

Regional analysis of maritime industries in the Split-Dalmatia County - The CLIPPER Project

November 2017 – Analysis conducted by the Public Institution RERA S.D. for Coordination and Development of Split-Dalmatia County

SUMMARY

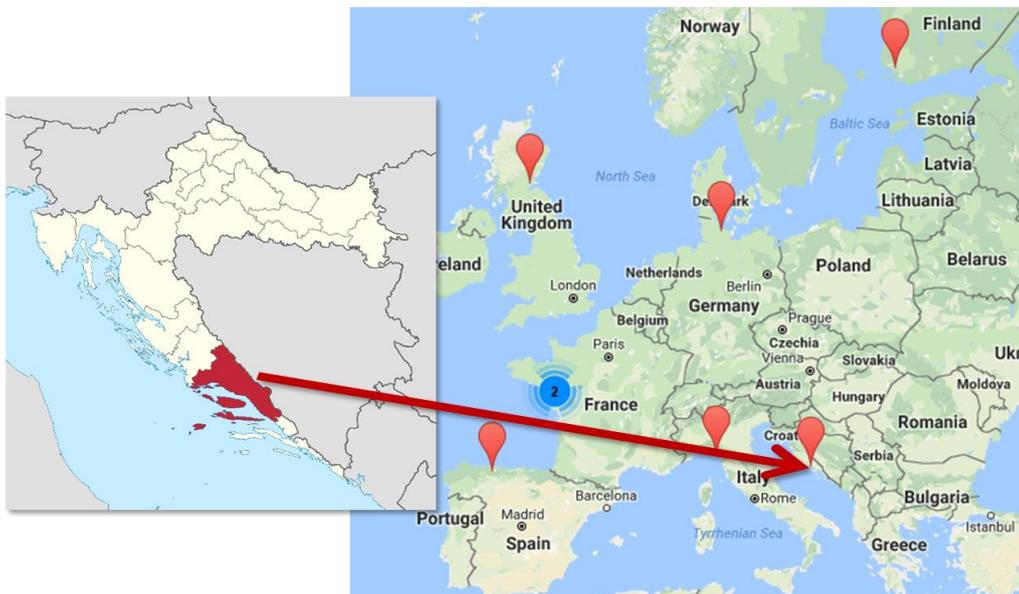


Figure 1. Geographical position of Split-Dalmatia County

The Split-Dalmatia County is the administrative-territorial unit in central Dalmatia (Figure 1), with its headquarters in Split. Spatially, it is the largest Croatian county with a total area of 14,045 km² of which 4,572 km² is a land, and rest of it is sea. In 2011 population census it had 454,798 inhabitants.

Since, nautical tourism is one of most important aspects of Croatian tourism, maritime infrastructure plays an important role in transport and economic development of Split-Dalmatia County as well as in entire Dalmatian region (Adriatic Coast). The share of nautical tourism of Split-Dalmatia County is between 10% and 14% depending of the measure of nautical tourism (Table 1), therefore on the State level it represents significant contribution.

Table 1. Share of nautical tourism of Split-Dalmatia County

<i>Nautical tourism</i>	<i>Republic of Croatia</i>	<i>Split-Dalmatia County</i>	<i>Share in total</i>
Water surface area (m ²)	3,764,124	434,830	11.6%
Surface area on land (m ²)	785,987	81,262	10.3%
Moorings	17,428	2,451	14.1%
Number of berths for land storage	4,880	603	12.4%

Nautical tourism in Split-Dalmatia County is increasing each year, but it needs a new maritime (harbour) infrastructure for the future increment. At the moment, existing harbour infrastructure of Split-Dalmatia County consists of:

- Harbour infrastructure at County level, consisting of 6 industrial ports, 10 ports of nautical tourism (8 county and 2 national importance), 65 ports open to public traffic (39 local, 20 county and 6 international), 10 sports and recreational ports (county level), 8 docks (5 counties and 3 state-owned), 4 shipyards (2 counties and 2 state-owned) and 1 service base
- Port of Split (*Splitska luka*), which is divided into passenger port (City port) and freight port (Northern port). The City port is faced with a lack of parking space for cars and moorings for mega yachts, as well as a cruise ship connection while Northern port faces the problem of lack of absence, lack and/or obsolescence of the port superstructure. Ferry ports on main roads generally have a problem of insufficient capacity and equipment. Generally speaking, it can be emphasized that sea ports of county significance (especially those for economic purposes) are insufficiently exploited with regard to the potentials and the need to grow.

Within the Split-Dalmatia County Development Strategy, the main development and long term obstacles in maritime infrastructure at County level are identified and are:

- Lack of moorings for mega yachts as well as cruise liners;
- Lack of organized anchors for boating sailors;
- Unauthorized use of commercial ports as well as outdated equipment (Northern port of Split);
- Ferry ports are inadequate for major transport routes.

The development needs in future period related to maritime infrastructure are:

- To foster the modernization of port infrastructure (operational coasts, port road and rail installations, water supply, sewerage, energy and telephone networks, and navigation facilities in port etc.) and superstructures (warehouses, silos, tanks, cranes etc.) and intermodal Traffic in North Port Split;
- To build or reconstruct the ferry port on main project directions;
- Increase capacity of nautical ports;
- Develop an integral study of the acceptance of nautical tourism boats in nautical ports, berths and temporary (summer) berths and anchors.

The support to nautical tourism and maritime infrastructure is maritime industry. At the moment, beside 2 LEs (shipyard in Split and shipyard in Trogir), there are 30 SMEs oriented on shipbuilding industry and 20 SMEs oriented on services of repair and maintenance that could support nautical tourism and maritime infrastructure of the County. More 141 SMEs are identified as suppliers of maritime industry. Further analysis of the maritime industry is presented in the following section.

Overview and key figures for the Split-Dalmatia County maritime industries

The manufacturing industry of Split-Dalmatia County consists of 380 enterprises, and 370 of them are SMEs (97%). According to NKD-2007 classification, shipbuilding industry is classified as „C30 – Manufacture of other transport equipment”. The data used in the analysis are from Croatian chamber of Economy (HGK)¹ for year 2016.

According to same data source, the maritime industry of Split-Dalmatia County consists of 2 large shipyards (in Split and Trogir) and 30 SMEs oriented on shipbuilding industry. The distribution of SMEs in maritime industry of Split-Dalmatia County is presented in Table 2.

SMEs with C30 as NKD-2007 class represent SMEs in shipbuilding industry, and SMEs with C3311, C3312 and C3315 as NKD-2007 class represent SMEs oriented on services of repair and maintenance. Together, there are 50 of them and they represent 13.5% of manufacturing SMEs of the County. But, there are more 141 SMEs that are supplying or could supply maritime industry with their products (raw materials, parts, equipment, and machines).

Geographical distribution of shipbuilding SMEs and SMEs oriented on services of repair and maintenance is presented in Figure 2. SMEs that are suppliers or could supply maritime industry with their products are presented in Figures 3 and 4.

