

# Digital Footprint

Exploring the transformation of Croatian startups and companies  
in the new market circumstances

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In cooperation with:



REPUBLIC of CROATIA  
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Sustainable Development

FIL ROUGE CAPITAL



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# Executive Summary

This report aims to provide a systematic analysis of the current state of the Croatian startup ecosystem and the operations of Croatian companies, with a particular focus on the digital transformation and effects of the COVID-19 pandemic on the economy. By studying startups and companies, the report considers and explains the impact of the pandemic on their business, the changes they have subsequently introduced, as well as their expectations and plans for the future. The study shows that the pandemic has undeniably prompted the economy to adapt and rapidly strive to implement digital solutions and transform existing business models. In addition, the report provides a basis for future analysis of digital economy trends in Croatia and enables ongoing monitoring of the progress and changes in this area.

Croatian startup ecosystem is still at an early stage of development, bearing in mind that almost 90% of startups have been operating for five years or less and have up to ten employees, with 62% of startups having received investment to develop their business and 50% generating income. The pandemic has had a negative impact on the sales of products/services of more than half of the startups, while third was not affected and 13% recorded a positive impact. Although at an early stage of development and affected by the pandemic, the Croatian startup scene has several examples of extremely successful startups. These examples together with our findings indicate that the Croatian startup ecosystem has great potential, but also that additional support mechanisms are called for.

The pandemic has had a similar impact on the business operations of companies. As much as 77% of companies have reported a negative impact of the pandemic on sales, 13% of companies were not affected and only 11% reported a positive impact. The vast majority of companies (73%) are adapting their products/services to the "new normal", while the same percentage of companies believe that the implementation of digital solutions will be necessary in this process. However, digital transformation of companies will largely depend on liquidity and financial resources that they will be able to earmark, and as much as half of the companies have reported a significant or very significant impact of the pandemic in this segment of their business. It is also interesting that only 20% of Croatian companies see startups as strategic partners in their transformation, although this is the prevailing trend in the world. Additionally, the market of Croatian companies appears to be extremely eurocentric given that 34% of companies place their products/services primarily on the EU market.

The study findings suggest that in terms of the overall progress of the business of Croatian startups and companies and in the context of the current COVID-19 pandemic, the state should create certain support mechanisms. Primarily, this should be done by facilitating the creation of additional sources of venture capital to finance startups, supported by programmes that will enable greater global connectedness and access to new markets, as well as by awarding grants for digital transformation that would further encourage cooperation between companies and startups in Croatia.



# Introduction

Over the past eight months, the COVID-19 pandemic has transformed both the global and the Croatian economic outlook and caused severe disruptions to business operations of both startups<sup>1</sup> and companies.<sup>2</sup> Public health protection measures, such as self-isolation, restrictions on movement and working from home, have significantly affected the development of the startup ecosystem and the Croatian economy as a whole. In order to find out more about the consequences of the COVID-19 pandemic, in October 2020 we conducted a study on the adaptation and transformation of startups and companies due to new market conditions. The study was conducted in the form of a questionnaire, with over 100 startups and about 100 companies surveyed.<sup>3</sup> The analysis of the collected data provided us with an insight into the existing market trends and improved our understanding of the challenges that lie ahead of us.

Most companies and startups have obviously become aware of the need to transform their business models and have already begun to adapt to new market circumstances. As a matter of fact, 74% of companies have already started adapting, and 41% of startups have already completed the adaptation of their existing products/services to new market circumstances.

Companies see the greatest transformation and innovation potential in the development of new products/services and the modification and optimisation of sales activities by improving and/or implementing customer relationship management. As much as 74% of surveyed companies believe that it is necessary to develop or introduce new digital solutions that would accelerate the transformation processes. At the same time, 55% of companies plan to collaborate with experienced domestic or international tech companies, while only 20% of companies plan to collaborate with startups.

The Croatian startup ecosystem is still in its infancy, but over the past few years there has been a relatively significant increase in the number of startups and investments, with support mechanisms continuously improving. The establishment of VC funds with the support of private capital and the European Investment Fund (EIF)<sup>4</sup>, as well as the increased availability of EU grants have further contributed to the development of the startup ecosystem in Croatia. In 2020, in the midst of the COVID-19 pandemic, Croatia saw the birth of its first *unicorn*, Infobip, with a valuation of over USD 1 billion.

<sup>1</sup> Startup is a legal entity that has at least one full-time employee, USD 10,000 of external investment or revenue, and the potential for exponential growth (Startup Genome).

<sup>2</sup> Company is a legal entity that is engaged in a production or service activity, regardless of its size and the industry, with no potential for exponential growth.

<sup>3</sup> The sample structure of this study follows the population structure of startups and companies

<sup>4</sup> EIF, 2019, *EIF invests EUR 32.55m into Fil Rouge Capital II under the Croatian Venture Capital Initiative*

In addition, in 2020 the Croatian startup ecosystem recorded its largest acquisition to date – Stillfront bought Nanobit for EUR 125 million. At the same time, in order to further develop the ecosystem, it is crucial to address certain challenges that the ecosystem is still faced with, such as poor global connectedness, startup support programmes in need of improvement and a low level of venture capital in the ecosystem.

Our study has shown that the national economy is marked by uncertainty and difficulties that many businesses face due to market disruptions, similar to the situation in the global market, as confirmed by many studies published in the last six months. While a decline in revenue and a partial freeze on investments in startups were expected, the impact on employment levels is far less than expected. Working from home and other measures of social distancing have brought about changes to business models that resulted in a transition to e-business and accelerated digital transformation processes. Precisely because of this, certain industries have recorded a significant decline in revenues, especially tourism, while the gaming and e-commerce industries have emerged as the biggest winners of the new circumstances.

The study indicates the optimism of the surveyed startups and companies because the vast majority believe that the situation will develop positively in the coming period. Much of this optimism is probably based on the EUR 22 billion<sup>5</sup> available to Croatia from the EU budget under the recovery and resilience facility (Next Generation EU instrument) and the 2021-2027 Multiannual Financial Framework. Operational plans for the use of these funds are expected to support innovation and digital transformation of the Croatian economy. In addition, it is important to note that despite the current COVID-19 pandemic, in order to further develop the economy, it is important to strengthen the collaboration between startups and companies in the context of digital transformation.

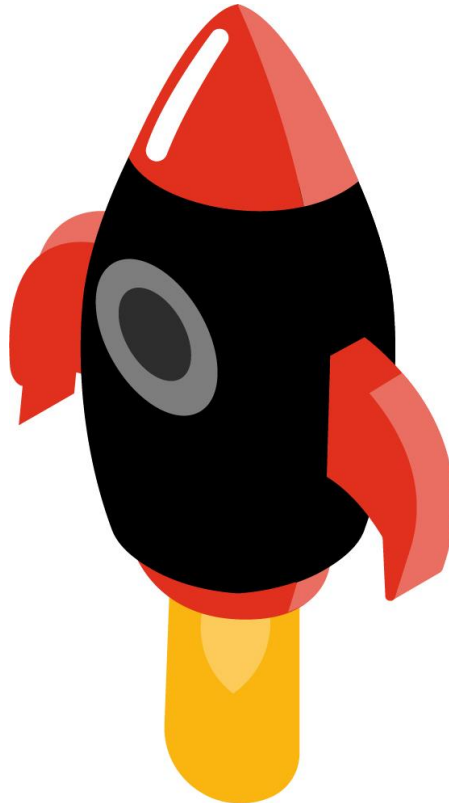
<sup>5</sup> Government of the Republic of Croatia, 2019, Hrvatskoj na raspolaganju 22 Croatia has EUR 22 billion of European funds at its disposal as a strong and additional lever for economic development



# Startup ecosystem in Croatia

Many countries are committed to developing their startup ecosystems. Countries around the world have started competing to create better conditions for startups. The efforts of governments cover all the key segments needed for the faster startup development and market success (e.g. legal framework, funding mechanisms). The reason for this is twofold. On the one hand, startups contribute significantly to employment levels and economic growth in a broader sense. On the other hand, many countries have seen the development of startup ecosystems as an opportunity to accelerate their development, skip a few steps and become relevant on a global scale.

The Croatian startup ecosystem is still in the early stages of development, as evidenced by the relatively small number of startups and the low level of total investment. In terms of the total startup investment level of USD 20,202 per professional developer in the period from 2012 to 2018, Croatia is in the top half of the EU member states list.<sup>6</sup> However, this must be viewed with reservations, given that Croatia has a far smaller number of professional developers compared to other EU member states.



According to StartupBlink, Croatia ranked 39<sup>th</sup> among 200 countries on the global scale of startup ecosystem development in 2020, having improved its position by 11 places compared to the previous year.<sup>7</sup> This shows that the Croatian startup scene is developing and becoming more dynamic with an increasing number of startup events and conferences.<sup>8</sup>

The broader public started speaking about startups in Croatia as soon as the first outliers recorded major successes in the global market. In this context, it is necessary to highlight Infobip and Rimac Automobili, as they, with their success stories, were among the first to contribute to the creation of additional incentives for the emerging entrepreneurial mentality and the development of the startup ecosystem. These examples, along with examples of successful startups established in the last five years, are proof that it is possible to create a technological ecosystem in Croatia.

