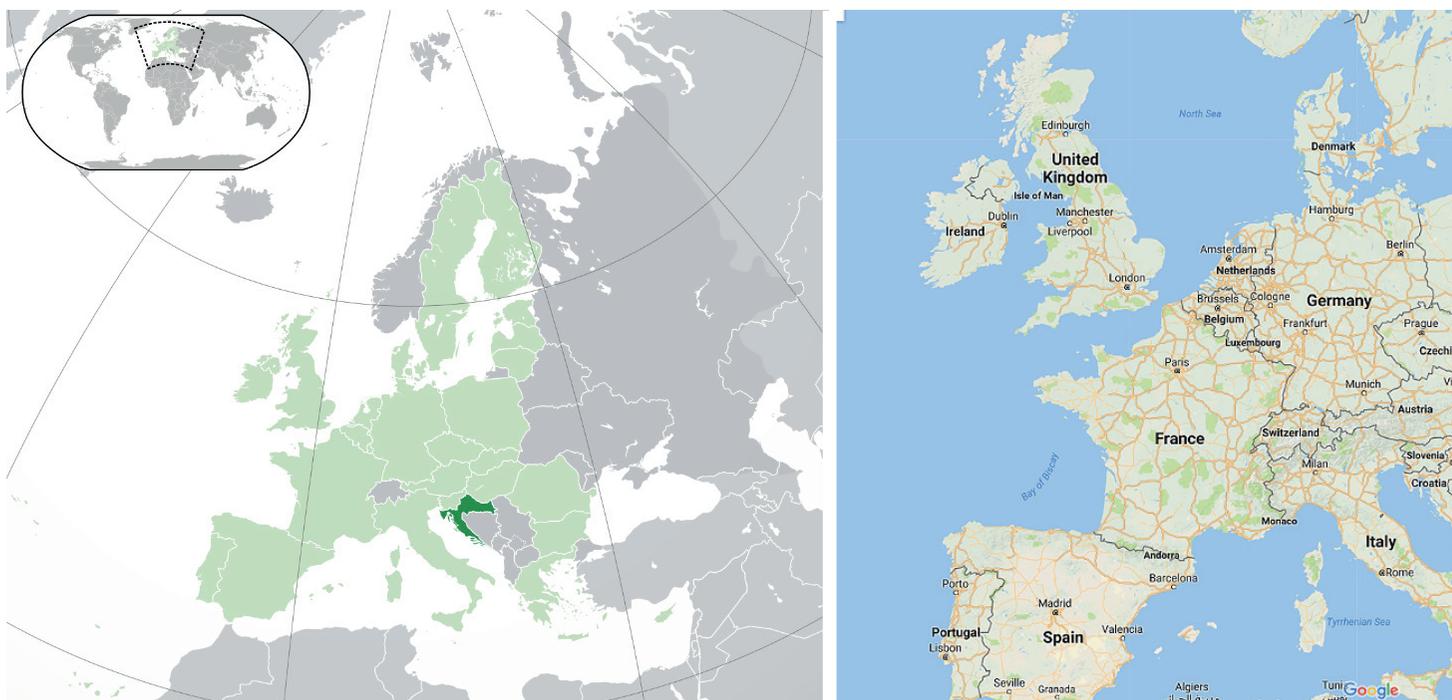
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Croatia – General Information

The Republic of Croatia is a Central European and Mediterranean country, bordering Slovenia, Hungary, the Adriatic Sea / Italy, Serbia, Bosnia and Herzegovina and Montenegro.

It covers a land area of 56.691 square kilometers and has a population of about 4.29 million people (2011 census). Over 90% of the population are ethnic Croats.

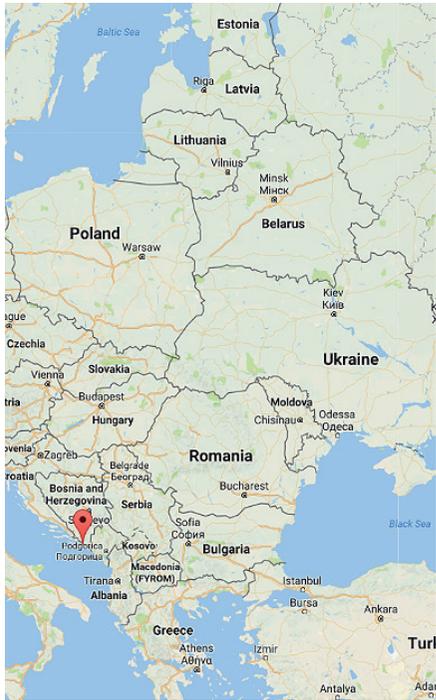
59.6% of the total population is considered urban population (2017) and it is estimated that 72.7% of the population are internet users (2016).

On July 1st 2013 Croatia became the European Union's 28th Member State.

City of Dubrovnik – General Information

Dubrovnik is a small Croatian city located at the south-eastern tip Croatia's Adriatic Coast. It is one of the most prominent tourist destinations on the Mediterranean, a seaport and the seat of Dubrovnik-Neretva County.