Table 2. SMEs in maritime industry of Split-Dalmatia County

<i>NKD-2007 classification</i>	<i>Description of industry</i>	<i>Number of SMEs</i>	<i>Share in total</i>
C	Manufacturing	370	100.0%
C30	Manufacture of other transport equipment (shipbuilding)	30	8.1%
C3311	Repair of metal products	3	0.8%
C3312	Repair of machinery	5	1.4%
C3315	Repair and maintenance of ships and boats	12	3.2%
C22	Manufacture of rubber and plastic products	27	7.3%
C24	Manufacture of basic metals	4	1.1%
C25	Manufacture of fabricated metal products, except machinery and equipment	50	13.5%
C28	Manufacture of machinery and equipment	15	4.1%
C26	Manufacture of computer, electronic and optical products	10	2.7%
C27	Manufacture of electrical equipment	11	3.0%
C16	Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials	9	2.4%
C31	Manufacture of furniture	15	4.1%
Total		191	51.6%

¹ Source: Croatian chamber of Economy (HGK), Biznet Database, <http://www.biznet.hr/>. Note that enterprises with less than 5 employees are expelled from the analysis, since there is a doubt that they only exist, but they are not manufacturing anything.

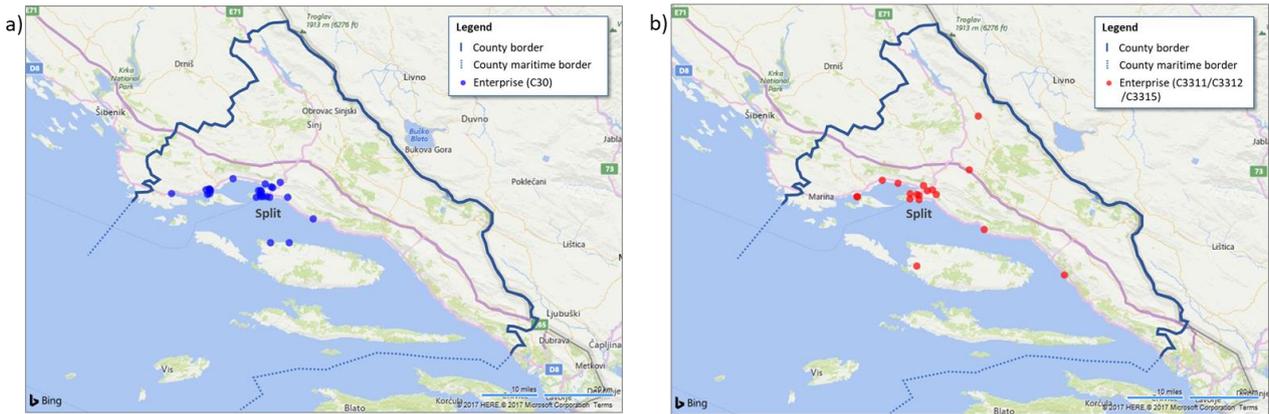


Figure 2. Geographical distribution of enterprises: a) C30 – Manufacture of other transport equipment (shipbuilding); b) C3311 / C3312 / C3315 – Repair of metal products / Repair of machinery / Repair and maintenance of ships and boats

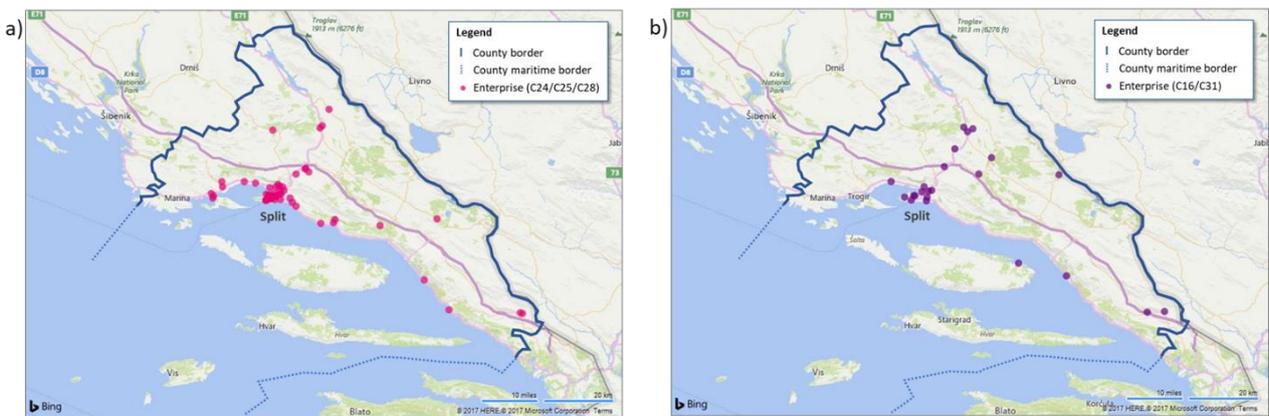


Figure 3. Geographical distribution of enterprises: a) C24 / C25 / C28 – Manufacture of basic metals / Manufacture of fabricated metal products, except machinery and equipment / Manufacture of machinery and equipment; b) C16 / C31 – Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials / Manufacture of furniture

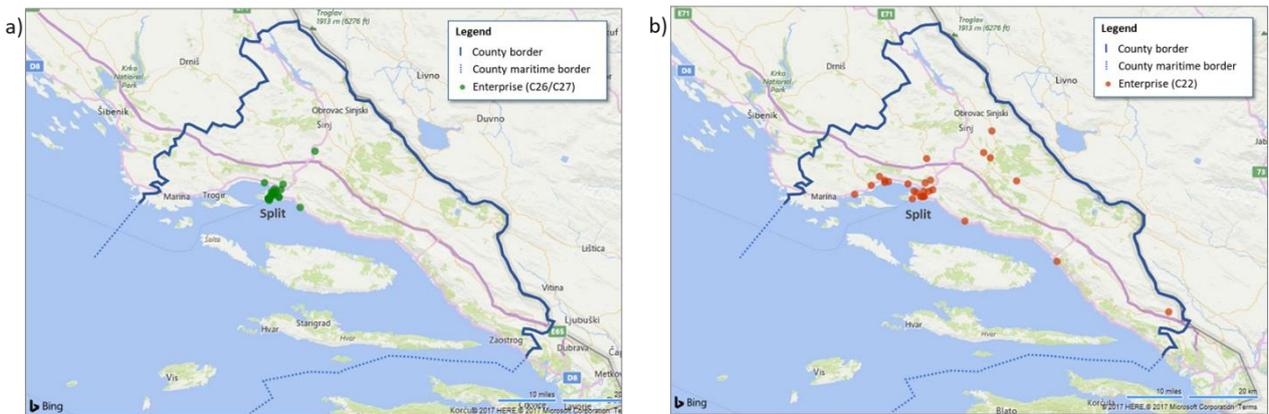


Figure 4. Geographical distribution of enterprises: a) C26 / C27– Manufacture of computer, electronic and optical products / Manufacture of electrical equipment; b) C22 – Manufacture of rubber and plastic products

Altogether, SMEs oriented to shipbuilding industry and their suppliers represent 51.6% of total SMEs, or 50.3% of total enterprises, in manufacturing industry of the Split-Dalmatia County. The rest of industry in Split-Dalmatia County belongs to beverage and food industry, textile industry, non-metallic mineral industry (cement, ceramics, and similar), and other smaller industries.

