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LANDSCAPING FINTECH READINESS

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1. EXECUTIVE SUMMARY

International experience highlights that facilitating the development of the Fintech (or financial technology) sector in a country's financial system can bring about various benefits. Driven by innovation in technology and business models, Fintech newcomers can overcome barriers that traditional financial services firms face in reaching underserved segments of individual households and micro and small enterprises. By doing so, Fintech start-ups capture significant market share since they face little competition, however, more importantly, by accessing these markets, they directly contribute to enhancing access to financial services for those who were unable to do so through the traditional financial channels such as banks.

Greater access to finance leads to wider benefits for economic growth at the country level. If small businesses can access finance (e.g., loans or equity capital), they can invest in business growth by spending on more equipment or stock. A growing business needs more human resources, and thus access to finance indirectly improve employment levels in an economy.

For traditional financial services players like banks, insurers and wealth managers, Fintech offers them the opportunity to improve operational efficiencies, reduce costs, earn more revenue by unearthing cross selling opportunities through data mining, and using technology to deliver a better customer experience and thus win a bigger market share away from their competitors.

At the macro level, Fintech brings about a more efficient financial system, with high levels of competition from Fintech newcomers, which drive a better deal for consumers, who have more choice, get better products and service, and at lower prices. More players in the financial system increases its breadth leaving more room for failure of weaker firms, without the contagion risk.

For Montenegro, policymakers are aware that a well-developed Fintech sector could attract foreign entrepreneurs to launch new Fintech ventures in Montenegro, as a way, for example, to springboard into the Western Balkans market or beyond. Montenegro offers a good quality life that could be attractive to digital nomads specialising in the area of Fintech. However, for Fintech led change to succeed, requires a complex set of stakeholder groups to come together and work collaboratively to achieve a common goal. This report examines the concept of a Fintech ecosystem and analyses the core stakeholders needed to drive success.

Realising the many benefits that Fintech can bring, policymakers are examining how a conducive environment can be developed in Montenegro, to develop the Fintech sector. This survey is a step in the process towards developing a National Fintech Strategy for Montenegro and it captures views from a wide stakeholder group essential to the efficient operation of the financial market and for the development of Fintech. The survey helps to landscape current Fintech and digital transformation initiatives in the financial system in Montenegro, as well as highlight benefits perceived by stakeholders and unearth perceived challenges to the development of Fintech led transformation of the financial system.

The findings from the survey then help inform detailed recommendations to take advantages of the opportunities that Fintech presents and mitigate the risks or unintended consequences brough about by Fintech led change. Seven stakeholder groups in the Fintech ecosystem were surveyed independently of each other, and collectively, 385 participated in the survey. For the small size of Montenegro’s financial system, this number represents a statistically significant response rate, and indeed, a variety of insightful responses were received from participants. Ninety nine percent of all respondents collectively, acknowledged that there is a need for Fintech in Montenegro, because stakeholders see the many benefits highlighted above.

There are already many proactive initiatives underway to develop the entrepreneurial and Fintech landscape. Government have implemented many programs to support the development of entrepreneurship, including Fintech. New laws have been created to facilitate these initiatives, Government agencies have rolled out support, grant and funding programs, as well as instituted tax incentives to promote entrepreneurship.

Regulators are equally taking proactive steps, with the Central Bank of Montenegro (CBCG) developing a Fintech Hub, which is an innovation centre that provides regulatory and licensing support to Fintech newcomers who aspire to launch new ventures in the financial sector. The Capital Markets Authority launched a regulatory sandbox that allow live testing of Fintech business models that fall outside of the current financial services regulatory landscape. The CBCG is also considering launching such a sandbox facility. Regulators realise that greater levels of competition brought about by supporting Fintech newcomers’ entry into the financial system, enhances financial inclusion and creates a more stable financial system

Incumbents are also busy digitally transforming their operations to bring about efficiencies and cost reduction. They explore how technology can deliver a better customer experience that allow them to win over greater market share from competitors. Once the Fintech landscape is developed, incumbents will find joint venture opportunities to enter new untapped markets, thus significantly enhancing their revenue potential. Indirectly, this drive for more revenue can deliver greater access to finance for those underserved segments. Given the nascent development of the Fintech entrepreneurial sector, incumbents have not launched accelerators to support Fintech newcomers, or explored any joint venture opportunities as yet. The hope is that this will happen once the Fintech sector is further developed.

Despite a small market size, alternative finance firms and Fintech newcomers, see opportunities that can be seized through technological and business model innovation. The opportunity arise because incumbents are unable to or choose not to serve specific market segments. Fintech newcomers entering such markets face little to no competition, thus improving their chances of gaining quick market traction and moving on to scale. Fintech can help to align Montenegro’s financial system with international best practice and thus enhance the chances of the country eventually joining the European Union.

However, with all the benefits that Fintech can bring, there are risks and challenges that incumbents, Fintech entrepreneurs and the wider Fintech ecosystem will face in realising the benefits that Fintech can bring. The survey highlights that incumbents struggle to deliver digital transformation without a dedicated strategy or a dedicated department to implement such change programs. Lack of digital financial literacy pose a challenge to the adoption of digital financial services products. Although the COVID 19 pandemic has accelerated the adoption of digital channels.

For Fintech entrepreneurs, the ecosystem is not well developed to support them in launching and scaling their venture. The investor landscape is under developed, and there is a lack of specialised Fintech accelerators to help entrepreneurs shape their Fintech venture ideas, launch, and grow their venture.

