

Invest in ICT in Croatia



Republic of Croatia
Ministry of Economy and
Sustainable Development

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Exceptionally rapid changes and growing challenges define times when technology has become the strongest driver of productivity and competitiveness with a major impact on our lives. Technology, informatisation and digitalisation today shape society and encompass all industries, while artificial intelligence systems and modern technology in the coming years will cause major changes in the way we do business and perform jobs, in the labour market, communications and in the lives of people in general. In this regard, the 2030 National Development Strategy of the Republic of Croatia recognizes the importance of technological change and the digital transition of society and the economy.

The ICT SECTOR, being one of the fastest growing sectors in Croatia, is an indicator of many successful business stories that have been built up over the years and are now present on the global business scene. Croatia abounds with talent, and its willingness and swift adaptation are essential factors for sustainability in a competitive market where knowledge, excellence and resourcefulness are essential. Croatian ICT sector stakeholders are particularly successful in this regard, and have shown remarkable readiness for quick adaptation to new possibilities, which is one of the most important sustainability factors.

The digital transition of society and the economy has already begun and will intensify in the next decade. By investing in digital infrastructure and introducing digital solutions, we are contributing to the interests of citizens and the Croatian economy, and participating in the creation of Europe's digital future.

Croatia is an excellent location for investors who want to expand their business in Central, Eastern and Southeast Europe, as well as for start-up businesses. Croatia's market potential is relatively small in global terms, but Croatian consumers and companies have already proven that they have the ability to absorb new technologies very rapidly. In this respect, Croatia can serve as an excellent market for the development and application of new technologies related to the ICT sector. Many multinational companies, such as IBM, Microsoft, Ericsson, Siemens, Oracle, etc. have recognised Croatia as an ICT investment destination.

Dr.sc. Tomislav Ćorić

Minister of Economy and Sustainable Development

About Croatia



About Croatia



Croatia is situated in South-Eastern Europe at the crossroads of the Adriatic Sea and the Pannonian Plain. With a surface area of 56,594 km², it is 19th in terms of size among the European Union countries. Croatia borders with Hungary in the north, Slovenia in the north-west, Serbia in the north-east, Bosnia and Herzegovina along the total length of the lower part of Croatia's crescent shape, Montenegro in the extreme south, and Italy and Slovenia on the Adriatic Sea. Croatia is part of the Danube Basin and the Adriatic Sea and forms the Mediterranean front of Central Europe, positioned favourably in terms of geography and communications at the meeting point of important European corridors, while its harbours are used as sea exits by the neighbouring countries to the north.

Croatia is a parliamentary democracy and is organised as a unitary republic. The welfare state, freedom, equality, equal rights and the rule of law are among the highest values of the constitutional order.

Croatia is classified as an open and developing economy by the International Monetary Fund and a high income economy by the World Bank. Croatia has a developed infrastructure, and in the last 20 years, 1,000 km of modern motorways have been built, which has contributed significantly to linking the countries of the European Union.

The country is divided administratively into 20 counties and the City of Zagreb, its capital and the largest city. Zagreb has an administrative status equivalent to that of the counties and is situated in the north-west of the country, on the banks of the Sava River, with a population of almost one million inhabitants. It is the political, economic, cultural and scientific centre of Croatia.

In 2020, the GDP of Croatia was about EUR 50.2 billion

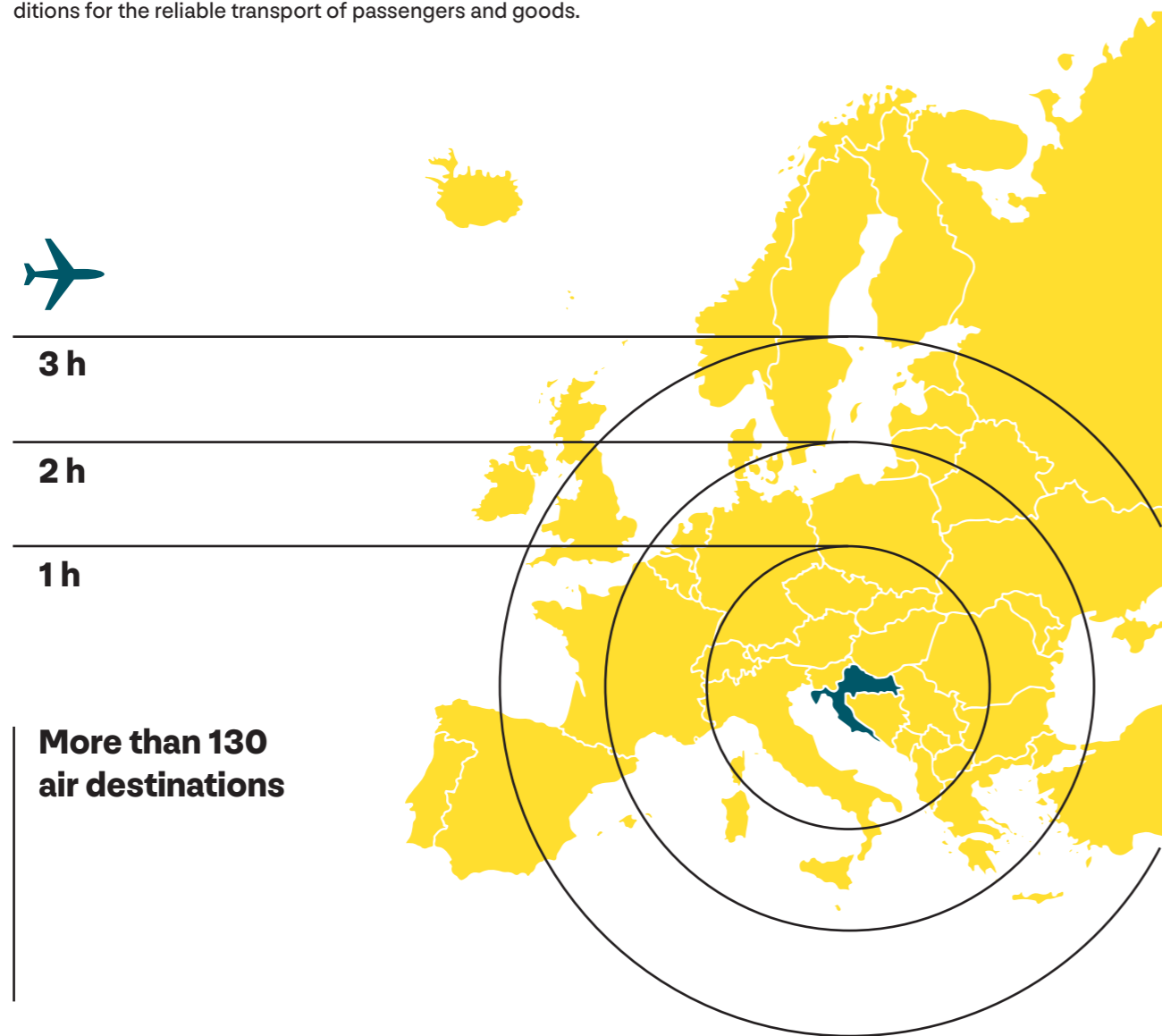
BASIC INFORMATION

Source: CNB, 2021 Main macroeconomic indicators

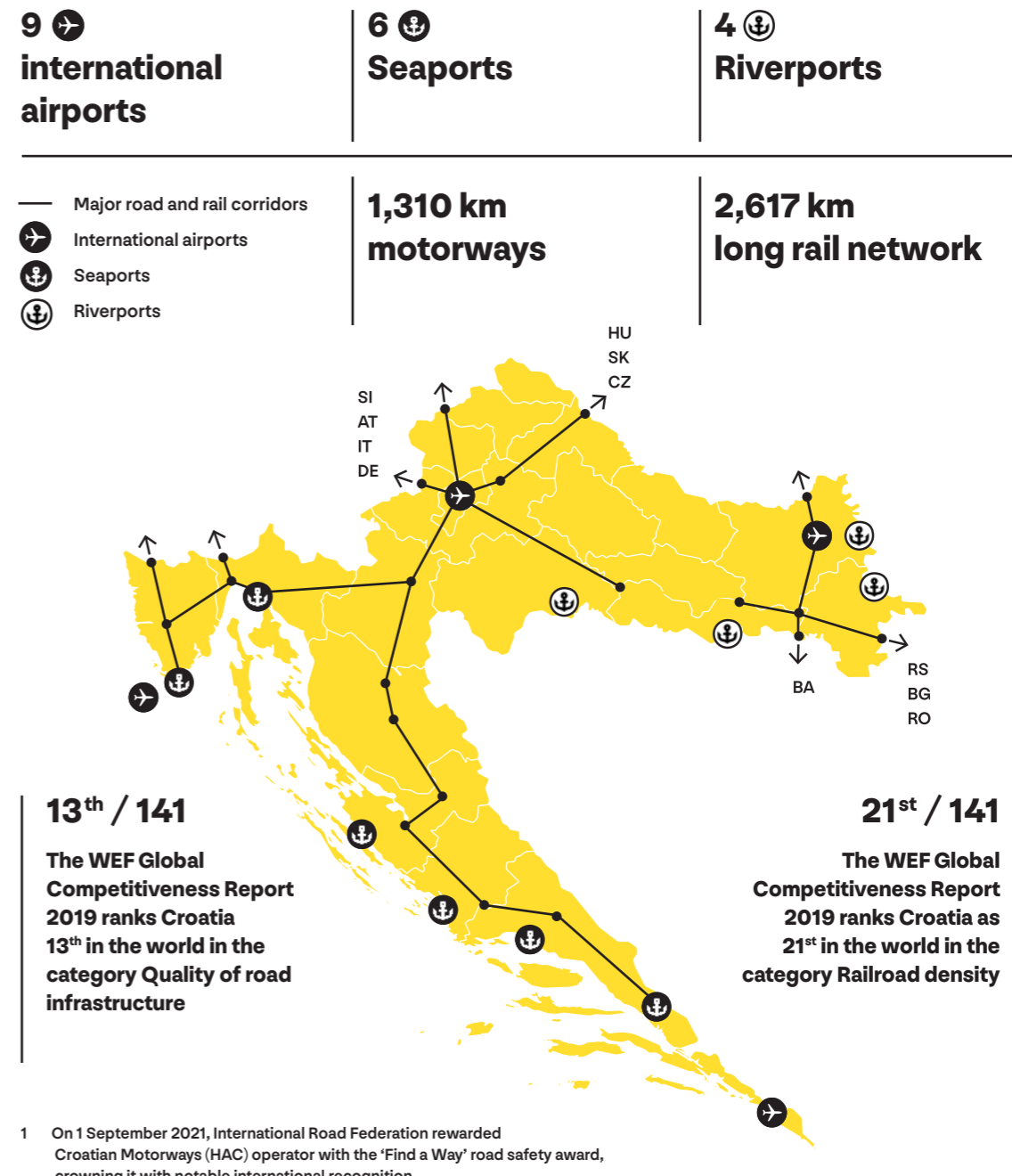
Official name The Republic of Croatia	Territorial organization 20 counties and the City of Zagreb	Member of 2000 World Trade Organization
Capital Zagreb	Local time GMT+1	2009 NATO
Government Parliamentary democracy	Currency kuna (HRK)	2013 European Union
Population 4,047 million (2020)	Telephone code 385	
Official language Croatian	Country code domain .hr	
Land area 56,594 (square km)	Climate Continental, Mediterranean and Alpine	

DEVELOPED INFRASTRUCTURE

Situated in the heart of Europe, Croatia is strategically located less than three hours by plane from all major European capitals. As a result of significant recent investments in airport infrastructure, over the past few years Croatia has experienced constant average annual growth in the number of air passengers. The network of modern infrastructure positions Croatia among leading European countries, and offers conditions for the reliable transport of passengers and goods.



The motorway network in Croatia is among the best in Europe¹. Three pan-European international corridors pass through Croatia, making it an essential European and international transport route.



COUNTRY COMPETITIVENESS

WB Doing Business 2020

The World Bank published the 17th edition of its Doing Business Report 2020 comparing 190 world economies. Croatia is ranked in the top third after having made significant steps to jump 14 positions when compared to its ranking in the 2015 Report.

In the WB Doing Business Report, Croatia is ranked first in the *Trading across borders* category. Croatia is also marked as a country with the best regulatory performance under the thematic section *Time to comply with VAT refund*.

World Economic Forum 2019

In 2019, the World Economic forum published the 38th edition of its Global Competitiveness Report analysing 141 countries. Croatia is recognized as a country with the biggest improvement in overall ranking in Europe compared to the 2018 Report.

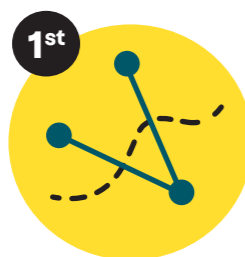
Global Innovation Index 2021

The Global Innovation Index by the World Intellectual Property Organisation ranks the innovation capabilities of world economies. Croatia performs above the high-income group average in Infrastructure.



Ease of doing business
(Rank; 2015–2020)

65th »»» 51st



Ranked first in the *Trading across borders* category

1st / 190



Global competitiveness index 4.0
(Rank; 2015–2019)

77th »»» 63rd



The Global Innovation Index rank

42nd / 132

QUALITY OF LIFE

14th / 165

According to the Sustainable development report 2021, Croatia ranks 14th among 165 countries in the Sustainable Development Goals Index.

17th / 163

According to The Global Peace Index, Croatia is evaluated as 17th safest country out of 163 countries, in 2021.

A preserved environment and beautiful nature, 3 climatic areas (Mediterranean, mountainous, continental), clear water and air, rich culture and traditions, historical heritage and lots of cultural activities, and the proximity of other European business and cultural centres, have all made Croatia recognizable for its natural beauty, and a perfect place to live. Regional diversity in such a small area offers something different in each season, whether it is an active vacation, gastronomy, winemaking, culture, or architecture. Due to their specific value, certain areas of Croatia are included in the list of international places of special interest, including two natural and eight cultural UNESCO World Heritage Sites.

Croatia has one of the most enviable lifestyles in the world. Croatians place considerable importance on spending quality time with family and friends. The healthy Mediterranean lifestyle, the pleasant and high quality of life all over Croatia, and high rates of safety and environmental quality, ensure that Croatia is a perfect place to live and work in.

Croatia ranks highly among 140 countries by safety and life quality according to the World Economic Forum's Travel and Tourism Competitiveness Report from 2019:



14th in environmental sustainability



20th in natural resources



22nd in health and hygiene



23rd in natural and cultural resources



SOME INTERESTING FACTS ABOUT CROATIA

The traditional way of life in Croatia is characterised primarily by community, which is reflected in customs, crafts and folklore, and also in eating habits, with regional cuisines becoming more and more available to foreign visitors as part of the tourist range of services. Croatia is particularly proud of its virgin quality olive oil and selected indigenous wines.

Natural wonders & heritage



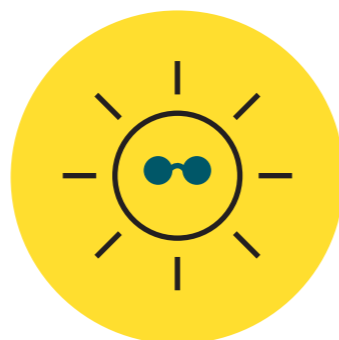
Almost 10% of the country surface is protected within **11 nature parks, 8 national parks and two strict nature reserves**



Croatia has **1,246 islands, isles and islets**



Zlatni rat beach changes its shape and colour depending on the wind



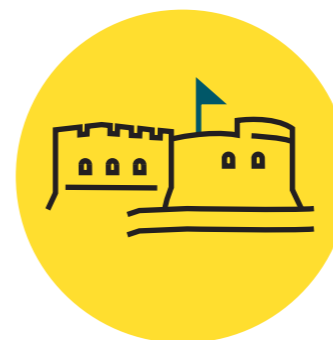
Croatia enjoys **2,715 hours of sunshine** per year, more than Sydney in Australia, for example



Alfred Hitchcock said that the seaside town **Zadar** in Dalmatia has the best sunset in the world!



Croatia is home to the world's smallest town, called **Hum**



Dubrovnik has been famous for centuries – the English poet Lord Byron was the first to describe Dubrovnik as the “pearl of the Adriatic”. Also, Dubrovnik was used as a location for Kings Landing in the acclaimed series Games of Thrones.



The **amphitheatre** in the town of Pula is one of only 3 preserved amphitheatres in the world – Roman gladiators used to fight here



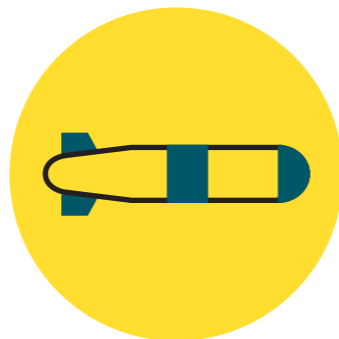
Sport success

Croatia is considered to be one of the top sporting countries of Europe

Croatian inventions & discoveries



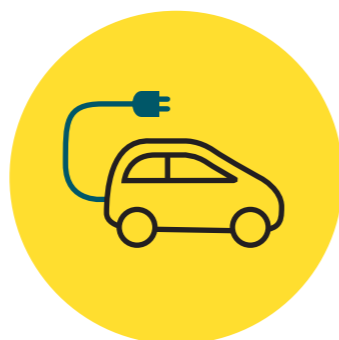
Nikola Tesla › With around 300 patents for his many inventions, Tesla is perhaps best known for inventing the first alternating current (AC) motor and developed AC generation and transmission technology



Ivan Blaž Lupis › Invented and built a torpedo in 1860, which was later perfected by the British engineer Robert Whitehead



Marin Soljačić › Wireless transmission of electricity (WiTricity/Wireless Electricity). In 2007, led by a group of scientists from the Massachusetts Institute of Technology (MIT), he conducted an experiment in wireless energy transfer



Mate Rimac › Croatian innovator and creator of the first Croatian electric car Concept One. He won awards all over the world with his inventions and it all started when he made iGlove for graduation work in a mechatronic high school – a replacement for a keyboard and mouse



Slavojub Penkala › Invented a mechanical pencil, called the Penkala in 1906 – today we call it a “pen”



Tomislav Uzelac › Created AMP which is considered to be the first successful MP3 player



Anthony Maglica › The first MAGLITE lamp was made in 1979, and has been constantly improved to this day



Nikola Bašić › Architect who designed the sea organ in Zadar – the world's first pipe organ that is played by the sea's rhythmic waves



Faust Vrančić › He is credited with, among other things, the invention of the first functional parachute, the suspension bridge, and the wind turbine

ICT sector in Croatia



ICT sector in Croatia

The ICT sector is one of the most important drivers of sustainable economic development in the Republic of Croatia, and has been recognised as a leader in the production of high added value products and services. It is based on the effective application of knowledge and innovation among Croatian ICT companies in Croatia and abroad. Investments in ICT have been the most dynamic component of investments in recent years in Croatia. One of the main characteristics of the sector is a skilled and well-educated labour force for meeting the demanding requirements of investment projects. The quality of Croatian engineers, developers and ICT employees in general is well known.

The ICT market in Croatia is constantly increasing and there is significant growth in the number of start-up businesses, and many new state-of-the-art data centres have been opened. The export of software and IT services is experiencing significant growth.

The sector is expanding and employs more than 50,000 people across more than 10,000 companies.

Siemens, Ericsson Nikola Tesla, IBM, Oracle, Atos IT Solutions and Services, and Constellation Software Group (IN2), are just some of the eminent international corporations that have recognized Croatia's human resources capacities. Besides foreign investors, numerous internationally recognized Croatian companies have seen rapid development, and are regularly found on the Financial Times' list of Europe's fastest-growing companies, as well as Deloitte's list of the 50 fastest growing technology companies in Central Europe, such as Infobip, Infinum, Microblink, Infodom, Agrivi, and Q.



10,877 companies

In September 2021, the number of ICT companies in Croatia reached 10,877

Source: CBS, 2021



51,655 employed persons

The number of employees in ICT in September 2021 was 51,655



1,843 EUR gross salary

The average monthly gross salary in the Croatian ICT industry in September 2021 was EUR 1,843

HUMAN CAPITAL



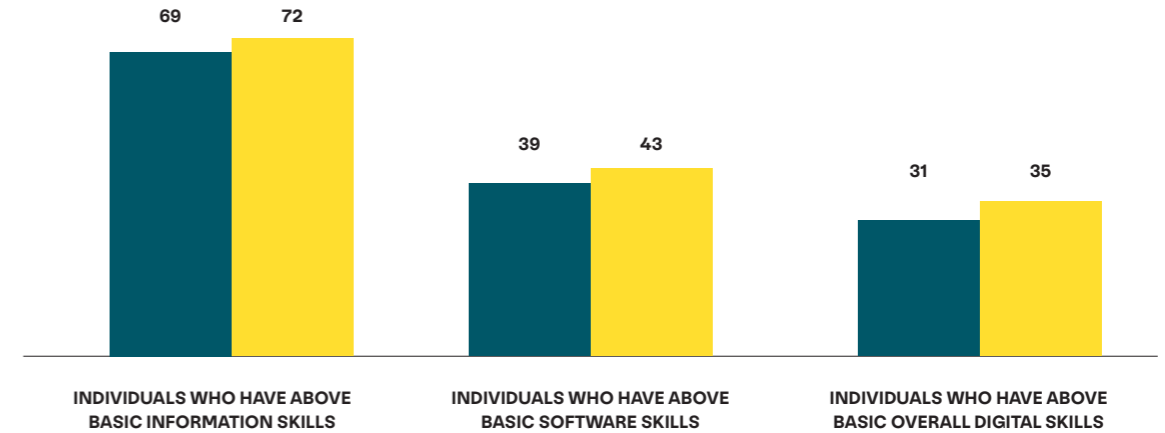
Croatia has an educated, highly skilled and motivated labour force. Over the past 15 years, the Croatian ICT industry has become deregulated and modernised, which has turned it into an attractive location for ICT recruitment and staffing. Since Croatia joined the EU, the ICT sector has become one of the most propulsive sectors of the Croatian economy, and is continuously growing. Global investors actively cooperate with higher education institutions to ensure that the Croatian education system continues to tailor itself to the market's needs.

DIGITAL SKILLS

Croatian young people are leading in EU in digital skills

In 2019, four in five young people from the same age group in the EU had basic or above basic digital skills. Croatians had the highest share with basic or above basic overall digital skills at 97%.

Likewise, Croatia has an above-average number of individuals who have written a computer program using a specialised programming language.



Source: Eurostat 2020, figures for 2019

● EUROPEAN UNION ● CROATIA

INDIVIDUALS WHO HAVE WRITTEN A COMPUTER PROGRAM USING A SPECIALISED PROGRAMMING LANGUAGE (AGED 16 – 74, %)



Source: European Commission, Digital Scoreboard 2021, figures for 2019

PROFICIENCY IN FOREIGN LANGUAGES

17th »»» **13th**
2018 **2020**

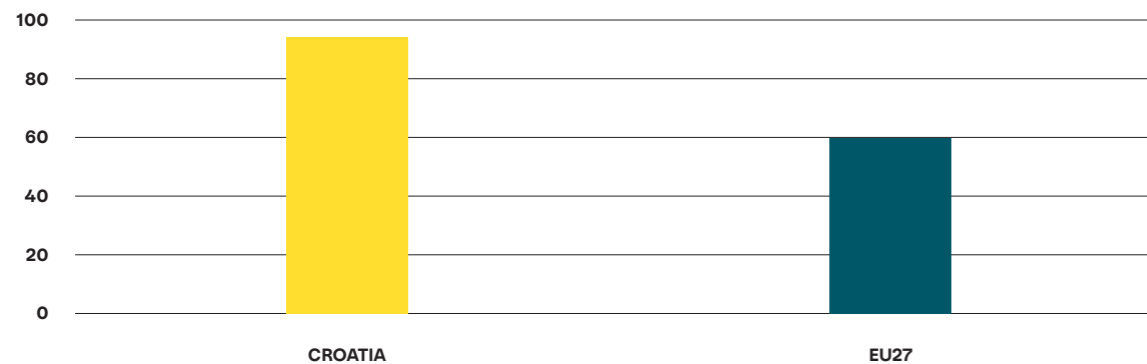
EF English Proficiency Index
 (Education First, 2020)

English proficiency (rank; 2020)

Based on research in the 10th edition of Education First, Croatia held 13th place in English proficiency (among 100 countries) ranking it as a country with a high level of proficiency. Also, the proficiency trend shows that Croatia has improved by four places since 2018.