Priority 1: SME competitiveness through individual performance

Analysis of SMEs performance

A decade of global economic crisis had a significant impact on European economy, especially on European manufacturing industry. The dramatic drop in customer demand has led to reduced working hours, layoffs of workers and idle factories. The situation has been even worse in weaker economies, like Croatian economy.

On the other hand, the introduction of the Internet of Things and Services into the manufacturing environment has started a fourth industrial revolution, called Industry 4.0 (the first three industrial revolutions came about as a result of mechanization, electricity and IT). This new type of industry is based on Smart Factory model. The Smart Factory has a completely new approach to production: smart products are uniquely identifiable, may be located at all times and know their own history, current status and alternative routes to achieving their target state. The embedded manufacturing systems are vertically networked with business processes within enterprises and horizontally connected to the dispersed value networks that can be managed in real time. Smart Factories allow individual customer requirements to be met and mean that even one-off items can be manufactured profitably.

Therefore, Croatian manufacturing industry is facing a great challenge toward new industrial revolution. Taking into account performances of Croatian manufacturing industry in 2014, Roland-Berger consultants have calculated “Industry 4.0 Readiness Index” for Croatia as 1.6 on a scale from 1 to 5 (Figure 5). It means that Croatian manufacturing industry is not ready to accept changes, so it belongs to group of countries called: hesitators (Figure 5).

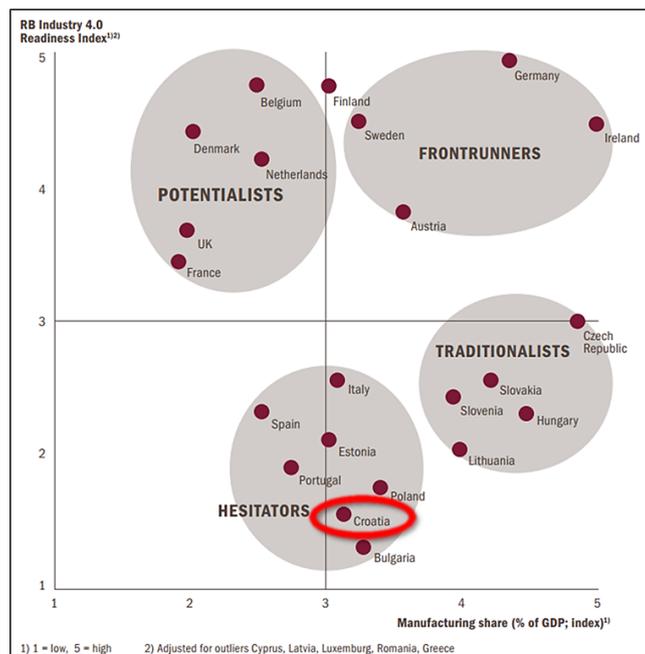


Figure 5. Roland-Berger's Industry 4.0 Readiness Index for EU countries

Another analysis of Croatian manufacturing industry was made in Croatian project “Innovative Smart Enterprise – INSENT” (<http://insent.fesb.hr/>) in 2015. A sample of 160 enterprises representing 8% of Croatian manufacturing industry was analysed and enterprises were grouped into four groups representing four industrial periods. Analysis shown that most of the enterprises belong to second industrial generation (Industry 2.0), which means that they belong to industrial evolution level of 1960’s and 1970’s. Most of these enterprises adopted only two technologies from third industrial generation: CNC machines and Computer-Aided Drafting (CAD).

In Figure 6, a distribution of a sample of Croatian manufacturing industry enterprises is compared with distribution of enterprises oriented to shipbuilding industry and their suppliers of Split-Dalmatia County (sample of 21 enterprise), with the respect to four industrial generations.

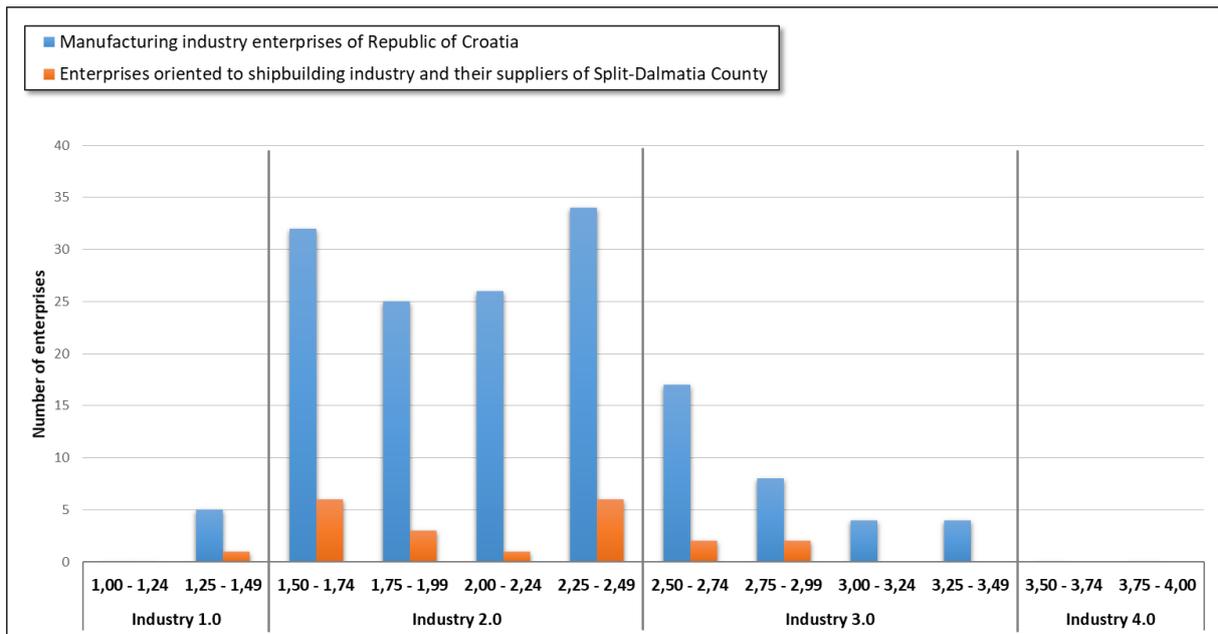


Figure 6. Distribution of enterprises with the respect to four industrial generations for Croatia and Split-Dalmatia County

Some most important findings of the analysis of SMEs oriented to shipbuilding industry and their suppliers of Split-Dalmatia County are:

- Single-item or small-lot production for known customer in 88% of SMEs;
- Annual income is less than 7 million EUR for 94% of SMEs;
- Usage only of a CAD software for product development in 75% of SMEs;
- There is no record of the path of the product in production system (no traceability) in 50% of SMEs;
- There is only approximation of stocks in the warehouse (no ERP system) in 50% of SMEs;
- Only functional organizational structure (without process-oriented or project-oriented approach) is used by 50% of SMEs;
- The Lean and Green principles and methods are not used at all in 81% of SMEs.