<sup>6</sup> Atomico, 2018, *The State of European Tech*

<sup>7</sup> StartupBlink, 2020, *Startup Ecosystem Ranking of Startups – Croatia*

<sup>8</sup> Startup Europe Networks, 2020, *The Ecosystem*



# 61%

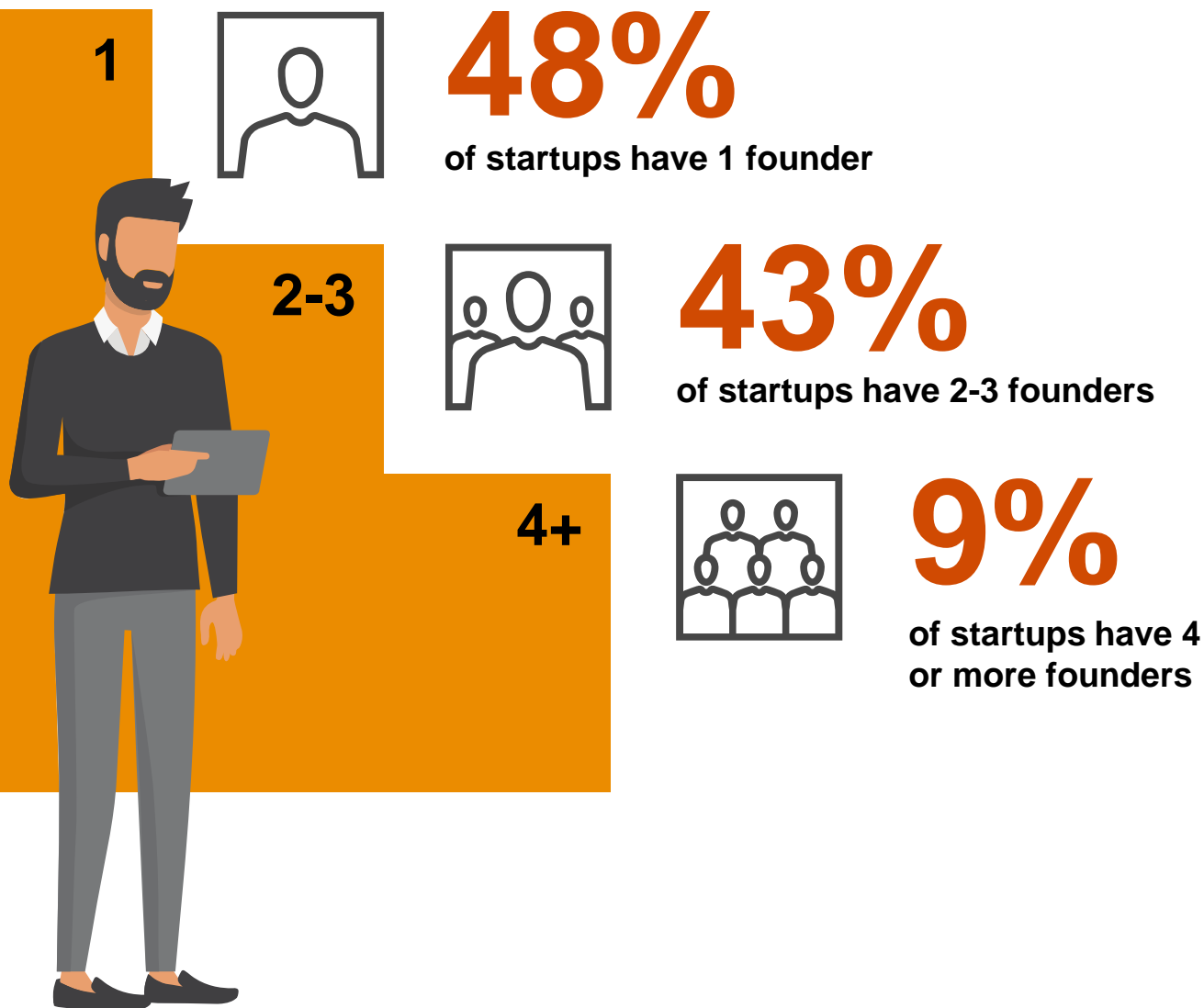
**of startups have existed  
for less than 2 years**

# 86%

**of startups  
are registered in Croatia**

61% of startups that participated in our study, have existed for less than two years. Although the number of startups that exist for up to two years is also high in other ecosystems, the distribution of these percentages differs. Namely, in mature ecosystems, the percentage of startups that exist between two and five years is significantly higher compared to the percentage recorded in Croatia, where it is 29%.

Regarding the general characteristics of startups, it is interesting to note that the findings of the study showed that 86% of startups are registered in Croatia and that only 7% of them are registered in a country other than Croatia. If we compare this data with other ecosystems in the same stage of development, we will notice a much higher percentage of those registered in countries with stronger investor presence. The underlying reason may relate to the increased number of investments over the past two years, that is still low, or the fact that a significant percentage of startups are still mostly financed by grants awarded by state institutions (31%). Moreover, this is also due to the early development stage of startups and their primary orientation towards the local market.



According to the research findings, nearly half of the respondents (48%) stated that their startup had a single founder, and almost the same percentage of respondents reported two or three founders. The fact that most startups in Croatia have a single founder can further limit the ability of startups to attract investors. Investors view startups with a single founder as a higher investment risk and they refer to this as the '*single-founder issue*'. This may also imply that the level of self-awareness among startup founders is low - especially in terms of acknowledging what they know and more importantly what they do not know. The result for two or three founders is in line with EU indicators, where the average number of founders per startup is 2.5, which is the preferred choice of most investors when investing in startups.<sup>9</sup> Startups having more than three founders usually imply a more complex decision-making process and more conflict, thus making a consensus more difficult to reach.

Most startups (89%) stated that they have up to ten employees, which would mean that most of the participants in this study are still in the initial stage of the startup lifecycle. The study shows that this initial business stage, in which the business model and strategy are still being developed, brings the greatest risk of failure and for many is a key stage for survival.<sup>10</sup>

<sup>9</sup> Steigertahl, Mauer, ESCP Europe Jean-Baptiste Say Institute for Entrepreneurship, 2018, *EU-Startup Monitor*

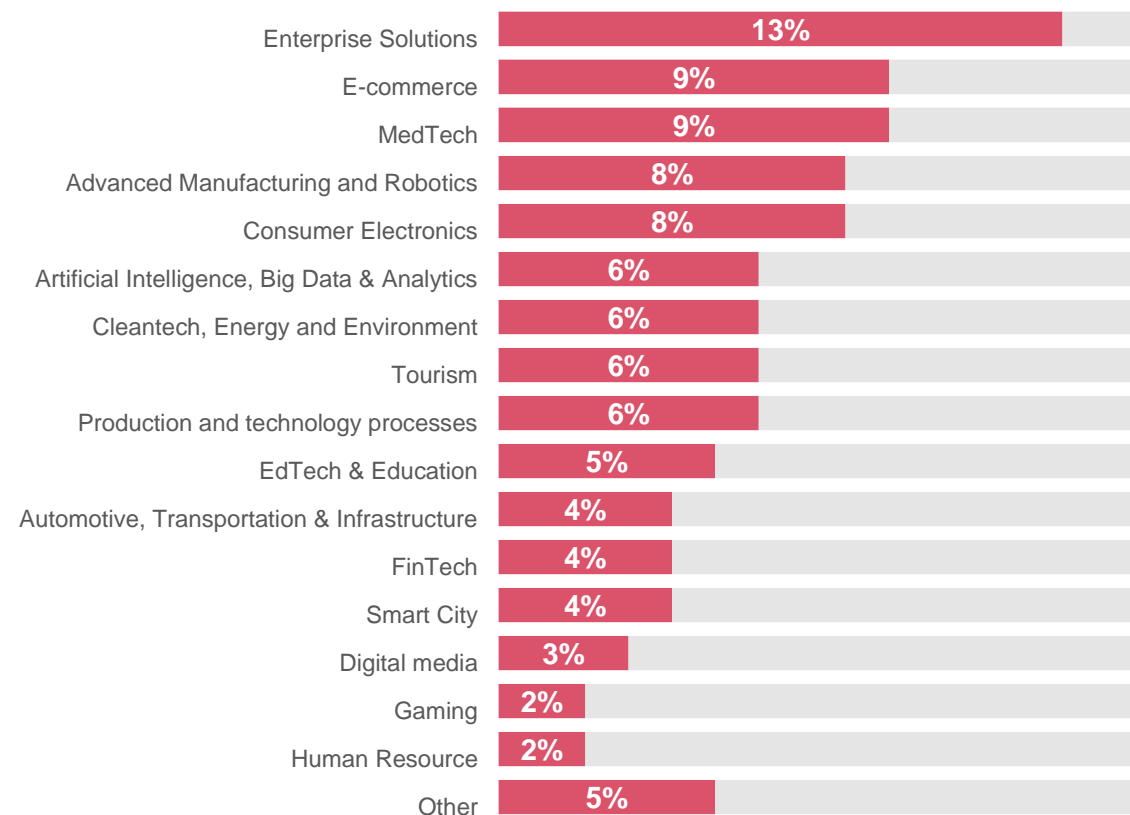
<sup>10</sup> Failory, 2020, *Startup Failure Rate: Ultimate Report + Infographic*

# Startup activity and primary markets



Given that startups currently operate in almost all sectors of the economy, the specialisation of the Croatian startup ecosystem is difficult to determine. According to the study, 13% of startups create B2B business software solutions, while 9% of startups are involved in the application of advanced technologies in medicine (MedTech) and e-commerce. Reviewing these findings in the EU context, one can conclude that the structure is fairly similar. Studies at EU level indicate that 99% of startups, regardless of the sector in which they operate, are engaged in providing certain online solutions. Moreover, although a sector such as software development (19%) is the most represented, new startups are also being established in the sub-sectors that received most attention in recent years (startups developing solutions for the financial sector and environmental technologies).<sup>11</sup> The dominant sub-sector in which the Croatian ecosystem could develop its comparative advantage cannot be identified at this time, so it is recommended that, given global trends and the current pandemic, the development of MedTech startups is monitored in the short and medium term.

**Chart 1: Industries in which startups operate**

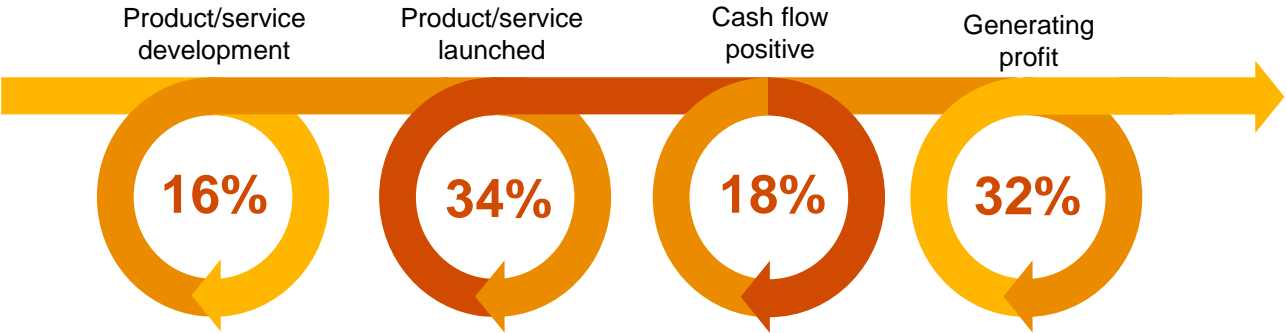


<sup>11</sup> Steigertahl, Mauer, ESCP Europe Jean-Baptiste Say Institute for Entrepreneurship, 2018, *EU-Startup Monitor*





Chart 2: Development stages startups are in



One third of startups have an already developed product or service and are currently collecting feedback from the market so they can further modify it. On the other hand, 50% of startups are in the commercialisation phase, which means that they already generate income, and some of them even generate profit.