Dubrovnik's unique cultural and political history (dating from the municipal statue of the Dubrovnik Republic of 1272), also with its world famous historical heritage and natural beauty (it is included in UNESCO's registry of World Cultural Heritage) - make it one of the most attrac-



tive and well known cities in the Mediterranean. With extraordinary natural beauty and cultural heritage, Dubrovnik is a city with a rich tourist offer. This city of luxurious hotels and beautiful natural surroundings, is attractive in every season. Its relative geographic isolation has been well overcome by –efficient and frequent air transportation, and speed hydrofoil service.

The City of Dubrovnik is a local self-government authority employing 211 civil servants. Departments include:

Mayor’s Office, Administrative Department of Culture and Heritage, Administrative Department of finance, Administrative Department of Tourism, Economy and Sea, Administrative Department of Education, Sports, Social Welfare and Civil Society, Administrative Department for Traffic, Administrative Department of Construction and Project Management, Administrative Department for City Property Management, Administrative Department of Spatial Planning Documentation, Licenses, and Construction, Administrative Department of Urbanism, Spatial Planning and Environment, Administrative Department for Municipal Utilities and Local Government, Administrative Department for European Union Funds, Regional and International Cooperation, City Council, Internal Audit Department

Also, the City co-owns six public utility companies and 10 public cultural institutions.

The city budget for the year of 2018 is about 94.2 million Euro.

The population of Dubrovnik is 42,615 according to the 2011 census, with about 30,000 people living in the city proper. Besides the urban area, the administrative area of the city includes three inhabited islands (Koločep, Lopud and Šipan), and several rural settlements.



The Economy and Labor Market

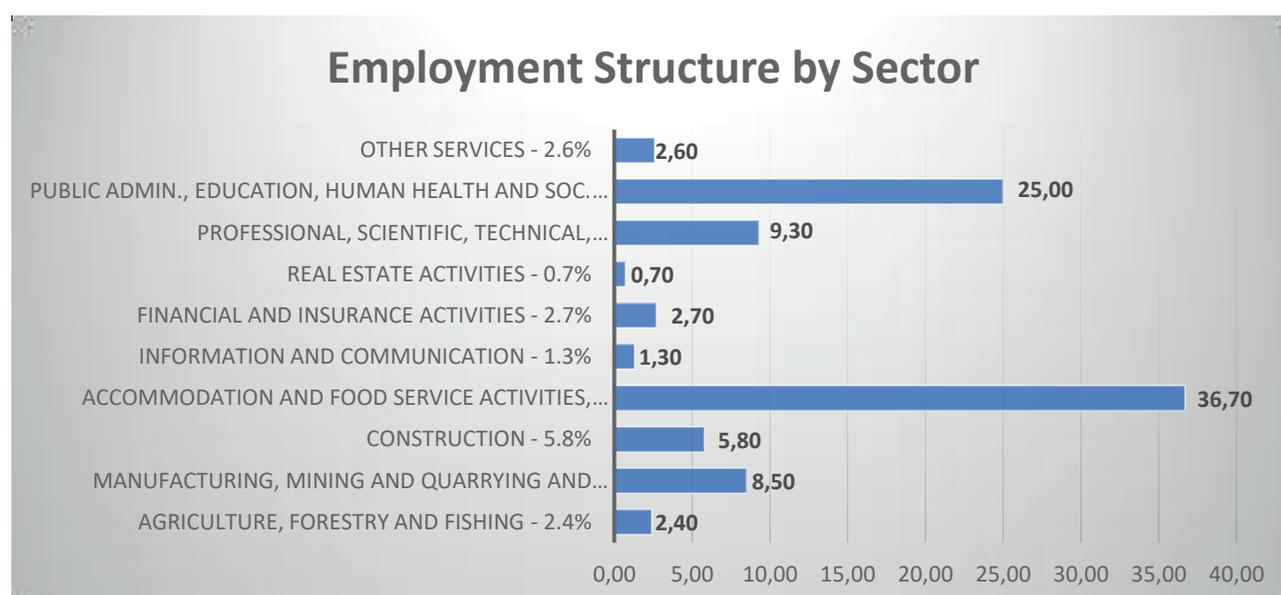
Croatia became a member of the EU in July 2013. Access to the EU internal market has helped connect the thriving part of the economy to global value chains, and tourism is experiencing a historic high¹.

Croatia's economy is expected to continue its growth in 2018, similar to the growth in 2017 (around 3%). A declining unemployment rate together with a strong tourist sector – supported by important investments to expand tourism capacity – should continue to underpin consumer spending in 2018 (European Commission, Economic Forecast-Croatia, 2017).

Dubrovnik's local economy is dominated by tourism and related industries, which account for 37,6% of employment. Tourism dominates the Croatians service sector accounting for up to 20% of Croatian GDP and with continuous growth. In 2017 the growth of international tourist arrivals was 9% (UNWTO Tourism Highlights, 2017²).

Although it provides great potential, the tourism-oriented economy leads to one of the greatest challenges that the Dubrovnik labor market is facing – a high rate of seasonal employment and a dominant mono-economy.