The analysis shows clear shortcomings in technological and organizational aspects of the maritime industry SMEs of Split-Dalmatia County. There is a lot of space for improvement, especially regarding adoption of new technologies and new organizational principles.

Access to new technologies and new market opportunities

According to the Boston Consulting Group (BCG), there are nine technologies and challenges that are transforming manufacturing industry today:

- 1) *Autonomous robots* – especially collaborative robots that can collaborate with human workers in assembly processes;
- 2) *Simulation* – simulation tools for optimization of products and production processes;
- 3) *Horizontal and vertical system integration* – vertical integration of production system from shop-floor level to management level inside enterprise, and horizontal integration enterprise with suppliers and OEMs within supply chain;
- 4) *The industrial Internet of Things* – new ICT devices that enable creation of cyber-physical production system that represents digital twin of a physical production system;
- 5) *Cybersecurity* – the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access;
- 6) *The cloud computing* – all information and data in the computer cloud;
- 7) *Additive manufacturing* – development of rapid prototypes and products by using 3D scanners and 3D printers;
- 8) *Augmented reality (AR)* – many AR apps are catering to a variety of industries, including manufacturing industry for some practical use in production systems.
- 9) *Big data* – it is a term applied to data sets whose size or type is beyond the ability of traditional relational databases to capture, manage, and process the data with low-latency; the data come from sensors, devices, video/audio, networks, log files, transactional applications, web, and social media - much of it generated in real time and in a very large scale.

For SMEs, especially for small enterprises, it could be difficult and expensive to adopt these new technologies. However, as global competition intensifies, the SMEs and Universities and Institutes need to work together and unite behind a strategy of creating a new business opportunities for SMEs by adopting some of the new technologies and new materials.

Regarding Republic of Croatia, analysis of SMEs made in 2017 has clearly shown that, beside financial problems, the biggest challenge of adopting new technologies is in lack of information/knowledge (Figure 7). Furthermore, same analysis shown that SMEs are looking for help and cooperation in implementation of new technologies (Figure 8).

Q7 - What challenges are you facing in implementing Smart Manufacturing technologies?

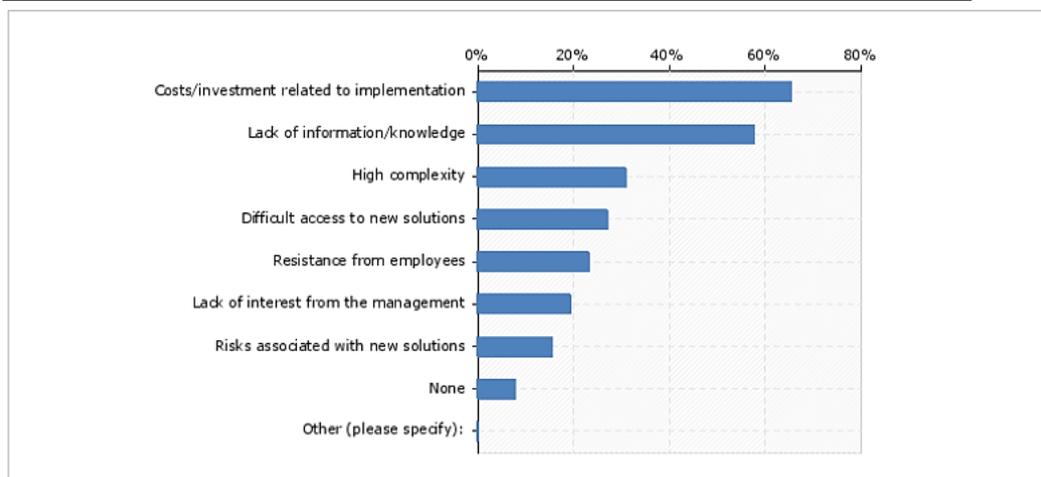


Figure 7. Challenges in implementation of new technologies for SMEs in Croatia (source: Smart Factory Hub, Interreg Danube, <http://www.interreg-danube.eu/Smart-Factory-Hub>)

In Split-Dalmatia County, within University of Split there is Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB) which represent most important partner for maritime industry SMEs, especially in the field of adoption of new technologies. With more than 50 ongoing scientific projects, FESB is an institution where science is the top priority. Number of publications in prestigious conferences and journals is constantly growing (more than 310 scientific papers in journals listed in Web of Science with more than 3300 citations), as well as the number of research projects. FESB is continuing to collaborate with prestigious scientific institutions in the world both as leading or collaborating institution. Due to its multidisciplinary nature, through various technological and professional projects FESB has a profound impact on the entire development in the region. In the last few decades FESB research groups have carried out many professional studies for companies such as Croatian telecommunications, Croatian power company, Split shipyard, Split-Dalmatian County, and many others. Professional and technological studies are related to IT, renewable sources of energy, lightning protection systems, wireless communications, electromagnetic compatibility, mechanical engineering, power engineering, impact of modern technologies on people and environment, monitoring and environment protection systems, etc.

Q19 - In which cooperation area would you be interested?

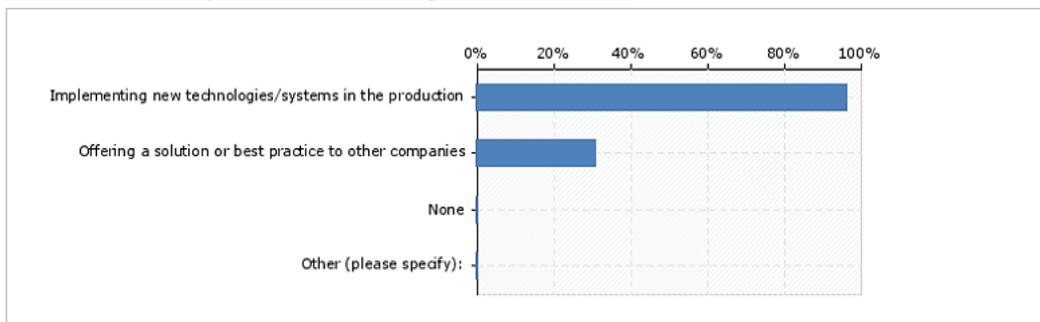


Figure 8. Interest for cooperation of SMEs in Croatia (source: Smart Factory Hub, Interreg Danube, <http://www.interreg-danube.eu/Smart-Factory-Hub>)

Only through collaboration of SMEs, University, and Government Organizations there is a possibility for maritime industry SMEs of Split-Dalmatia County to become innovative and ready for new emerging markets, like:

- Green Shipping – design and production of new ships and new shipbuilding processes that are environmentally friendly (low CO² emission, use of renewable energy, etc.);
- Off-shore aquaculture – design and production of products for off-shore aquaculture.
- Off-shore renewable energy – design and production of products for off-shore renewable energy, especially wind-turbines.
- Security, Safety and Surveillance – design and production of products for maritime security, safety and surveillance, due to new challenges caused by refugees, terrorism, and growth of maritime traffic.