Proportion of students that study two or more foreign languages (%; 2019)

In 2019, 95% of Croatian students in general upper secondary education learned two or more languages, whereas the EU average is 59.3%. Almost all (99.6%) students at this level were studying English as a foreign language, followed by German (63.7%) and Italian (22.2%).



Source: Eurostat 2021, figures for 2019

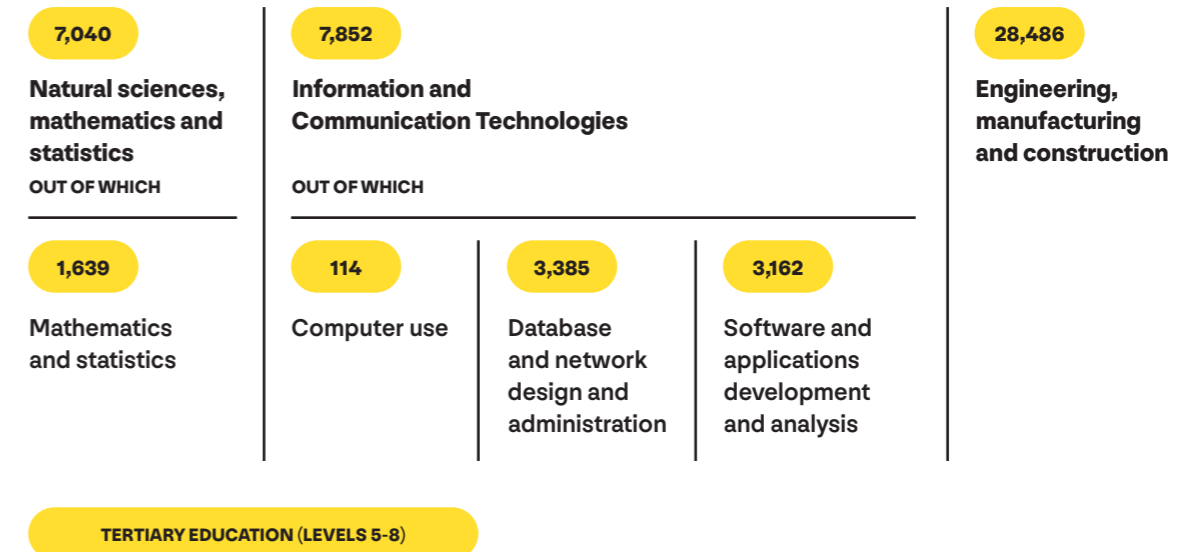
ICT EDUCATION

Many countries now regard a wider concept of computer literacy as part of core education, alongside reading, writing and numeracy, while in prosperous countries, businesses and individuals often identify developing advanced ICT skills as a key factor of their success. The increased application of digital technologies in sectors such as manufacturing, energy, retail, transport, finance, education and healthcare, as well as the ICT sector itself, has created rapid growth in the demand for ICT specialists. This has made the advanced skills sought by employers across the EU extremely valuable.

Croatia is a source of high-quality engineers and excellent IT & tech universities

- › **ICT education and innovation:** internationally recognized ICT programmes in higher education institutions with strong focus on the integration of practical skills and the knowledge demands of today's and future labour markets
- › **Croatia is recognized among international students worldwide:** more and more students choose Croatia as their full-time study or exchange destination
- › **On the national level universities provide:** attractive places to continue education for high school students and also a deep pool of young experts for potential employers

In 2020, around 28% of all students were enrolled in STEM fields of study



Source: CBS 2020





FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING

www.fer.unizg.hr/en



The University of Zagreb Faculty of Electrical Engineering and Computing (FER) is the leading research and education institution in the Republic of Croatia in the fields of Electrical Engineering, Computing and Information and Communication Technologies. More than 3500 students study at FER at all study levels – bachelors, masters, doctoral and other specialist levels. For years, FER has been the first choice for almost 50% of the 1,000 best high-school graduates in Croatia, based on Mathematics and Physics in the State Matura. FER students have the opportunity to be part of FER's 35 research laboratories and five research centres, and to obtain hands-on experience in more than 250 research projects that are currently run at FER.

The faculty is continuously adapting its study programmes to meet the demands of the job market, and students who graduate from FER are very competitive and prepared even for jobs that will only exist in the future

FER is highly competitive on a global scale in fields such as:

- › Artificial Intelligence
- › Data Science (Big Data)
- › (Smart and Autonomous) Robotics
- › Sustainable Energy
- › Green Transportation
- › Augmented and Virtual Reality
- › Advanced Components
- › Biomedical Engineering
- › Communication Technology
- › IoT
- › Blockchain technology
- › Cyber Security

All these fields represent top trending technologies that will make a great impact on our everyday lives, in terms of the quality of life, health-care, education, access to information and many other aspects of life.

FER actively cooperates with more than 450 companies on both national and international levels, including a large number of the most significant high-tech companies from Croatia. Both students and companies benefit from this network, which provides an opportunity to match the best talent with industry needs. FER collaborates with large companies such as Siemens, Ericsson Nikola Tesla, Končar, Rimac Automobili, Google, Microsoft, and also with numerous SMEs and spin-offs.

The ability to adapt to new situations is crucial for all engineers, and FER inspires its students to participate in up-to-date challenges, latest research developments, and also to pursue their own interests.

prof. dr. sc. Gordan Gledec



- › Dean of Faculty of Electrical Engineering and Computing (FER)
- › Full professor, Department of Applied Computing

Unlike most other technological sectors, ICT crossed its own domain boundaries a long time ago and became an essential part of almost every aspect of our daily lives. Nowadays, ICT does not live in its own shell, and serves as a key factor for the advancement of other, often seemingly unrelated, technological sectors. The ICT of today is not only about computers, programs, networks, and data, or even their synergy in more advanced forms such as artificial intelligence algorithms and services, ICT is also about how we perceive the future of education, healthcare, transportation, sustainable energy, agriculture, efficient government, smart cities etc. One of the most notable recent examples of how ICT related technologies have made an important difference on

“At FER, students are offered early career guidance through the services of our Career Centre, which helps them to connect with employers through the organization of various networking events, such as Job Fair and Career Speed Dating. Students are also highly encouraged to participate in an internship programme to gain a competitive edge in the labour market while still studying. For students with start-up aspirations, FER also runs a student-friendly incubator SPOCK.”

Dean, professor Gordan Gledec, Ph.D.

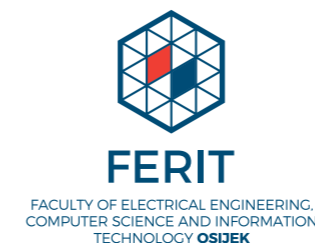
a global scale was the development of the mRNA COVID-19 vaccine, with unmatched speed in the history of medicine, thanks to developments in the fields of bioinformatics and high-performance computing, as a part of ICT in a broader sense.

Croatia has a long tradition of being a nursery of great inventors, from the famous, such as Nikola Tesla, to some less famous and some yet to become so. As the most vibrant and fastest-growing technological sector in the country, ICT has naturally become an important part of the Croatian economy in recent years, with a significant impact on the growth of other sectors as well. A tipping point was reached last year when the first Croatian unicorn company emerged, showing that it is possible for an ICT company to reach such a high goal even from a small country such as Croatia. Other companies accepted the challenge and now we have a few prospective contenders for a new Croatian unicorn, not only from classic ICT companies, but also from companies who are developing next-generation electrical propulsion systems and hypercars, autonomous driving and robotics etc., mainly driven by ICT as the most essential part of their end products. We have just begun a new chapter that has placed Croatia on a world map as a destination where some of the most advanced technologies are being developed, and a new mecca for high profile experts and investors alike.



FACULTY OF ELECTRICAL ENGINEERING, COMPUTER SCIENCE AND INFORMATION TECHNOLOGY OSIJEK

www.ferit.unios.hr/home



The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek was founded in 1978. With 1,679 students enrolled in the academic year 2020/2021, FERIT is the regional leader with respect to study programmes in electrical engineering, information and communications technologies, and computer science. FERIT offers 8 different study programmes: 2 undergraduate programmes; 2 professional undergraduate programmes; 3 graduate programmes; as well as programmes in postgraduate doctoral studies in electrical engineering and computer science. At the undergraduate level, it is possible to enrol in one of the 3-year study programmes: Computer Engineering, Electrical Engineering and Information Technology. After completing one of the undergraduate study programmes, students can enrol in one of the graduate study programmes: Computer Engineering, Electrical Engineering or Automotive Computing and Communications. At the professional undergraduate level, it is possible to enrol in study programmes in Computer Engineering or Electrical Engineering.

Cooperation with the economy, encouragement of entrepreneurship and transfer of knowledge and technologies

FERIT is extremely proud of its cooperation with the economic sector, and in order to improve that cooperation, the STUP portal (<https://stup.ferit.hr/>) has been established, which connects FERIT students and employers, and enables companies to directly inform students about employment opportunities, scholarships, possibilities of writing final papers and master's theses at companies, internships and other activities. The quality of study programmes and great interest in FERIT students are confirmed by the fact that currently over 400 companies are STUP portal users. The successful cooperation of FERIT with the economic sector is reflected in 7 currently active projects with partners from the economic sector, and it is worth emphasising another 25 active research and development projects in various fields of electrical engineering, computer science and IT.

One of the great comparative advantages of FERIT is its close cooperation with industry and its adaptability to the needs of the economic sector, taking into account, of course, technological trends that are yet to come. An excellent example of cooperation with the economic sector is the Graduate Study Programme in Automotive Computing and Communications that was launched in 2016. This study programme was developed in cooperation with six companies in the field of automotive engineering, and it has also been delivered in English since the 2019-2020 academic year.

In continuous cooperation with companies, FERIT follows upcoming trends, which, in their view, will popularise topics such as AI, IoT, Big Data, Cryptography and Cyber Security, as well as the application of Blockchain Technology. Through teaching, science and research, the Faculty can use its comparative advantage to cover various fields ranging from Power Engineering, Electromechanical Engineering, Electrical Engineering, Electronics, Information and Communication Technologies, Automation and Robotics, to Computer and Software Engineering and Data Sciences. In this way, FERIT introduces a multidisciplinary approach when designing study programmes and joint projects in cooperation with the economy, and applies the latest trends in ICT in various aspects of technical systems.



FACULTY OF ORGANIZATION AND INFORMATICS OF THE UNIVERSITY OF ZAGREB

www.foi.unizg.hr/en

foi

The Faculty of Organization and Informatics of the University of Zagreb (FOI) was founded in 1962 and over the years it has profiled itself as a higher education institution with a tradition in the field of Information and Communication Sciences, occupying a central place in the development of the IT profession in Croatia. Over the last few years FOI has also evolved into an important venue for the development of studies and research in the field of Economics. In addition, FOI has proved itself a leading university where online education is concerned. FOI's activities and its current status are based on half a century of continuous work, invested by generations of its employees that have laid the foundation for its further progress. FOI has seen generations of students pass through its doors, who are now performing demanding and responsible jobs worldwide. It is located in Northern Croatia, in the very heart of the beautiful city of Varaždin.

Study programmes

- › **Undergraduate university studies**
Information and Business Systems, Economics of Entrepreneurship
- › **Graduate university studies**
Information and Software Engineering, Business Systems Organization, Databases and Knowledge Bases, Teacher of Informatics, Economics of Entrepreneurship
- › **Undergraduate vocational study programme**
Information Technologies and Digital Business
- › **Postgraduate specialist studies and doctoral studies**

Connection between the academic and business sectors

The Faculty of Organization and Informatics is continuously involved in strengthening cooperation between the academic and business sectors, thus having a direct impact on IT sector investments in the city of Varaždin and its region. It has established itself as an institution that links technological knowledge and digital innovation with business aspects, with a teaching staff that is continuously engaged in education aligned with labour market demands. Owing to the Faculty's cooperation with numerous employers, students have the opportunity to get in touch and meet employers while they are still studying, thus often securing their first position in IT companies, or companies in other industries, right after graduation. Due to an obligatory internship for students in the final year of their graduate studies and the final year of their vocational studies, FOI has entered into collaboration with over 800 companies to date. Since the 2020/21 academic year, FOI has been at the forefront of introducing internships as part of the undergraduate study programme Information and Business Systems, in the form of job shadowing. This internship model allows students to become acquainted with a company, and to work on their bachelor's thesis with an employer.

An internationally recognized higher education institution in the interdisciplinary field of informatics, organization and business

Project activity at FOI

In 2021, the Faculty of Organization and Informatics is participating in 34 projects supported by different funding programmes, either as a project coordinator or partner (Erasmus+ – 10, European Social Fund – 8, European Regional Development Fund – 5, Croatian Science Foundation – 5, European Cooperation in Science and Technology – 2, Horizon 2020 – 1, EUREKA – 1, European Association for Research on Learning and Instruction – 1, Europe for Citizens Programme – 1). In terms of project execution areas, 20 of the projects are international, and 14 national. In terms of project types, there are 11 scientific and 23 development projects. The total value of the applied projects is EUR 201 million, with FOI's share amounting to EUR 3.7 million. Teaching excellence greatly relies on research excellence as well as on strong international partnerships and constructive project cooperation on innovative research topics. International partnerships will open up new opportunities for FOI to participate in applying for competitive scientific research projects, such as Horizon Europe and others, through calls that will be issued in the forthcoming months.





“For the last 20 years, Algebra has been one of Croatia’s greatest sources of digital leaders, engineers, developers and creative professionals. Our mission is to help people discover what they love doing and steer them towards greatness in their chosen field of digital technologies. Our passion and dedication have enabled our alumni to excel at leading Croatian and global companies, including Google, Amazon, Microsoft, Infobip, Rimac Automobili, and many others. By becoming a university, we will further advance and expand the opportunities for our students. Digital careers are our playground, whose development is supported by our quality assurance system and over 150 full-time employees. That is why we can help any organization build and maintain a successful digital team that delivers tangible results.”

Hrvoje Balen, President of the Board of Trustees at Algebra University College

ALGEBRA UNIVERSITY COLLEGE

www.algebra.hr/en

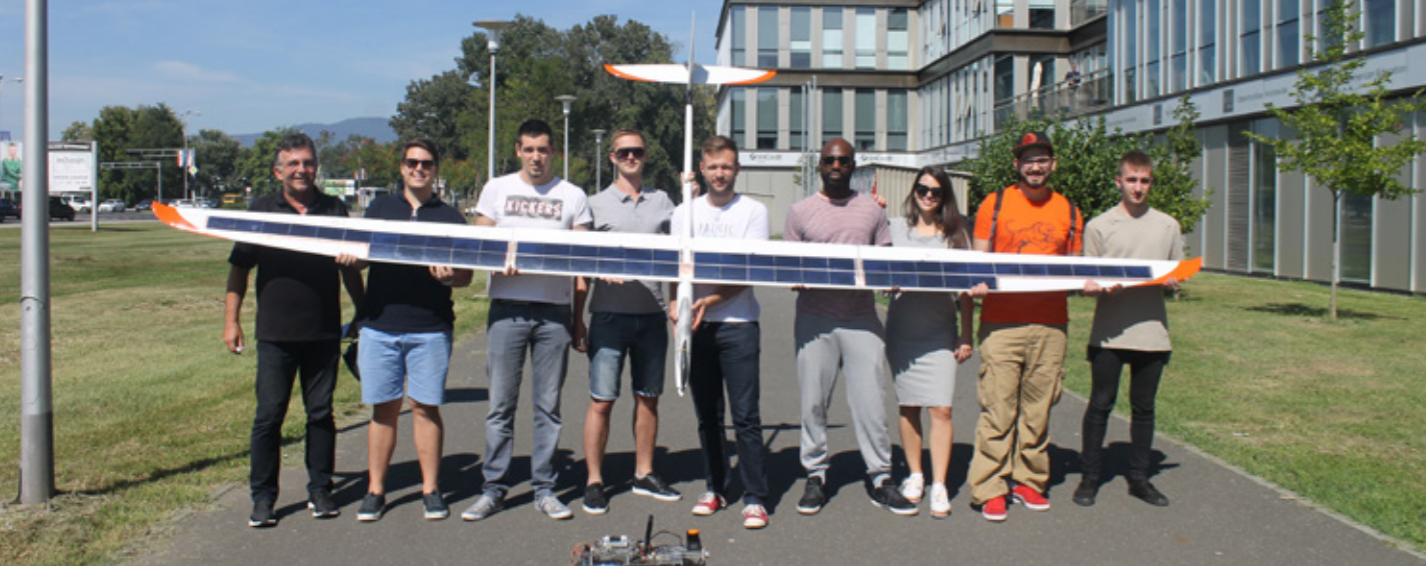


With more than 15,000 annual admissions to undergraduate and graduate study programmes, lifelong learning and certification training programmes, as well as an international MBA programme, junior digital academies and numerous other programmes, Algebra is one of the largest integrated education organisations in Croatia, accredited by national and EU authorities and international IT vendors. Algebra University College is a non-profit private higher education institution accredited in the field of computer engineering, economy and arts. Prospective students can choose from among 14 study programmes and specializations at levels 6 and 8 of the European Qualifications Framework, as well as the first accredited e-leadership MBA study programme in Europe. Algebra has also received a positive accreditation recommendation for the establishment of Algebra University, the first private university of applied sciences in Croatia.

Leads the way in the acquisition of digital skills and knowledge for domestic and international students, helping everyone to excel at what they love doing and to attain globally competitive careers in digital technologies

Apart from its role as a learning springboard for future experts in digital technologies, Algebra also nurtures strong relationships with B2B partners through the following:

- › **The Career Centre outreach programme**
Internship cooperation, scholarship offers and job placements
- › **The oldest and the most successful high tech start-up incubator in the country**
More than 100 start-ups have completed our programme so far, with the 14th generation of innovators beginning their journey in Algebra’s entrepreneurial ecosystem this year
- › **Design and implementation of training programmes for partner companies with 500 local trainers + 500 trainers in Algebra’s international network**
On-site training, SMART training and virtual classrooms: software development advanced networking skills, systems engineering, project management, service management, soft and managerial skills, mini MBA programmes, etc.
- › **Employment & training campaigns**
Advertising, live and online events, candidate testing for professional skills, hackathons, selection process, assistance with active labour measures and national employment support, up-skilling of selected digital professionals, on-site mentoring and shadowing.
- › **Algebra LAB, innovation and research centre, a fully operational EU Digital Innovation Hub (DIH)**
With the support of Horizon, Erasmus and ESF funding mechanisms, Algebra provides support for SMEs and larger companies in technology transfer to ensure the commercialization of high-tech research in the areas of Artificial Intelligence, Machine Learning and Data Science in general. Algebra assists the public as well as the private sector to unlock the value of their data.



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www.croatia.rit.edu

RIT | Croatia

RIT Croatia is a global campus of the prominent US university Rochester Institute of Technology from Rochester, New York. RIT is recognized for providing a unique blend of curricular, experiential, and research programmes delivered within a student-centric culture. It is the third largest producer of undergraduate STEM degrees among all private universities in the U.S. The university has been a pioneer in technological education for decades, teaching computing since the early 1970s, and launched the first nationally recognized information technology degree.

Hands-on approach in an international environment

Known for its career-oriented education, RIT Croatia is celebrating its 25th academic year in Croatia, which makes it a private institution of higher education with the longest tradition in providing undergraduate programmes in Croatia. Students are provided with contemporary American programmes, an international environment, an opportunity to spend a semester on RIT's campuses in the US and Dubai (UAE). All programmes and curricula at RIT Croatia are fully aligned with the high standards of education from Rochester Institute of Technology. Upon completion of studies, students are granted two diplomas, an international American degree awarded by Rochester Institute of Technology, and a Croatian degree from RIT Croatia, which offers numerous business opportunities in the EU and worldwide.

American programmes for the future ICT generation

American BSc and MS programmes prepare students for jobs of the future

Among other US BSc programmes delivered in Croatia, RIT Croatia offers the 4-year Web and Mobile Computing/Information Technology undergraduate programme on its campuses in Dubrovnik and Zagreb. The programme prepares students for prospective and sought-after professions in the areas of programming and web and mobile application design. In addition to faculty and other administrative services at RIT Croatia, students enjoy the full support of the Career Services Office. Career Services specialists help them plan their careers, and connect to networks with potential employers and co-ops.

Experiential learning and putting knowledge into practice is an integral part of studying at RIT Croatia. Cooperative education is mandatory and each student undergoes 800 hours of co-op during the 4 years of study. Students have conducted co-ops in companies such as Async Labs, Bit4Bytes, Cinnamon Agency, Croz, Enum Software, Ericsson Nikola Tesla, HR Cloud, Infoart, Laus CC, Megatrend, mStart, Perpetuum Mobile, PHOBS, t-matix, Verso Altima Group, and ZIRA.

In addition, for their Senior Project, senior students have worked on concrete business cases of companies in Croatia and the world. During the academic year 2020 – 2021, clients whose projects students were working on included the renowned companies Rimac Automobili and GDi. Web and Mobile Computing alumni can develop their careers as an Android Developer, Back-end Developer, Frontend Developer, Full Stack Developer, Graphic & Web Designer, iOS Developer, IT Security Specialist, Java Developer, Program Engineer, QA Specialist, System Administrator, and Web Content Manager. Companies they work for include AG04, Amazon, Bazaar, CloudSense, Cinnamon Agency, Combis, Croz, Direct Booker, ecx.io, Enum software, Ericsson Nikola Tesla, Hrvatski Telekom, Huawei Technologies, Infobip, IN2, Microblink, KING ICT, NSoft, Oradian, PHOBS, SAP, Span, and Verso Altima group. Finally, as part of RIT Croatia's life-long learning initiatives, RIT Croatia is facilitating the opportunity for students to earn MS degrees in Information Sciences and Technologies, from RIT. The programme is delivered on the Zagreb campus and addresses Web Systems and Integration Technologies, and the Information Management and Database Technology pillars of the IT academic discipline, along with the additional option of discovery Informatics.



Excellence in university education in science and mathematics and the development of innovative curricula and techniques based on research and the latest scientific knowledge

The Department of Mathematics of the Faculty of Science is the leading research institution in Croatia in all areas of Mathematics and mathematical sciences, including Computer Science. The Department of Mathematics supports the development of key technologies, as well as new studies in the fields of Mathematics and Computer Science by keeping up to date with the needs of the economy. All leading Croatian companies, in particular ICT companies, employ graduates of the Department of Mathematics. Even at the undergraduate level, many courses taught at the department are devoted to programming and algorithms. At the graduate level, students of Computer Science acquire a deeper understanding of its theoretical underpinnings, as well as the theory and practice of data science, machine learning and cryptography. Moreover, most of the other graduate studies include topics related to programming, algorithms and machine learning.

UNIVERSITY OF ZAGREB, FACULTY OF SCIENCE

www.pmf.unizg.hr/en



PMF is an institution which educational and research excellence has been recognized both domestically and internationally. The Faculty designs and conducts relevant university studies and scientific research programmes which are an integral part of the higher education process in the fields of biology, physics, geophysics, geography, geology, chemistry, and mathematics. The scientific, professional, and teaching activities of the Faculty of Science serve the development of science and technology in the Republic of Croatia, and contribute to science and education globally. The scientific disciplines cultivated at PMF are all part of the so-called STEM areas (Science, Technology, Engineering, and Mathematics), which are extremely important for technological development and progress.

The Faculty of Science of the University of Zagreb provides high quality and effective university education in the fields of natural science and mathematics at all three levels of university studies. The study programmes are founded on research and up-to-date scientific knowledge, whereas teaching is an important part of innovation and international collaboration. Scientific research is carried out within the fields of natural sciences (mathematics, physics, geology, chemistry, biology, geophysics, and interdisciplinary natural sciences) and interdisciplinary areas of science (geography), accounting for about 20% of the total scientific output of the University of Zagreb.