The unemployment rate in Dubrovnik is one of the lowest in Croatia, 6,9%, although with high numbers of youth unemployment – 1 in 3 unemployed persons is between 15 and 29 years old and highly qualified³.

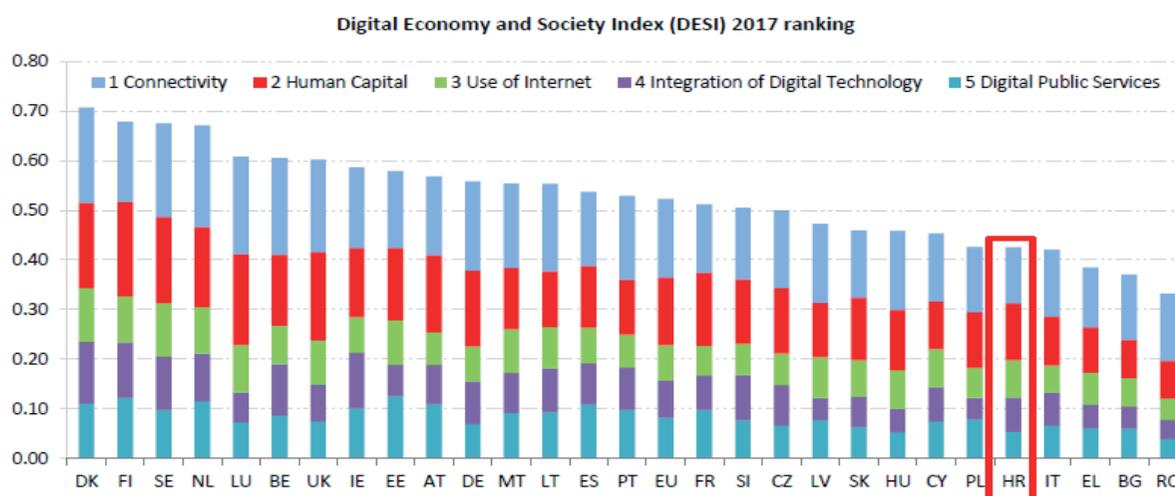


Croatian Pension Insurance Institute, December, 2017

- 1 The World Bank, 2017., <http://pubdocs.worldbank.org/en/308421507748390598/Croatia-Snapshot-Fall2017.pdf>
- 2 <https://www.e-unwto.org/doi/pdf/10.18111/9789284419029>
- 3 Croatian Employment Services, <http://www.hzz.hr/default.aspx?id=10053>

City of Dubrovnik – The digital economy and Smart City context

According to the Digital Economy and Society Index (DESI), in 2017 Croatia ranked 24th. Croatian citizens are above average users of the Internet and their digital skills are steadily progressing. The use of digital technologies by enterprises is close to average. Digital Public Services are slowly improving although Croatia’s low performance in Connectivity could slow down the further development of its digital economy and society (DESI, 2017).



Source: Digital Economy and Society Indeks 2017, http://ec.europa.eu/newsroom/document.cfm?doc_id=42995

National percentages of Internet users, ICT specialists, STEM Graduates and citizens with ‘at Least Basic Digital Skills’ show that the Human Capital is, although steadily increasing, still performing below the EU average. Further research shows that Croatians are active Internet users. In particular, they like to read news, listen to music, play games or watch videos and movies online, but still engage less in eBanking and eCommerce than other Europeans do.

Regarding the Integration of Digital Technology, Croatia is slowly progressing. Companies are above average users of Cloud Services and RFID while eCommerce figures are steady and the turnover from SMEs selling online is increasing. Looking at the Digital Public Service area, Croatia’s performance in the availability of Open Data is at EU average. The number of eGovernment users is slowly increasing but there is no progress in the delivery of services.⁴

4 Croatia DESI country profile, 2017. http://ec.europa.eu/newsroom/document.cfm?doc_id=42995

● **Strengths**

- Relatively high IT literacy, high educational level
- (2 out of 3) Universities in Dubrovnik are of IT sector
- Good broadband access within the region
- Greatest ICT demand from tourism sector (the dominant local business sector)

● **Weaknesses**

- Tendency of declining number of ICT companies within the region
- Lack of knowledgeable professionals
- Lack of ICT companies that can satisfy high local/regional demand for technology and job opportunity in this sector
- Lack of current 'good local examples' within digital economy
- Lack of entrepreneurship among youth (self-employment, SME's)
- Average salaries within SME's/digital economy not competitive (compared to bigger cities in Croatia)

● **Opportunities**

- Sector growth is encouraged by various national and EU funding programmes (e.g. Horizon2020)
- E-learning as an answer to geographical isolation of Dubrovnik
- Digitalization of most frequently used city public services
- Sufficient sources of national funding for SME's to develop and/or become more competitive -(develop the ICT sector within the business)
- Further development of digital economy within tourism sector

● **Threats**

- 'Brain drain' – tendency of professionals leaving the region / high demand for IT professionals within EU
- Not enough youth are interested in education within ICT sectors
- Competition of digital economy from bigger cities in the area is too strong for the local SME's
- ICT infrastructure is developing too slowly to meet the demands

5 Dubrovnik-Neretva county ICT strategy, 2014, <http://www.edubrovnik.org/wp-content/uploads/2015/10/ICT-strategija-Dubrova%C4%8Dko-neretvanske-%C5%BEupanije.docx>

Dubrovnik Smart City vision and conceptual model

Through implementation of a holistic smart city model, the City of Dubrovnik could strengthen its existing competitive advantages by using technologies and increase the quality of life for the citizens, ensure competitiveness and long-term sustainability.