It is clear that one maritime industry SME from Split-Dalmatia County cannot adopt new manufacturing technology, nor be ready for new emerging markets, alone by itself. It needs financial resources (Figure 7), help and cooperation (Figure 8) that can be achieved through clusters, networking, and new innovative funding solutions².

² These topics are addressed latter in sections: Priority 2, Priority 3 and Priority 4

Strengthening the innovation system

The Ministry of Economy, Entrepreneurship and Crafts is the creator of the development and implementation of the Republic of Croatia's Innovation Promotion Strategy 2014-2020, adopted by the Government of the Republic of Croatia on 17 December 2014 and published in the Official Gazette no. 153/2014. This Strategy, as one of the most important measures under Priority 1 entitled "Improving the efficiency of the national innovation system", provides for the establishment of a national body responsible for the implementation of the said Strategy, called the Innovation Council for the Republic of Croatia³.

The Ministry of the Economy, Entrepreneurship and Crafts is responsible for the implementation of two strategic projects funded by the European Structural and Investment Funds (European Regional Development Fund) within the Operational Program "Competitiveness and Cohesion 2014-2020", which began on June 1 2016 will ultimately contribute to the strengthening of the national innovation system. Strategic projects of the Ministry related to innovation system are:

- ***Supporting Cluster Competitiveness Initiatives***

Indicative allocation: 67,494,068.00 HRK (approximately 8,900,000 EUR; 85% of ESI funds)

Start of implementation: May 9, 2016

Project implementation period: May 2016 - June 2020

Partner: Croatian Chamber of Economy

Objective: To increase the competitiveness and improve the position of the Republic of Croatia within the global value chains and supply chains through the diversification of economic activities through the development of new products in the priority thematic and sub-thematic areas of the Strategy of Smart Specialization of the Republic of Croatia 2016-2020. (S3). The project will continue the process of S3 Entrepreneurial Discovery and enable the 13 S3 sub-thematic priority areas to be narrowed in line with the agreement with the European Commission, given that the S3 thematic and sub-thematic areas (approved by the European Commission) are broadly set. Through the activities of this Project, based on defining the Croatian economy's position in global value chains, potential export markets for new products and brand development, it will be possible to identify production niches within each of the 13 S3 sub-thematic priority areas that will be defined as areas Investment in research and development.

- ***Support for the establishment of Innovation Networks for Industry and Development of Thematic Innovation Platforms***

Project Value: 66,294,768.00 HRK (approximately 8,750,000 EUR; 85% of ESI Funds)

Start of implementation: May 9, 2016

Project implementation period: May 2016 - June 2020

Partner: Croatian Chamber of Economy

Objective: To create an effective and self-sustainable institutional, legal and strategic framework for supporting and encouraging private sector investment in research, development and innovation (establishment of S3 councils, Innovation Council for Industry and 5 thematic Innovation Councils for S3 thematic priority areas) as well as raising awareness On the importance of research, development and innovation in the business sector to exploit the potential and achieve industrial growth through the continuation of the process of smart specialization and entrepreneurial disclosure aimed at narrowing S3 thematic and sub-thematic priority areas to enable S3 auditing and achieve even greater efficiency of public calls For the granting of grants

³ The tasks of the Council are following: (1) Coordinating and directing the operational implementation of the identified priorities and measures of the Strategy by making recommendations and making decisions on the implementation of national innovation priorities towards certain bodies or organizational units within the identified innovation system; (2) Proposing measures to improve the innovation system; (3) Issuing binding recommendations to the stakeholders of the innovation system for which it is determined that they do not implement the measures determined, which are in the backlog and deviations in the implementation of the prescribed measures of the Strategy; (4) Approval of the annual report on the state of innovation and making recommendations for improving and revising the objectives and priorities of the innovation policy.

for research, technological development and innovation. Establishment and Operational Functioning “The Innovation Network for Industry (INI)”, which will consist of Thematic Innovation Platforms serving industrial development stakeholders to network, create an innovation community and launch innovation, will be the ultimate result of this project.

Associated services at national and international level (South East Europe)

In order to strengthen the entrepreneurial and innovation eco-system and encourage the establishment of new enterprises and the growth and development of the existing ones, the Ministry of Economy, Entrepreneurship and Crafts is implementing a project under the Operational Program “Competitiveness and Cohesion” for the period 2014-2020. The project supports the development and construction activities of the “SEECEL Regional Center for the Development of Entrepreneurial Competences” as a modern Human Resources Development Competence Center. SEECEL members are: Albania, Bosnia and Herzegovina, Montenegro, Croatia, Kosovo, Macedonia, Serbia and Turkey.

The role of SEECEL as the future Human Resources Development Center for Human Resources Development is capacity for initiative, innovation and entrepreneurship and digital competence, thus strengthening the entrepreneurial eco-system in recognizing entrepreneurial opportunities, accepting risks, changing attitudes, skills and ambitions for innovation in entrepreneurship. Strengthening entrepreneurship as a key competency necessarily encourages innovation and creativity, which are a prerequisite for entrepreneurial reflection. The SEECEL activities envisaged are complementary to the measures identified in the Operational Program Competitiveness and Cohesion 2014-2020. As they jointly contribute to the comprehensive and systematic strengthening of the entrepreneurial eco-system, creating preconditions for achieving the overall goal, namely competitiveness of the economy. The synergic effect is especially achieved with the interventions carried out in the field of smart skills development in line with the Smart Specialization Strategy of the Republic of Croatia 2014-2020, the promotion of entrepreneurship and the strengthening of entrepreneurial support institutions. Measures to promote entrepreneurship want to change the attitude of entrepreneurship; Measures to strengthen entrepreneurial support institutions strengthen the base of institutions that provide operational and technical support to the business of existing entrepreneurs or in preparations for starting a business; While SEECEL strengthens competence for entrepreneurship. The synergies of these activities, above all the strengthening of the capacity for initiative, innovation and entrepreneurship, and digital competence, will be the backbone of the SEECEL Human Resources Development Center.

Priority 2: SME competitiveness through enhancement of the value chain (collective performance)

Support from public sector

At the State level, the main support from public sector is Ministry of the Sea, Transport and Infrastructure, which the policy area related to Ports, Port authorities, Nautics, Maritime traffic, Inland waterways etc.

Furthermore, the support also comes for Ministry of economy, entrepreneurship and crafts (sector of industry, investments and innovations). In 2013 the Ministry launched the strategic document “Strategic Guidelines for the development of the maritime industry” (Ministry of economy, Directorate for competitiveness and investments, 09/2013).

Nevertheless, Ministry of Regional Development and EU funds (<https://razvoj.gov.hr/>) is generally responsible for coordination of the funds coming from ERDF. However, the ERDF funds are allocated through the Call for proposals at national level. These Calls for proposals are distributed within line ministries in different sectors (maritime, fisheries and transport affairs, construction affairs, agriculture affairs etc.).

At regional level (Split-Dalmatia County) there are few support programs directed towards the innovation and production SMEs. However, these financial support programs are not sufficient in terms of amount of financial support and in terms of developed criteria.