The faculty is home to a number of reputable experts in teaching and academic research, and each year FESB attracts a growing number of students

cooperation with internationally recognized research and academic institutions, respectively. In accordance with its research strategy, the Faculty continuously not only provides a basis of knowledge for the industrial, public and private sectors, but also ensures efficient mechanisms for knowledge transfer through the organization of international conferences, workshops and symposia, covering a broad range of topics and gathering researchers from all over the world.

Each year, approximately 2,300 students study at the Faculty and, so far, about 12,500 students have successfully completed different study programmes. There are around 900 new enrolments per academic year, about 500 at the undergraduate level, 300 at the graduate level, and 100 for vocational studies. Between 20-30 candidates annually enrol in postgraduate study programmes in Mechanical Engineering, Electrical Engineering, and Information Technology.

Due to its multidisciplinary nature, through various technological and professional projects, FESB has a profound impact on development in the entire region. In the last few decades, FESB research groups have carried out many professional studies for companies such as Hrvatski Telekom, Hrvatska Elektroprivreda, Ericsson Nikola Tesla, Brodosplit, Split-Dalmatia County, and many others.

FACULTY OF ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE

eng.fesb.unist.hr



The Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, with approximately 2,300 students and more than 250 employees, has continuously played an important role regarding educational and scientific issues in the area of engineering and high technologies, thus contributing to the benefit of the society. The basic activities of the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split involve teaching, research, development, professional work, and innovation in areas of technical science, including Electrical Engineering, Electronics, Mechanical Engineering, Naval Architecture, Computer Science, Industrial Engineering and Natural Sciences.

In particular, the robustness of FESB research capabilities has been confirmed through numerous successful competitive and other research and technological projects, a number of scientific and professional papers published in peer-review journals, and through continuous





A key aspect of the Faculty of Engineering is excellent opportunities for student and teacher mobility, both at the national and international levels. A strong focus in the Faculty is placed on keeping a healthy work-life balance for the students and academic staff. The Faculty put a lot of effort into attracting students and academic staff from, and sending them to, national and international scientific institutions and R&D laboratories and companies. Two main exchange programmes are available in the Faculty Erasmus mobility programme and CEEPUS programme. The Faculty is constantly working to improve quality and modernize laboratories, in order to implement the latest technology in educational processes and to prepare students for the future work market.

Cooperation with companies

The Faculty actively cooperates with local and international companies from all four major technical fields which are represented in the scope of the work. Also, cooperation is well established with higher education and scientific institutions. A large number of research projects in cooperation with companies is notable in terms of a proven concept of two-way ideas sharing between industrial partners and the academic community.

ICT sector

Over the last two decades, ICT has become a driving force behind major technological changes that have rapidly transformed the way we do business and work. The emergence of many new and innovative digital applications and services, the instantaneous availability of information and the ability to communicate and collaborate remotely, have laid the foundations for driving economic growth, and also improving the way we live. The Faculty of Engineering offers undergraduate, graduate,

FACULTY OF ENGINEERING, RIJEKA

www.riteh.uniri.hr/en



The Faculty of Engineering is an institution which plays a significant role in higher education and scientific research in the field of Technical Sciences, not only as a part of the University of Rijeka, but also as a leading institution supporting Croatian and international companies in R&D fields. Nowadays, The Faculty of Engineering is organised into 11 departments, 50 laboratories, an HPC facility and specialized computer centre, and a technical library. Mechanical Engineering, Naval Architecture, Electrical Engineering, and Computer Engineering are four technical fields in which the Faculty conducts undergraduate and graduate university study programmes. Also, undergraduate vocational study programmes in Mechanical Engineering, Naval Architecture, and Electrical Engineering are available as separate studies on the faculty. The top level study programme in the Faculty is a 3-year PhD study in the field of Technical Sciences.

The study programmes are the result of traditional and new scientific achievements in the fields of mechanical engineering, naval architecture, electrical engineering and computer engineering, as well as related technical fields

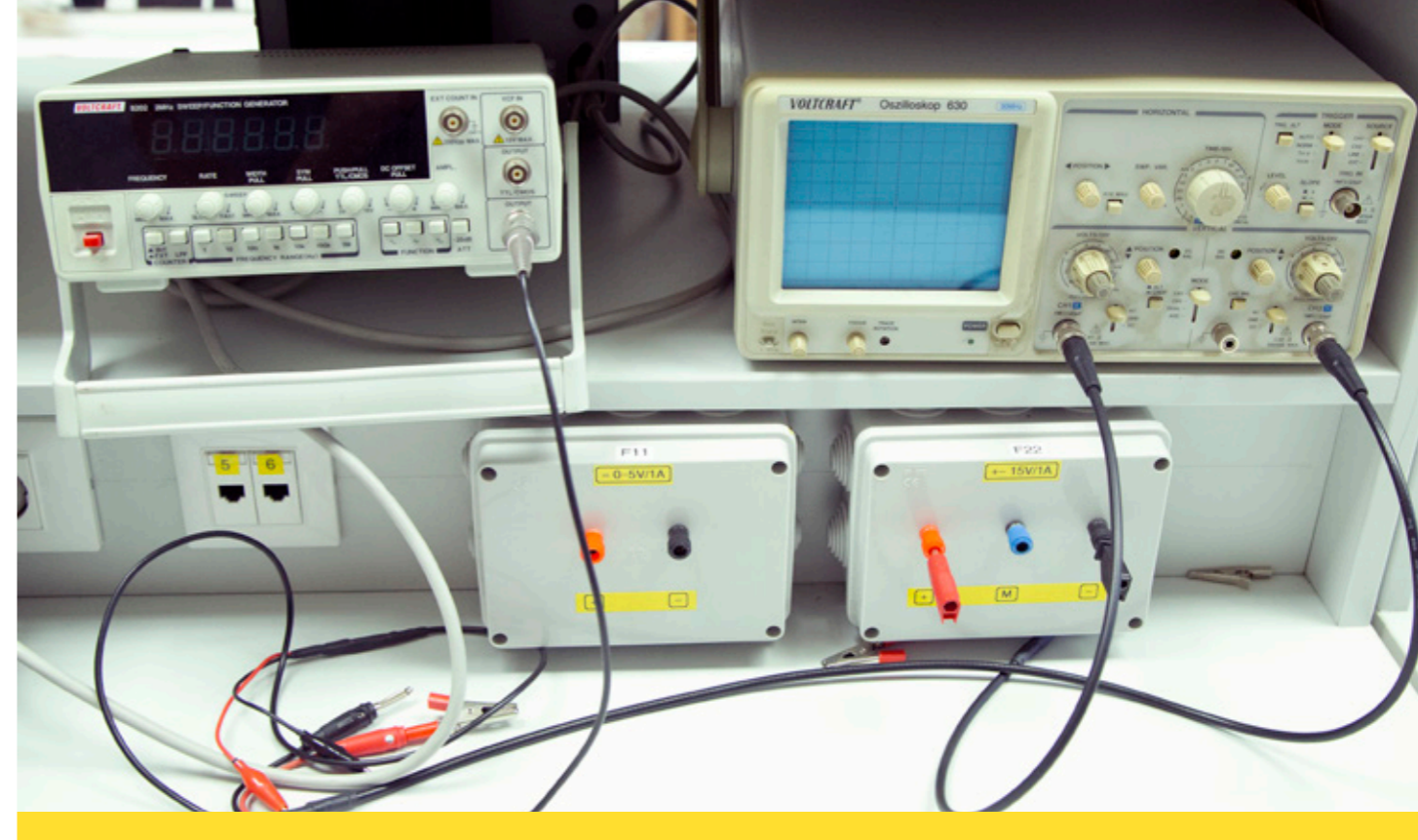
“An important aspect of the Faculty’s activities relates to cooperation with institutions and the economy, both at local and global levels. This collaboration helps the engineering industry to gain work-ready talent with profound engineering knowledge and practical training. On the other hand, the Faculty benefits from being involved in solving challenging real-world problems. In order to preserve such quality cooperation in the future, the mission of the Faculty is to actively seek out new industry partners, as well as to deepen cooperation with existing ones. The best indicator that we are on the right path is an increasing demand for our students in the labour market.”

Duško Pavletić, Dean of the Faculty of Engineering in Rijeka, Croatia

and doctoral programmes in computer science, preparing young professionals and researchers for the acquisition of new knowledge and skills in the understanding, design and control of digital technology, promoting innovation and development of new technologies in ICT.

Research and EU projects

The Faculty of Engineering, as an institution or on an individual basis, participates in several significant initiatives at a national and/or international level in the areas of advanced ICT technologies and the implementation of artificial intelligence. Two notable initiatives are the Centre of excellence for Data science, and Centre of competence for Smart cities. Both initiatives are designed to establish a research environment for the development of advanced sciences and the implementation of new technologies in industry. The activities in both initiatives are financed from the EU’s Operational Programme Competitiveness and Cohesion.



ZAGREB UNIVERSITY OF APPLIED SCIENCES

www.tvz.hr



The Zagreb University of Applied Sciences (TVZ) is a tertiary education institution that carries out a large number of undergraduate professional study programmes, together with a large number of specialist graduate professional study programmes, in the field of Technical Sciences. The study programmes follow the changing demands of the labour market, and provide students with the knowledge and skills necessary to meet the requirements of the labour market in the Republic of Croatia, but also in the EU and in the wider world.

Students are trained to become experts in the fields of:

- › **Electrical Engineering**
- › **Civil Engineering**
- › **IT**
- › **Computer Science**
- › **Mechanical Engineering**
- › **Mechatronics**
- › **Information Security and Digital Forensics**
- › **Digital Economy**

Connectivity with the it industry is strong throughout the courses, which help students to select and improve their professional profile. It engineers find employment in development jobs, in numerous public or private enterprises, in industry, representative offices, project organisations and state institutions

The University permanently employs about 150 professors and associates who deliver classes in the fields of Technical Sciences, Natural Sciences, Social Sciences and Humanities. In order to continuously raise the quality of the teaching processes, the University cooperates with a large number of external associates, who are renowned experts in their respective fields, in both science and industry. TVZ is proud to have more than 20 full-time teachers who have either a PhD degree with a corresponding scientific title or a PhD degree with both a scientific and a teaching title.

There are about 1,000 students who graduate each year with either a bachelor's degree or a master's degree, after undergraduate and specialist graduate study programmes. Each year about 800 students enrol in undergraduate professional study programmes, and about 300 students in specialist graduate professional study programmes, which makes a total of more than 4,300 students enrolled in study programmes during the academic year. This makes Zagreb University of Applied Sciences one of the leading tertiary education institutions, that educates engineers on undergraduate professional study programmes and specialist graduate professional study programme, which ultimately improves business competitiveness and increases economic growth in Croatia.

Instruction is delivered in 40 well-equipped computer-based classrooms, with over 600 computers and 17 superbly equipped specialized labs. Since 2009, students and staff have had the opportunity to take part in the international exchange of students, and teaching and non-teaching staff, in the ERASMUS+ programme. TVZ is continuously striving for excellence by improving existing study programmes and launching new ones, which ranks it among the leading of Croatia's universities of applied sciences, offering academically based and practice-oriented undergraduate professional study programmes and specialist graduate professional study programmes in the field of Technical Sciences.



DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTING, UNIVERSITY OF DUBROVNIK

www.unidu.hr
web.unidu.hr/index_eng.php



UNIVERSITY OF DUBROVNIK
DEPARTMENT OF ELECTRICAL
ENGINEERING AND COMPUTING

The University of Dubrovnik is one of the leaders at the forefront of the internationalization of higher education in Croatia. The Department of Electrical Engineering and Computing has a 30-year long tradition with over 1,300 graduate students, and offers undergraduate and graduate university studies in:

- › **Marine Electrical Engineering and Communication Technologies**
- › **Applied/Business Computing**

Monitoring the needs of the economy and social community in the development of new curricula which originates from the tradition and culture of Dubrovnik

“Dubrovnik has a 50-year long tradition of the computerization of business operations whereby it has become one of the leading centres in the region in this sector, which naturally has led to the establishment of our Department. Currently we have 26 employees, of which 14 are doctors of science. A distinctive feature of our Department is that most of our doctors of science have previous professional experience in the labour market, which, along with our individual approach, sets apart our way of transferring knowledge and experience to students.”

Mario Miličević, Head of the Department of Electrical Engineering and Computing

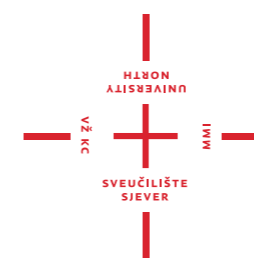
The Applied/Business Computing study programme educates experts in the field of Information and Communication Technologies to develop, integrate and maintain the computer and communication systems that are used in all areas of modern life. The digitalization of society and the economy, e-business, Intelligent Systems, the Internet of Things, Robotics, Big Data, and Augmented and Virtual Reality are just some of the trends in Information and Communication Technologies that have had an impact on this study programme. In addition, the emphasis is on a very diverse offer of elective courses, which allows graduate students of applied/business computing access to knowledge and skills crucial for the jobs of the future. The practical classes take place in laboratories with modern equipment in small groups to ensure an individual approach to each student. Students interested in scientific work during their studies are involved in research within professional or scientific projects in collaboration with teachers and external associates.

One of the goals of the Department is cooperation with the business and public sectors through professional and scientific projects and the promotion and positioning of the University in the local community, but also nationally and internationally through excellence in one of the most dynamic scientific fields. Currently, more than 10 largely international EU funded projects are underway in the Department.



UNIVERSITY NORTH

www.unin.hr/en



**Sveučilište
Sjever**

University North is one of the youngest but also the fastest growing higher education institutions in Croatia, which in the academic year 2021/2022 is running a total of 30 study programmes, of which over 80% are in the STEM field. This places it at the very top in the region, standing out from other universities. University North educates staff in deficit occupations not only in Croatia, but also at the European level. Graduates of University North are very successful, which is largely due to the fact that students, in addition to theory, acquire a good part of their knowledge through practice, learning from leading experts in real-world sectors and in the science sector. Also, University North is specific primarily in the composition of its teaching staff. A large proportion of teachers have had professional careers in the real economy and have additionally dedicated themselves to academic education. In such a way, not only professional and scientific knowledge, but also the real business experience of applying such knowledge, is transferred to students.

Education of students for the needs of the real economy and the health care system in the region of north-western Croatia through the quality realization of professional and university studies in accordance with the requirements of the Bologna Declaration

The constant growth and increase in the number of study programmes at University North is certainly the result of a response to the labour market and the needs of the economy in the region, a region which desperately needs experts in the fields which University North conducts studies. In all study programmes at University North, professional practice has been implemented through which students have the opportunity to apply what they have learned, and during their studies to work in a profession on specific tasks. University North cooperates with more than 100 companies and institutions, of which a large number are from the ICT sector, which requires a significantly larger number of professionals than there are in the labour market. Some of the companies with which University North cooperates intensively are also recognized in the field of ICT: NTH Mobile, Mobilissis, 404, Croteam, Infobip, Upchain, CRATIS, Marker and many others, where students of University North have the opportunity to acquire best professional practice. Without quality cooperation with companies and the economy, the development of the University would not be possible, and the backbone of this is joint projects in the economy, among which UNIN can highlight its cooperation with HAKOM, T-Com on various studies and projects such as research into the application of HbbTV technologies, the production of digital educational content in the field of health, and numerous other projects.

Quality staff are crucial for the proper management of the ICT sector. Therefore, University North has launched an undergraduate study of Computer Science and Informatics, which will start this fall 2021/2022, given the high market demand for experts in this field. It is important to emphasize that ICT is an integral part of the study programmes, with an emphasis on studies in the STEM field. Computer experts of this profile are architects and implementers of the latest Information and Communication Technologies, with high demands in industry, trade and the public sector.

Also, University North recognized 3D graphics, computer game development and 3D design in 2005 by launching an undergraduate study

programme in Multimedia, Design and Application, and supplemented it in 2018 by launching a graduate university study programme in Multimedia at the University Centre Varaždin. In these programmes, students acquire competencies in the field of 3D modelling for video games, 3D animation for video games, video game production, virtual and augmented reality (VR and AR), followed by 3 months of mandatory professional practice in a real-world work sector, and a final thesis consisting of a specific project, on a task on a topic related to the economy. This is precisely the greatest added value of studies at University North – a final graduate thesis that includes specific projects, tasks on the topic of solving “study cases”, and tasks from the real-world work sector.

Successful completion of studies at University North, and the combination of technology and creativity, enables employment in a wide range of jobs. In the field of ICT at University North, more than 400 students study annually, which makes up about 10 percent of the total number of students, while annually more than 100 students graduate in this area. At University North, students are focused on quality interaction with the economy, from which UNIN derives the focus for creating and adapting the content and form of the study programmes. The labour market has recognized the high level of expertise and motivation of students and professionals graduating from University North, and proof of this is the large number of reputable companies in the ICT sector that employ graduates from the University.





UNIVERSITY OF ZADAR

www.unizd.hr/eng



Sveučilište u Zadru
University of Zadar
Universitas Studiorum
Jadertina | 1396 | 2002 |

The University of Zadar is a place of creativity and the transfer of new knowledge and technologies

The University of Zadar was established on the foundations of the first university in Croatia – Studium Generale Sancti Dominici Jadrae, dating from 1396. The act on the establishment of today's modern integrated University was adopted by the Croatian Parliament in 2002. The University of Zadar, a legally and functionally integrated university, is registered in the Register of Scientific Organisations in the Fields of the Social Sciences, Humanities, and Natural, Biomedical, Technical, Biotechnical and Interdisciplinary Sciences. The University of Zadar expresses its basic task in the mission statement: The University of Zadar is a place of creativity and the transfer of new knowledge and technologies. The vision of the University of Zadar shows that the University perceives itself as a modern, international university, a generator of knowledge and a driver of innovative changes, based on the needs of society and the principles of equal opportunities, socially responsible behaviour, and high ethical standards.

The undergraduate professional study programme in Information Technology is a novel programme in the University of Zadar that started in

“Cognism is one of the global leaders in compliant sales intelligence platforms. We operate globally with more than 250 employees across four continents. Our core software engineering office is based in Zadar because we value local communities with a great source of talent – Zadar was a perfect choice when the Information Technology Study Programme kicked off in 2017/2018. Without this study programme we would probably not have set up an office in Zadar on this scale, where we employ more than 20 highly skilled professionals, and we plan to hire more people in the coming years. This IT Study Programme proves that global IT companies can operate from places like Zadar, when local universities have the vision and strategy to strengthen the IT ecosystem.”

Stjepan Buljat, Chief Technology Officer at Cognism

the academic year 2017/2018. One of the guides in the programme's development was the ACM curricula recommendations for Information Technology. Like other study programmes, this programme tends to prepare students as much as possible to be competitive in the demanding labour market. In that sense, professional practice is an integral part of the study programme. A total of 120 hours of practice in the winter semester, and 210 hours in the summer semester, are organised and coordinated with IT companies in Zadar County. Cooperation with IT companies has been in an ascending trajectory since then, and includes a variety of projects and initiatives related to the development of the IT sector, and industry in general in Zadar County. Moreover, researchers are involved in different scientific projects, some within the H2020 program. Further crucial steps are being undertaken towards establishing IT-related laboratories, and the first such laboratory is the UX laboratory, which has already attracted keen interest from various industry stakeholders. Furthermore, with the assistance of partners, initial steps towards enabling recognizable IT industry certificates for students have been carried out.

Some programme recognition has also come from IT companies outside of Zadar County which have chosen to open their offices in Zadar. Therefore, this relatively young study programme, together with other more established programmes (especially in Information Sciences and Geography with a strong GIS module) is an asset in developing the ICT sector in Zadar County and Croatia.



Vsite harmonizes study programmes with the development of new information technologies, and the needs of students, employers and society

Since 2013, VSITE has been conducting a specialist graduate programme in Information Technologies, where students acquire specialist knowledge in the field of Software Engineering and Information Systems, Computer Systems and Embedded and Laptop Computers, with the possibility of acquiring consulting skills and basic knowledge in the field of Computer Security Management, Information System Reliability, Robotics and Accounting, and Marketing basics. VSITE's success is thanks to experienced teachers and IT experts who selflessly convey to students their rich experiential knowledge of classical and modern Information Technologies. For the past 15 years, VSITE has successfully trained professionals and specialist engineers for the most demanding jobs in the ICT sector, as evidenced by a rate of 95% employability in the IT sector (according to a survey by alumni of the College club in 2019).

VSITE provides lifelong education programmes for IT professionals, and cooperates with companies that implement its new business concepts, and the modern information technologies that support them. In this way, VSITE can proactively support both foreign investors and their employment needs, in terms of the ICT fields its programmes cover.

Projects

- › Application of Artificial Intelligence in the recognition of suspected behaviour (partner of Husar companies in the realization of an EU project)
- › Cheatless, a tool for checking knowledge remotely
- › Traction battery charger (allows you to monitor the charging process of all types of batteries in real time, collaboration with EEET)
- › PASSIVE sensor LAN (range within a radius of up to 10 km)
- › Pro bono projects by teachers and students (mobile application for remote monitoring of solar systems, database of an institution for the education of people with special needs)

The flexibility of the curriculum, with a large number of elective subjects, and the improvement of the curriculum (2018 Python, 2020 Artificial Intelligence), together with the lifelong education programme, ensure students' futures in the IT labour market. Connecting with foreign investors, and meeting their specialist IT recruitment needs, is certainly an opportunity that VSITE is in a position to take advantage of.

In the next period, VSITE'S scientific research and professional activities are focused on industrial research and the experimental development of IT products, primarily in the field of Process Management and Predictive Maintenance, Supply Chain Management, the Internet of Things, Customer Relationship Management, the Application of Artificial Intelligence, Machine Learning and Data Engineering, Computer Cloud Services, and connecting small IT companies to e-clusters. These studies are designed to strengthen VSITE's teaching activities, and its training of teachers for the challenges posed by modern information technologies.

COLLEGE FOR INFORMATION TECHNOLOGIES

vsite.hr/hr



The College for Information Technologies was initiated by teachers of the professional study of computer science at the Polytechnic of Split. It was the first fully private higher education institution for computing in Croatia. The undergraduate professional study programme in Information Technologies has four courses: Programming, Computer Systems and Networks, Databases and Web Design, Information Systems. In addition to the compulsory subjects of the course, undergraduate students have at their disposal a large number of elective subjects, which allows them to create their own career and quickly engage in the work of IT companies:

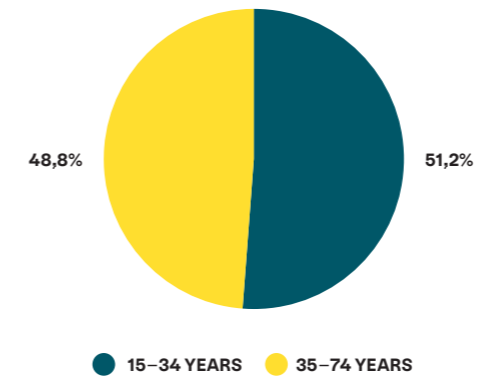
- › **Students of Programming** learn all relevant programming languages (Python, C, C++, C#, Java, ...) and concepts of software engineering
- › **Students of Computer Systems and Networks** must master Unix, Linux and Windows operating systems and their security, and gain first-hand experience working with servers and computer networks in the teaching work site at Storm computers.
- › **Students of Database and web design** master the relevant database management systems and tools used in web design, enabling them to develop web applications and content management systems.
- › **Students of information systems** are trained for the tasks of designing information systems, production and business automatization, and managing projects and documentation.