More than 57% of startups state that their product or service is used by large companies, which indicates the potential for their cooperation when it comes to improving the companies' business operations. According to the respondents, some of the processes that could benefit from further improvement include many of the so-called support processes.

Support processes are essential to any business, which is why inadequate management of support processes can represent a significant financial cost to any organisation.

That is why they must be specially monitored and optimised, which opens up an opportunity for startups to help large companies with their solutions.<sup>12</sup> The study shows that the majority of startup products/services could improve business processes such as sales, information and communication technologies, as well as logistics and infrastructure. The research also found that 87% of startups plan to work with large companies in order to contribute to the transformation of their processes/ products/ services.

**87%** of startups think that they can work with companies on their transformation

<sup>12</sup> AllTopStartups, 2017, *Business Processes That Will Save Your Startup*

With regards to primary markets, the largest number of startups (39%) serve small and medium-sized companies. However, some startups (33%) state that their primary markets refer to individuals. Most startups at the EU level participate in B2B markets and generate their income in full or mainly by working with other companies. Based on these findings, we can conclude that the startup ecosystem in Croatia has not yet caught up with global trends in the context of focusing on B2B solutions.

At the global level, startups exhibit a lack of cooperation with state institutions, which is also the case with the participants in this study. A considerable number of papers and publications on this topic emphasises the importance of a good relationship between the public sector and startups, given that they can be of great assistance to each other. By introducing policies, strategies and initiatives, governments can influence the creation of an environment that will encourage the development of startups (cutting red tape, providing easier access to funding, etc). On the other hand, startups can provide governments with new less expensive solutions for their digital transformation and process optimisation, thus leading to significant savings on the cost side of the budget.<sup>13</sup>

<sup>13</sup> Forbes, 2019, It Takes Two To Tango: Why Tech Startups And Governments Need To Rethink Their Uneasy Relationship

Chart 3: Primary customers/users

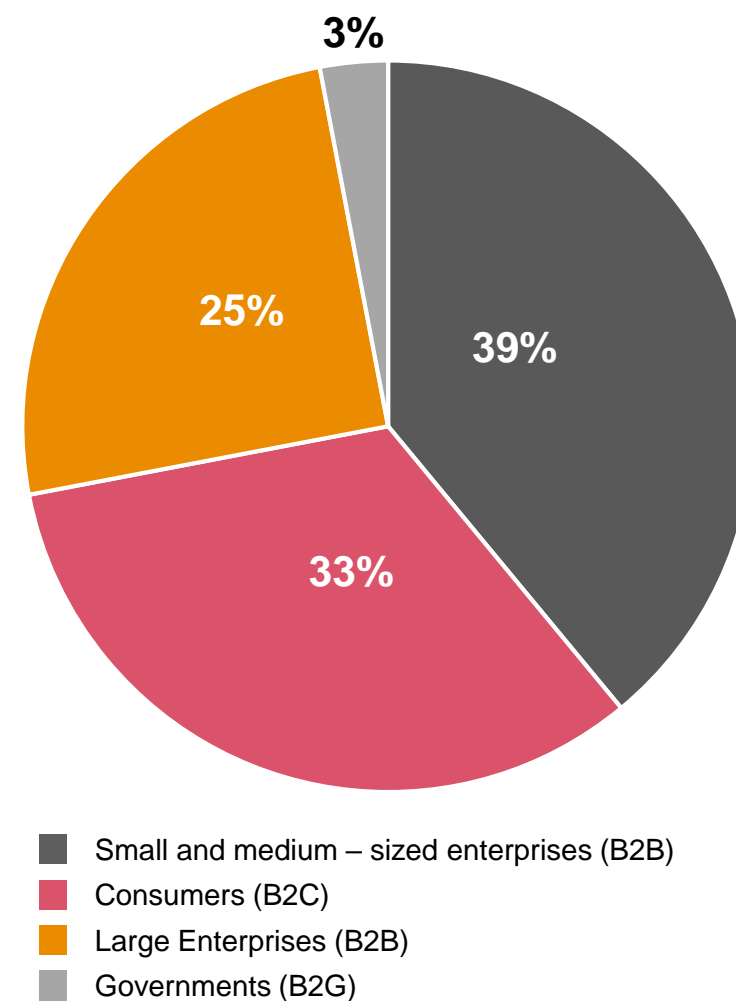
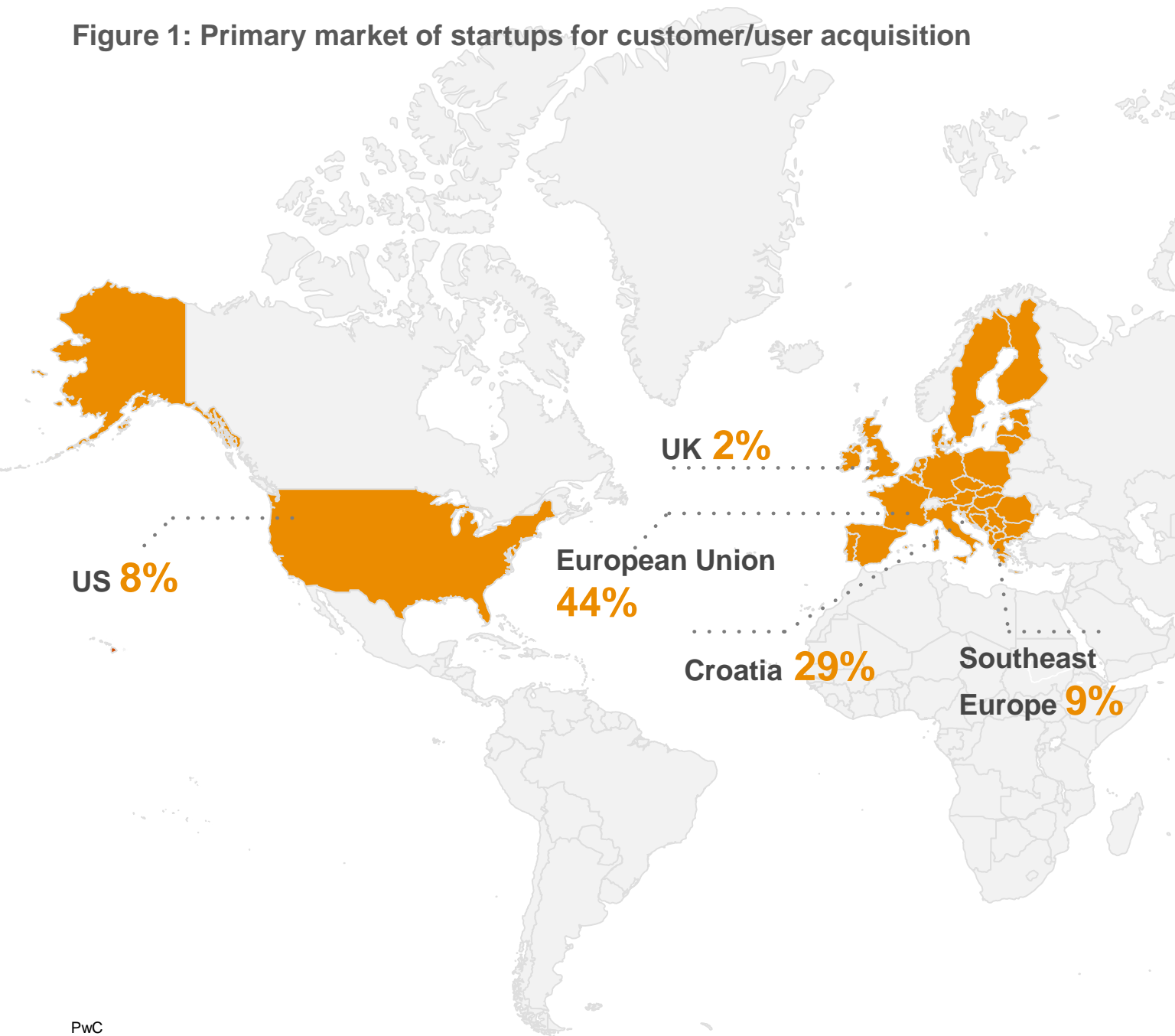


Figure 1: Primary market of startups for customer/user acquisition

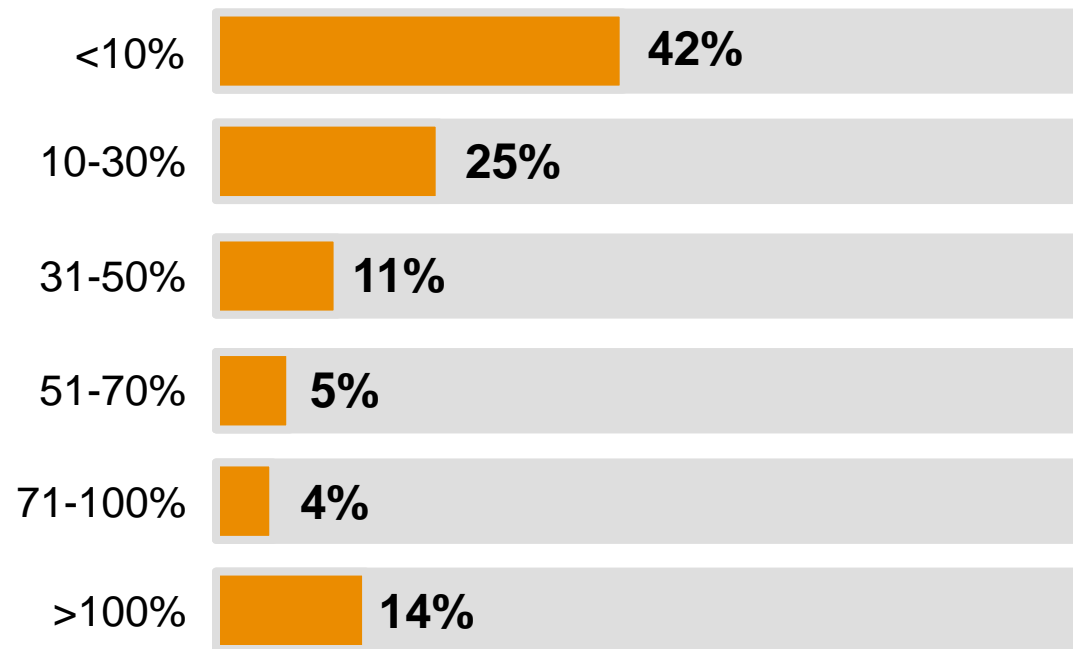


The primary market of startups for the acquisition of customers/users is the European Union and Croatia. As a matter of fact, more than 54% of them stated that they generate over 80% of their income in these markets. Moreover, the study findings showed that most startups will continue to target the EU and Croatian markets in the next 12 months. A few also plan to operate in the US (13%) and Southeast Europe (12%). At the EU level, 88% of startups plan (further) internationalisation, and they see growth markets both within (85%) and outside (40%) the euro zone.<sup>14</sup> The reason why Croatian startups focus on the EU market may be related to the low availability of investments, which at an early stage may be insufficient to penetrate markets such as the US. In contrast, startups in similar ecosystems typically target non-EU markets to diversify risk and create the potential for greater global outreach. Therefore, the above findings may indicate a lack of global connectedness, a lack of understanding by startup founders about the need to launch products on global markets, or a strategy developed by startups opting for less risky markets (markets they are familiar with).