Competitiveness clusters

In order to foster the development and growth of the Croatian economy, the Government of the Republic of Croatia has decided to group all public, private and scientific-research representatives in innovative sectors, all in order to strengthen the competitiveness of Croatian companies, and consequently the Croatian economy and society.

Competitiveness clusters in the Republic of Croatia are conceived as non-profit organizations that bring together all the best businesspeople in a particular sector - small, medium and large entrepreneurs, representatives of regional and local self-government and scientific research institutions, in order to establish synergies and joint co-operation with the aim of strengthening competitiveness of economic Sector at the national level.

Public, private and scientific-research sectors represent the concept of 'triple helix', which is the basic structure of the Croatian Clusters of Competitiveness. The cluster's ultimate efficiency is determined by the quality of established communication and collaboration within the formal cluster structure.

There are 13 Croatian Clusters of Competitiveness, and one of them is "The Croatian Cluster of Competitiveness of the Maritime Industry" (MarC, <http://www.marc.hr/>) Established 2 years ago and functions within the Agency for Investments and Competitiveness. Cluster has established cooperation with two European clusters, Italian DITENAVE and French PoleMER⁴. Apart from the direct business and scientific cooperation that can be achieved among the members of these clusters, great opportunities for joint participation in various funds are open, which is very interesting to all of us.

Territory attractiveness: Support for investors

Through the Croatian Agency for SMEs, Innovations and Investments, called HAMAG-BICRO, there is an Investment Incentive programme. In 2012 Croatian Government adopted the new "Investment Promotion and Development of Investment Climate Act" (OG 111/2012, 28/2013). The incentive measures in the new act are aimed at strengthening production activities and the use of new technologies, supporting research & development activities and stimulating employment.

The act provides the following incentive measures:

- Tax incentives;
- Customs incentives;
- Employment incentives;
- Incentives for education and training;
- Incentives for the capital expenses of investment projects;
- Incentives for labour intensive investment projects;

Incentive measures can be used by enterprises registered in the Republic of Croatia investing in fixed assets in the minimum amount of:

- € 50,000 and 3 new jobs created for micro enterprises;
- € 150,000 and 5 new jobs created for small, medium and large enterprises.

⁴ Also mentioned in Pays de la Loire document „Regional analysis of maritime industries in the Pays de la Loire region - The CLIPPER Project“, July 2017 - analysis conducted by the Conseil Régional des Pays de la Loire with input from ORES, Summary.

All these measures could attract the international investors to invest in Croatian maritime industry, which is always looking for new funding sources.

Priority 3: SME competitiveness through internationalisation

SMEs participation in international fairs

Maritime industry SMEs from Split-Dalmatia County mostly participate as exhibitors in two international boat shows in Croatia:

- ***Biograd Boat Show (Biograd na moru, Croatia)***

The Biograd Boat Show is Central Europe's In-water Boat Show. The Biograd Boat Show is a Gold Member of the International Federation of Boat Show Organizers, adopting the high standards of the organization and participating in its further development by sharing its unique business model, and innovative touches.

An important part of the boat show is business to business (B2B) activity. B2B Presentation and Meeting Centre gathers professionals from the boating industry to meet and be informed. Originally designed to service the world leading Croatian yacht charter industry, it has been expanded to service the whole nautical industry, and serve as a contact point for foreign firms interested in doing business in Croatia.

With more than 300 international and domestic exhibitors from maritime industry, this show is unique, and many side events take place attracting locals as well as many affluent visitors from Central Europe that make a holiday of the event.

So far, 20 Biograd Boat Shows have been organized. Next Biograd Boat Shows is planned for October 2018.

<http://www.bbs.com.hr/>

- ***Croatia Boat Show (Split, Croatia)***

During the last decade, the Croatia Boat Show (CBS) inevitably confirmed that the business contacts made during the fair are the most effective ways of connecting the nautical industry world and related activities. Confirmation of this lies in the fact that for all foreign visitors and exhibitors, the fair has become a sort of nautical international forum and connection point with the Mediterranean. Every spring, CBS organization team with quality preparations and construction of the so-called floating exhibition city, allows exhibitors to display their beautiful vessels at the best light and natural surroundings. This insight brings a privilege to present vessels over the duration of the fair through sea trials, making the fair unique and significantly different from the others of its kind.

CBS as remarkable stage of Croatian and international nautical industry products continuously confirms its enviable location on the boat fairs map and deservedly bears the title Croatian Superbrand and full member of International Federation of Boat Show Organizers.

So far, 19 Croatia Boat Shows have been organized with 70-100 international and domestic exhibitors from maritime industry. Next Croatia Boat Show is planned for April 2018.

<http://croatiaboatshow.com/>

Involvement in European projects and networks

The Split Dalmatia County is involved in European projects and networks, including "The 2014 - 2020 Interreg V-A Italy - Croatia CBC Programme, Call for proposal 2017 Standard":

- *BLUES* – A network Boosting innovation in pLeasUre boating businESs, Priority Axis 1: BLUE INNOVATION, Specific objective 1.1: Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area – still in evaluation phase;

and “European Territorial Cooperation - the INTERREG projects”:

- *CLIPPER* – Creating a Leadership for Maritime industries – New opportunities in Europe, INTERREG Europe programme.

Related to legal framework and possibilities for EU funding, the Ministry of Economy, Entrepreneurship and Crafts acts as authorised body for strategic topic „Industry, Investments and Innovation” through several financial instruments for the implementation of Innovation Policy and for Financing Innovation Projects. These options are:

- ***Operational Program Competitiveness and Cohesion 2014-2020***

The main instrument for financing innovation projects is the grants available to the Republic of Croatia under the Competitiveness and Cohesion Operational Program 2014-2020. From the European Regional Development Fund (ERDF) which is awarded through public calls to the authorities in the system of management and control of the use of structural instruments of the European Union in the Republic of Croatia, whereby the Ministry of Economy, Entrepreneurship and Crafts is responsible for the Priority Axis 1 of the Competitiveness and Cohesion Operational Program 2014.-2020. (IRI) and 1b2 Strengthening Research, Development and Innovation of the Business Sector through Creating a Favourable Investment Environment (IRI).

All public calls are published on the web pages of the Ministry of Regional Development and European Union funds <http://www.strukturnifondovi.hr> . Public calls in the areas of research, technological development and innovation that are the responsibility of the Ministry of Economy, Entrepreneurship and Crafts:

- 1) Public call “Increasing the development of new products and services arising from research and development activities”
<http://www.strukturnifondovi.hr/natjecaji/1158>
- 2) Public Call “Commercialization of Innovation in Entrepreneurship”
<http://www.strukturnifondovi.hr/natjecaji/1318>
- 3) Public Call for Innovation of Newly Established MSPs
<http://www.strukturnifondovi.hr/natjecaji/1193>
- 4) Limited Call “Support to the Development of Centers of Competence – CEKOM”
<http://www.strukturnifondovi.hr/natjecaji/1194>

- ***Programme Obzor 2020 (HORIZON 2020) - SME Instrument***

The *Obzor 2020* Program is the European Union's Framework for Research and Innovation for the period 2014-2020, which will contribute to the achievement of the EU's key strategic documents related to research, technological development and innovation, a European strategy for smart, sustainable and inclusive growth (Europe 2020) and the Innovation Union and the construction of the European Research Area.