ICT SPECIALISTS

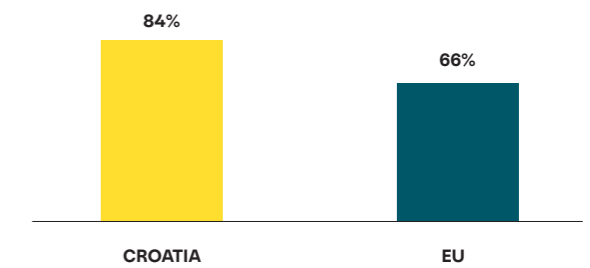
Distribution by age

In 2020, more than 50% of all persons employed as ICT specialists in Croatia were aged 35 years or under.



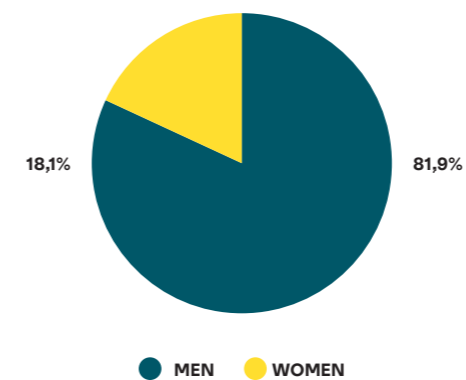
In fact, Croatia ranks highest among member states of the European Union in terms of the share of young people between the ages of 15 and 34 in full time employment in the ICT sector.

% OF EMPLOYED PEOPLE WITH AN ICT EDUCATION 15-34 YEARS



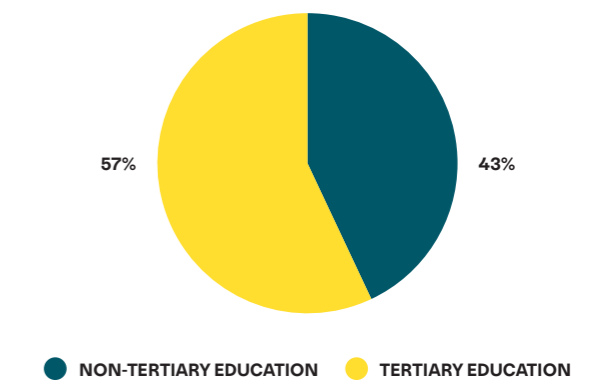
Distribution by gender

The vast majority of persons employed as ICT specialists are men.



Distribution by educational level

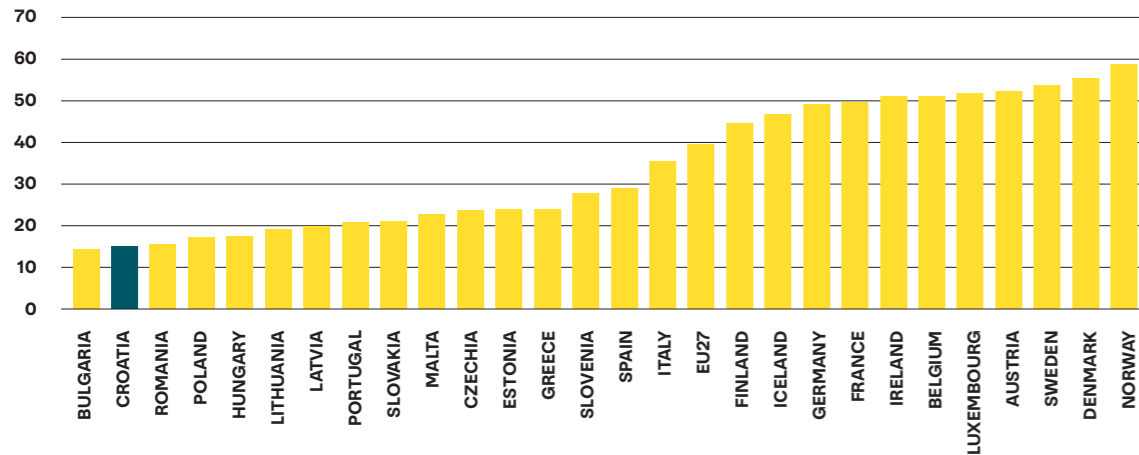
Over half of all ICT specialists had completed a tertiary level of education.



Source: Eurostat 2021, figures for 2020

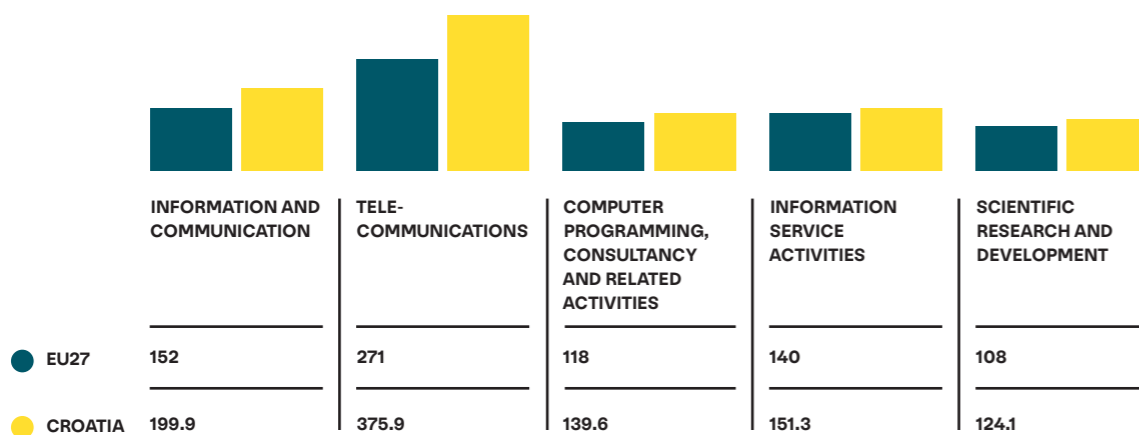
Average personnel costs in ICT in Croatia are significantly lower than the EU average. Moreover, wage adjusted labour productivity in the ICT sector in Croatia is above the EU average.

TOTAL HOURLY LABOUR COSTS, ICT, EUR



Source: Eurostat 2021, figures for 2020 (data for Cyprus and Netherlands was not available)

WAGE ADJUSTED LABOUR PRODUCTIVITY BY AVERAGE PERSONNEL COSTS (%)

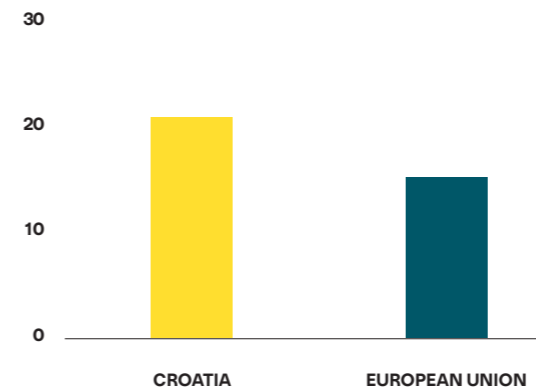


Source: Eurostat 2021, figures for 2018

In the field of the integration of digital technology in business, Croatia is above the EU average. A dynamic commitment to promoting and investing in digital technologies is being practised through EU-coordinated programmes. As a member of the EuroHPC Joint Undertaking, and having signed the Declaration on cooperation on Artificial Intelligence (AI) in 2018, Croatia also joined the European Blockchain Partnership in 2019, which allows for the further adoption and integration of blockchain technology in day-to-day operations.

According to the European Commission's Advanced Technologies for Industry Data Dashboard, Croatia is above EU average in AI and Big Data Technology Generation. The Technology Generation Composite captures countries' capabilities to develop advanced technologies through patent and firm-level indicators. It is composed of indicators such as the share in world patent applications, revealed patent advantage index that measures specialisation and share of VC-backed firms that develop advanced technologies.

ENTERPRISES WITH HIGH LEVELS OF DIGITAL INTENSITY (%)



Source: European Commission, Digital Scoreboard, 2020

TECHNOLOGY GENERATION COMPOSITE SCORE



Source: EC's Advanced Technologies for Industry Data Dashboard, 2021



SUCCESS STORIES

Growing presence of leading ICT companies

A1 HRVATSKA

www.a1.hr/about-us



A1 Hrvatska has been an innovator and provider of communication services based on the most modern technologies for 22 years. As the largest greenfield investment in the Croatian market, the entry of the company called Vipnet at the time signified the start of competitiveness in the telecommunications market and thus the shift of the entire industry towards numerous innovations. In the meantime, the company took a leading position in the field of innovation and was the first in Croatia to present prepaid services, multimedia messages (MMS), video calls, parking payment services via SMS, and mobile 3G internet and 4G networks. In less than two decades, the company has grown from a mobile operator into a significant convergent market player that uses state-of-the-art networks to offer its users all mobile, fixed, TV and ICT services and products, as well as helping them navigate the realm of new digital technologies. A1 Hrvatska has been active in the field of sales of business ICT solutions since 2016. Over the last five years, the company has formed a team of ICT experts and defined a portfolio of solutions in three main areas: data centres, cyber security, and smart solutions. Thanks to such a diverse offer, A1 Hrvatska has become one of the most influential domestic companies, and one of the largest generators of growth in the ICT industry in Croatia.

In recent years, the need for data centre services has grown tremendously, and forms of teleworking due to the pandemic have further increased the demand for collocation and cloud services. Therefore, A1 Hrvatska, in addition to its existing data centre, has invested EUR 11 million in the most modern data centre in Croatia, which started operating in Q3 of 2021. With additional capacity, it includes the most modern technology, and is designed and built as a Tier III data centre according to the UpTime Institute – the highest ranked data centre in the domestic market. Data centre services rely on the company's core services, which is why they offer links and other technology that allow users to be present online constantly, without interruption. Also, to provide customers with a complete service, the focus is on cyber security. The company offers consulting services on cyber protection, such as vulnerability checks of user systems and advanced levels of protection.

With the development of technology and communication infrastructure, smart solutions connected to the Internet of Things (IoT) have



In line with the digital lifestyle, A1 Hrvatska provides business customers with complete ICT services and solutions to enable them to focus on their own business growth

become a reality, and A1 Hrvatska is among the first providers of such services for smart cities and advanced industries. As the first domestic operator with national coverage via the NB IoT network, services such as these may be offered on the market: smart metering, smart parking, air quality monitoring, smart waste management and others. So far, projects have been launched in several Croatian cities. In addition, A1 Hrvatska has adjusted its portfolio for an important Croatian industry – tourism. Specialized solutions have been developed, such as a mobile application for hotel guests, IPTV solutions, advanced WiFi, and smart waste management systems.

The guiding principle of the ICT solutions and services of A1 Hrvatska is to facilitate and make the operations of users more efficient, leaving their online availability and security to A1 experts with complete confidence, so that they can focus on their business. The demand for ICT services is constantly growing on the Croatian market, and the company sees the COVID-19 crisis as a chance to invest in the development of the growing digitalization of the economy and society. Its plan is therefore to expand the portfolio of smart solutions by offering reliable and safe cloud services using cutting-edge infrastructure and digital solutions based on specific requirements. Besides supporting its business users, the company is committed to building a 5G network that delivers high capacity, gigabit speeds, and low latency. It is especially important for reducing the gap between rural areas and cities in Croatia, and will enable business development and equal conditions throughout Croatia.



Atos

atos.net/hr/hrvatska



Atos is a European IT giant based in France with 105,000 employees in 71 countries and annual revenue of over EUR 11 billion. Atos is a global leader in digital transformation and a European number one in cybersecurity, cloud, and high performance computing (HPC), as well as a Worldwide Information Technology Partner for the Olympic and Paralympic Games. In 2021 Atos is celebrating 10 years in Croatia. They now have offices in Zagreb, Split, Osijek and Rijeka, with over 270 employees. Atos in Croatia holds the prestigious Great Place To Work (GPTW) certificate, the world's most famous recognition in the field of employee satisfaction.

Atos in Croatia is a local market leader in the field of digital transformation, and for its clients, among other things, they plan and organize the construction of modern data centres, create platforms to improve user experience or automate business processes, implement SAP ERP, and deal with cyber security. Among Atos' latest projects for the Croatian market, three major ones stand out. One of them is the supply and maintenance of Atos' BullSequana XH2000 supercomputer for

The purpose of Atos is to help design the future of the information technology space. Its services and expertise support the development of knowledge, education and research, and contribute to the development of scientific and technological excellence

the Croatian Meteorological and Hydrological Service (DHMZ). The new system will multiply DHMZ's computing power by 4, to enable faster calculations for more frequent and accurate weather forecasting and prediction of severe weather events. Another major project is the expansion and modernization of Hrvatski Telekom's (HT) data centre. With this investment, HT more easily supports the migration of business to the cloud, whether it be a private, public, or hybrid cloud. In addition, Atos is currently working on the largest business outsourcing project in Croatia, which includes partially outsourcing business and people. They are taking over the maintenance of over 30 IT systems and applications and hiring about 30 employees, which will enable the transformation of the client's IT operations into an agile organization with lower costs and higher quality.

The future that Atos is shaping comes with a concrete concern for the environment. Atos has boosted its decarbonisation ambition by committing to Net Zero by 2028. For its customers, Atos is developing a decarbonisation option, and offers CO2 reduction commitments in all large contracts. Emphasis is also placed on Engaged Employee Experience, the most comprehensive set of services on the market today. It is unique for its combination of both traditional digital workplace solutions and employee experience services. It supports businesses around the world to effectively manage new ways of working and face challenges such as a remote and dispersed workforce. Cyber security is an area that Atos has been focusing on for a long time, and they expect significant growth in this segment of business in the future. The global organization plans to employ 2,000 cyber experts, including several dozen in Croatia.

The ICT sector is a driver of the economy and a carrier of innovation in the ways of conducting business and work, which was especially evident during the pandemic. With the help of local experts and global expertise, Atos co-creates these positive trends in Croatia through innovative projects and the development of smart technologies.



“Ericsson Nikola Tesla has been a technology business leader in Croatia with strong ties to academia for more than 70 years now. We have been transforming and growing over the years, always maintaining a focus on the quality of our people, partnership with our customers, and the sustainability of our business. We make the best use of cutting-edge technology by creating digital responses to challenges in contemporary life. Value-driven, we seek to employ technology for the good of businesses, industries and society as a whole. As an associated company of Ericsson, the global leader in 5G, we introduced this technology to our customers, and look forward to developing innovative solutions that this new platform enables. Our Research & Development centre, the largest of its kind in Croatia, is highly valued in Ericsson’s global organization. Digital solutions that we provide are designed in close partnerships with our customers and are tailored to their specific needs. After the announcement of the introduction of digital Covid-19 passports in the EU, Ericsson Nikola Tesla promptly reacted and, together with partners, was the first in the EU, within seven days from the request, to develop and implement an application for Covid-19 vaccination certification, making Croatia the first country in the EU to accomplish this. Our knowledge and expertise in digital transformation of large complex national public systems in specific domains such as eHealth is currently also serving customers abroad. We look forward to enabling our customers to harness diverse opportunities for innovation that the full implementation of the latest generation of mobile technology will bring about.”

Gordana Kovačević, President of Ericsson Nikola Tesla

ERICSSON NIKOLA TESLA

www.ericsson.hr/en/homepage



ERICSSON

Ericsson Nikola Tesla, an associated member of Ericsson Group Sweden, is a Croatian company with over 3300 employees, the majority of whom are experts in the STEM field. Investment in talent is one of the company’s focus areas, and more than 400 experts were employed in 2020 and the first half of 2021 alone. In 2020, the company’s sales revenue grew by 13.7% year-on-year to EUR 268.49 million. Exports accounted for 54.2% of the total revenue, which positioned Ericsson Nikola Tesla, with more than EUR 132.72 million of exports in 2020, among the largest Croatian exporters, ranked as number one in knowledge export.

The Company operates in the global ICT market and supports sustainable economic and social development by balancing long-term growth and competitiveness in changeable external conditions with a positive economic, social and environmental impact. Its activities include research and development, the design of complete communication solutions, services in the multi-service and mobile networks area, including mobile internet and complex system integration in all business areas. Innovative value-added digital solutions that the company provides include those in healthcare, transport, state administration, municipal services and multimedia.

The company provides innovative solutions in healthcare, transport, state administration, municipal services and multimedia that improve people’s lives and create new value



Five is a digital design, development, and growth marketing agency. In 2021, they gathered over 290 experts, spanning offices in New York, Zagreb, Split, Osijek and Rijeka

more and more young talent will buckle down and find a place to develop and grow their skills, primarily in software testing, application development, DevOps, and customer support. In March 2021, FIVE merged with Endava, one of the leading global IT services providers, with whom they share similar business and cultural values. Joining forces with Endava enables FIVE and its people to work on even bigger projects with even bigger global clients, and the additional opportunity to accelerate growth across all business segments.

In the year 2020, despite the global economic crisis due to the COVID-19 pandemic, FIVE experienced an upward trend in business, which is best illustrated by the level of newly acquired clients, and retaining old clients who rely entirely on their development teams. During that period, they became a partner to some of the world's industry-leading companies, including the world's leading fixed income management company, the fifth largest pharmaceutical company in the world, and a global leader in security software. Their list of clients today, compared to a year ago, has changed significantly, and they have managed to reduce business risk by distributing revenue among a larger number of strong clients.

In the first nine months of 2021, FIVE is recording growth rates higher than 45%. During the current year only, FIVE hired more than 100 new experts in Croatia and the United States. They closed the year of 2020 by reaching service revenues greater than EUR 13.27 million. In the next 18 months, FIVE plans to hire an additional 200 people in Croatia only, and to hire as many as 500 experts by mid-2023. Vast opportunities that are opening up together with Endava today provide assurance that such growth rates are sustainable in the long term. Next year, FIVE will be opening a new office in Split, and plans to have a capacity for 70 people there by 2023.

Croatian talent on the global IT scene is well recognized and appreciated. FIVE is proudly contributing to building a bigger picture of Croatia as a country of knowledgeable people and skilled professionals capable of solving global digital challenges.

FIVE

five.agency

FIVE

FIVE is a digital design, development, and growth marketing agency that started as a small development studio back in 2007. Their main focus is solving core business problems and building award-winning digital products for global companies in finance, media, publishing, NGOs, pharmaceuticals, and other industries in global markets, but mainly the U.S. market. In 2021, FIVE gathered over 290 experts, spanning offices in New York, Zagreb, Split, Osijek, and Rijeka. Their New York office was established in 2010, and during the last decade, FIVE has developed into one of New York's most respected digital agencies. This was confirmed in 2020 by being included in the list of the three best mobile development agencies, according to Clutch, the leading ratings and reviews platform for IT, Marketing and Business service providers. Breaking into the demanding New York digital design scene fortified FIVE's image in clients' perceptions as a leading New York agency.

Aside from its fast-growing Zagreb team, FIVE is expanding its team in Osijek. In 2021, they opened the doors of their new office, where

IBM

Drive real business transformation

IBM technology has been present in Croatia since 1937 (and in its present office for over 25 years), and it has helped shape the country's technological development. IBM chose Zagreb for their facility, based on criteria such as its highly educated and experienced professionals, language skills, and a favourable business environment.

The Client Innovation Centre Zagreb is one of the strategic IBM Centres for the global delivery of Technology Support Services. Established in 2016, it has become a hub of global importance for the company, providing end-to-end remote technical support on hybrid cloud platforms, hardware and software solutions.

IBM delivers IT services to the global clients of IBM and provides multi-vendor support services covering a broad range of industries, from retail and financial institutions through to automotive services.



“IBM’s client innovation centres are critical in delivering IT services to their clients around the world as they advance with their journeys to AI and hybrid cloud.”

Tomislav Balun, Country Leader, IBM Croatia



IN2 GROUP

in2.hr/en



IN2 Group Ltd is one of the leading ICT software development companies in the South-East European market focused on the development of digital solutions that provide support to the most demanding business processes and industrial verticals. With almost 30 years of experience, the company has acquired experience in the development and implementation of solutions in almost all business branches with a particular focus on healthcare, finance, insurance, business and the public sector. IN2 Group is part of Constellation Software Inc. (CSI), with branches in over 100 countries around the world.

IN2 Group is well-known for projects that include complex and long-term solutions, as well as setting high standards of execution. The company has been continually investing in the implementation of new technologies, offering a rich portfolio of solutions adapted to the needs of users. The Group now operates in five countries, with offices

Leading provider of IT services for the public and private sectors in Croatia

in Croatia, Slovenia, Bosnia and Hercegovina, Serbia and Macedonia, employing over 350 experts. IN2 Group experts are leaders in the industry in developing life-changing large-scale projects with positive effects on the economy and society.

IN2 Group is an end-to-end partner for planning, design, and implementation that delivers a complete solution. For the health sector, IN2 group has a strong team developing software products and own solutions for hospitals, laboratories, health insurance companies and other healthcare institutions. Their main platform, primarily intended for the informatization of hospitals, is the Integral Hospital Information System – IHIS. For partners in financial asset management, insurance and banking, the main product of IN2 Group is the INvest2 solution, which has been implemented in some 40 financial institutions in seven countries, and is used by hundreds of business users who manage tens of billions of EUR of financial assets for millions of individual investors. Clients in the business sector can benefit from solutions that enable a quick and efficient digital transformation of their key areas of business. With IN2opus*ERP – an integrated solution for business process management in retail, wholesale and distribution, clients receive a full business overview and quick and easy access to data in all required formats with just one click.

“Our focus is on products that bring standardization of work processes which brings multiple benefits and value to our customers. All this is possible thanks to our experts who have a deep knowledge and understanding of business processes in verticals. The prerequisites for the development of such solutions are many years of experience, a presence in each vertical, and the monitoring of our business development, which puts us in an elite circle of companies as long-term partners. There are many positive examples in IN2 Group, from finance to the business sector, which provide a good foundation for an even stronger and larger IN2 Group in the coming years.”

Denis Jašarević, CEO, IN2 Group



ORACLE

www.oracle.com/hr/index.html

ORACLE

Oracle established its dedicated office in Zagreb, Croatia in 1994, and since then it has significantly influenced the country's technological development. Oracle is embedding innovation in every aspect of their technology solutions and delivery service – and they have used that empowerment to lead the Oracle Croatia team and local Oracle Partners to enable customers to reimagine their businesses, processes and experiences. Oracle provides the building blocks for companies to pioneer innovations and drive new business models, using AI and Machine Learning, to ensure business growth for any industry. Oracle is particularly proud to have created a large Oracle community in Croatia with over 100 members gathered in associations, partner companies and academic institutions.

Oracle creates the future by designing, developing, and delivering solutions that transform how the world uses and manages information

“The era ahead of us is the era of autonomous services, which are tailored to each user – Oracle Croatia acts as an accelerator for digital transformation activities, not only in Croatia but also the broader region, which has a significant impact in digital economy growth.”

Marin Tadić, Country Leader Croatia & Cluster Leader Tech – Hungary, Serbia, Slovakia, Croatia

Executive decision makers today are under tremendous pressure to ensure the survival of their organizations. Restrictions on movement, disruptions to the supply chain, and a volatile economic outlook are upending the traditional ways of managing operations. In the face of such uncertainty, IT investments are coming under increased scrutiny to prove their value, and to demonstrate how they are supporting the broader business and the strategic goals of an organization.

Oracle will keep helping its customers in the private and public sectors, developing roadmaps and advancing their (digital transformation) journey from any point. Artificial Intelligence, Blockchain, Human interfaces, the Internet of Things, Machine Learning, and other emerging technologies permeate every aspect of work and life. These technologies help us reimagine what’s possible: self-driving cars, personalized medicine, precision agriculture, and smart cities.

Oracle’s complete, integrated approach makes it easy for companies to get started in understanding how new and innovative digital use cases are helping organizations adapt to the digital economy.



SIEMENS

new.siemens.com/hr/hr.html

SIEMENS

Siemens Croatia is part of the global Siemens Group. Siemens is the world’s leading company in the field of automation, digitalization and electrification. As one of the largest manufacturers of cost-effective and energy-efficient technologies, Siemens is a leader in industry automation, infrastructure and industrial solutions, as well as providing energy distribution systems. Siemens has been present in Croatia for over 130 years, and thanks to its knowledge and experience in providing state-of-the-art technological solutions in markets around the world, Siemens Croatia is a valuable partner to the Croatian economy.