Objectives of the Smart City of Dubrovnik:

Quality of life – Bring public administration and the educational system closer to the citizens by aligning city services with the needs of the citizens and by making them more accessible, affordable and faster.

Service efficiency – Optimize costs, generate savings and increase efficiency of utility services through real time service management.

Smart services in culture and tourism – Increase city revenues from tourism and cultural activities by using technology and developing new services.

Internal efficiency – Optimize and improve the business / organizational processes for the city and all relevant stakeholders by using the smart city concept.



Dubrovnik smart city key areas of activity

Mobility and infrastructure

- Transportation
- Parking
- Infrastructure

Economic development

- Employment and economic development
- Entrepreneurship and innovation
- Tourism and culture

Quality of life

- Waste and water management
- Urban development and landscaping
- Environmental protection
- Youth and sports
- Social care
- Education
- Civil protection

Management and institutions

- Citizen services
- Economic and financial management
- ICT and internal functions support

Source: Strategija razvoja pametnog Grada Dubrovnika, 2015

One of the first steps undertaken by the City of Dubrovnik was development of Smart City Dubrovnik Strategy⁶ which contains a primary analysis of the city and its services. Based on this evidence the Strategy proposes a set of 17 ICT/Smart City projects that would digitalize and optimize city services by making them more accessible to citizens and private companies.

This Strategy formed the backdrop against which this IAP has been developed.

Dubrovnik Business Incubator

City of Dubrovnik Development Agency DURA is acting as one of the two official Business Support Institutions.⁷ Between 2014 and 2016 around 170.000,00 EUR was invested in the Business Incubator infrastructure. Within the last five years, the Business Incubator provided space and support to 36 start-ups. Out of these 36 start-ups, 30 are currently operating and developing, while 6 of them have closed. The subsequent success rate is 83%.

Besides the regular support services that DURA provides through the Business Incubator, it also:

- Acts as an info point for all local entrepreneurs – provides information from “How to start-up a business” to “Sources of financing.”
 - *From 2014 to 2017, the number of consultations provided increased by 254%.*
- Organizes and implements training and workshops for entrepreneurs through Start-Up Academy Program.
 - *From 2014 to 2017, the number of participants increased by 1.221%.*
- Provides service in Creation of Business plans and Investment studies.
 - *15 Business plans and 12 Investment studies created*
- Offers Mentorship programmes for IOT Start-ups.
 - *In 2016 – 12 mentorship programmes completed*
- Organizes events and competitions for start-ups and other businesses aiming to promote and empower business ideas and start-ups.
 - *Start-up Weekend event held in 2013, 2014, 2015.*
 - *Hackathon event held in 2015, 2016, 2017.*
 - *CityOS Smart City Startup Conference held in 2015, 2016.*

6 City of Dubrovnik Smart City Strategy, http://dura.hr/user_files/admin/strateski%20dokumenti/Strategija%20razvoja%20pa-metnog%20Grada%20Dubrovnika.pdf

7 Republic of Croatia's Unique Register of Entrepreneurial Infrastructure, <http://reg.mingo.hr/pi/public/#>

The Integrated Action Plan context

The City of Dubrovnik Development Agency DURA joined the URBACT III Action Planning Network 'TechTown' in May 2016. TechTown is a network of 11 medium-sized cities⁸ from 10 different EU countries aiming to explore how small and medium sized cities can maximize the job creation potential of the digital economy.

From May 2016 to May 2018 the City of Dubrovnik as part of the network, examined whether there is a potential for spillover from stronger city and regional level digital economies, explored the role of the city in growing the digital economy, examined how clusters can work at the city level and looked collaboratively at what cities can do to support business to access the digital skills and innovations they need in order to grow and compete⁹.

The network focused on four themes:

- Better understanding the digital economy
- Growing digital jobs
- Finding, developing, and retaining talent
- Governance

The URBACT Local Group (ULG), a group of all relevant local stakeholders, was formed in order to define and develop an Integrated Action Plan on improving digital economy on the local level.

ULG members:

Public sector

- City of Dubrovnik – Vlaho Margaretić, (formerly Head of Department of Entrepreneurship, Tourism and Sea)
- City Council – Ljubo Nikolić
- Croatian Employment Services, Regional Centre in Dubrovnik – Katarina Krile, Project implementation department
- Croatian Chamber of Economy, Dubrovnik County Chamber – Nikolina Trojić, Senior Associate

Educational sector

- University of Dubrovnik – Ivana Palunko, Docent
- Rochester Institute of Technology Croatia – Andrej Šarić, Lecturer

8 Network partner cities: Barnsley, UK (Lead partner); Basingstoke, UK; Cesis, Latvia; Clermont-Ferrand, France; Gavle, Sweden; Limerick, Ireland; Copenhagen/LOOP City, Denmark; Nyiregyhaza Hungary; San Sebastian, Spain; Syracuse, Italy; and Dubrovnik, Croatia.