<sup>14</sup> Steigertahl, Mauer, ESCP Europe Jean-Baptiste Say Institute for Entrepreneurship, 2018, *EU-Startup Monitor*

# Startup growth and investments

**Chart 4: Average customer growth rate  
(September 2019 – March 2020)**



When it comes to the average customer growth rate in the period from September 2019 to March 2020, 42% of startups said that their growth rate was below 10%. This was accompanied by relatively low average monthly revenues during the 12 months before COVID-19, which were lower than EUR 10,000 for 60% of startups.


Most startups (62%) generated profit before the outbreak of the pandemic. The share of startups that have been in existence for less than two years and generate revenue below EUR 10,000 is 46%. This is consistent with the expectation that startups that have been on the market for a longer period of time also generate higher revenues.



The total level of investment in startups under review is over EUR 42 million. However, if we remove an outlier investment (being much larger in size than the others), the total level of investment is around EUR 25 million. The average investment per startup was about EUR 400,000 if we exclude the outlier investment. To illustrate, venture capital investments in startups in Croatia amounted to between EUR 10 and 20 million in 2016. Therefore, a significant increase in investment is observable in this context, but it is still lower than the average level of investment in startup ecosystems that are in the early stages of development.


62%

of startups generated profit before the outbreak of the COVID-19 pandemic




42 million euros

is the total level of investment in startup



400 thousand euros

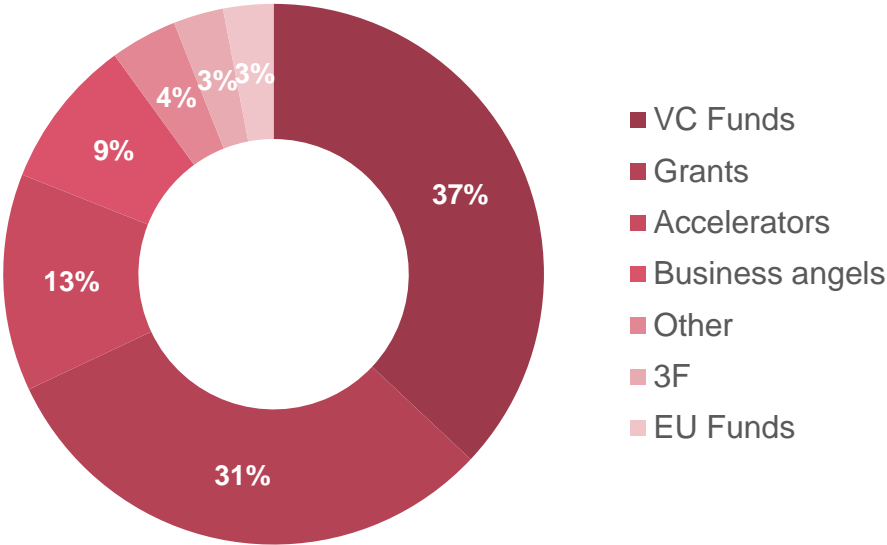
is the average investment per startup



<sup>15</sup> The total level of investments into startups of 42 million euros includes the aforementioned outlier investment

<sup>16</sup> Startup Genome, 2020, *The Global Startup Ecosystem Report 2020 (GSER2020)*

Chart 5: External funding/investment sources



Further analysis shows that the funding received by the startups mainly came from VC funds (37%) and national or international organisations in the form of grants (31%). Startups with higher revenues received VC funding, and startups with lower revenues received investments from a national or international organisation in the form of grants. At EU level, funding sources vary. The largest share (29%) is accounted for by business angel investments, venture capital accounts for 26%, while crowdfunding platforms are used by 18% of startups.<sup>16</sup> Grants are not such a common source of funding for startups as obtaining funds can be difficult due to high competition and strict award criteria. All of the above further confirms the fact that in Croatia there are fewer funds available to finance startups than required and that they are at an early stage of development.



# COVID-19 and the Croatian startup ecosystem

Both in individual countries and on a global scale, the development and survival of many startups has been seriously threatened by the pandemic. Startup ecosystems have been most affected by investment freezes and cuts, as well as the termination of contracts by users that had budget cuts.

Lack of capital significantly affects the sustainability of startups and this is manifested through three different statistics. Firstly, four out of ten startups currently have three months or fewer of capital runway left.<sup>17</sup> Secondly, the fact is that investors are withdrawing in times of crisis and the vast majority of startups are left without a major source of funding.

It is this scenario that can be seen from the Startup Genome survey, which indicates that the fundraising process has been dramatically disrupted. As many as 18% of startups had their funding round cancelled by the investor and 54% have had their funding round delayed or the lead investor became unresponsive.<sup>18</sup> Thirdly, total VC funding has dropped by 20% in the first three months of 2020.<sup>19</sup>

Another major shock caused by the pandemic is the drop in demand for services/products. As much as 72% of startups have seen their revenue decline since the onset of the crisis due to a drop in demand, with the average startup experiencing a revenue drop of 32%.<sup>20</sup>

According to the survey, most Croatian startups (as many as 95%) believe that they will not be forced to close their business due to the current pandemic. On the other hand, Startup Genome survey shows that globally more than 40% of startups are in the "red zone", i.e. they have three months or fewer of capital runway left.<sup>22</sup> In other words, more than 40% of global startups are significantly threatened and at high risk of closing their businesses in the next three months.

In light of that, it seems that the Croatian ecosystem is in a significantly better position compared to its foreign counterparts. However, in interpreting these findings, the risk of "subjective optimism" of Croatian startups must be taken into account, thus implying that the general state of the Croatian ecosystem is better than it actually is.

17, 18, 19, 20 Startup Genome, 2020, The Global Startup Ecosystem Report 2020 (GSER2020)

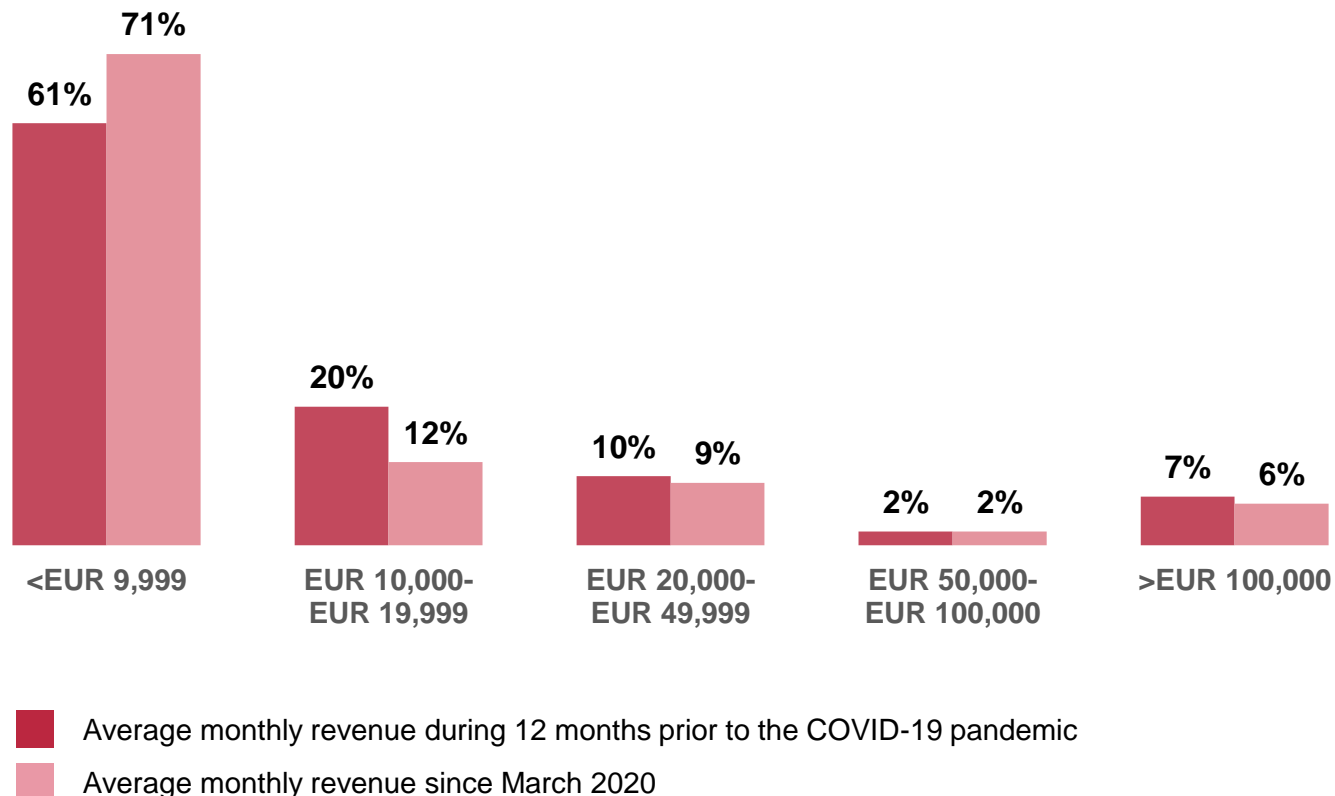


If we compare the revenues the startups generated before and after March 2020, it is evident that after March 2020 a larger number of startups generated monthly revenue of less than EUR 10,000. Before March 2020, 61% of startups generated monthly revenue below EUR 10,000, while after March, this increased to 71% of startups.