The state administration body responsible for the *Obzor 2020* program in Croatia is the Ministry of Science and Education and the Ministry of Economy, Entrepreneurship and Craft participates in the work of the Program Committee: Small and Medium Enterprises and Access to Risk Finance. The MSC's Programming Committee and Risk-Aid Approach is active in the Pillar of Industrial Leadership, which aims to facilitate access to finance for companies and other organizations involved in R & D (through non-refundable grants, financial instruments, loans, guarantees, counter-guarantees and other forms of financing). The HAMAG-BICRO web site: <http://www.hamagbicro.hr/inovacije/privatni-sektor/obzor-2020/>.

- ***Programme EUREKA and Eurostars 2***

EUREKA is a program that encourages small and medium-sized enterprises (SMEs) to cooperate with international partners in launching research and development (IR) activities. EUREKA is a pan-European network of innovation agencies, each providing funding for its project partners. The Republic of Croatia's budget for this program is 5 million HRK (approximately 660,000 EUR) a year. EUREKA was founded in 1985, the Republic of Croatia has been a full member since June 2000, and the High Representative of the Republic of Croatia in the EUREKA Program is State Secretary at the Ministry of Economy, Entrepreneurship and Crafts Mario Antičić.

The objectives of the program are:

- 1) Encourage companies to invest in research and development activities and thus strengthen their innovation capacity;
- 2) Encourage international cooperation of entrepreneurs;
- 3) Establish the foundation for international market placement.

A joint call for international collaborative projects is also underway in the Eurostars-2 R & D program, which has emerged as a joint initiative between EUREKA and the European Commission. Cooperation is being conducted in such a way that the European Commission contributes to the development activities of small and medium-sized enterprises in a way that it can participate up to 25% of the public share of co-financing. Competitors in the Eurostars program must be small and medium-sized enterprises engaged in research and development activities. There are no thematic limitations, ie they can be applied to any technology area provided that the project has a civilian purpose and implies the development of a new product, process, or service.

<http://www.hamagbicro.hr/inovacije/privatni-sektor/eureka>

<http://www.hamagbicro.hr/inovacije/privatni-sektor/eurostars>

- ***The Fund for Investing in Equity in Early Financing (Seed Co-investment Fund)***⁵

The program provides for co-financing of innovative small business entities in the Republic of Croatia through conditional loans that are granted subject to the requirement of investing in the capital of the recipient of the investment by eligible private investors.

<http://www.hamagbicro.hr/financijski-instrumenti/fond-za-poticanje-ulaganja-u-kapital-u-ranoj-fazi-financiranja-seed-co-investment-fund/>

Priority 4: SME competitiveness through risk sharing

The legal framework for SME funding

Law on Promotion of Small Business Development (the purified text of the law in NN 29/02, 63/07, 53/12, 56/13, 121/16, effective from 31/12/2016) permits the Region to support company development.

This Law establishes the basis for the implementation of incentive measures of economic policy aimed at the development, restructuring and market adjustment of the small economy, and the establishment of the Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO); <http://www.hamagbicro.hr/>.

The HAMAG-BICRO'S activities include the promotion of establishment and development of small business entities, financing operation and development of small business entities by loans and guarantees issuing for approved loans by creditors as well as promotion of investments in small business. HAMAG-BICRO also provides financial support to innovative and technology-oriented enterprises in Croatia by increasing commercialization of knowledge and awareness about the value of innovations, supporting the transfer of knowledge and technological solutions from the scientific sector

⁵ See details in the section: Priority 4: SME competitiveness through risk sharing, Regional financial engineering.

to economy, promoting the establishment and development of technology infrastructure and participation in the creation and development of venture capital industry. By supporting the growth and development of SMEs and crafts, HAMAG-BICRO attempts to stimulate Croatia's economic growth to strengthen the Croatian global competitiveness. The activities are within the competence of the Ministry of Entrepreneurship and Crafts. HAMAG-BICRO is an independent institution under the supervision of the Ministry of Entrepreneurship and Crafts.

HAMAG-BICRO's main fields of work are:

- Promoting investment;
- Issuing guarantees for bank credits to SMEs;
- Grant schemes implementation;
- Co-financing consultancy services.

The guarantee and risk-sharing mechanisms

As stated in previous section, one of the main fields of work in HAMAG-BICRO are grant schemes. One of them is the Entrepreneurial Impulse 2014 Support Program for entrepreneurship and crafts. Through this grant scheme, HAMAG-BICRO makes direct financial contributions to SMEs in a form of grants by implementing the Strengthening Business Competitiveness activity.

The activity is intended for crafts and companies with at least ten employees, which are in the category of small and medium entrepreneurship pursuant to the Small Businesses Development Promotion Act (OG 29/02, 63/07, 53/12). Grants are aimed at projects in the manufacturing industry, environmental protection and the IT sector. Part of the funds are also aimed at innovative SME projects. The maximum grant amount one SME may receive in 3 fiscal years is HRK 1,400,000 (approximately € 186,600).

Regional financial engineering

The commercial banks' demand for guarantees on one side and lack of sufficient own capital/assets in companies on other side represent a persistent problem in Croatia, a factor that obstruct the new development private projects/investments. The HAMAG-BICRO provides guarantees for SMEs under different conditions.⁶

As stated previously, additional important field of work in HAMAG-BICRO are guarantees to SME-s. HAMAG-BICRO provides guarantees to small and medium enterprises (SMEs) in compliance with the SME Development Promotion Act. Guarantees are issued for loans approved by credit institutions and other legal entities approving loans to SMEs.

Currently HAMAG-BICRO offers 3 different guarantee programs adopted by the Government of the Republic of Croatia. With the help of HAMAG-BICRO Guarantee Programmes, SMEs have easier access to credit funds.⁷

⁶ Detailed description of guarantees under Guarantees Programmes EU Start-up and Growth can be found on the web site HAMAG-BICRO: <http://www.investcroatia.hr/about-us/guarantees/guarantee-programmes/>

⁷ Issue of Guarantees – practical application: An SME first contacts a bank which has to give its consent for the issuance of a loan with the HAMAG-BICRO guarantee. After the loan has been approved, the bank submits its Decision on the issue of a loan to HAMAG-BICRO together with the Guarantee application and all the necessary documentation. After receiving the above mentioned documentation, HAMAG-BICRO financial analysts process the application and make their assessment. Upon their assessment HAMAG-BICRO adopts a Decision on the issuance of a guarantee and submits it to the bank and the SME. SMEs operating less than 24 months which qualify for EU Start-Up programs have an opportunity to apply for a letter of intent to issue a guarantee which can help them find more favourable funding sources. Letter of intent may be issued to all EU Start-Up program types except A1. It is important to note that HAMAG-BICRO cannot issue a letter of intent once the SME has applied for a bank loan.