9 TechTown Baseline Study, 2016., http://urbact.eu/sites/default/files/2016-03-08_techtown_baseline_study_final_content.pdf

Private sector

- IntuIT Ltd – Vedran Vukas Džaić, director
- Laus CC Ltd – Ljubo Nikolić, assistant director
- Enum Software – Ivan Brčić, co-founder
- Universal Industries – Robert Kalačić, director

Civil society

- Croatian Association of Technical Culture CATC – Jelena Vlahović, Secretary

Managing and coordinating the creation of IAP:

City of Dubrovnik Development Agency DURA:

- Alisa Aliti Vlašić
- Nikša Vlahušić
- Marijana Puljas

From October 2016, when the ULG group was formed, until September 2017 9 active and participative ULG meetings were held.

Throughout the meetings the URBACT Results Framework Guidance on Integrated Action Plans (IAP) was used as the main framework. A result framework means defining results from the outset of the project, the change that is to be achieved through the project, deadlines, and how results will be measured¹⁰.

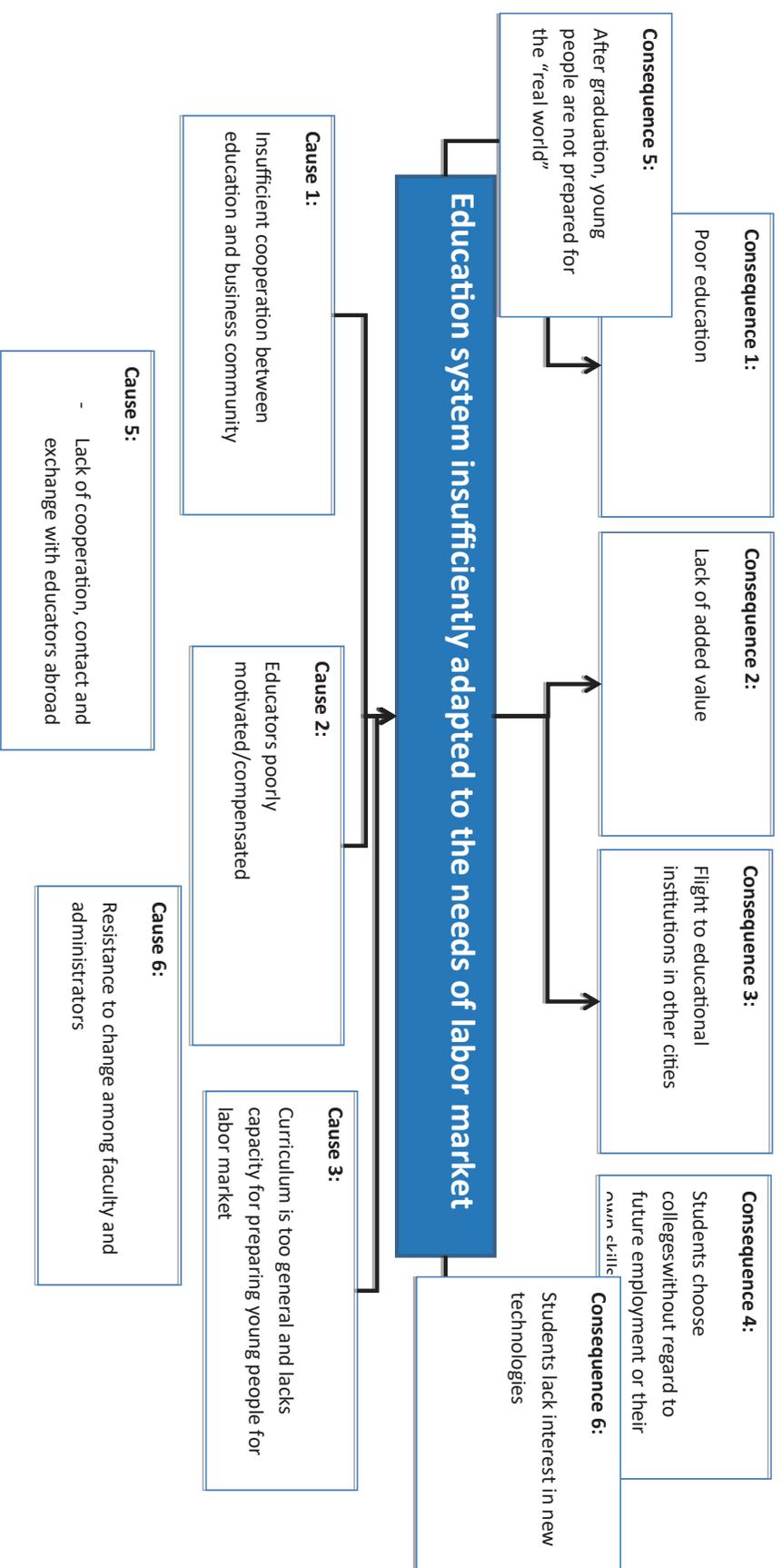
Creation of the IAP included the following steps:

- Analysis of local economy and its potential,
- Definition of problem statements and elaboration of problem trees,
- Mapping and analysis of stakeholders
- Extending invitations to additional ULG members
- ULG members participated in TechTown transnational meetings presenting local IAP progress and exchanging knowledge on good practices from other partner cities,
- defining the IAP objective
- Elaborating the action plan

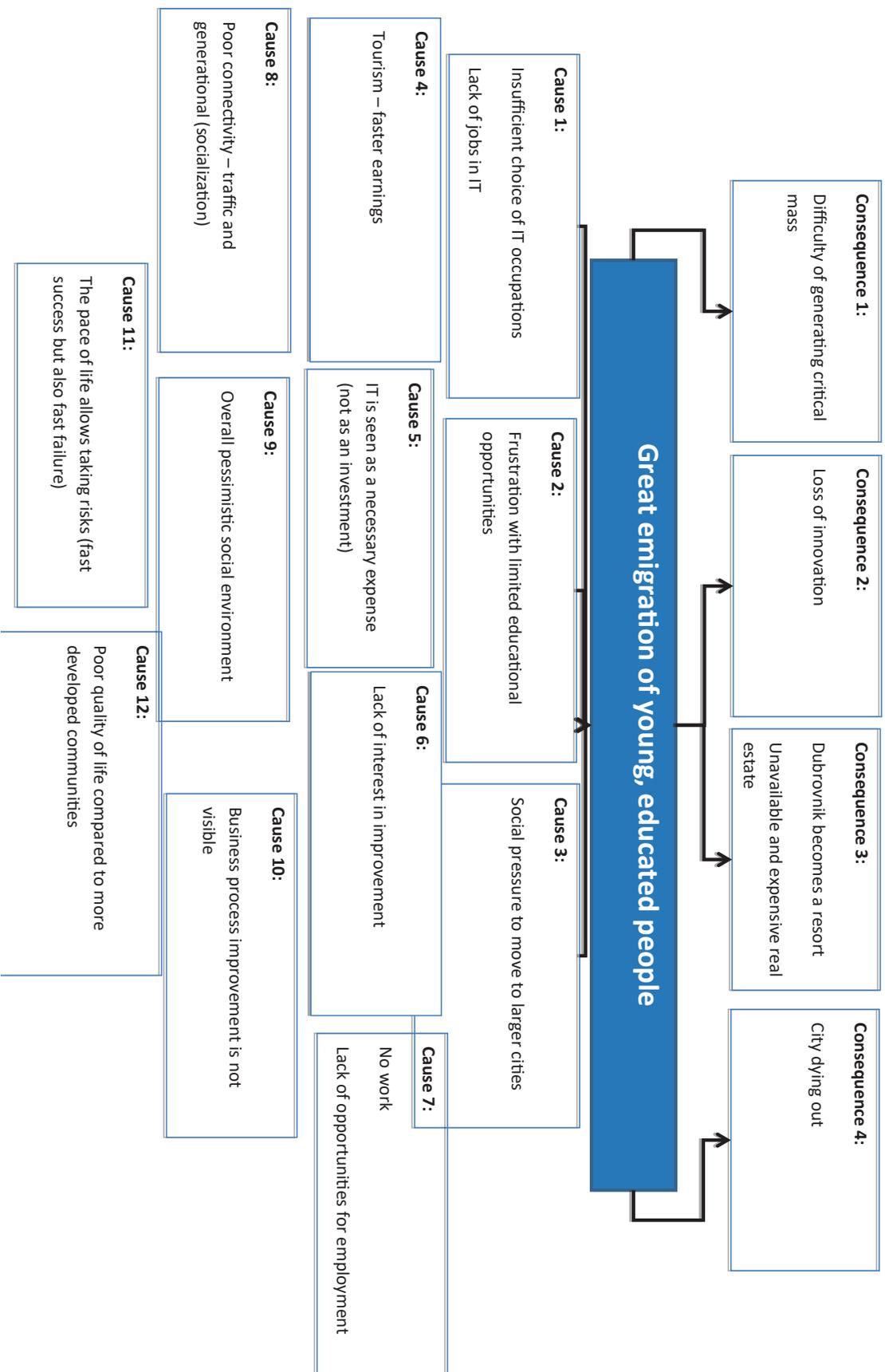
ULG developed 3 problem trees around the following problems:

1. High levels of emigration of young and educated people (brain drain)
2. Educational system poorly adapted to the labour market (mismatch between the skills available/taught/those needed to develop a successful digital economy)
3. Entrepreneurs and citizens not equipped and not informed adequately to use key potentials from digital sector