Therefore, it can be concluded that 10% of startups saw their financial situation deteriorate. Globally, 74% of startups have experienced a drop in revenue.<sup>21</sup> Although these figures indicate a markedly negative trend in terms of revenue and may be discouraging, in most cases the decline in revenue is less than 20%. From this perspective the actual financial loss, both in Croatia and in the world, is not as drastic as expected at the beginning of the pandemic.<sup>22</sup>

It is encouraging that most startups (85%) do not plan to lay off their employees. However, the question is whether in the near future, given the course and duration of the pandemic, startups in Croatia will be able to maintain such an approach, considering that it is not in line with the negative trend of layoffs caused by COVID-19 globally. According to a study conducted by *Startup Genome*, startups on a global scale were, unfortunately, forced to make difficult decisions regarding their teams. As many as 74% of them had to lay off full-time employees. Although the number of layoffs in most startups was relatively low, not exceeding 20%, it is still reasonable to expect a further reduction in the number of employees.<sup>23</sup>

Chart 6: Average monthly revenue



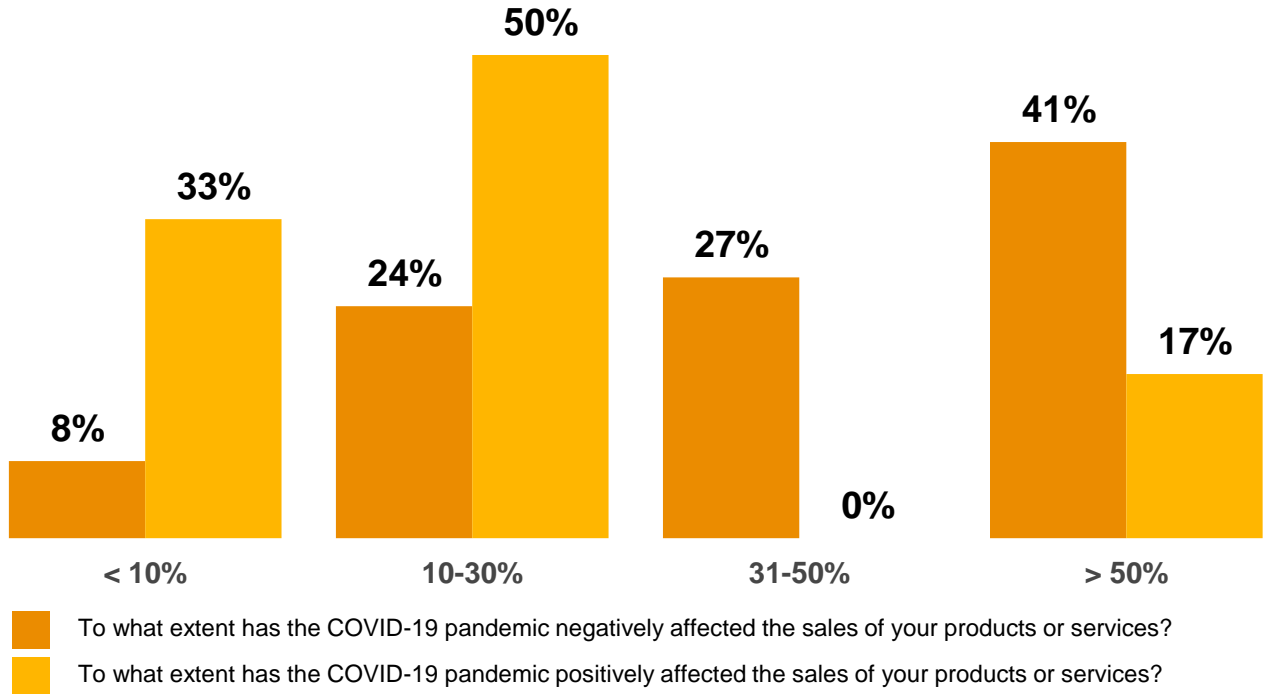
<sup>21, 22, 23</sup> Startup Genome, 2020, The Impact of COVID-19 on Global Startup Ecosystems: Global Startup Survey

It is important to mention that as many as 51% of startups stated that the COVID-19 pandemic had a negative impact on their sales, while 36% stated that it had no impact. If we look at startups that reported a negative impact, as many as 40% of them have recorded a sales loss of more than 50%. The industries that have suffered the heaviest losses are tourism and B2B software solutions. Given that travel is banned in much of the world or considered a risk, it is no surprise that tourism startups have suffered the biggest drop in sales. Such a decline coincides with the findings of the Startup Genome survey, stating that global tourism has seen a decline of 70% since the onset of the crisis.<sup>24</sup>

Startups that primarily serve small and medium-sized companies (B2B) have recorded a greater negative impact on sales than startups that primarily serve individual consumers (B2C) or large companies (B2B). 33% of startups serving large companies have experienced a negative impact on their sales. Approximately 50% of startups estimate their loss as exceeding 10%.

For almost 70% of startups, the primary market for acquiring new customers is Croatia and the EU. This figure is rather specific for the Croatian startup ecosystem, bearing in mind that most startups from the region and the EU target the US market. The focus on these two markets and the greater slowdown in economic activity in the EU, we can conclude that the overall impact of the crisis on customer acquisition is greater in Croatia than in some other ecosystems where startups target different primary markets. In addition, if we consider that these startups generate more than 75% of revenue in their primary markets, the extent of the negative impact is even more apparent.

**Chart 7: The impact of the COVID-19 pandemic on product/service sales of startups**



**51%** stated that the COVID-19 pandemic had a negative impact on their sales



<sup>24</sup> Startup Genome, 2020, The Global Startup Ecosystem Report 2020 (GSER2020)



Interestingly, 13% of startups have reported a sales increase. The most significant growth has been achieved by the gaming and e-commerce industry, which saw their sales increase by more than 50%. Startups that reported a positive impact on business have on average experienced an increase in the number of customers of 10 to 30%. These findings are expected, given that people spend more time at homes and refrain from going to stores – they spend their free time shopping online or playing online games. Some studies revealed an increase in page views and online purchases during the pandemic.<sup>25</sup>

Considering the positive impact of the pandemic, the greatest success has been achieved by startups which primarily serve individual consumers (B2C), as many as 42%. Such a result is consistent with the findings of the *Startup Genome* survey, claiming that B2C startups are approximately three times more likely to operate in industries experiencing growth than B2B startups. This trend results from large companies slashing expenses quickly, while consumers are changing their behaviour patterns towards spending more time and money online.<sup>26</sup>

New circumstances have prompted startups to start adapting their products/services to mitigate the negative impact of the pandemic and respond to new market trends. 41% of surveyed startups adapted their products. Surprisingly, our survey revealed that startups that have not yet started developing their products/services or the respective product/service is still in the development phase, have not decided to adapt after all, although this would provide them with the opportunity to avoid the negative impact of the pandemic on their future business and market growth.

**41%**

of startups adapted their  
products to new  
circumstances

<sup>25</sup> Veronica Hottenroth, 2020, The impact of COVID-19 on e-commerce by category

<sup>26</sup> Startup Genome, 2020, The Global Startup Ecosystem Report 2020 (GSER2020)

# Companies and the structure of the Croatian economy

In 2019, the Croatian economy had the following structure: 59% of the economy comprised services, 20% from industry, and 3% agriculture (the remaining 18% was accounted for by other sectors).<sup>27</sup> This structure of the economy is reflected in the sample of companies that participated in the survey – 64% of respondents are engaged in service industries, and 36% in production. In terms of ownership structure, 57% of the companies in our sample are owned by a domestic legal entity and/or a natural person, while 34% are owned by a foreign legal entity and/or a natural person, and 9% are in mixed ownership.

Regarding Croatia's foreign trade, it should be noted that only about 15% of companies in Croatia export their products/services.<sup>28</sup> This tells us that exporters are underrepresented in the total volume of companies in Croatia, but they are of key importance for the entire economy. These companies employ 51% of the total number of employees, their investments represent 62% of total investments, they generate approximately 66% of total sales revenues, invest 73% of funds invested in development, and generate 76% of total profits in Croatia.<sup>29</sup> In light of the above data, it is clear that the growth and development of a small number of exporting companies is making the Croatian economy stronger and more competitive.