By February 1, 2017, HAMAG-BICRO received applications for funding for projects funded by the:

- ***The Fund for Investing in Equity in Early Financing (Seed Co-investment Fund)***

The program provides for co-financing of innovative small business entities in the Republic of Croatia through conditional loans that are granted subject to the requirement of investing in the capital of the recipient of the investment by eligible private investors.

The objectives of the Program are:

- 1) Encourage investment of eligible investors into the equity of innovative MSPs and newly established companies for the purpose of further development and / or commercialization of an innovative product or service;
- 2) Provide support to the development of innovative MSPs and newly established enterprises to a stage where they are well positioned to receive investment from private equity venture capital funds.

For the implementation of the Program, a total amount of EUR 2.5 million is planned from the budget, which is financed by the International Bank for Reconstruction and Development loan. Eligible projects will be co-financed in the amount of at least EUR 30,000 up to a maximum of EUR 300,000 with a duration of up to 24 months.

<http://www.hamagbicro.hr/financijski-instrumenti/fond-za-poticanje-ulaganja-u-kapital-u-ranoj-fazi-financiranja-seed-co-investment-fund/>

The new funding mechanism: crowdfunding

According to the European Commission⁸, crowdfunding is: “An open call to the public — usually through a web page — requesting funds for specific projects or business investments. In this way, funding platforms or campaigns put a variety of non-professional investors in contact with project promoters. Nevertheless, their improper use must be prevented.”

The European Economic and Social Committee has given following conclusions and recommendations on crowdfunding:

- Crowdfunding benefits the economy in terms of investment, innovation and employment and, at the same time, increases the range of consumer credit options;
- Universal access to crowdfunding will ensure that people with disabilities are not excluded from this source of funding;
- Since EU businesses are more dependent on bank loans than their US counterparts, they are hit harder when recessions are compounded by financial crises. Furthermore, many EU countries are unduly restrictive when it comes to SME credit;
- The dependence of SMEs on bank loans, a situation that will persist despite the existence of alternative sources which are not always easy to access;
- Crowdfunding benefits the financial ecosystem which will not in itself suffice to address the funding difficulties facing businesses;
- Start-ups, young innovators, and social economy enterprises play a significant role in the 2020 Agenda and the Digital Agenda;
- Crowdfunding with non-financial returns is widespread in the EU. The impact of tax incentives, which vary among the Member States, should be studied;

⁸ Source: Opinion of the European Economic and Social Committee on the communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — Unleashing the potential of Crowdfunding in the European Union, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014AE4004>

- European legislation should only cover specific types of financial return crowdfunding, and not donations and other forms of non-profit sponsoring;
- These rules should be based on achieving balance, protecting investors and avoiding excessive regulation. Nevertheless, the regulator's actions are crucial to fostering investor confidence;
- The rules should seek to achieve simple administrative procedures, rapid decision procedures and minimum costs, as well as neutrality, transparency and avoidance of unfair practices, with accessible claims procedures. This is as much in the interest of providers as of consumers;
- Potential investors must receive accessible information that is clear, appropriate, accurate and not misleading;
- EEU should supplement action taken by the Member States to support non-profit initiatives that promote values such as employment, solidarity, pluralism, democracy and freedom;
- Crowdfunding should be explicitly recognised in the laws of the Member States as a new form of patronage.

The most popular crowdfunding platforms in Europe and World are presented in Table 3.

Table 3. The most popular crowdfunding platforms

<i>Platform</i>	<i>Description</i>	<i>Web access</i>
CrowdRise	<p>CrowdRise's fundraising model is based upon the notion of making giving back fun, which may lead to more people donating and more funds being raised. The platform uses gamification and a rewards point system to engage users to participate in fundraising and donating.</p> <p>Its primary model is donation-based, and the campaign defaults to keep-what-you-raise.</p>	http://www.crowdrise.com
Kickstarter	<p>Kickstarter is an enormous global community built around creativity and creative projects. Over 10 million people, from every continent on earth, have backed a Kickstarter project.</p> <p>Kickstarter is gathering money from the public, which circumvents traditional avenues of investment. Project creators choose a deadline and a minimum funding goal. If the goal is not met by the deadline, no funds are collected.</p>	https://www.kickstarter.com
Zopa	<p>Zopa enables investors to lend to UK consumers directly through its peer-to-peer lending platform.</p> <p>Borrowers can take out loans and use these to funds to help buy a car, consolidate debts, and cover home improvements.</p> <p>Investors' money enters a queue to be lent in one of three products, which vary</p>	http://www.zopa.com

	according to the risk, returns and accessibility they offer. Once the money reaches the front of the queue, it is split into micro-loans that go to multiple borrowers. Investors then receive monthly repayments of interest and capital, which they can relend to compound the interest.	
Crowdfunder	<p>Crowdfunder is based on investor community of over 13,000 institutional and angel investors.</p> <p>Crowdfunder's equity or investment crowdfunding in today's environment enables Accredited Investors to invest in companies fundraising on Crowdfunder and gain ownership, or a promise of future returns.</p> <p>Unlike other crowdfunding sites, which have restricted people to simple donations or the purchase of a product or reward, Crowdfunder allows investors to become an investor/shareholder in a company.</p>	https://www.crowdfunder.com

For Republic of Croatia, the main problem of crowdfunding is that there is no legislative framework⁹ that supports and controls crowdfunding. It means that there is a risk for investors in crowdfunding campaigns to lose their investments due to lack of legislative regulations and rules. Nevertheless, there are two crowdfunding Web platforms in Croatia:

- ***Croinvest.eu***

Croinvest.eu is the first Croatian crowdfunding platform for financing entrepreneurial, infrastructural and socially useful campaigns, with particular emphasis on campaigns that apply for EU funds.

The platform combines five models of financing (donations, awards, loans, ownership participation and profit participation) customized to domestic law so through the platform it is possible to: give money; pay money in exchange for a goods or services with a beginning at a specific time; to borrow money in the form of interest-free or interest investment loan at a specific time; invest money in exchange for an ownership interest in a limited liability company or cooperative; invest money in exchange for a share of the profits in by signing a contract on a silent partnership.

The platform can be used by all domestic physical and legal persons and all foreign nationals who want to invest in Croatia.

<http://croinvest.eu/>

- ***Doniralica.hr***

Doniralica.hr is a platform similar to world-known crowdfunding platform Kickstarter, therefore it supports creativity and creative projects. It is based on donations by individuals that could

⁹ Source: Bago A., Pilipovic O. (2016): Skupno financiranje [Crowdfunding]. Zbornik radova Veleucilista u Sibeniku, No. 3-4, 2016.

recognize a project which has a benefit for the whole community. The crowdfunding projects on Donirlica.hr can propose only individuals or NGOs registered in Croatia.

<http://www.donirlica.hr/>

<http://www.crowdfunding.hr/>

To conclude, crowdfunding in Croatia is in its initial phase, but it definitely needs a legislative framework for further development and popularisation. So, the regulatory agencies are the most important stakeholders that need to act in defining of legislative framework for crowdfunding. Without it, the future of crowdfunding in Croatia is doubtful.