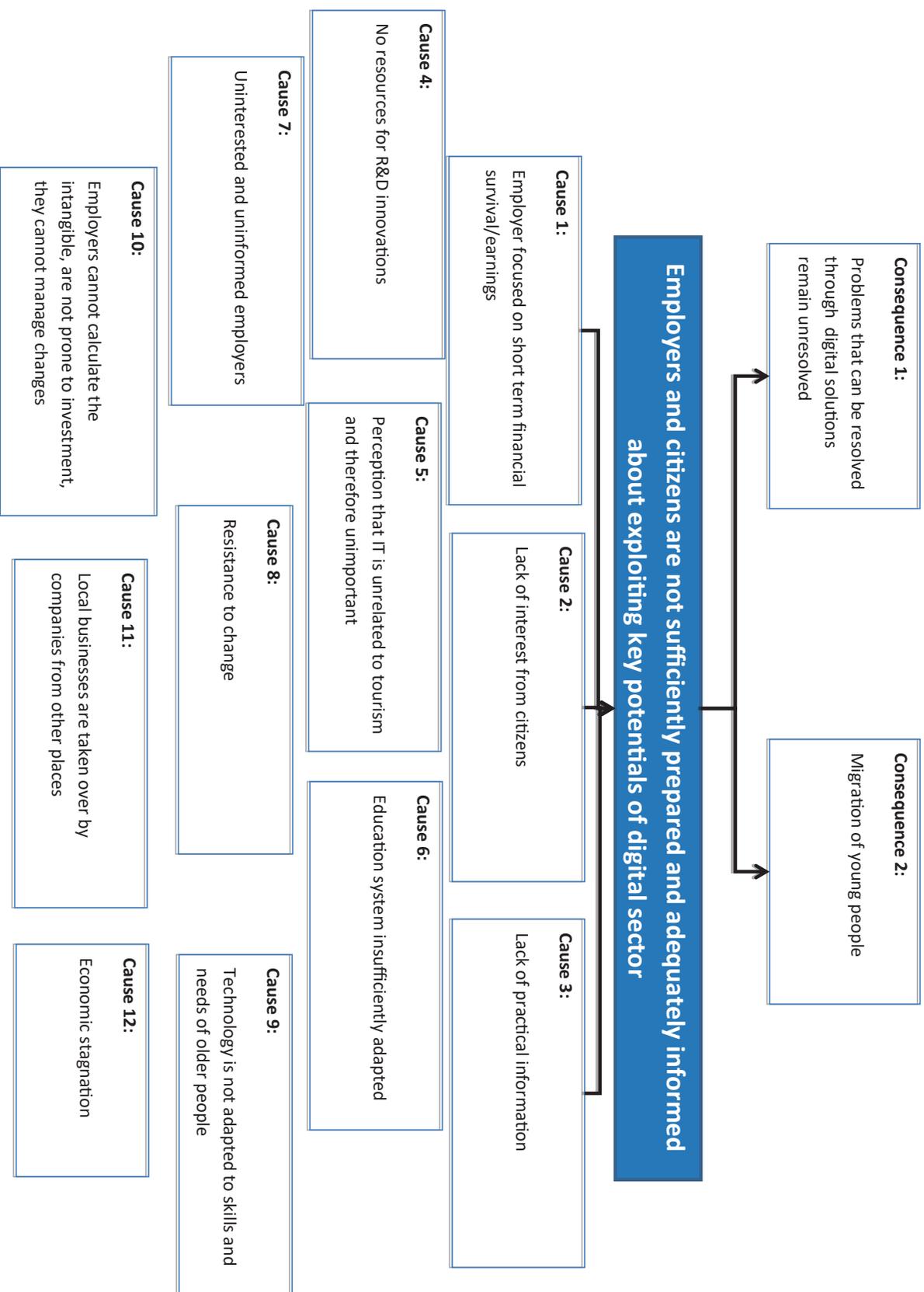
10 URBACT Guide Applying the result framework to Integrated Action Plans, 2016, http://urbact.eu/sites/default/files/evaluation_guide_usu_final.pdf



Problem tree 1., ULG group work



Problem tree 2., ULG group work



Problem tree 3., ULG group work

INTEGRATED ACTION PLAN

SPECIFIC OBJECTIVE

Improvement of local digital economy through educational system, digitalization of public services and supporting digitalization of existing business sector.

OBJECTIVES

Dubrovnik's TechTown Action Plan is divided into three categories or sectors;

1. INCREASING THE USE OF DIGITALIZED CITY SERVICES
2. INCREASING THE RATE OF DIGITALIZATION OF THE EDUCATIONAL SECTOR
3. INCREASING THE RATE OF DIGITALIZATION OF BUSINESS

The decision to divide the Action Plan in these categories was made by Dubrovnik ULG members with the understanding that the separation of goals would make sense in a local context, providing clear limits and scope for all actions and outcomes. Each sector/category is represented by one or more Dubrovnik ULG members.

Although it provides great potential, the tourism-oriented economy leads to one of the greatest challenges that Dubrovnik labor market is facing – a high rate of seasonal employment and a dominant mono-economy. **Through this Integrated Action Plan the intent is to provide diversification of the current mono-economy.**

QUICK WINS

No.	ACTIONS	Completion date
1	Unified web portal for citizens - participation in public sector, regarding permits, subsidies, requests, unpaid bills, bonuses and discounts. Promotion and dissemination in local media	2019.
2	Education for harmonization of ICT systems with GDPR (General Data Protection Regulation - EU 2016/679) for city employees	2019.
3	Upgrade and integration of already available city services	2019.