The key projects of Siemens Croatia in the past year are closely and mostly related to the field of digitalization in industry and smart infrastructure. In particular, Siemens Croatia has distinguished itself in a significant number of projects in the Croatian market, from equipment delivery and software solutions to services and service activities in the field of automation and digitalization. It has a long cooperation history with various clients from all branches of Croatian industry. In the past year, a significant emphasis has been placed by Siemens Croatia on

Siemens Croatia is part of the global Siemens Group. Due to its knowledge and experience in providing advanced technological solutions worldwide, it has been a valuable partner to the Croatian economy for over 130 years.

digital consulting for companies on their way to digital transformation, and to 'smart grid' solutions and projects of voltage regulation in the portable high-voltage network, by applying the latest technological solutions in several Croatian substations. In addition, Siemens Croatia proudly notes the application of smart applications such as IoT and Digital Twin to test the functionality of a plant without a physical presence at the test site. They are also actively working in the field of the application of distribution solar systems and their connection to the energy network, and offer interesting solutions in the field of e-mobility.

Siemens in Zagreb is continuously developing a team at the Global Engineering Centre (GEC) in the field of process industry, which today consists of about 60 mostly young talents. In other words, the company in Croatia has retained an exceptional potential of young engineers whose software solutions and work with Siemens state-of-the-art distributed control and management systems are implemented in various systems and companies in many countries around the world, all from its headquarters in Zagreb. Last year, GEC implemented many challenging projects abroad in various industries, mostly in the pharmaceutical industry.

“Our tendency is to strengthen digital competencies in industrial plants in the spirit of Industry 4.0 standards, which is very important for the future. We at Siemens believe that digital transformation includes the transformation of people and management, not just the development of digital solutions. In this sense, we have prepared our people for the coming period – their awareness, knowledge, way of thinking. We have set four strategic priorities that we want to apply in our business: influencing customers, developing our people, promoting the importance and benefits of technology, and finally – striving towards growth by learning from all the changes that have taken place. In this way we believe that we will contribute to the local community and Croatian economy, that as a company we will grow together with customers day by day, and work with them on future solutions in industry and smart infrastructure, with an emphasis on energy and environmental sustainability”

Medeja Lončar, President of the Management Board of Siemens Croatia



HRVATSKI TELEKOM

www.t.ht.hr/en



Full range of telecommunications services, fixed line and mobile telephone services, data transmission, internet and international communications

Hrvatski Telekom has held the position of market leader in all segments of the telecommunications business from the very beginning. Over the years, the company has continuously carried out transformation processes to always provide its customers with the most advanced services and solutions. Today, Hrvatski Telekom is one of the largest private investors in the digitalization of Croatia and a modern company. Its vision is to achieve sustainable and profitable growth by connecting everyone in Croatia with the opportunities provided by digitalization and enable people to make their lives better.

Hrvatski Telekom has invested a total of EUR 1.32 billion over the last six years, from which Croatian society has benefited greatly. In 2020 alone, Hrvatski Telekom invested more than EUR 225.62 million. It resulted, among other things, in a record coverage of fibre optics, because in just one year, the company laid more than 6,000 kilometres of fibre optics, equal to the radius of the Earth. More than 80 thousand new households and companies received optical speeds. And their plans for this year are even bigger – around 100,000 households, which will strengthen HT's position as a market leader and a leading mobile and fixed network. The optical infrastructure in which the company continues to invest intensively is a crucial lever for strengthening and developing the competitiveness of the Croatian economy. Hrvatski Telekom was also the first to launch a commercial 5G network in Croatia in 2020.

This opened a new chapter in the development of the digital society and economy, preparing Croatia for digital transformation based on Industry 4.0, and placing it alongside the most technologically advanced countries globally. Following the completion of the recent RF spectrum auction, HT with an EUR 17.25 million investment, ensured the highest 5G spectrum share that will enable the biggest and fastest 5G network of the future. As the leading operator in development of 5G networks and services, HT, with a total of 600 5G base stations, already covers a population of 2 million with a 5G network, and with the new RF spectrum, has met the preconditions for strengthening its leadership position further. 5G technology is an important milestone for the country, and the foundation of future technological, economic, and social development, and a higher quality of life.

Hrvatski Telekom offers a wide range of solutions and services for residential and business customers – fixed and mobile telephony services, data transmission, TV services, internet and international communications, ICT and Cloud services, and Smart City solutions. HT is a leader in Smart City solutions, and many of them are implemented together with Combis, a company it wholly owns. Hrvatski Telekom and Combis aim to connect society as successfully as possible with the opportunities provided by new technologies. Smart City solutions are a critical step to building a digital society.



Boris Drilo

- › Member of the Management Board and Chief Technical and Chief Information Technology Officer (CTIO), Hrvatski Telekom
- › President of the HUP ICT Association

Digital infrastructure and digitalization are extremely important for all aspects of our lives, for the economy, local communities, and society. The growing need for digitalization indicates that this trend will continue. Further digitalization and further development of the ICT industry require the development of fibre-optics infrastructure. We have seen its importance in the past two years, in which we have shown how important a stable and fast internet connection is to continue to operate in a personal and business sense. Likewise, optical networks are a prerequisite for the development of 5G technology, which is an important milestone for the country and the foundation of future technological, economic, and social development, and a higher quality of life. Due to its wide application, there is practically no area that will not

benefit from 5G. This technology enables faster and better internet access, faster network response, and mass connectivity with about a million connected devices per square kilometre, which is required to develop smart industries.

In the past period, the Croatian ICT sector has established itself as one of the key generators of economic growth. The period we are currently in further confirms ICT as a strong lever in combating the crisis of Covid 19's adverse effects on the entire economy. It must be emphasized that the ICT industry in Croatia over the last ten years has had the highest employment growth. It generates the highest revenues and creates the highest added value, and pays the highest taxes and contributions per employee to the state budget. Its exports are growing in double digits. ICT investments create high levels of newly created gross added value. For example, EUR 132.72 million invested in ICT creates at least EUR 132.72 million of gross added value, with approximately 1/3 of the value being created by the investment itself, 1/3 by the activity of suppliers, and 1/3 indirectly through employees through their personal consumption. ICT projects have a relatively short implementation period of 6 to 18 months, which is very important so that their multiplicative effects on the rest of the economy happen quickly and represent the best type of investment for society as a whole.





COMBIS

www.combis.hr/en



Combis is a regional high-tech ICT company focused on the development of application, communication, security and system solutions and the provision of services, and has been present on the market for more than 30 years. In 2010, Combis became a member of the HT Group. Subsequently, the Croatian market gained wide access to a broad portfolio of first-rate information-telecommunications business solutions and services. Therefore, today Combis is an exceptionally flexible company, able to respond quickly to market impulses, but also a company with high international corporate standards which makes it an ideal partner for large companies.

With more than 400 highly motivated employees, more than 1,000 successful projects in Croatia and abroad, 900 professional certificates and more than 70 technology partners worldwide, Combis provides a high level of expertise and competency for the growing needs of more than 500 satisfied business customers. The company is present in regional and international markets, with 9 branches in Croatia and 5 in the region. In Croatia they have offices in Zagreb, Split, Rijeka, Osijek, Zadar, Pula, Varaždin, Bjelovar and Dubrovnik. Combis also operates via several locations in the region. It has an office in Sarajevo in Bosnia and Herzegovina, as well as three service centres in Banja Luka, Tuzla and Mostar. It is also present in Serbia, with a local headquarters in Belgrade. Their team of experts from various technology fields has the knowledge to make clients' businesses more efficient, whether we are talking about complex network products, demanding security projects or complex development solutions. Among the most prominent projects and achievements, they would like to single out:

By employing modern ICT solution design methodologies, as well as advanced technologies, combis ensures reduced technology and business risks, the optimisation of operating costs, innovation, and the improvement of clients' businesses

- › Cooperation with **Rimac Automobili**. Combis successfully responded to their complex request and offered expertise to connect several different solutions from partner companies VMware, HPE and NVIDIA, and successfully integrated them to ensure the delivery of personalized graphics virtual workstations to CAD / CAM engineers at Rimac Automobili from any location or any device
- › Combis solution for managing API services in **Wiener osiguranje**. In order to create a competitive advantage and an additional breakthrough in the market, the company addressed the implementation of API service architecture, which is the key to agile integration. Wiener osiguranje is now able to launch faster new mobile applications, simplify customer onboarding, and has API unified monitoring and management and security settings automation.
- › Combis implemented the data centre of **Hrvatska pošta Mostar**. The project entailed the implementation of a software-defined data centre with cutting edge technology. Hrvatska pošta Mostar has managed to address all challenges with a set of technologies for the Software Defined Data Centre (SDDC). SDDC is a modern data centre that provides business support and enables the efficient use of resources, ensures fast response for customers, and allows a lot more services to be available from any location.

Also, Combis is serving leading domestic clients in the field of finance, retail, telecommunications, hospitality and government industry verticals. The unique selections of ICT solutions is not designed only for the Croatian market, but also fits in international markets, and COMBIS also provides services to companies abroad. Combis has established partnerships with a number of the world's leading IT corporations. They cooperate with more than 70 global partners such as Citrix, Cisco, Commvault, Dell, Fortinet, IBM, Lenovo, Microsoft, Oracle, Palo Alto, Redhat, Weeam, VMware.

We are building the future.

Next generation optical network

10 GIGA

TELEMACH

telemach.hr

telemach

Telemach has been present in Croatia since March 2020, after it acquired Tele2 Croatia and became part of United Group, the leading telecommunications and media operator in Southeast Europe. Since then, the company has been going through an intensive business transformation with a clear focus on delivering the best customer experience and providing gigabit speeds throughout Croatia. At the beginning of 2021, Telemach started building its own 10 Giga optical network and launched fixed telephony and super-fast internet speeds which are 20 times faster than the average internet speed in Croatia. With the introduction of new mobile packages and the start of an investment cycle of EUR 225.62 million aimed at the modernization of the mobile and the construction of a state-of-the-art 10 Giga optical network, Telemach is the fastest growing operator in Croatia today. Business growth is accompanied by a significant increase in the number of direct hires, to be more precise, an increase of a staggering 59 percent in a year and a half, which means that the company employs more than 600 people at the moment.

By building the fastest 10 Giga optical network in Europe, Telemach will position Croatia high on the European digital map and provide

“Our vision is to transform Telemach Croatia into a completely convergent telecom company that offers a full range of telecommunications services on its own infrastructure, and I am glad that we will soon be able to offer the so-called Triple-play service, i.e. television, internet and mobile telephony in one package. We came to Croatia to become a leader, and we plan to achieve this by significantly improving the quality and by introducing the newest, most advanced services. To this end, Telemach is investing heavily in network infrastructure and is undertaking intensive network construction following the example of United Group companies who have the fastest mobile networks in their markets.”

Adrian Ježina, CEO of Telemach Croatia

customers with the highest level of service quality. Thanks to investments in infrastructure, Zagreb will become the first 10 Giga city in the region, and the fastest optical network will soon be available throughout Croatia. The introduction of technology for ultra-fast data transfer is of strategic interest to the country, and Telemach Croatia wants to be a leader in digitalization since it considers this to be the backbone of progress, given the expected positive effects of technology on the economy and society as a whole.

Simultaneously with the construction of an optical network, Telemach has significantly improved the coverage and capacity of the existing 4G mobile network and is hard at work building a 5G network. By the end of 2021, the entire city of Zagreb will be covered by their 5G signal, and by the summer of 2022, the entire territory of Croatia. The residents of Novi Zagreb can already boast of the fastest internet speeds in Croatia because the entire neighbourhood is covered both by a 5G mobile and a 10 Giga optical network. Telemach, until recently a mobile-only operator, is building the fastest fixed network in Croatia and has introduced EON, one of the most popular and most advanced TV platforms in the region. This television of the future is among the world's most advanced platforms with numerous functionalities, comparable to Netflix for example, but with relevant local content in superior HD quality.



Digital agriculture platform – empowering growers and the agri-food value chain with real-time insights

AGRIVI has built a comprehensive suite of digital agriculture solutions for farms, food companies, agribusiness banks, ministries of agriculture, and other important stakeholders of the agri-food value chain, to support them in adopting change and empower their digital transformation projects. Powerful farm management software provides real-time agronomic and economic insights throughout the entire food production process, and helps producers in producing healthy, nutritious and safe food by applying sustainable and climate-smart agricultural practices.

AGRIVI empowers agri-food stakeholders to collaborate with growers by using a digital platform, provides agronomic practices and advice to meet quality requirements and make their production sustainable and profitable, utilize big data analytics to identify which actual practices their farmers apply to lead to the best food quality, and much more. The positive impact on over 100 million people worldwide that they already create, together with customers and partners in 100+ markets, make them confident that change is possible and the future is bright. AGRIVI is humbled to be a part of the solution and is proud that today they are a global leader in digital agriculture.

AGRIVI

www.agrivi.com



AGRIVI is a company with a grand yet simple vision – to solve the global food problem by changing the way food is produced and positively impact over a billion people. The AGRIVI approach to solving the global food problem is through the digitization of agriculture, that is, by switching the farmer’s decision-making, reliant on traditional practices and historical knowledge, to a new data-driven and fact-based decision-making empowered by best-growing practices and real-time agronomic insights available using technology. AGRIVI believes that the digital transformation of the entire agri-food industry is essential for solving the global food problem, and they are focused on both changing the way farmers produce and on empowering collaboration between the agri-food value chain and farmers. The solution is not just in bringing a simple farming app to growers, it is about supporting them in adopting new concepts of the crop management system, by enforcing best growing practices that focus on sustainability, food safety and nutrition, the timely protection of their crops to mitigate the risk of yield loss, and ensuring efficiency of field operations to secure profitability. The change is in adopting a new way in which companies collaborate with growers to secure a sustainable and efficient food supply chain.





CROZ

croz.net



Crafting meaningful solutions

CROZ develops clever solutions for complex businesses environments. It is specialized in critical IT systems in large business organizations. CROZ can help in the transition from a traditional enterprise to a new digital economic structure. CROZ core competencies are: CLOUD NATIVE AND DEVOPS: Building and executing a sustainable strategy for transition to cloud; DATA ENGINEERING: converging all customer data sources into a polyglot platform capable of providing a wide range of insights into business; BUSINESS AGILITY: Improving organizational resilience by building better leadership practices for complex environments; and INTEGRATIONS: crafting the best strategy for every possible integration scenario an enterprise might need. CROZ offers education and consulting, the implementation of specific business solutions, or turn-key projects for large customers.

CROZ has a strong presence in the Croatian IT market: working with major banks, telcos and government organizations. It has proved to be a trusted provider of business critical IT solutions. With a strong

focus on growth in the international market, primary EU countries like Germany, Austria, Hungary, Sweden, CROZ also delivers projects in UK, US and the Middle East. Business coming from non-domestic markets represents almost half of revenue. Over the years, CROZ has progressed from being an extended bench for partners into becoming a trusted partner for the most demanding projects. CROZ has proved to be reliable partner for the digital transition of enterprise IT systems into modern connected eco-systems. CROZ is partnering with a number of IT vendors and service providers like IBM, Red Hat, Liferay, Alfresco, HCL Software, Confluent; and service providers like Time to act, ARS, Prolifics, agile42 and Container Solutions.

CROZ have been showing stable growth over the years and such a dispersed and huge target market offers CROZ unlimited potential for growth. CROZ has had impressive financial results over the years, and recent ramp-up of digital transformation projects only adds additional fuel to future growth. They deliver projects all around the globe that are primarily related to the integration of legacy enterprise systems and the modernization of those systems. Their main value advantage are specialized experts with vast technical knowledge and experience.

At CROZ, they believe no company is an island. They have decided to support the development of young and agile companies and help them to grow. For this reason, they have launched the CROZ Partner programme where they help young companies to grow. The CROZ Partner programme gives advice for organizational growth to companies, helps them to get the most out of their talent, and provides senior expertise and quality assurance when needed.

CROZ is planning further investment in two directions: the presence in selected EU markets and the development of its internal resources and partner eco-system. CROZ has been demonstrating for years that Croatian IT companies provide an excellent level of IT knowledge, and has proved that its business model and organization model can be very competitive in European and global IT markets.



INFINUM

infinum.com



Infinum is an independent design and development agency. Founded in 2005, the company operates from six offices across Europe and the US. The collective of over 300 talented individuals such as designers, engineers, software testers, analysts, machine learning specialists, and business professionals, work on technological solutions for major global clients. The company's expertise lies in developing rock-solid, functional, and beautifully designed software solutions – they accomplish this by designing, building, and scaling authentic digital experiences that deliver value and empower people to accomplish their goals.

Deloitte regularly ranks Infinum among the fastest-growing tech companies in Europe, and independent research has granted them the best employer award four times. Aside from client projects, Infinum has launched several businesses like Productive – software for agency management, and a joint venture Porsche Digital Croatia, a digital innovation hub for high-tech solutions in the automotive sector.

Infinum is also known for its company culture and community contribution. Infinum Academy and Infinum Foundation are among notable projects through which the company's resources are distributed to socially responsible causes.

16 years ago a two-man craft is now a thriving collective of 300+ people across 12 countries.

Infinum helps clients discover and take advantage of the next big thing in technology as a full-service company. Infinum provides expertise in all phases of the digital product life-cycle by taking on projects and challenges across industries, being determined to make businesses more efficient and people's lives easier.

Digital products that solve real-life problems

INFOBIP

www.infobip.com



Infobip started in 2006 as a small start-up from Vodnjan in Istria, Croatia. With more than 15 years of industry experience, the company has expanded to 70+ offices across six continents and employs more than 3,500 employees globally. It offers natively built technology with the capacity to reach over seven billion mobile devices and 'things' in 190+ countries connected directly to over 700 telecom networks, enabling seamless mobile communication of businesses with their end-users – on every channel and device, at any time and in any location in the world. Infobip has grown into a leading global cloud communications platform (CPaaS). Last year, they introduced their software as a service model (SaaS). The company cooperates and is in partnership with leading mobile operators, messaging application companies, banks, e-commerce companies, social networks and technology companies.

The company is directly connected to more than 700 telecom operators and is recognized worldwide as the winner of numerous awards for the quality of its services. Infobip collaborates with the world's largest chat applications such as WhatsApp, Viber, Telegram, and globally known brands such as Virgin Megastore, Fear, Uber, Zendesk, Burger King, etc.

The first outside capital raised by Infobip's visionary founder came in mid-2020 by One Equity Partners amounting to the total of EUR 300 million, **achieving a unicorn valuation**. This year, Infobip concluded the acquisition of the American company OpenMarket, a leading provider of mobile messaging solutions to enterprises, for a gross cash amount of approximately EUR 266 million. New acquisitions followed shortly after with the takeover of Southeast Europe's largest tech conference Shift, and the number one SMS firewall service provider Anam Technologies.

Scalable, fast and flexible solutions

“In the coming period, Infobip is looking at technological solutions based on Artificial Intelligence such as augmented, virtual and mixed reality, which will make people’s lives much easier and better. This year the company has entered a new three-year phase in which we are looking towards further business expansion and stronger positioning in the North American market. We are looking at various tech companies in the market that can further expand our product portfolio which would complement us technologically. Infobip has started the process of preparing for an IPO, considering this is one of the company’s goals. The whole Infobip story was and continues to be written thanks to our talented people, and top-notch experts – over 1,200 employees in four Croatian offices – in Vodnjan, Zagreb, Split and Rijeka.”

Izabel Jelenić, CTO, Infobip



Izabel Jelenić › CTO, Infobip

The IT sector has grown exponentially in the last few years, with Gartner predicting that worldwide IT spending will total EUR 3.72 trillion this year, an increase of 8.6% from 2020. This will no doubt continue in 2022 as we enter the post-pandemic period. IT is crucial for every country because it serves as a solid base for all other sectors.

The Croatian IT industry is proving to be a driving force of the domestic economy, confirmed by lots of great news coming from our sector, with companies achieving extraordinary results and making a significant impact on a global scale, such as Rimac Automobili, Nanobit, Photomath, Infinum etc. Many companies have emerged during these challenging and unpredictable

times to drive positive action. In fact, a programme to attract remote workers to Croatia has been launched to continue growth.

Infobip’s first institutional investment from One Equity Partners was a significant step in putting Croatia on the world start-up map. This milestone is also important for all smaller start-ups that have lots to show on the world market stage. The Croatian IT sector puts great emphasis on artificial intelligence as the future of the industry, helping position our country as a leader on the European tech industry map. The proposed partnership with the Croatian Government supports this positioning by involving and engaging numerous universities and domestic companies via Infobip’s global communication platform in the segment of artificial intelligence.

Artificial intelligence is developing rapidly in several great domestic IT companies. Many of them have AI as their core business model. We want Croatia to profile and position itself even more strongly as a country attractive to young experts in the field of AI, given the vast potential of the sector and the benefits that life in Croatia brings. Our country is full of talented people and quality experts. There is no reason why the success of the Croatian tech sector should not continue. IT is the future, and an extra effort is needed to keep young people living here, innovating and working on projects that have a global impact.



INFODOM

www.infodom.hr

INFODOM

Experience based on knowledge

InfoDom is a knowledge driven company, a leading provider of flexible digital platforms for the public and private sectors that ensures the achievement of business excellence and economic viability based on the best global and domestic standards. With more than two decades of experience, with a network of renowned ICT partners and the development of their own products and solutions, InfoDom provides key competencies for future market trends, by which their clients achieve business agility in the context of digital transformation.

Eco system – guarantee of excellence

InfoDom is part of the InfoDom Group, which covers the work and operations offices in Zagreb, London, Sarajevo, and a network of partner companies in over 10 countries. In addition to its own product

INFODOM

Innovation-driven growth

development, InfoDom's portfolio of services and solutions is based on globally recognized methodologies, and the standards of institutions such as Business Process Management Institute, Object Management Group, TeleManagement Forum, Knowledge Management Consortium International, and Project Management Institute. By using standardized business processes, InfoDom ensures continuous cooperation with all stakeholders in their ecosystem: real sector users, state administration bodies, national institutions, and strategic business partners and groups. Partnerships with leading ICT solution providers, such as IBM, Microsoft, Oracle and Odoo, allow InfoDom to verify the highest level of certification, which maintains a high level of competitive advantage in domestic and foreign markets.

Reference projects – 250 user experiences

Currently, references from the public sector and state administration and the real sector stand out, such as: e-Governance Operations Platform, e-Inspector, e-Public procurement platform, e-Sourcing, e-Auctions and e-Purchase management platform, e-Communal inspection, Performa 365 digital platform for knowledge and competency management with online exams and certification management, Customer Influence Platform, Customer Experience Support System, consulting services for digital transformation, smart strategies and change management.

InfoDom's solutions are part of a large number of central state administration bodies, but also local municipalities, such as the recently modernized solution in the city of Split; and regional projects, e.g. in Kosovo, using the ePublic Procurement platform with significant effects in overall reforms of its national economy, driven by the international community and supported by the World Bank.

Flexible digital platforms for the public and private sectors

“By learning, excelling and innovating, InfoDom is a modern example of an ICT company that, based on the principles of openness and cooperation, is a reference point for the development of the ICT industry, not only in Croatia but in the SEE region, and at the EU level. We provide a complete portfolio of products and services for the accelerated digitalization and digital transformation of our customers with integrated systems with which we consistently enable the observance of the principles of e-business ‘first digitally’ and ‘only once’.”