64%

of companies are engaged  
in service industries



36%

of companies are engaged  
in production

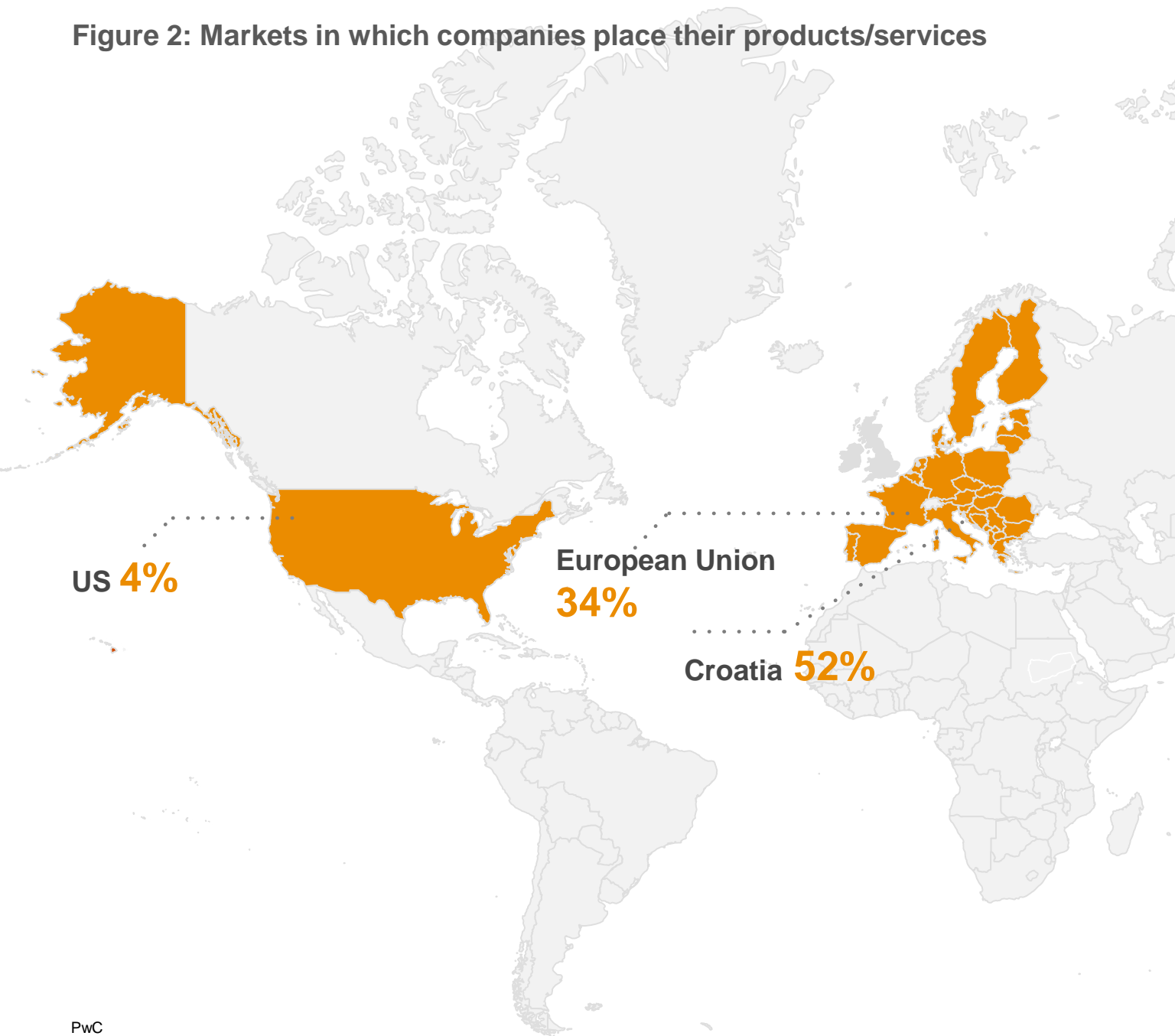


<sup>27</sup> Statista, 2020, Share of economic sectors in the GDP in Croatia 2019

<sup>28, 29</sup> Croatian Bureau of Statistics, 2019, Foreign trade in goods of the Republic of Croatia



**Figure 2: Markets in which companies place their products/services**



Large proportion of the companies we analysed for the purposes of this report fall into the category of exporters. This is particularly apparent with regard to the data on the companies' primary markets. 52% of companies place their products/services primarily on the Croatian market, while for 34% and 4% of companies the primary market is the EU and the US. The dominance of the EU as a primary foreign market compared to other countries is not surprising, since the Croatian economy is highly Eurocentric. This is clearly supported by the data on Croatia's trade with the EU, as it accounted for about 68% of total exports and about 80% of total imports.<sup>30</sup> This is further confirmed by the extent of trade with the United States, where trade accounted for 3% of Croatian exports and less than 1% of imports.<sup>31</sup>

<sup>30, 31</sup> Croatian Bureau of Statistics, 2019, Foreign trade in goods of the Republic of Croatia

# Impact of the COVID-19 pandemic on companies

There is no doubt that the COVID-19 pandemic is unprecedented both in terms of its global impact and effects on the world economy. A June 2020 World Bank report predicts a 5.2% decline in global GDP, which would be the worst recession since World War II.<sup>32</sup> Despite numerous stimulus packages for the private sector introduced by the government, the negative impact of the pandemic on the economy is observable, both globally and in Croatia.

Therefore, it is not surprising that 77% of surveyed Croatian companies reported a negative impact of the COVID-19 pandemic on the sale of their products/services. The survey shows that the level of negative impact of the pandemic has not been the same for all industries. The industries that have suffered the greatest impact are industrial production and the automotive industry. In addition, the adverse impact on tourism is certainly present, but due to the small number of companies from this sector participating in the survey, the magnitude of this negative impact cannot be determined.

A small number of companies (10%) reported a positive impact of the pandemic on their sales. The software and information technology sectors have experienced the greatest positive impact, but at the same time, a certain number of companies in this sector have been adversely affected. These seemingly opposite negative and positive effects on sales within this sector can be explained by a large number of sub-sectors. Thus, certain sub-sectors, such as e-commerce or communication platforms, have recorded sales growth, while others have recorded a decline or stagnation.

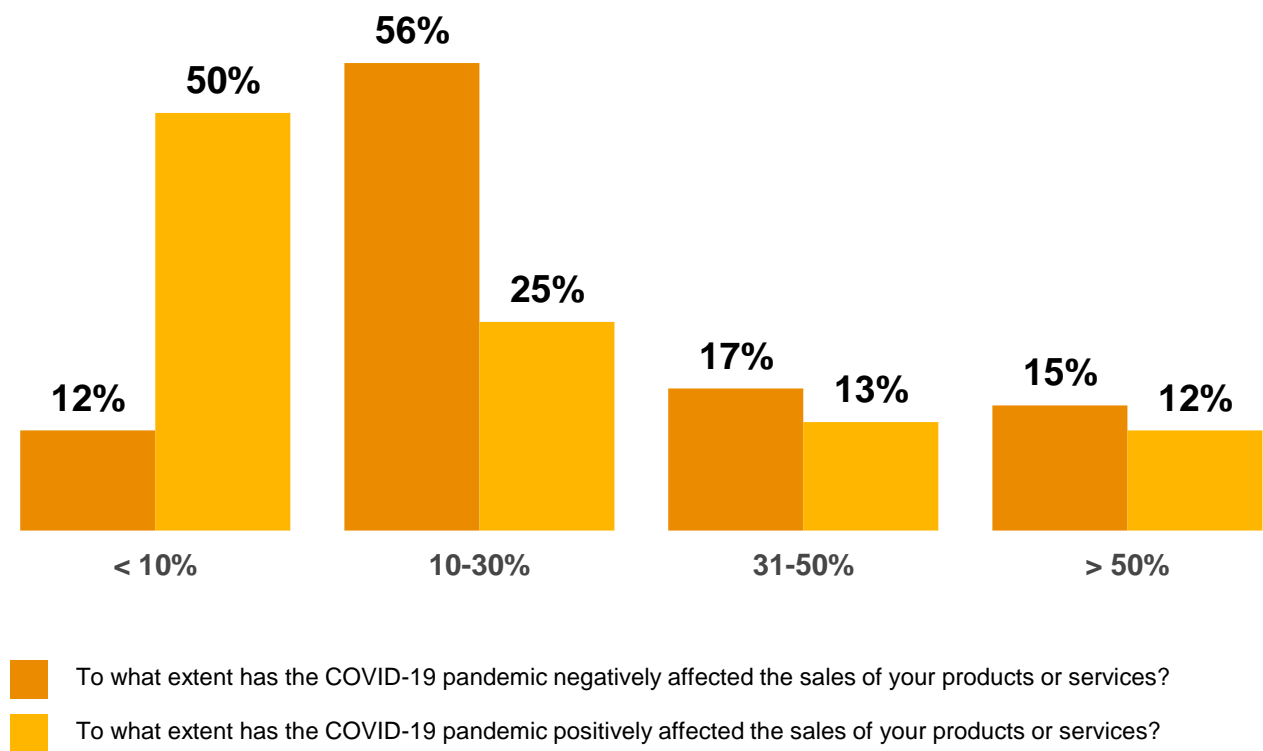
**77%**

of companies reported a negative impact of the COVID-19 pandemic on the sale of their products/services

<sup>32</sup> World Bank, 2020, COVID-19 to Plunge Global Economy into Worst Recession since World War II



Chart 8: The impact of the COVID-19 pandemic on product/service sales of companies



Globally, e-commerce saw an increase in the number of visits to online stores of nearly USD 6 billion between January and June.<sup>33</sup> In addition, the volume of goods sold through e-commerce is expected to increase by the end of 2020 and reach USD 2.4 billion, compared to USD 1.8 billion in 2019, representing an increase of almost 33%.<sup>34</sup>