1. INCREASE THE USE OF DIGITALIZED CITY SERVICES

No.	ACTIONS	RESPONSIBLE / SUGGESTED BY	TIME FRAME	FUNDING	OUTPUT INDICATORS
1.1	Digitalization of city government - unified web portal for sharing documents, contracts, work tasks and permits among city departments and city companies	Department for Mayor Affairs	2020.	140.000,00 EUR	- No. of process types citizens can process with Local government through web portal and services
1.2	Digitalization of city council - unified web portal for sharing documents, suggestions, agendas, conclusions. Automation and versioning of document sharing between councilors and citizens before and after council sessions	Department for Mayor Affairs - City Council Service	2020.	180.000,00 EUR	- No. of city council debates prepared on digital platforms. - Document preparation and dissemination - Citizen opinions included in material preparation (originated from web portal services defined in 1.1.)
1.3	Unified web portal for citizens - participation in public sector, permits, subsidies, requests, unpaid bills, bonuses and discounts. Promotion and dissemination in local media	Department for Mayor Affairs - Division for Informatics, DURA	2019.	180.000,00 EUR	- No. of citizens registered for services on digital platform - No. of documents issued. - No. of suggestions made by citizens on digital platform. - No. of articles in local media.
1.4	Education for harmonization of ICT systems with GDPR (General Data Protection Regulation - EU 2016/679) for city employees	Department for Mayor Affairs – IT Services division	2018.	2.000,00 EUR	- No. of city employees participating in education
1.5	Upgrade and integration of already available city services	Department for Mayor Affairs - IT Services division	2019.	50.000,00 EUR	- No. of interconnected systems using city digital services (i.e. MIAS integration, eCitizen inbox...) - No. of projects/modules harmonized with new ICT standards and regulations
1.6	City level Wi-Fi infrastructure	DURA	2019. – 2020.	200.000,00 EUR	- Area covered by Wi-Fi

2. INCREASE THE RATE OF DIGITALIZATION OF THE EDUCATIONAL SECTOR

No.	ACTIONS	RESPONSIBLE / SUGGESTED BY	TIME FRAME	FUNDING	OUTPUT INDICATORS
2.1	Dedicated ICT workshops in elementary schools	DURA, NGO's	2019. – 2021.	40.000,00 EUR	- No. of schools teaching optional courses in fields of ICT, programming, electronics and other related to digital - No. of students participating in workshops
2.2	Dedicated ICT workshops at university level	University of Dubrovnik, Rochester Institute of Technology Croatia, DURA	2019. – 2021.	54.000,00 EUR	- No. of students participating in workshops
2.3	Dedicated ICT workshops for citizens (basics: email, MS Office packet, access to data, using city ICT solutions)	DURA, NGO's	2019. – 2021.	40.000,00 EUR	- No. of citizens participating in workshops
2.4	Yearly fair/conference for young students with focus on ICT solutions developed in Dubrovnik	DURA, NGO's	2019. – 2020.	20.000,00 EUR	- No. of attendees per conference/event - No. of new solutions presented



3. INCREASE THE RATE OF DIGITALIZATION OF BUSINESS

No.	ACTIONS	RESPONSIBLE / SUGGESTED BY	TIME FRAME	FUNDING	OUTPUT INDICATORS
3.1	IT projects prepared and rolled out by the local government with aim to increase the rate of digitalization of business (i.e. basic IT solutions for startups and new companies; documentation management solutions for SMEs, IT solutions for tourism related issues)	Department of entrepreneurship, tourism and sea	2019. – 2020.	120.000,00 EUR	- No. of solutions developed - No. of solutions deployed - No. of employees engaged in these IT deliveries
	Tax related benefits for employees with digital skills in IT companies	Department of finance	2019. – 2020.	30.000,00 EUR	- No. of employees included in tax benefit policies
3.2	ICT workshops for companies about modern ICT tools used in everyday work environment, PR and online marketing	DURA	2019. – 2020.	36.000,00 EUR	- No. of employees participating in workshops - No. of companies participating in workshops
3.3	Development of business incubator and mentorship programs for ICT startups	DURA	2019. – 2020.	250.000,00 EUR	- No. of ICT startups using incubator space - No. of ICT startups using mentorship program
3.4	Open Data Portal	DURA	2019.	130.000,00 EUR	- No. of data sets implemented in portal - No. of APIs or applications developed to data sets in portal by third parties - No. of registered users (developers)
3.5	Hackathon - yearly competition for engineers, programmers, designers...	DURA	2018. – 2020.	36.000,00 EUR	- No. of participants per conference/event - No. of new solutions presented
3.6	Yearly digital/ICT companies fair / conference	DURA	2019. – 2020.	20.000,00 EUR	- No. of attendees per conference/event - No. of new solutions presented

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