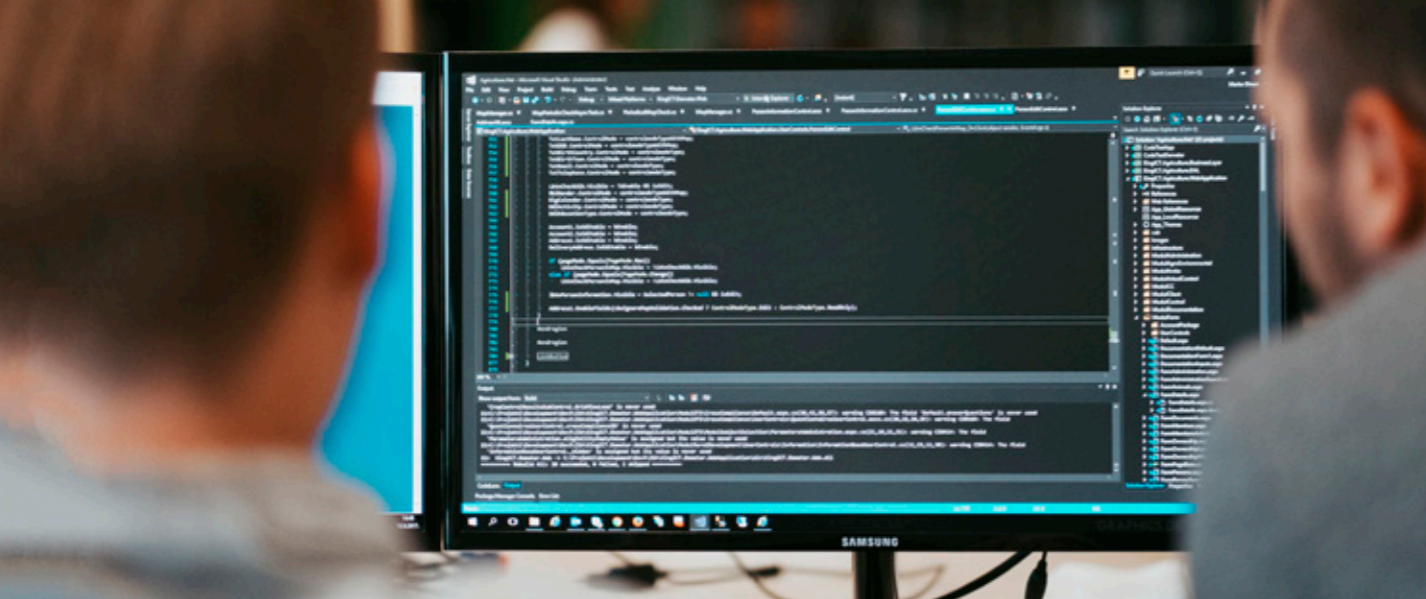
Hrvoje Sagrak, President of the Management Board and CEO of InfoDom

A look into the future

InfoDom's strategic growth is based on the experience of previous periods and a strong understanding of future technological and business trends, focusing in the coming period on five areas of development: the commercialization of products funded from EU projects and product development for smart industries; a focus on business excellence and the application of global and EU standards, modular architectures and methodologies; strategic partnerships that will ensure a stronger international presence; a sustainable growth index with a tendency to achieve above average growth in the ICT industry in the Republic of Croatia; creating a knowledge incubator that will collectivise employees who will generate innovations and technological achievements.

EU funds ensure the implementation of the digital transformation

InfoDom continuously invests in research, innovation and the development of new products and services. Innovative business models as well as new software solutions and platforms have been prototyped and developed through EU funded projects, e.g. Platform for digital enterprise transformation, GRC Food e-Controller, CEKOM – Centre of Competences for Digital Transformation of the Food Industry in Rural Areas, and most recently the development of a digital platform for building critical infrastructure protection systems in smart industries.



KING ICT

king-ict.com



With more than 550 employees and a series of successful projects achieved over a 23-year history, and driven by knowledge and creativity, KING ICT is always motivated to provide new insights and create added value. Today, the KING ICT group operates in European and international markets, and is recognised as one of the strongest and most stable system integrators in this part of Europe. The company provides consultation services on the implementation of digital transformation through the development and implementation of key technological solutions. Based on new technologies, a cloud and mobile-first principle, KING ICT creates innovative ICT solutions and develops and integrates solutions such as ERP, DMS and products for managing employee efficiency such as HRplus. Moreover, they build data centres, optimise IT infrastructure, implement security solutions, and develop new ways of managing information, which has led to the creation of systems such as the BI system for business reporting and the GIS solution for the exchange of spatial data.

Creating a digital future for us all and the generations to come

Proven expertise and professionalism

With great pride, KING ICT stresses that they are a Google for education partner in Croatia, and cooperate with some of the leading global technology companies, such as CISCO, SAP, VMware, Oracle, Dell Technologies, etc. The synergy KING ICT achieves with their partners, with the great expertise of its employees, enables them to successfully implement enterprise projects in Croatia and beyond. As proof of the

expertise and professionalism of their employees, KING ICT regularly receives recognition and confirmations of their partner status. For example the status of Dell EMC Titanium partner in southeast Europe, and the only SAP Education Services Partner in Croatia.

Highlighted projects of KING ICT

KING ICT also operates in the Western European market, where they have proven that they are a modern and highly professional company able to fully compete in an international market. In the domestic market, KING ICT has confirmed its status as one of the largest and strongest system integrators, implementing solutions in various fields.

- › In the field of transport, KING ICT has proven that they are experts at the implementation of solutions based on the SAP S/4HANA platform and the integrated software systems SAP Enterprise Asset Management.
- › In the field of energy, they have attained competencies for the implementation of SAP IS-U (Solutions for Utilities), systems for the calculation and payment of electricity, natural gas and heat.
- › As part of the Smart cities solutions, they implement systems to establish traffic congestion zones with the aim of implementing sustainability measures for urban mobility, reductions in vehicle emissions, and noise reduction.
- › In the field of national and EU security, they implement solutions for cyber security such as SIEM solutions for managing security records and events.

Stepping into the future with grand visions

Regardless of achieved successes, they are always looking forwards. KING ICT is continuing to work towards the benefit of their clients and towards strengthening cooperation with their technological partners. As the regional leader in the creation and implementation of innovative solutions, KING ICT aims to create a digital and connected future. They place a focus on applied artificial intelligence, which is taking on an increasing share in the delivery of their solutions, using it to detect movement and traffic congestion, for facial recognition, for the analysis of satellite images and high-resolution photographs obtained by drones. KING ICT sees new opportunities for them and the entire Croatian IT sector in exports, in project cooperation with global industry companies, and in intensive M&A processes. That said, their mission remains the same – to create a digital future for us all and for generations to come.



“All of our products have been developed in Croatia by our expert engineers and our work has been recognized by a number of reputable publications – including Deloitte and Financial Times.”

Igor Strejček, VP of Operations & Managing Director for Croatia

Time and time again, Microblink has been featured as one of the fastest-growing tech companies in the world for its breakthroughs in the field of computer vision, including browser-based ID scanning and AI capabilities. We’ve also raised EUR 53.2 million in our first investment to date, and are using it to expand the team, build upon our products and enable the next phase of growth.

MICROBLINK

microblink.com



MICROBLINK

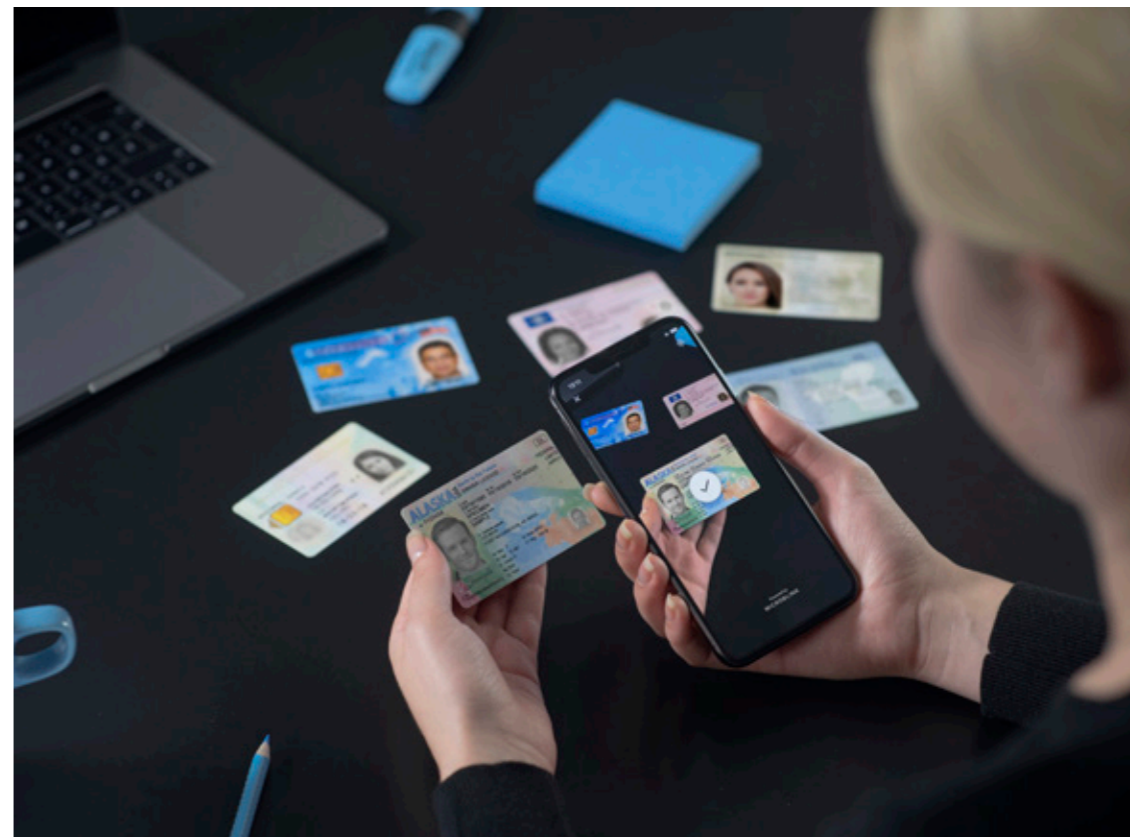
See beyond.

Microblink is a computer vision company that helps businesses verify their users remotely in a simple and secure way. Our technology makes life easier for millions of people around the world, while at the same time letting businesses gain a better understanding of who their users are. Some of the biggest names in tech and beyond use Microblink’s technology to optimize UX and reduce fraud in their apps.

In the eight years since it was founded, Microblink has brought a number of successful products to market. One of them is BlinkID, a market-leading software that uses AI to read data from documents such as ID cards, driver’s licenses and passports. BlinkID is used in mobile and web apps to streamline user onboarding, age verification and visitor management, among other use cases. It also creates an entryway into the global identity verification space, which is seeing a 20 percent growth year-on-year.

Microblink is in the process of launching its own suite of solutions to accommodate this market. This includes Document Verification – a Software Development Kit (SDK) that can tell if an ID document is real through a camera lens. So far, nobody has been able to come up with a fully automated solution to this problem, and Microblink is well positioned to solve it due to its extensive expertise in identity documents and artificial intelligence.

Global, AI-driven identity solutions





NANOBIT

www.nanobit.com



Nanobit, the Zagreb-based game development studio, is one of Croatia's largest ICT exporters and its first major start-up exit. Founded in 2008, by two young entrepreneurs Alan Sumina and Zoran Vučinić, it soon achieved stunning results galvanizing media attention in the UK and USA, namely the New York Times, Harvard Health and The Guardian. What started back then as an iOS fitness app development project has evolved into a multi-million-dollar gaming company whose mobile games have topped the App Store and Google Play Store charts. To date, Nanobit games have amassed over 200 million downloads reaching 10 million monthly active players worldwide. In a highly competitive global gaming industry, Nanobit has succeeded in cultivating a reputation that crossed the borders of Croatia to thrive globally.

From year to year, it scaled up its operations growing its revenues multifold and thus secured its rank, for two years in a row, on the Financial Times list of FT 1000: Europe's Fastest-Growing Companies, and the Deloitte's list of Top 50 fastest growing technology companies

in Central Europe. In 2020, Nanobit recorded exponential growth in two quarters in a row, generating a revenue of over EUR 53.2 million.

The highly educated yet skilled talent pool in Croatia made it possible for Nanobit to bring together a team of 150 experts and talents from Croatia of diverse backgrounds and areas of expertise: art, design, programming, data analytics, digital marketing, content writing, game design and engineering. The award-winning company made a name for itself in global game development, hence has been attracting foreign talent who made the move to Croatia specially to work at Nanobit. After recording impressive growth, it embarked on a new journey to expand its footprint in new markets. Together with its skilled team, Nanobit conquered the world by reaching players in over 150 countries through the localization of its games into 11 other languages: Arabic, French, Italian, Japanese, German, Korean, Polish, Portuguese, Russian, Spanish, and Turkish.

For over a decade, the bootstrapped gaming studio had independently designed, developed and distributed its mobile games before its acquisition by the Swedish Stillfront Group in October 2020 for EUR 141.86 million. Nanobit's acquisition has been one of the largest investments in the history of the Croatian ICT industry, placing Croatia on the world map of the gaming scene. Being part of Stillfront Group has paved new growth paths for Nanobit to establish new business partnerships with other global gaming studios pioneers. It has continued to grow and is currently working on new titles and planning to enter new markets. Along all the achieved successes, in terms of revenue growth and echoes at local and international levels, Nanobit is also playing an active role in the local community of students through hosting workshops, learning labs and providing internship opportunities. In 2013, it won the Golden Index Award for its active participation in the college student community in Croatia, securing internship opportunities and exposing students to real work life experiences. Besides being Croatia's first major start-up exit, the acquisition has enriched and impacted the overall Croatian ICT scene, as recently five Croatian universities joined forces in the preparation of the first public university graduate programme on Game Development and Game Design.

Creating games that put extra into ordinary



“The greatest value of Span is the knowledge of our employees. We are the only company in Croatia with eight Microsoft advanced specializations – a significant recognition for many years of investment in the expertise of our experts and confirmation of the company’s clear path in the future – as one of Microsoft’s key partners internationally, we will continue to create and implement best IT solutions users in existing and new markets.”

Nikola Dujmović, President of the Management Board of Span Group

its revenue on the international market. In addition to the company’s Zagreb headquarters and offices in Osijek and Rijeka, Span has eight subsidiaries in Slovenia, the United Kingdom, the United States, Germany, Ukraine, Azerbaijan, Switzerland and Moldova. Some of Span’s clients are McDonalds, Starbucks, Rimac Automobili, Metinvest Group and Infobip, and in addition to the mentioned markets, the company plans to expand into the markets of Central Asia and Eastern Europe.

Span Group’s values are based on knowledge, expertise and commitment to clients and projects. Among the 550+ employees of the Group, there are more than 300 certified experts, who spend an average of more than 100 hours a year in training and development, and hold an average of four certificates in various fields of information technology. As a leading expert in Microsoft technologies and a leading regional Microsoft partner, Span carries the recognition of Microsoft Gold Partner. Also, Span is the only company in Croatia to have eight Microsoft Advanced specializations, which ranks the company among an elite group of Microsoft partners in the world that have so many highly specialized competencies that confirm the possession of deeper skills and knowledge in certain Microsoft solutions. Thanks to them, Span is the first choice when choosing a reliable IT partner when the highest level of expertise is required to improve IT security and customer productivity. As one of the pioneers in the application of cloud technology in Croatia and with numerous advanced specializations in that field, Span also has the Cloud Adoption Framework status, which is a guarantee to its users that the company’s cloud projects and the methodology of their development are approved by Microsoft.

SPAN

www.span.eu/en



Span is a Croatian IT company which operates worldwide, specializing in providing professional services for the design and development of information systems and technical support for business users and large corporate organizations. Together with 1,200 customers and 40 partners worldwide, Span is contributing to the digital transformation of 100+ markets on the six continents where it operates. It is one of the leading Croatian IT companies in terms of revenue and one of the largest Croatian exporters, which generates two thirds of

Technology, people, processes... Span helps companies empower all aspects of their business to seize the advantage of the digital revolution



“We have worked a lot on employee satisfaction, set ambitious goals, and invested a lot in the engagement of our people. As a result, today we are among the top technology companies in the world in terms of satisfaction and commitment. This is one of the most beautiful awards we can get. This award is a great confirmation of our philosophy. We are happy and proud.”

Filip Ljubić, CEO of Q

Q AGENCY

q.agency



Q – #1 fastest growing development & design agency in Europe. With +200 experts Q designs and builds digital solutions and scale-up dedicated teams for global brands, enterprises, agencies, and start-ups. Brands in 22 countries worldwide trust Q with their core products’ design & development, including The Times, Sandoz, BBC, TWINT and ManpowerGroup. Working in many industries Q has specialized in setting a strategy for the product, and then designing and developing custom software solutions, including various Mobile and Web apps, Enterprise platforms, ML & AI, and E-Commerce and eLearning solutions.

Croatian software agency Q is in 613th place with a growth of 306.4%, according to the Financial Times list. Last year Q concluded with EUR 7.3 million in revenue, the most so far. In addition, Q acquired 22 new clients, hired 55 new experts, and provided 15 unique benefits to employees. Q operates in 22 countries where it develops unique software solutions for about 30 large clients and is most represented in the markets of the UK, Switzerland, Germany, and the USA. With headquarters in Zagreb, Q has offices in London, Belfast, Zurich, and New York.

**“Whatever the Q,
we got the A”**

**Q helps global
brands and
start-ups build
digital products
and scale teams**

Experience

Q works mostly in the medical industry, education and financial services. Among the list of clients is Accunea with whom it works on innovative digital solutions that follow the process of organ transplantation. In general, it continues to expand strongly in the fields of medicine and pharmacy. The clear conclusion that emerges from looking at new Q clients is that these are industries that have not been greatly affected by the COVID crisis. In 2021, it also forecast the recovery of some

previously affected industrial segments, but it also expects further growth in the above industries.

Last year, the company received several awards – the leading research agency Clutch ranked Q among the 20 best web development companies globally and named Q the best B2B company in Croatia in 2020. Peakon, one of the world’s leading companies for measuring employee engagement and satisfaction, ranked Q among the top 5% of IT companies globally based on employee engagement, and in most categories in the top 1%.

The year 2020, Q concluded with the recognition for the most desirable employer in Croatia. The survey was conducted by the largest employment platform in Croatia, Moj Posao. Q also received recognition for the best placement for the first participation in the survey, which involved 48 companies and more than 4,300 employees. Its team was joined by 55 new talents. There are currently more than 220 people, from designers, developers, and project managers to HR and communication consultants and sales managers. In the crisis of 2020, Q generated the highest revenues so far.

Plans for the future

Q’s Chief Business Officer has moved to London, with a mission to acquire a local design agency and to expand the Q London office with more technical experts. Q is working on expanding their services list:

- › Invest further in emerging areas and introduce new services
- › Focus on what they are doing best but invest in further development in the following areas: Machine Learning/Artificial Intelligence, low-code/no-code platforms, IoT, Product Strategy, Growth Marketing



SUPPORTING INSTITUTIONS

Entrepreneurial support institutions are part of the total entrepreneurial infrastructure and comprise development agencies, entrepreneurial centres, business incubators, entrepreneurial accelerators, business parks, science and technology parks, centres of competence, and business associations.

CROATIAN INDEPENDENT SOFTWARE EXPORTERS

www.cisex.org/hr

CROATIAN
INDEPENDENT
SOFTWARE EXPORTERS

Croatian independent software exporters (CISEx) gathers Croatian high-tech companies that base their businesses on export, and represents between 27-36% of the Croatian software industry based on revenues, exports and number of employees. Today, CISEx members are companies such as Infobip, Rimac Automobili, PhotoMath, Orqa, Gideon Brothers, and many other globally leading companies within their segments, which makes them attractive for significant investments that are used to expand their businesses globally. In order to be successful, the strategy of going global in high tech from a small country such as Croatia requires a top notch quality of products and services.

The Croatian educational system is continuously producing quality talent that has proven itself many times by working for the largest global companies. In the past 20 years, a new generation of technological entrepreneurs inspired their companies with the vision of being globally competitive. Today, we are reaping the fruits of these visionary moves. Infobip became the first Croatian unicorn in 2020, and Rimac Automobili followed soon after. At a first glance they are two completely different companies in two different industries, and yet, they are so similar. Their successes are based on the same goal – being the best in their industry – all the while up against competition with much better access to resources, be it capital, local clients, or much more populous labour markets.

The sensational investment in 2020 that made Infobip a unicorn is considered the Big Bang of the Croatian high tech scene. The year that followed was an avalanche of investments and exits worth over EUR 620.67 million, and further investments are picking up speed. Those investments are not due to hype, but continuous good results software exporters are achieving year after year. That is best illustrated by the “most modest” results of the past few years that CISEx members had in the pandemic 2020, where they achieved 18% revenue growth,



The mission of the association is to develop IT activities in Croatia by improving the position of software production, export and entrepreneurship, creating new jobs and positioning their members in the global market

13% growth in number of employees, 30% export growth, all that with a profit margin increase from 10 to 11%. CISEx members today have 8,196 employees and total revenue of EUR 779.39 million, of which as much as 53% comes from exports.

The Croatian tech industry is going through transformation from service companies with a solid, but non-scalable business model based on quality services, to companies that base their businesses on their own products. Thus, CISEx members recorded the largest growth in investments in R&D, which last year grew by as much as 42% to EUR 100.19 million and account for as much as 39% of total investments in R&D in Croatia. It is this transition that has made CISEx members interesting in the global capital market because they can scale their proven quality and profitability in the global market to the level of a unicorn through their own products, as shown by Infobip and Rimac Automobili.



Davor Runje

- › President of Croatian independent software exporters Association
- › Co-founder and CTO of the company AIRT

Are we just approaching or have we already stepped into the mature phase of IT development in Croatia? The first phase was the reselling of foreign solutions, and if you remember the Info fair at the Zagreb Fair in the 1990s, it was the peak of that business model. One of the most known companies of the time was HGSPOT that went public in 2007 with a valuation of EUR 25.22 million and over EUR 132.72 million revenue.

The next phase was the development of software solutions, which prompted a significant growth in the industry due to the fact that, instead of expert salespeople, we started developing expert knowledge. It was based on the service business model, in other words, working on projects with a margin. The quality increased every year and the best local companies achieved top quality in global terms. Some of the first companies that grew under that model were Arbor informatika and Logos, which was acquired by the Polish company Asseco in 2008 for EUR 18 million. This generation includes FIVE, one of the best Croatian IT companies by any measure, not just by results, but in terms of the overall impact on the ecosystem. FIVE were acquired at the beginning of this year for EUR 35.47 million. Their revenue is much lower than HGSPOT's, but the total created value, as evinced by their market valuation, is higher.

The last phase of this industry's transformation is moving away from the service model to developing own solutions that are being sold all over the world. This model was the basis for Infobip, Rimac, Nanobit, Microblink, Photomath, Orqa, Robotiq.ai and many others, and here we are not concerned with

the "man/hour" margins anymore, but with the value these companies create, which is incomparably higher. Which is why, for example, Nanobit was sold for over EUR 88.67million, and Infobip and Rimac have a valuation of over one billion dollars. With the large added-value that these companies create, the rules of engagement are changing fundamentally. The demand for high quality employees is rising, and salaries are no longer defined by the margin on their time, but by the value they produce. This process results in a steep increase of employee compensation, be it through salaries, or other compensation models, such as owning shares in the companies they work for. A great example of this is Nanobit that implemented the ESOP (Employee Stock Options) model of rewarding employees, who thereby profited from the recent sale of the company. Today, we are witnessing Infobip's preparations for an IPO, when the immense value created in that company will be distributed not only to its owners, but also to numerous employees through a similar programme.

The historical experiences of other countries show us that these successes lead to the transformation of not only the IT industry, but society as a whole. Estonia's example is probably the closest to us because, after the global success of Skype, they managed to transform from a small socialist country into one of the most prosperous countries in the EU. That is exactly what we are expecting, or at least hoping for, to happen in Croatia in the near future – that we will finally become a true heaven on Earth: a rich, highly developed European country with fantastic people, climate, and food.



CroAI

www.croai.org



CroAI, the Croatian Artificial Intelligence Association, was founded in 2019 and brings together leading companies and start-ups in the field of AI in Croatia – over 210 members, including Rimac Automobili, Infobip, Photomath, Mindsmiths, Airt. CroAI seeks to position Croatia as a country of unique opportunities for the development of human-centric AI through a culture of dialogue between entrepreneurs and decision makers at the national and European level. Also, CroAI cooperates with European associations that base their work on artificial intelligence.