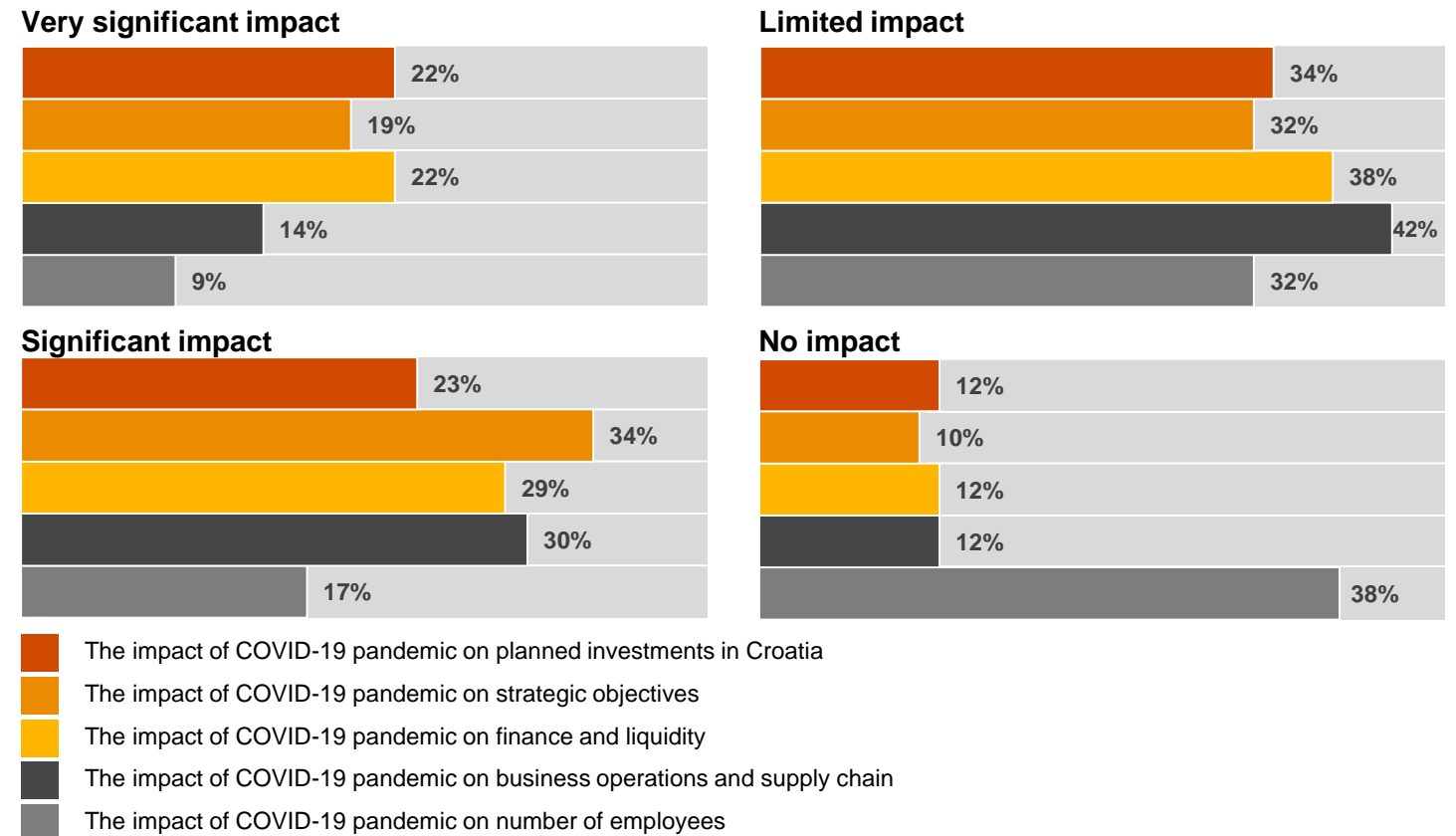
On the other hand, with regard to the sub-sector of communication platforms, a significant increase is observable, both in the number of users and the value of specialized technology companies. Globally, the Microsoft Teams platform recorded an increase of 75 million users in April 2020, compared to the same period in 2019.<sup>35</sup> As expected, communications companies/startups in Croatia (e.g. Infobip) have also experienced a positive impact as a consequence of the pandemic. In conclusion, if we compare the trends of Croatian technology industry companies with the global ones, they coincide – sub-sectors have recorded either growth or decline, depending on their specialisation, which also implies that Croatia has a diverse ecosystem of highly specialised companies within the technology industry.

Regarding the severity of the pandemic's negative impact on sales within Croatia, 56% of companies have experienced a negative impact in the range of 10 to 30%, while some companies in the automotive industry saw their sales drop by more than 50%. This figure is not surprising, as both the global and regional automotive industry is one of the industries that have been hardest hit by the pandemic. On the other hand, only 10% of companies involved in industrial production had a sales increase of 10 to 30%.

<sup>33, 34</sup> Statista, 2020, Coronavirus impact on retail e-commerce website traffic worldwide as of June 2020  
<sup>35</sup> Research and Markets, 2020, E-commerce Global Market Report 2020-30: COVID-19 Implications and Growth

**Chart 9: The impact of the COVID-19 pandemic on different business segments of companies <sup>37</sup>**

In addition to the adverse impact on sales, the COVID-19 pandemic had a negative impact on companies' finances and liquidity. As expected, as many as half of the companies in our survey reported a significant or very significant impact on liquidity and finance. Given the global situation, maintaining liquidity is crucial in the context of the pandemic and its consequences for companies' operations. Thus, in June, 42% of CFOs in the United States said the financial impact of the pandemic, including liquidity, was their main area of concern. However, this percentage was higher in April when, having been asked the same question, 75% of CFOs expressed this particular concern, according to *the PwC US CFO Pulse Survey* conducted in the US.<sup>36</sup> This decrease implies that a significant portion of the surveyed companies managed to find ways to stabilise their liquidity (mainly companies in the US bond market). Our survey confirms these global effects of the pandemic on the liquidity of Croatian companies, which, in the long run, can create risks of default and difficulties in collecting receivables from domestic and foreign companies.



<sup>36</sup> PwC, 2020, PwC US CFO Pulse Survey

<sup>39</sup> Chart 9 does not show the results of companies that cannot assess the impact because the percentages are extremely low

In the same way in which the pandemic created new market conditions and disrupted the normal course of business, it is also expected to affect the companies' strategic objectives. 53% of companies reported that the pandemic had a significant or very significant impact on their strategic objectives. Companies that reported very significant impact were divided into service and manufacturing activities, showing that the pandemic brought significant strategy changes for all companies, regardless of their sector.

In addition to the strategic framework that most companies will now change, there are clear indications that the investment level in Croatia will change for many companies (45%), with only 12% of them that will not experience any changes in planned investments. The largest percentage (44%) of companies that will not change the level of planned investments comes from the technology industry. As already mentioned, every fifth company in the EU is deferring long-term investment commitments in order to release immediate funds.

Also, the *PwC US CFO Pulse Survey* revealed that the percentage of CFOs whose companies are considering deferring or cancelling pre-planned investments is slightly declining – from 67% in April to 52% in June. However, it should be noted that even this figure is fairly high. In addition, 78% of CFOs whose companies are considering deferring or cancelling their investments plans are targeting cuts in the facilities and general capital expenditures.<sup>38</sup>

The COVID-19 pandemic also had a significant negative impact on companies' supply chains. Only 12% of respondents said that the pandemic had no impact on their supply chains, while 44% of them responded that the pandemic had a significant or a very significant impact. Among the companies with supply chains not affected by the pandemic, all but one was engaged in service industries. This figure is not surprising, as service industries are less dependent on physical supply. Among companies that have reported a very significant pandemic impact on their supply chains, 45% are in the automotive industry.

Despite the largely negative impact of the pandemic on sales of products/services and finance and liquidity, the vast majority of companies, as many as 74%, did not lay off any employees. 14% of participants were forced to lay off up to 10% of employees, while 12% of them were forced to lay off more than 10% of employees. The largest number of companies that were forced to lay off more than 10% of the workforce is engaged in industrial production, while the largest number of companies that did not lay off any workers are engaged in technology. This is not surprising given that agility of remote work in the area of technology, while industrial production relies on high productivity within the plant.

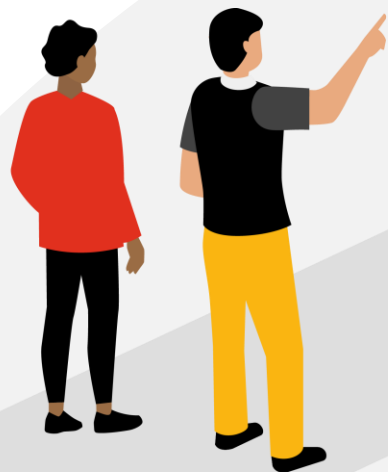
<sup>38</sup> PwC, 2020, PwC US CFO Pulse Survey





Regarding the expectations of companies as to how the pandemic will develop in the coming months, those companies that place their products/services primarily on the Croatian market do not expect significant changes. In contrast, a number of companies (19%) that place most of their products/services on the EU market expect positive changes in the coming months. A more detailed analysis of this trend reveals that companies owned by domestic legal and/or natural persons generally do not expect any changes or positive impact in the coming months. On the other hand, most companies that expect a positive impact or do not expect any changes are engaged in the provision of services.

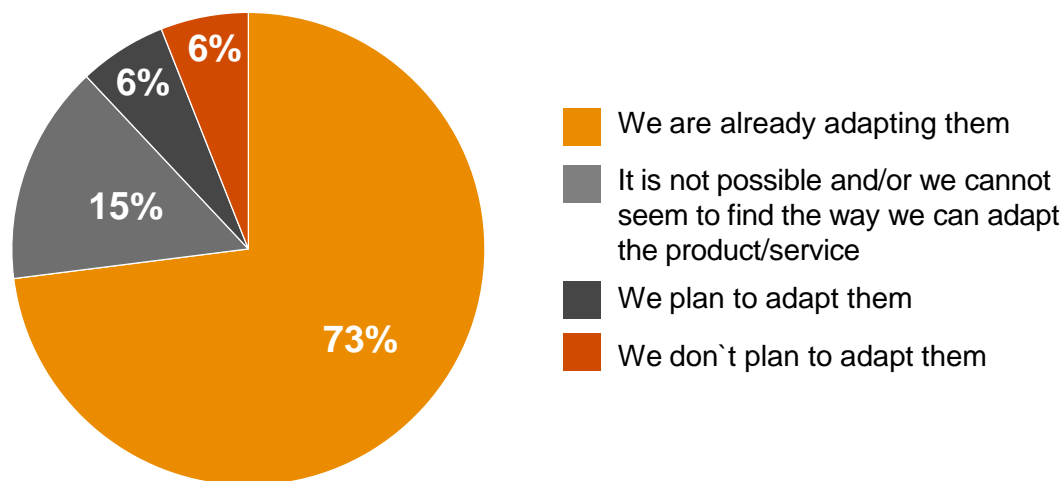
With regards to the situation in Europe, the Economic Sentiment Indicator (ESI) has been on the rise since May, stagnating in October. The stagnation was caused by a decrease in confidence and/or optimism in service industries (a decline of -0.6 compared to September), due to initially over-optimistic demand forecasts.<sup>39</sup> Nevertheless, our study shows that Croatian companies are optimistic about the development of the situation in the next few months. Service providers make up the majority of those who expect positive changes or do not expect any changes, but should be careful not to let this optimism affect their forecasts to a large extent, otherwise they could find themselves in the same situation as European companies included in the ESI study.



# Digital transformation, startups and companies in Croatia

The COVID-19 pandemic has greatly prompted and accelerated the digital transformation of companies towards modern, digital solutions and technologies, with the goal of reducing face-to-face human interactions to mitigate the risk of virus spread. In Croatia, 73% of companies are already adapting their products/services to the so-called “new normal”, while 6% of companies see the need for adjustment. At the same time, globally, as many as 97% of decision-makers in companies believe that the digital transformation of their company has been accelerated by the ongoing pandemic.<sup>40</sup> Therefore, it may be concluded that companies in Croatia follow global trends when it comes to product/service development in response to the pandemic.

**Chart 10: Adaptation of existing products/services to the new circumstances**



<sup>40</sup> Forbes, 2020, 97% Of Executives Say Covid-19 Sped Up Digital Transformation; Twilio, 2020, Covid-19 Digital Engagement Report

74% of respondents believe that it is necessary to develop or use existing digital solutions in the transformation process and intend to obtain them externally (from a third party). Further to the development or procurement of digital solutions, it is interesting to note that companies that have been in existence for less than five years mostly plan to develop digital solutions internally, while companies that have been in existence for more than five years expect to develop this product externally, usually with the help of a domestic or an international technology company. One of the underlying reasons is that companies that have existed for less than five years are mainly technology companies – as many as 50% of such companies are in the IT industry, indicating that they have the necessary knowledge and experience to internally develop an appropriate digital solution.

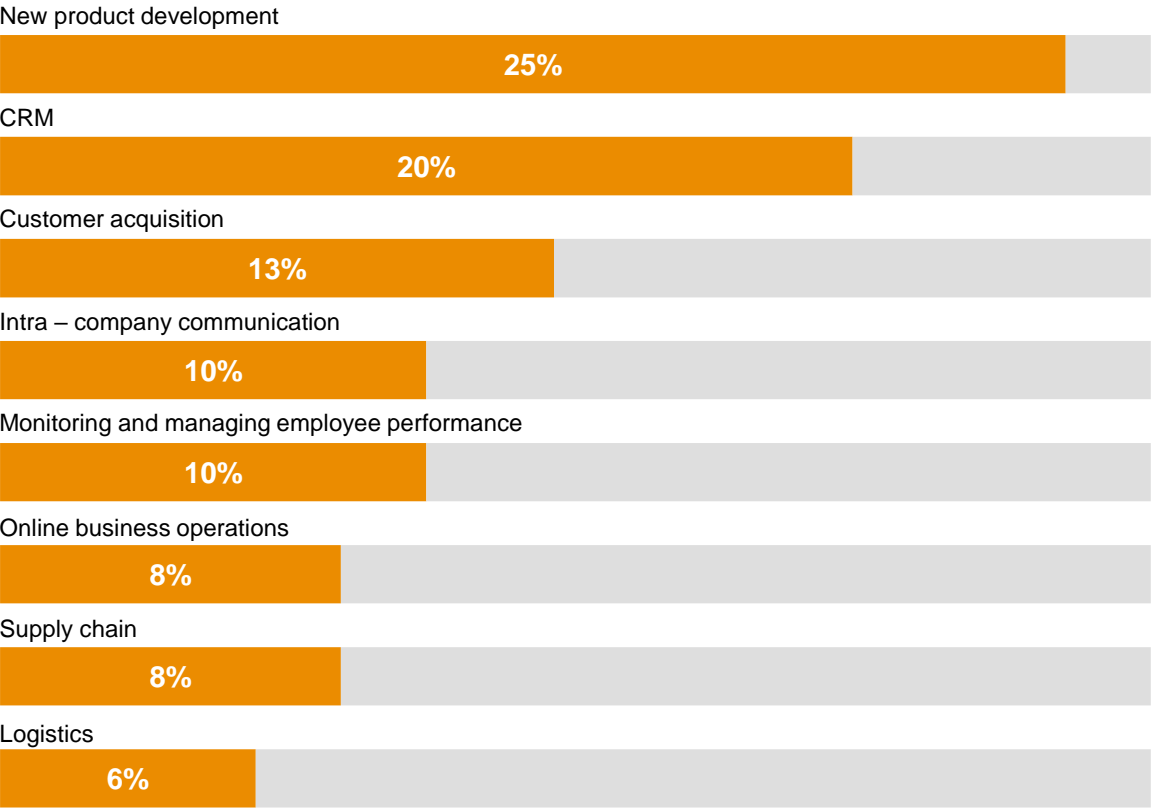


Of the companies that are already adapting their products/services or see the need to adapt, 25% see the greatest potential in new product development, while 20% see the greatest potential in CRM. Additionally, companies existing for one to two years, are mainly focused on new product development, while companies existing for three to five years are still open to new product development, but they are also focused on attracting customers through better CRM. With regard to global trends, it is important to note that the importance of digital commercial interactions has seemingly increased – companies that have improved their CRM regularly achieve better results than those that have not. It is therefore not surprising that globally 95% of companies are looking for new ways to engage customers, and 92% of these companies say that transforming digital communications is extremely or very important to address current business challenges.<sup>41</sup> This tells us that companies around the world have recognised the importance of engaging and attracting new customers through innovative technological solutions, and companies in Croatia are no exception.

The findings also imply that companies do not see the collaboration with startups as a means to obtain the digital solution they need and do not regard them as partners in the digital transformation process – only 20% of companies said they see startups as strategic partners in their transformation. Of the companies that are willing to work with startups, 50% are willing to work with startups in developing a new solution, while 50% are willing to work with startups that have already developed a solution and only need to adapt it. A good example of cooperation between a startup and an established company is the recent partnership between Porsche and Infinum and their newly established company "Porsche Digital Croatia".<sup>42</sup> This company will develop digital products aimed at improving internal processes within Porsche and the end-user experience.

<sup>41</sup> Twilio, 2020, Covid-19 Digital Engagement Report  
<sup>42</sup> Infinum, 2020, Porsche Digital Croatia

**Chart 11: Elements of companies’ business operations with the greatest transformation/innovation potential**



# Conclusion and recommendations

By analysing the findings of the research, we conducted in October 2020, we have gained a better understanding of the impact of the current pandemic on the Croatian startup ecosystem and corporates. We have identified significant trends relating to the development stages of the Croatian startup ecosystem, discovered the willingness of companies to transform their businesses together with startups and identified those processes within companies that will be adapted to new market conditions. Given that the COVID-19 pandemic has significantly accelerated the digital transformation, it is obvious that countries that succeed in accelerating the development of the digital economy will recover faster from the consequences of the crisis. The digital sector is expected to be one of the key drivers of transformation and adaptation to new market conditions for all industries.

The Croatian startup ecosystem and corporates certainly have the potential to make a step forward and improve their positioning in global markets. Successful examples of startups worth more than one billion euros and companies with products/services that are used by the world's largest companies only serve to confirm this. However, in order for this potential to create more significant added value for the entire economy in the future, it is necessary to create additional support mechanisms. Based on the study findings and the trends identified, recommendations were created. They should contribute to the further development of startup ecosystems and the digital economy in Croatia, and that should improve the positioning of Croatian startups and companies in the global context. The recommendations below are based on an analysis of global best practices and an assessment of the positive effects they can have both on the startup ecosystem and the economy.



## Lack of early-stage startup financing

The availability of venture capital on the EU market through VC funds increased by more than 90% in the period from 2015 to 2020.<sup>43</sup> If we analyse the situation in Croatia in the same period, we can observe an upward trend in the level of investments and the number of active VC funds. However, a comparative analysis of the Croatian startup ecosystem with foreign startup ecosystems, at the same stage of development, indicates a lack of adequate access to capital and lower levels of investment. Nearly 40% of Croatian startups did not receive any external investment, while the average level of individual investment is about 15% lower, amounting to approximately EUR 400,000.

Experiences of early-stage startup ecosystems on a global scale have shown that private sources of venture capital contribute more to the development of startups than public sector funding schemes. On the other hand, if the problem of funding in the early stages of startup ecosystem development was left exclusively to private investors, it would take many years to significantly increase the level of investment given the level of risk that investors would have to take. Precisely for this reason, public sector support that contributes to reducing this risk is crucial. Therefore, in the coming period, it is necessary for the public sector to create initiatives that would direct EU funds and other funding towards the creation of mechanisms that would support investments in startups. These initiatives would enable the creation of new private local VC funds managed by professional managers, that would be supported by the funds of international financial institutions and EU funds.

In addition, the creation of a grant scheme for startups in the earliest stages of development, to be awarded by a commission composed of professional angel and VC investors, coupled with a customised mentoring programme, could further boost the number of created startups. Moreover, it is necessary to create support programmes in order to develop a startup ecosystem and provide startups with easier access to EU funding (e.g. awareness raising programmes regarding available funds and schemes, assistance programmes on how to apply for EU funds). This is particularly important in respect of the available EU funds in the period 2021-2027 and considering the findings of our study which indicate that presently only 3% of startups are making use of these incentives.

<sup>43</sup> Dealroom, 2020, Can Europe be the most entrepreneurial continent?



## Limited global connectedness

The findings confirmed the eurocentrism of the Croatian economy and the predominant focus of companies on placing products and services on the markets of EU member states as their export markets. In addition, it has been shown that over 70% of startups acquire new users primarily on the Croatian and EU markets. Although this focus on the local market and the market of EU member states may be a result of low investment levels and lack of funds to launch products on the US or Asian markets, this clearly indicates that there is a problem in respect of global connectedness.

The connectivity of startup founders in developed markets and their global network significantly affects the speed of their development, as well as their success on a global scale. It is for these reasons that initiatives must be created that will be supported by the government and donors such as the World Bank in order to improve global connectedness. One of these initiatives may be related to the creation of a network of international VC funds that are willing to invest in Croatia, followed by a network of successful Croats who have startup experience or work for large multinational companies and, finally, programmes that will enable Croatian startups to create strategies for penetrating markets outside Europe.







## Slow pace of digital transformation

Nearly 80% of companies are already adapting or recognising the need to adapt their products/services/processes through some form of digital transformation. At the same time, more than 50% of companies indicate a significant or very significant impact of the pandemic on their finances and liquidity. This clearly indicates that the digital transformation of companies will largely depend on the available financial resources. In this context, it is necessary to engage the public sector and create mechanisms to support such processes. Therefore, in the period leading up to 2030 it is necessary to direct a portion of the available EU funding to digital transformation projects in the private sector through grant schemes that will make it easier for companies to finance such projects.

In addition, the analysis of the findings has revealed a gap between Croatian startups and companies with regards to their perception of opportunities for cooperation. As much as 57% of startups believe that their product/service could be used by large companies, and 87% believe that they could collaborate with companies on their transformation and innovation projects. On the other hand, 74% of surveyed companies plan to develop digital solutions with external partners, and only 20% of them intend to involve startups. Given the high degree of collaboration between companies and startups on the global scale, initiatives must be created in order to foster their cooperation in Croatia. One of the ways to encourage their cooperation is through establishing grant schemes that will focus especially on the cooperation of startups and companies within digital transformation projects.



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