CroAI continuously analyses the artificial intelligence market in Croatia – State of Croatian AI – giving the overall insight into revenues, markets, investors, types of AI capital, number of AI experts, which programs they use, etc. According to the CroAI AI ecosystem of the Republic of Croatia there are:

They have 220+ members consisting of Croatian AI companies, start-ups, scale-ups, universities and AI enthusiasts

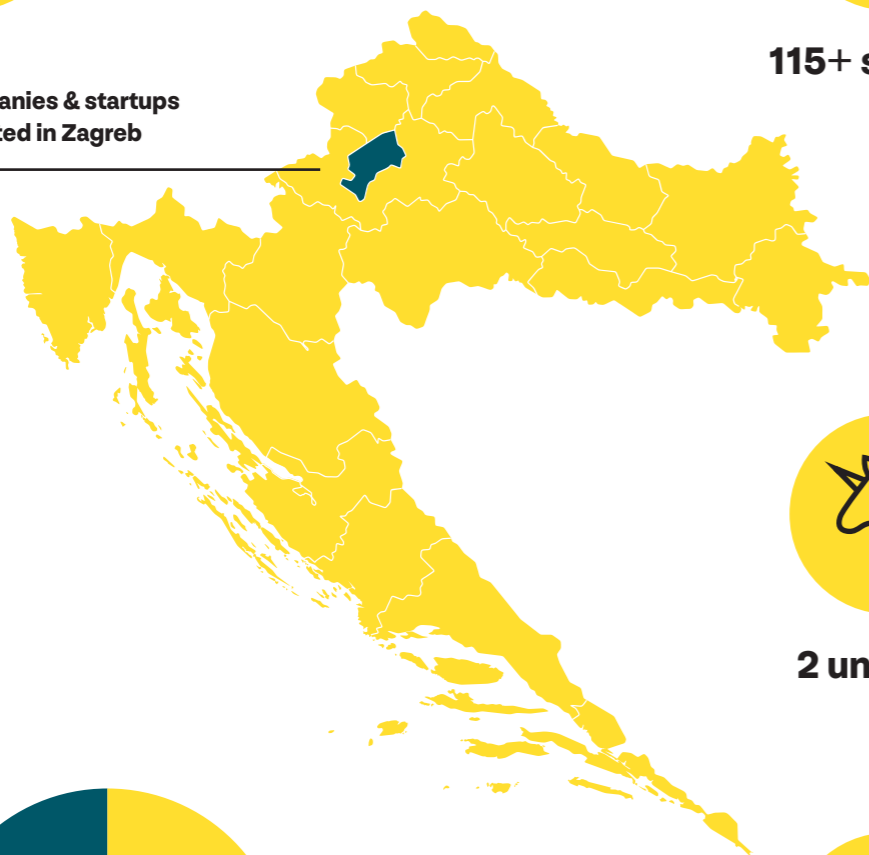
Croatian AI Ecosystem – Facts & Figures



74%
of companies & startups
are located in Zagreb



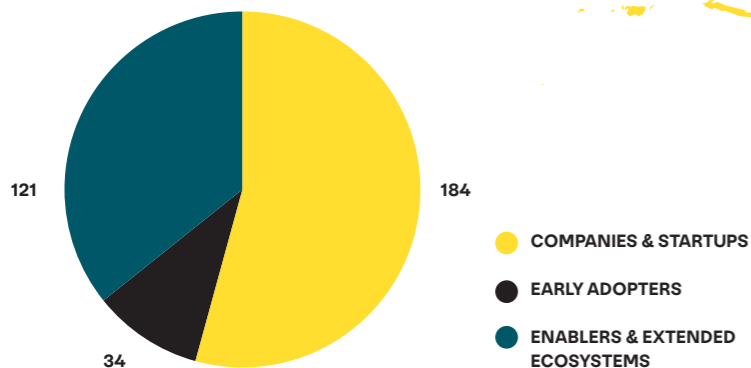
115+ startups



2 unicorns



**17% female
founders**



Mislav Malenica

- › President of CROAI/Croatian Artificial Intelligence Association
- › Founder and CEO of AI start-up Mindsmiths

Artificial intelligence is the key to progress over the next 30 years, and Croatia is determined to be an important partner in shaping a better world. Behind this ambition is a generation of start-up entrepreneurs who started about 15 years ago and created a snowball effect in motivating others to follow their path. They realized that in the digital world we all live in, the size of your home country is not relevant, but what matters is the pervasiveness of ideas brought to the table and the determination to put them into action. We can already see the first serious results. With two technological unicorns, Infobip and Rimac Automobiles, Croatia is amongst the leading EU countries with unicorns per capita, and the future is bright: among the hundred and more technological start-ups in Croatia at the moment, there are new potential unicorns right around the corner.

Artificial intelligence will transform the world. Croatia will have a say in it.

In December 2019, the Croatian Association for Artificial Intelligence, CroAI, was founded with the idea to finally make it clear that Croatia is not afraid to dream big dreams and wants to be an important part of the technological revolution ahead. The association is focused on three main goals: to raise awareness of the importance of artificial intelligence, to create the preconditions for the success of start-ups in Croatia and to create a culture of dialogue between entrepreneurs, academia and the state.

Along with Germany and France, Croatia is one of the founders of the European AI Forum and actively participates in the formation of European AI regulations. In Croatia, there is more talk than ever about AI and start-up culture. This hype combined with the quality of life that Croatia offers presents a unique opportunity for domestic and foreign start-ups looking for the perfect place to take off and reach the sky.



UBIK

ubik.hr



Educating and informing the public, supporting entrepreneurs and building the community since 2017, UBIK is leading the effort to bring crypto and blockchain to Croatia

The Croatian Association for Blockchain and Cryptocurrencies was founded on 12/13/2017 with the objective of developing and promoting the utility and value of blockchain and cryptocurrency technology in the Republic of Croatia, and for that purpose has assembled a substantial number of experts in the fields of IT, economics, management and law, who are all actively contributing to the Association's main areas of activities which include, but are not limited to: the implementation and development of sustainable interactive education in blockchain technology, providing structural financial and technological support to its members and stakeholders involved with blockchain technology, participating in international projects and cooperating with related organizations in the country and abroad, and cooperating with legal entities in the Republic of Croatia for the purpose of creating a viable regulatory framework for the sustainable application of blockchain projects.

From its inception, the blockchain industry has been brimming with regulatory challenges much more than any other area of fintech. Having detected regulatory uncertainty as a barrier to entering the industry, the Association took it upon itself to try to function as a regulatory bridge between entrepreneurs innovating in the field and regulators aiming at keeping the industry in check. For that purpose the Association holds regular formal and informal meetings with the Financial Services Agency, Croatian Central Bank, Anti-Money Laundering Office and Tax Administration where issues of the members are analysed and potential solutions are discussed.

With the increasing number of business entities involved with blockchain, the Association is strongly focused on being the professional backbone in order to potentiate market development within the Republic of Croatia.

INNOVATION CENTRE NIKOLA TESLA

www.icent.hr/en



Innovation Centre Nikola Tesla (ICENT), established by the Faculty of Electrical Engineering and Computing, University of Zagreb, is a non-profit institution that conducts applied research and technology development as a basis for innovative solutions for products and services. ICENT represents an important link in the value chain: scientific research – applied research and technology development – production and commercialization. Focusing on the development and application of information and communication technologies (ICT) in economically important sectors: energy, transport systems, agri-food sector, complex automation and robotics, and biomedical engineering, ICENT is a bridge that connects scientific research and economic needs. Thus, ICENT follows global trends in the development and application of advanced digital technologies in synergy with digital technologies.

Within Innovation Centre Nikola Tesla (ICENT), there are two Digital Innovation Hubs (DIH) acting as one-stop-shops. CROBOHUB DIH – Croatian Robotic Digital Innovation Hub helps Croatian companies to digitize their production and business through the efficient orchestration of various stakeholders in the robotic innovation ecosystem. CROBOHUB also has the role of connecting with investors, facilitating access to financing digital transformations, helping to connect users and suppliers of robotic innovations along the value chain, and fostering synergies between digital and other key technologies (such as biotechnology, advanced materials, etc.). Apart from Croatia, CROBOHUB is also recognized in the EU and is involved in several H2020 projects, which develop solutions based on digital technologies, especially for small and medium-sized companies. For example, such projects, which are ongoing, are Logistics for the production of small and medium enterprises (L4MS) and KITS of artificial intelligence with a platform for EASY acceptance by small and medium enterprises (KITT4SME).

Leading constituent of the innovation ecosystem in Croatia for applied research and development in the field of engineering and related applications that lead Croatian society and economy towards competitiveness and sustainability. It integrates scientific – research, innovation and commercial processes for setting up new industrial technologies, products, services and business models

Another DIH hosted by ICENT is CybersecRDI DIH which serves as a support network and incubator to strengthen research and development activities related to cyber security. It also represents a major point of know-how and activities that will increase cyber security in industry, government, and research institutions. Currently the project e-Schools: Development of digitally mature schools is ongoing, where the role of ICENT is related to aspects of information security of digital content and services. The emphasis is on security models to enable automated scanning of cyberspace and the discovery of compromised Internet services.



prof. emer. dr. sc. Nedjeljko Perić

› Director of Innovation Centre Nikola Tesla (ICENT)

ICT is an important lever for the processes of technological and business improvements of the economy and society as a whole. In these processes, ICENT contributes to the creation and development of innovation ecosystems by focusing on the synergy of digital and green technologies. Relying on the scientific research of the academic and research community, ICENT actively participates in the deployment of the concept of cyber-physical systems, in which it applies predictive control methods and disruptive digital technologies such as Artificial Intelligence and Internet of Things. In its future development, the Croatian ICT industry will focus on the Digital European Program (DEP) and the key mechanism for the implementation of the DEP – European

ICENT's activities in the development and application of ICT in the energy sector are focused on renewable energy sources, energy storage, microgrids, and smart grids. Through the project Advanced Tools Towards cost-efficient decarbonisation of future reliable Energy Systems (ATTEST) a modular open-source platform is being developed consisting of several innovative energy ICT tools to support transmission and distribution systems.

Current and upcoming climate change is likely to have the most significant impact on the cultivation of agricultural crops in terms of reduced harvest, increased costs, and the necessary deviation from traditional farming. Therefore, advanced agriculture is an important focus of ICENT. For example, the goal of the ongoing project – Smart and predictive agriculture for resilience to climate change (AgroSPARC) is to develop a portal to predict different stages of wheat development in real and hypothetical climate conditions, with the collection and archiving of feedback from farmers as additional data to adapt developed models using artificial intelligence methods.

In an effort to arouse the interests of students at Croatian universities for digital and green technologies, ICENT launched in 2018 the Student Programme 'Imagine, Create, Innovate' to help students turn their ideas from various ICT areas into commercial market products. Focusing on Smart City (2018) and the Smart Agriculture (2019), the programme has attracted numerous multidisciplinary teams resulting in the launch of several start-up companies.

Digital Innovation Centres (EDIH), which aim to build technological expertise and experimental infrastructure to enable digital industry transformation and the public sector. EDIHs represent the extension of existing DIHs through the establishing of international corridors and the networking of EDIHs. The services offered by EDIHs are: pre-investment testing, skills and training, support for access to finance, and the creation of innovation ecosystems and networking. The logical partners in EDIHs consortia are technology research and development organizations (RTOs) and technical universities / faculties in cooperation with business associations, clusters, the European Entrepreneurship Network (EEN), accelerators/incubators, innovation agencies and vocational training institutions. It is crucial for EDIHs to serve the digitalization and digital transformation of the economy, especially SMEs and public administration. EDIHs are designed to act as access points to the European network of EDIHs for local organizations. As orchestrators, they will actively network with other

innovation hubs, sharing best practices and specialist knowledge, and bringing companies into contact with other companies of a similar value chain. Also, EDIHs will be intermediaries between public administration and companies providing technology services to e-government.

For Croatian research and development institutions and the ICT industry, this is undoubtedly a great challenge and opportunity to take a more agile and comprehensive approach to the development and application of artificial intelligence, cyber security and high performance computing (HPC), and related technologies such as robotics, computer vision, Internet of Things, embedded control and automation systems, smart sensors, blockchain technology and digital simulations. This will enable raising the level of digital maturity of industrial sectors and societies such as: manufacturing industry, digitized agriculture, energy and environment, health and public and state administration.



HUB385

hub385.com



HUB385 is a centre of knowledge of creativity and innovation, which with its slightly more than 2,300 square metres, makes it the largest co-working space in Croatia. In just over 4 years of existence, over 9,000 different workshops, trainings and conferences have been organized at the HUB385 innovation and knowledge centre. In the HUB385 co-working space, there are about 80 smaller companies and startups with a total of about 250 professionals who make up the HUB385 community and exchange knowledge and ideas through networking and joint work on a daily basis. The emphasis is on interconnection, networking and a sense of community. For this reason, HUB385, in addition to providing workspace to professionals and creatives from different business backgrounds, organizes many interesting events for its users, but also the public who are interested in technology, science and progress. Also, an additional aspect that HUB385 emphasizes is free education, mostly focused on IT and ICT technology, the development of modern technologies and entrepreneurship.

In addition to co-working, renting space for various events and trainings, members of the HUB385 team also offer various mentoring programs to help young enthusiasts to position themselves and cope with the demanding business market. HUB385 also participates in several

Centre of knowledge of creativity and innovation

international initiatives aimed at developing digital skills with an emphasis on skills development in children and youth as well as educating, guiding and encouraging the aforementioned knowledge for women in entrepreneurship. (SAP CODE WEEK, Brave New World festival etc.)

Also, in these 4 years of business and cooperation with hundreds of micro, small and medium enterprises, they are proud that as members of the HUB385 community they can single out today's respectable and multi-award winning companies such as: **Include, Repsly, Funderbeam, Bolt, Netokracija, ENTG, Cantlab** and our long-term partners **A1, Atlantic Group, Uber, Zagrebačka Banka, RBA, SAP, Croatia osiguranje, RIT** and many others.

In 2017, less than a year after its founding, HUB385 received the Central European Start-up Award for the best co-working space in Croatia, and the event organized by HUB385 – Brave New World, a festival of digital technologies, won the RSVP award for the best non-profit socially beneficial event in the same year.



BIRD INCUBATOR

bird-incubator.com



BIRD Incubator is the first Croatian incubator for start-ups and projects related to artificial intelligence, machine learning, and data analytics. It was founded by Poslovna Inteligencija and officially opened its doors on February 9th, 2021, while the first start-ups began incubation in late 2020.

There are 16 start-ups in the first generation of BIRD Incubator, with 6 of them being international teams. The start-ups in BIRD Incubator have a wide variety of fields of application. There is a start-up utilizing AI to find new sequences of proteins and enzymes to be used in the medical and pharmaceutical industries, a start-up that automates employee data collection and satisfaction measurement, and provides advanced analytics with recommendations for improving business processes. One of the start-ups is working on a system that is managing guest satisfaction in tourism and communication with a virtual agent, while another allows payments made solely based on car license plates and provides geolocation marketing based on analytics. One of their start-ups in the medical field uses technology and sensors integrated into clothing to predict and prevent cardiovascular diseases. Their first international start-up is developing a platform for selling and annotating

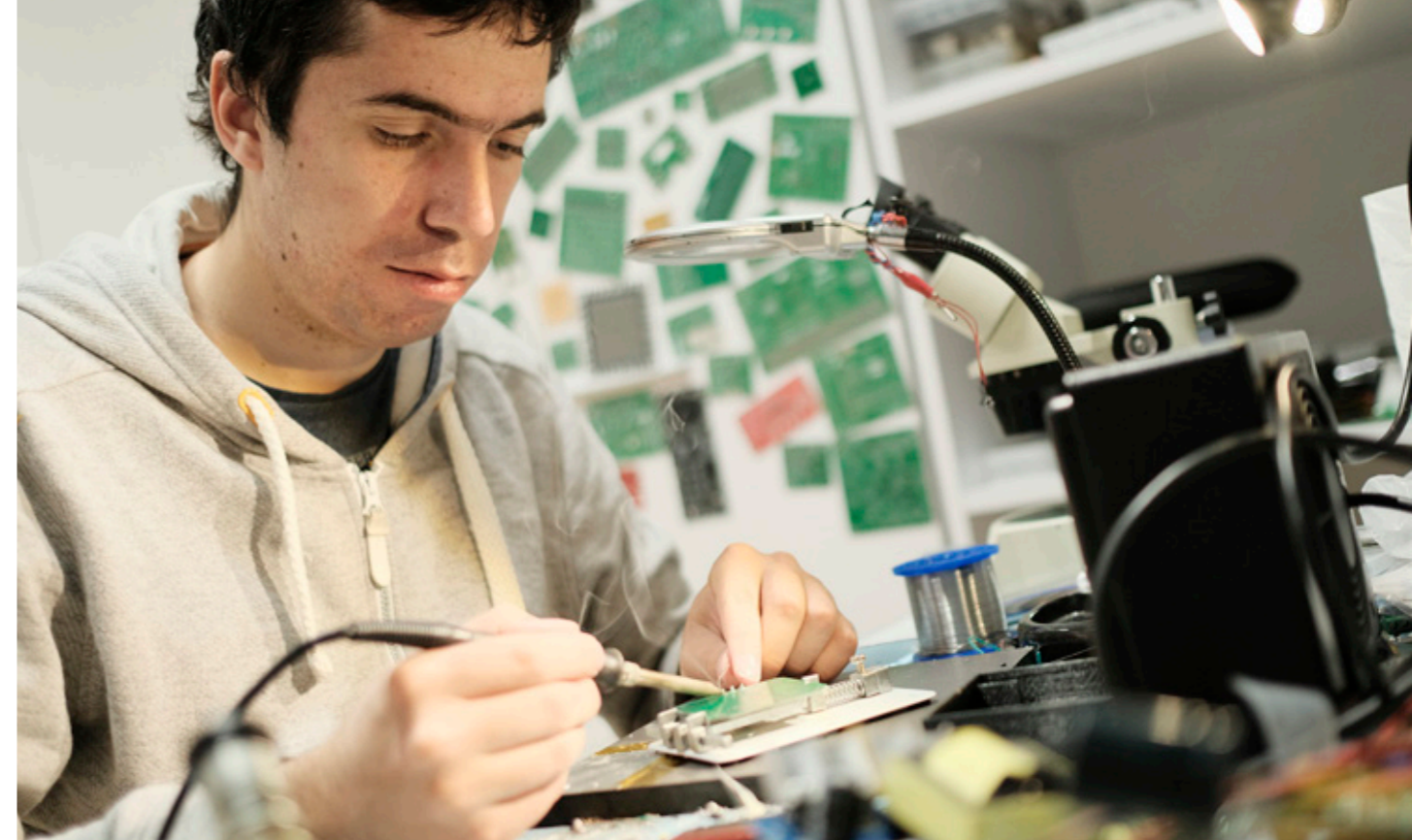
Incubator for all software ideas related to data analytics, artificial intelligence, and machine learning

large data sets such as images that will train algorithms and models of AI. One of the more recently joined start-ups is working on level 5 autonomous driving.

The element of BIRD Incubator that they are most proud of is their network of mentors that consists of almost 70 experts in fields of marketing, banking, IT, law, tax, and many more. These mentors can provide start-ups with great information and help them further develop and expand their businesses. They also have a great network of partners, with corporate partners – Atlantic Grupa, United Group, and Croatia osiguranje. They've partnered up with leading faculties of technology - the Faculty of Electrical Engineering and Computing, the Faculty of Organization and Informatics, and the Faculty of Mechanical Engineering and Naval Architecture. Students of these faculties will have the opportunity to work on project assignments of corporate partners. Other important partners include two big local IT communities, CroAI and CISEx. There are of course "friend incubators" with which they share their network and educational programmes – Algebra LAB and Krapina-Zagorje County Entrepreneurship Centre. The technology partners are AWS, C Square, Hubspot, IBM, Infobip, Microsoft, and Vertica.

As all start-ups need to be recognized by investors, and the ultimate goal of incubation is the willingness of investors to invest in a particular start-up, BIRD Incubator has signed cooperation with VC funds from Croatia, Europe, and the rest of the World. Their current partner VC funds are Batalla Family Office, Day One Capital, Eleven Ventures, Feelsgood Capital Partners, Fil Rouge Capital, Gold Ventures Investments, Hitchikers Ventures, LAUNCHub Ventures, Next Road Ventures, South Central Ventures, Spring UP Capital, and Vestbee. BIRD strives to promote and expand the IT start-up ecosystem and provide opportunities for young entrepreneurs and students. They are continuously working on providing their start-ups, and the public with interesting and useful workshops and events.

BIRD will continue to host, organize, and sponsor events that will further develop the local IT start-up ecosystem and provide students and young entrepreneurs with plenty of project tasks that will not only help them improve their abilities but also attract generous prizes and possibilities of further cooperation with big companies. The goal for BIRD Incubator is to further expand their network within the local and international AI ecosystems through organizing events, workshops, and collaborating on projects. In the future, BIRD Incubator plans to open its own VC fund to be able to fund start-ups.



ZICER

www.zicer.hr/eng



A place where innovative ideas are transformed into sustainable businesses

ZICER – Zagreb Innovation Centre is the nation's leading incubator and accelerator, and the largest start-up ecosystem in Croatia. ZICER was founded by the City of Zagreb. The mission, throughout the past 27 years, has been to create a stimulating entrepreneurial environment and make sure that innovative high-tech companies and teams turn their ideas into successful products. ZICER's 7,300 m² flagship location is home to a dynamic community of innovative entrepreneurs. Their incubation, acceleration and co-working programs are set up in ways that help technological start-ups catalyse their growth and ensure a healthy business foundation. Members receive comprehensive assistance including education, consulting, mentoring, state-of-the-art infrastructure, and financial support. There are around 100 start-ups incubated on-premises. ZICER's tailor-made, award-winning Start-up Factory acceleration programme makes it easier for start-ups to do business, especially during the initial development stages. ZICER assists them with creating high-quality innovative products, expanding into new markets and increasing revenue. The goal is for start-ups to monetize their ideas and sustainably grow their businesses.

“At ZICER, start-ups are focused on organic growth. This makes them more stable and resilient on the market. Regardless of the development stage our tenants and programme participants are in, we use a well-rounded approach to turn their innovative, high-tech ideas into start-ups, and start-ups into strong and successful companies.”

Frane Šesnić, CEO of ZICER – Zagreb Innovation Centre

The expertise of ZICER’s staff, as well as cooperation with partner institutions, national authorities, agencies, non-governmental organizations, academia, investors and anyone who can positively contribute to the development of entrepreneurship, is what completes their well-rounded approach. ZICER is a place where good ideas turn into entrepreneurship.



BIOS

inkubator.hr



Business Incubator BIOS was established by City of Osijek. BIOS services are intended for start-ups, high-tech and innovative businesses, manufacturing and spin-offs. Incubator’s services and support includes providing facilities, high speed Internet free of charge, business planning and development support, entrepreneurial and technological education services, consultancy, knowledge and technology transfer support to manufacturing and new technology oriented companies. Incubator tenants can also become companies that are not beginners but are developing a new product or service. Currently, among such tenants we have companies from Zagreb and Labin, but also from Germany and Poland. A quality entrepreneurial eco-system (cooperation with local government, faculties, other support institutions), as well as a number of companies that are open to cooperation, attracts many start-up entrepreneurs, but also established IT companies to place their development teams in the Business Incubator BIOS.

BIOS monitors the needs of entrepreneurs, informs them and encourages their development

BIOS has several programmes – pre-incubation, incubation, acceleration, and rapid prototyping. Programmes can be connected but can also be used independently. Entrepreneurs who are not tenants of the incubator can also apply for prototype development and acceleration programmes, so BIOS is open to any support to technology companies that they need.

BIOS tenants, as well as other entrepreneurs developing new products, can apply for the use of a hardware lab for rapid prototype development and the production of smaller quantities of products. They can use the lab on their own or with the support of technicians for 3D printing, CNC machining and other operations. In addition, through the incubator, it is possible to agree on technical and business cooperation in the development of prototypes in which entrepreneurs who have experience in the development of prototypes will do part of the development work for the applicant.

BIOS doesn't finance their tenants directly, but financing is effected through costs reduction by subsidizing the price of space, incubator services and external services (education, mentoring and similar). That amounts to between EUR 20,000 and 25,000 in a five-year incubation programme.

When it comes to direct financing, BIOS helps their tenants preparing applications for co-financing from local, state or EU programmes, then together with experts from different fields they help in creating crowdfunding campaigns and connect their tenants with investors and investment funds. Before that, they prepare tenants for a presentation to potential investors.

BIOS currently has 42 tenants (IT companies, technology and manufacturing companies, partner institutions), 41 virtual tenants and 20 co-working space users with more than 300 employees. A lot of entrepreneurs have gone through the incubator and they have a number of success stories, some of which are: ORQA company that develops technologies for fast wireless video signal transmission, INCHOO company that develops web commerce solutions for more than 150 clients in 45 countries, ESCAPE studio, a regional digital marketing agency, Agro club which is the leading regional portal for the agricultural area, and in addition they have developed a number of solutions for entrepreneurs in the field of agriculture and many others.



OSIJEK SOFTWARE CITY

softwarecity.hr

OSIJEK
SOFTWARE
CITY_

Osijek Software City (OSC) started in 2012 as a project for IT companies and their effort to make a mark in the local, non-existing, tech community. At this moment, there are 213 IT companies in Osijek that employ more than 2000 people. A lot of these companies have been successfully present on the international market for more than a decade. They produce quality software and export it all over the world. The association's goal is to increase awareness of the developers' profession, elevate job market competitiveness and encourage a positive entrepreneurship climate in the ICT sector. OSC is trying to act vertically in the education system – from elementary school, high school, to universities.

Cooperation with the University of J. J. Strossmayer in Osijek

Together with the University of Josip Juraj Strossmayer in Osijek, they write and implement programs and modules. The goal of the collaboration is to increase the educational scale of the developers' and designers' profession in Osijek-Baranja County. To achieve that, they even provide lecturers from the community and local IT companies that are experts in their field of knowledge and are familiar with how things work in practice.

A place for you to develop

Collaborations

Collaborations with the Faculty of Electrical Engineering (FERIT), Department of Mathematics Osijek (Mathos), Academy of Arts and Culture in Osijek (AUKOS), Faculty of Economics Osijek (EFOS), Faculty of Humanities and Social Sciences (FFOS), and many more educational institutions, work as symbiotic relationships. While they provide knowledge transfer and up-to-date information on industry trends, faculties provide infrastructure, logistics, and experts from their institutions.

IT Park initiative

The IT Park is an Osijek Software City and City of Osijek initiative for placing the ICT industry in Osijek as one of the leading verticals. With more than 25,000 m² all together, fragmented into 10 lots – they're currently welcoming the first residents to the park. The first building will be finished by the end of 2021 – by the company Mono from Osijek.



SPINIT

spinit.unist.hr



The Split-Dalmatia start-up ecosystem consists of three interconnected subsystems: University of Split through research and student projects, the Split-Dalmatia County with StartIT@PICS and GROWit programme, and University Technology Centre for Advanced Technologies – SPINIT which offers outstanding, modern and well-equipped entrepreneurial infrastructure and all the necessary services for start-ups within the field of high technologies.

The basis for generating high technologies entrepreneurial ideas are research projects at the University of Split as well as student projects arising from certain aspects of these research projects. These students as individuals or teams in the next phase apply to the Split-Dalmatia County StartIT@PICS programme, specially designed as a pre-incubation programme with professional training that is intended for individuals and teams that are in the initial phase of development of technologically innovative products or services. Those who successfully complete this programme can apply to the GrowIT programme that is intended for entrepreneurs who are planning to fund or have founded their own company/business in the field of high technologies. At the end of this programme they can apply for membership within SPINIT incubator.

The SPINIT incubator for new technologies supports the start-up and growth of innovative entrepreneurship through incubation programmes and provides newly established innovative companies with a similar profile and interest with the resources and professional services needed for growth and development

SPINIT provides its customers with outstanding infrastructure, twenty-six fully equipped offices, three conference rooms, and seven meeting rooms fully equipped with video conferencing equipment, co-working space with fifty places, a laboratory for product prototype development and testing, as well as a gym and spaces for rest and informal meetings. Furthermore, users are provided with consulting services, mentoring, partners finding, as well as financing possibilities. At this point, all the offices in the SPINIT incubator are rented. There are sixteen start-ups and nine companies which have high-tech products and cooperate closely with the start-ups.

Split-Dalmatia County has its office located within the facility supporting start-ups through the organisation of education, mentoring and consulting, as well as financing some of their activities.



AI CENTRE LIPIK

www.lipik.ai



**The future
is here**

Lipik Artificial Intelligence Centre (AI Centre Lipik) was established in 2020 as a department within the Lipik Development and Tourism Agency LIRA d.o.o. Within the Centre, there is the Artificial Intelligence Education Centre, which conducts education and training of students, and the Entrepreneurial Artificial Intelligence Incubator, which provides accommodation and support to companies dealing with programming and artificial intelligence.

The Artificial Intelligence Education Centre is the first AI education centre in Croatia. Classes in the Centre take place every day for 8 hours.

The basics of AI are followed by machine learning and work on neural networks and deep learning. After covering these main areas of artificial intelligence, students learn application through programming languages and tools in the field of artificial intelligence. With the support of experts from various fields of artificial intelligence, the education includes work on own projects that will be presented during the last week of education.

Microsoft for Start-ups will enable eligible start-ups within the Lipik AI Centre Business Incubator to receive Microsoft support in the form of free access to technology, training and other resources that can help start-ups within the Lipik AI Centre to achieve the next step in their development.

All companies and participants within the Lipik AI Centre will be introduced to Microsoft's global skills acquisition initiative, which includes free online learning courses to acquire digital skills for the most sought-after jobs. Free learning includes four platforms: LinkedIn Learning, Microsoft Learn, AI Business School and GitHub Learning Lab.

The development of the Entrepreneurial Artificial Intelligence Incubator is planned in two phases:

- › **Business Intelligence Incubator PHASE 1**
Within the existing incubator, 330 square metres have been arranged for companies dealing with AI and programming, and they are now arranging another 330 square metres. At the beginning of 2021, the first foreign company Datamir with activities in the field of AI was opened – they currently have 20 employed programmers.
- › **Business Intelligence Incubator PHASE 2**
EUR 460,000 investment for the reconstruction of the building, equipping and launching a new Entrepreneurial AI Incubator. Round 300 square metres of office space, laboratory with quality equipment, quiet area, meeting room. Planned start of work: October/November 2021.

Benefits of entering incubator for START-UPS

Up EUR 26,500 incentive for starting an AI start-up in Lipik by the Croatian Employment Service, the City of Lipik and Požega-Slavonia County over two years. Provided infrastructure, equipment, logistics, mentoring.



PISMO

www.inkubator-pismo.eu



**The incubator
of the gaming
industry that is
changing Croatia**

The centre of the Croatian gaming industry is located in Sisak-Moslavina County, in the town of Novska, where the Entrepreneurial Incubator PISMO was opened in 2020. The opening was preceded by the idea and a goal to make it easier for entrepreneurs to run their businesses and create new jobs, as well as to strengthen the entrepreneurship of Sisak-Moslavina County by focusing on the sectors of the metal industry and the video game development industry. For a county that is traditionally focused on the metal industry, whose potential has, unfortunately, never been developed enough, a new branch of industry is coming at the right time. The gaming industry is experiencing great expansion all over the world. With the opening of an incubator specialized in the production of video games, Croatia is positioning itself on the world gaming map. By building an incubator that covers 1,500 square metres, the centre of the gaming industry offered entrepreneurs 26 functional-spatial units to contain all the necessary equipment, such as CNC machines and 3D printers, conference room, photogrammetric, music and motion capture studios with state-of-the-art video game testing simulators, and all the necessary software to increase entrepreneurial activity, and the development of ideas in other areas of activity.

“Approximately 87 % of our students are unemployed young people eager for new knowledge, of which 66% secure a job immediately upon graduation! We were the first in Croatia to launch such a programme, knowing that the gaming industry is the fastest growing in the world. How successful this branch is shown by the fact that the revenues of this activity did not fall in the COVID-19 year, but only grew. Video games were the future, but now they are our everyday life!”

Mario Čelan, director of the SIMORA Development Agency and the initiator of the incubator

This incubator has influenced the creation of a quality business environment by creating space, providing services and the ability to use the equipment to make it easier and more accessible for entrepreneurs to work on the development of their businesses. The opening of this digital innovation hub (DIH) has accelerated the use of advanced digital technologies, but also provided competitiveness for start-ups to enter the global market. All this was recognized by the leading Croatian telecom A1 Hrvatska d.o.o., which became a technological partner for the PISMO incubator, providing it with the most modern optical and 5G infrastructure.

Around 80 people per year are trained to make video games. Through the trainings of two programmes – Blender and Unity, participants learn to produce video games in six months, and through cooperation with the Croatian Employment Service, if they were unemployed before the training, they receive a salary and compensation for transportation costs. The concept of retraining mostly the young and unemployed combined with excellent performance was awarded by the European Association of Development Agencies EURADA, and the project holder, Sisak-Moslavina County Development Agency SIMORA, was named the best in Europe in 2020. So far, five generations with more than 200 participants have successfully completed the training. Statistics show that most of them work in the IT sector, after completing the training, and 49 of them decided to open their own start-ups in the PISMO powered by A1 incubator.



STEP RI

www.step.uniri.hr

STEPRI

Business consulting for innovation, competitiveness and business growth

As the first science and technology park in Croatia, Step Ri supports knowledge-based entrepreneurship and facilitates the interaction between academia and business since 2008. Step Ri is one of the best places for growing enterprises looking for a foothold in Croatia, as it provides soft landing services through office facilities integrated with business support services and contacts in the entrepreneurial ecosystem in Central and South East Europe. Step Ri is located in a modern, renovated building at the University of Rijeka Campus. They offer office spaces (15-300 m²) through flexible renting schemes: preferential rental for companies in incubation and regular rental for new technologies and knowledge-based companies. Preferential rental can be approved for start-up entrepreneurs and scientists whose business ideas have been evaluated positively by three independent experts. Moreover, they offer co-working facilities for those that require temporary use of office space, conferencing facilities and team coordination at minimum cost.

Step Ri has considerable experience in national and international cooperation, having carried out more than 50 projects. They have cooperated with the U.S. State Department since 2013 and have implemented projects focused on the development of entrepreneurship and business competences and employability. STEP RI projects have been funded by various funds and programmes (European Social Fund, European Regional Development Fund, INTERREG CE, INTERREG MED, INTERREG Italy-Croatia, COSME, H2020, LLP Leonardo da Vinci), yielding rich experience with grants management.



THE CENTRE FOR ENTREPRENEURSHIP

centar-za-poduzetnistvo.hr



The Centre for Entrepreneurship offers full support to entrepreneurs, from education, assistance in applying for available competitions for grants and incentive credit lines, to individual counselling and mentoring, along with incubation spaces in two business incubators in Dubrovnik and Ploče. The Centre for Entrepreneurship monitors entrepreneurs on their journey from idea to product or service placement and provides support even in the later stages of business development and expansion.

The Centre for Entrepreneurship mainly cooperates and supports entrepreneurs from service industries.

As bright examples, they would like to introduce entrepreneurs to whom the Centre provides entrepreneurial support services for their business development:

- › The **EZ Booker** is a booking system for tours and excursions. The 'EZ Booker' app is designed for a wide spectrum of users and it functions as a central booking system for tours and excursions making it instantly available for numerous booking channels. Synchronization in real time starts with a client's website and social networks, sales giants such as TripAdvisor, Viator and others contracted to EZ Booker with no need for additional availability checks
- › **Review Booster Pro** is a system for reviewing and conducting surveys using NFC technology. Recognizing the opportunity in the lack of positive online reviews and the low motivation of satisfied users to write it, they presented a solution by which their users, by scanning the RBP Board, come up with reviews within 30 seconds without downloading the application.

With joint forces to progressive entrepreneurship

TECHNOLOGY PARK VARAŽDIN

www.techpark.hr



Technology Park Varaždin is a **business community** that provides entrepreneurs – tenants with resources for growth and development. The common space and sense of community and cooperation in the Technology Park Varaždin provide the opportunity for a cross-sectoral exchange of knowledge. Technology Park Varaždin collaborates on various student exchange projects, so it often hosts students and young people at the beginning of their careers from multiple EU countries: Hungary, France, Belgium, Spain, Portugal, and others. Some of them recognized the companies in the Technology Park as their ideal employers, and after completing the programmes through which they came to practice, they stayed to work in Varaždin for some time.

Makerspace – a shared space for creation and creative expression is one of the initiatives of the Technology Park Varaždin, and the result of the project Reconstruction and Equipping of the Technology Park Varaždin. Makerspace is a place where people with common interests, using advanced technology, can come together to work on projects, sharing ideas, equipment, and knowledge. These spaces are also intended to educate those who need 21st-century critical skills in science, technology, engineering, and mathematics (STEM). Furthermore, Varaždin Makerspace has the ambition to become a place for launching innovations, education, and cooperation organized according to the business model of the sharing economy.

International cooperation is another significant segment of the Technology Park Varaždin. Technology Park Varaždin is a long-time member of the national consortium of the European Entrepreneurship Network. It is a platform that enables regional formal and informal gatherings with other consortium members to exchange practical knowledge and experience. Through this network, companies have at their disposal a

Dynamic business ecosystem to connect, innovate and grow your business

free service for finding international business partners, sales representatives, distributors, etc. Varaždin Technology Park also achieves international cooperation through projects it implements with its founders, the Faculty of Organization and Informatics of the University of Zagreb. Most of these projects are R&D projects that allow them to collaborate with scientific institutions across the EU.



Investment costs

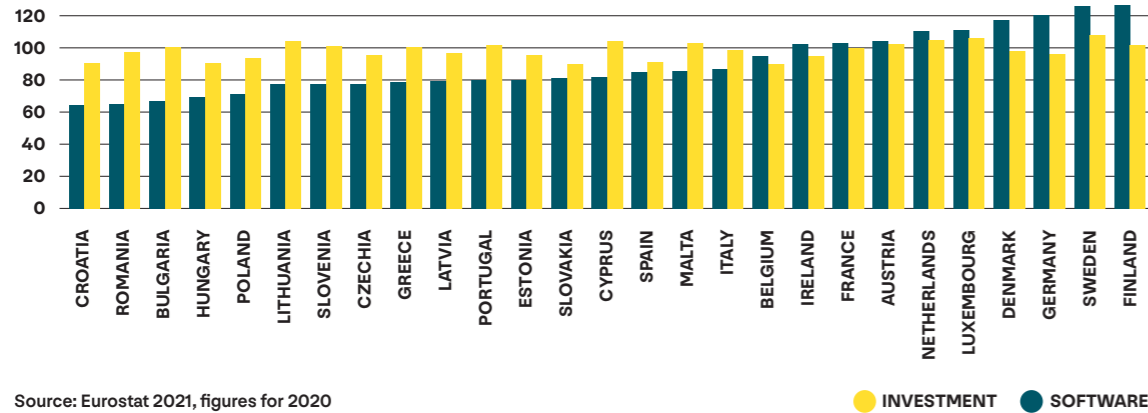


Investment costs

According to Eurostat, price levels for investments in Croatia are 35% lower than the EU average, with price level indices for software being the lowest in the EU.

Price level indices for investment

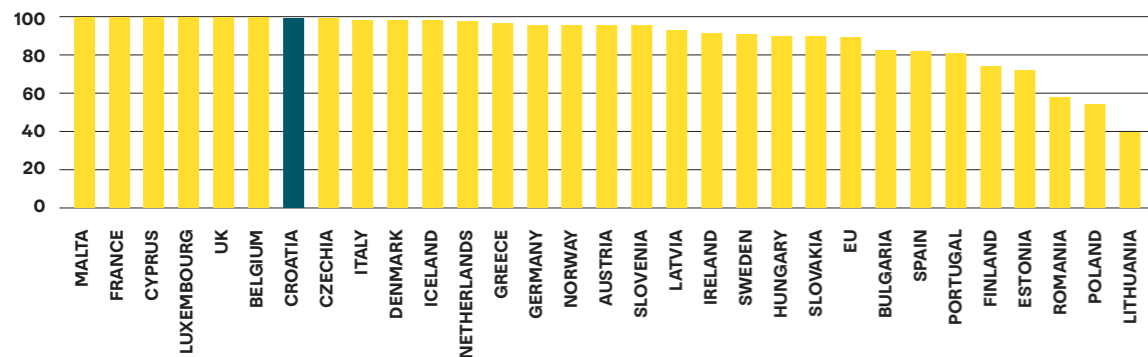
PRICE LEVEL INDICES FOR INVESTMENT AND SOFTWARE, 2020 (EU27 = 100)



Source: Eurostat 2021, figures for 2020

State of the art infrastructure

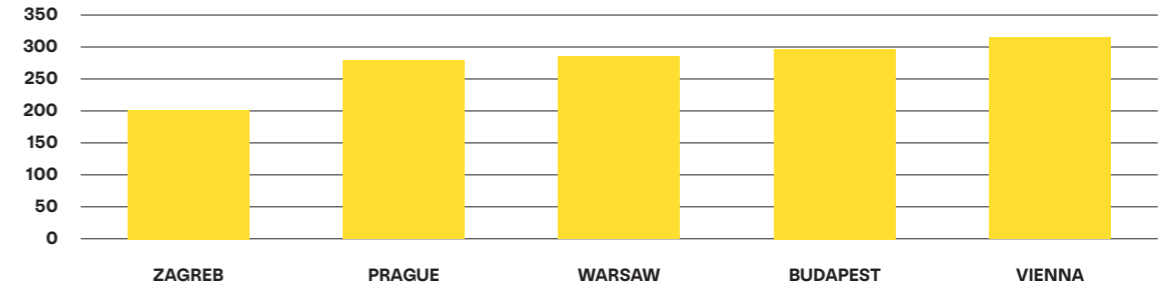
STANDARD FIXED BROADBAND COVERAGE/AVAILABILITY (AS A % OF HOUSEHOLDS)



Source: European Commission, Digital Scoreboard, 2020

Approachable rental prices

PRIME RENT IN EUR



Source: CUSHMAN & WAKEFIELD 2021

KEY OFFICE MARKET FIGURES H1 2021 (NET EFFECTIVE RENTS)

Zagreb office market

Total A and B class stock	1,475,000 m ²
Vacancy rate	5.0 %
Average Prime Monthly Rent	€ 14.0 – 15.0/m ²
Average Class A Monthly Rent	€ 12.5/m ²
Average Class B Monthly Rent	€ 7.0 – 10.0/m ²

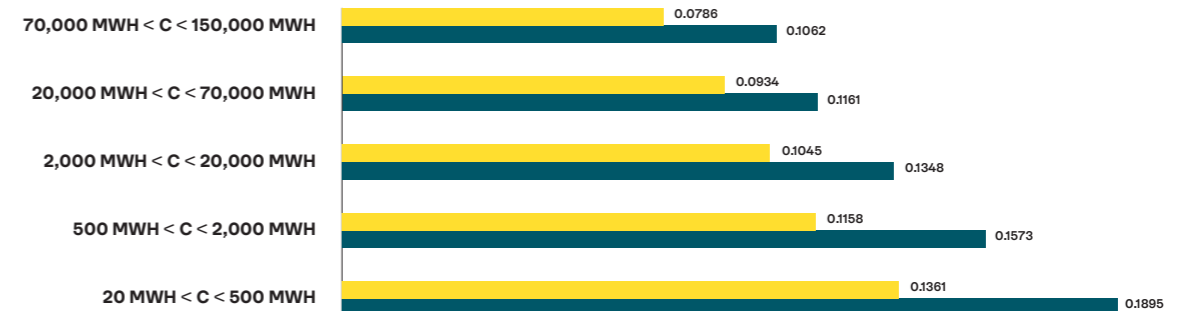
Croatian cities

Split	€ 9.0 – 14.0/m ²
Rijeka	€ 5.0 – 13.0/m ²
Osijek	€ 4.0 – 9.5/m ²

Source: COLLIERS for 2021, Market overview Croatia H1 2021

Low utility costs

ELECTRICITY COSTS FOR NON-HOUSEHOLD CONSUMERS, S12021, €/KWH



Source: Eurostat 2021, all taxes and levies included



Incentives and financing



Incentives and financing



INVESTMENT INCENTIVES

To increase foreign direct investment (FDI) and economic competitiveness, Croatia is continuously pursuing activities in improving the legislative framework. Significant reforms have been implemented and administrative procedures optimized. Likewise, Croatia offers competitive investment incentives in line with the Investment Promotion Act.

- › Grants for the capital cost of investments up to EUR 1,000,000
- › Grants for R&D up to EUR 500,000
- › Employment incentives up to EUR 18,000 for every new employee
- › Grants for training costs covering up to 70% of employee training costs
- › Tax incentives up to 100% deduction or suspension of profit tax rates for up to 10 years

Minimum investment

**EUR
50,000**

in fixed assets with the creation of at least three new jobs for micro-enterprises

**EUR
150,000**

in fixed assets with the creation of at least five new jobs for small, medium and large enterprises

**EUR
50,000**

in fixed assets with the creation of at least 10 new jobs in centres for the development of ICT systems and software

**EUR
500,000**

for projects that invest in modernization and increase the company's business process productivity

AID FOR R&D PROJECTS

Aid for Research and Development projects is regulated by the Act on State Aid for Research and Development Projects (OG 64/18) which has been in force since 26 July 2018.

Grantor:

Ministry of Economy and Sustainable Development

Beneficiaries:

Legal and natural persons, taxpayers of profit tax and income tax

Type of aid:

Tax relief for R&D projects and feasibility studies (reduction of the tax base)

The maximum aid levels to which beneficiaries may be entitled:

- a) 100% of the amount of eligible project costs for basic research
- b) 50% of the amount of eligible project costs for industrial research
- c) 25% of the amount of eligible costs of projects for experimental development
- d) 50% of eligible costs for feasibility studies

The total amount of support for R&D that a beneficiary may receive per project:

- a) Predominantly basic research: maximum of EUR 300,000 per entrepreneur per project
- b) Predominantly industrial research: maximum of EUR 200,000 per entrepreneur per project
- c) Predominantly experimental development: maximum of EUR 100,000 per entrepreneur per project
- d) Feasibility studies in the preparation of research activities: maximum of EUR 50,000 per study

The maximum total cumulative amount of support for R&D projects that an individual entrepreneur may receive:

- a) Predominantly basic research: maximum of EUR 40 million per entrepreneur per project
- b) Predominantly industrial research: maximum of EUR 20 million per entrepreneur per project
- c) Predominantly experimental development: maximum of EUR 15 million per entrepreneur per project
- d) Feasibility studies in the preparation of research activities: maximum of EUR 7.5 million per study

A beneficiary receives support through an additional reduction of the tax base for eligible costs of R&D projects or feasibility studies:

- a) 200% of eligible project costs for basic research
- b) 150% of eligible project costs for industrial research
- c) 125% of eligible project costs for experimental development
- d) 150% of eligible costs for feasibility study

EU GRANTS

In addition to national measures, EU grants play a vital role in stimulating entrepreneurial activities as well as encouraging innovations and new product development, which will also be facilitated by the new EU Multiannual Financial Framework (2021 – 2027).

Ministry of Economy and Sustainable Development



MINISTRY OF ECONOMY AND SUSTAINABLE DEVELOPMENT

The Ministry of Economy and Sustainable Development is a central place for investors who decide to invest in the Republic of Croatia. We provide support in implementing investment projects through all phases, such as:



1
Providing all necessary information on business and investment opportunities in Croatia



2
Support to investors by providing relevant information, data and analysis on the business climate, investment conditions, labour market, potential partners, investment locations and investment incentives



3
Supporting investors in finding suitable investment locations and organizing visits to investment sites and meetings with representatives of public and private bodies



4
Post-investment support



Contact us

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