The industry as a whole face a skills shortage around Fintech and equally, to generate the necessary level of demand for digital financial services, will require a strengthening of digital financial literacy on the part of consumers and small businesses. However, educational institutions are already responding by offering specialised courses in digital financial services. They acknowledge however, that more practical training must be delivered by the industry themselves, and that government have a bigger role to play in building digital skills.

The regulatory environment (in other words the current laws and regulation) is perceived to hinder Fintech developments, because certain laws constraint innovation. Despite Government providing support for entrepreneurial development, stakeholders collectively feel that more can be done. This may be just due to a lack of awareness of the government support available, or in-deed, government must find more ways to support the development of Fintech entrepreneurship.

Fintech can bring a greater risk of cyber security for financial services firms, government and regulators, as financial services goes online where it is more exposed to hacking. Online channels can also expose consumers and businesses to greater threat of fraud. Money laundering may be easier and faster to carry out when financial services goes digital.

There is concern that Fintech newcomers, whilst bringing hope of more financial inclusion, can also expose consumers to harm, because smaller starts-ups may not have the know-how and resources to fully comply with complex regulatory requirements that protect consumers money and rights. Non-compliance can unnecessarily expose consumers and small businesses to potential harm through a loss of funds or buying financial products and services that are not suitable for them.

If the Fintech sector scales to a sizeable segment of the market, new firms could take market sizeable share away from established players. In the banking sector, if a small bank loses a significant market share to Fintech newcomers, they could face failure, thus causing contagion risks.

Overall, the respondents of the survey highlight that the benefits of Fintech could outweigh the risks, especially if the challenges and risks are addressed proactively in a National Fintech Strategy that will be informed based on input from the Fintech ecosystem. The survey highlights a sense of energy and enthusiasm by all stakeholders to bring about Fintech led change in the financial services sector, that not only benefit Montenegro's consumers, and the financial system, but it can be a stimulus for wider economic growth as finance is more accessible by individuals who spend more and by businesses who invest in growth and create employment. Fintech led change can also better align Montenegro's financial system with that of the European Union, thus creating further favourable conditions for eventually becoming a member state.

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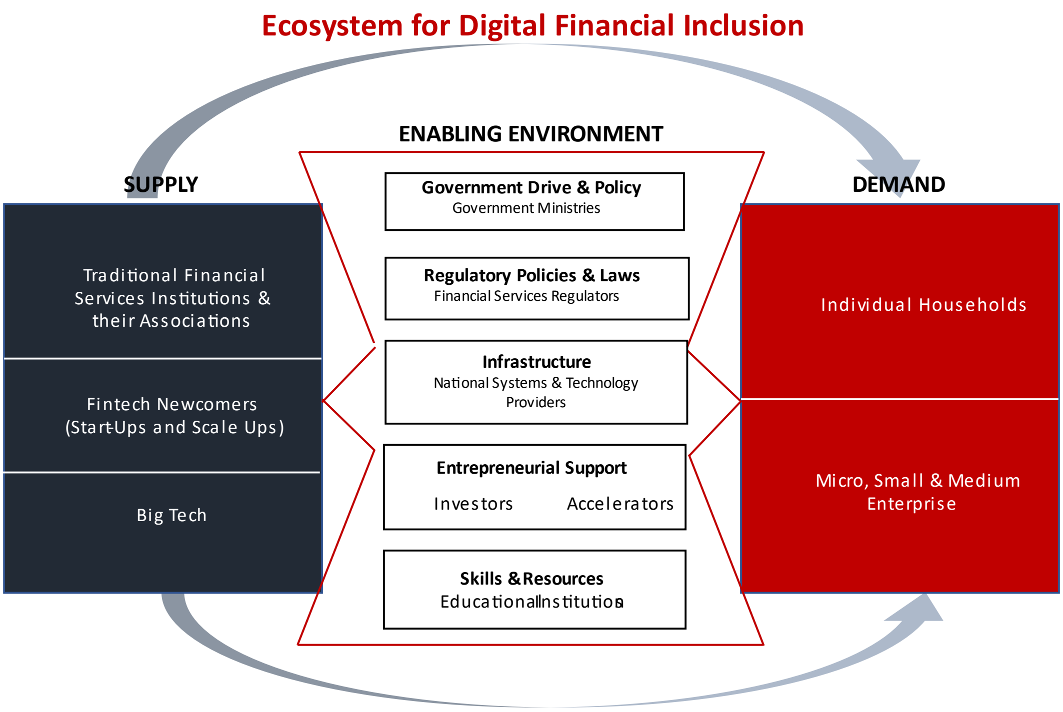
4. SURVEY METHOLODOGY & APPROACH

4.1. Ecosystem for Successful Digital Financial Services

For Fintech led digital transformation in the financial system (also referred to as digital financial services) to succeed, there is a need for a well-functioning ecosystem with a variety of different stakeholders working together in a coordinated manner to achieve the desired outcomes that digital financial services can bring to the individual consumers, businesses, the financial system, and the wider economy. Figure 1 sets out a diagram that illustrated the hypothesised ecosystem needed for digital financial services to succeed.

Figure 1: Ecosystem for Successful Digital Financial Services



It assumes the following key stakeholders, as a minimum, playing their part in the ecosystem:

Demand Side

1. **Progressive individuals** – who are open to exploring digital financial services channels, because they are convenient and more importantly, open access to financial services and products that may have been inaccessible by certain groups through traditional financial services channels. Individuals willing to adopt digital channels, creates the necessary demand required for entrepreneurs and incumbents to step in and develop digital financial services.

2. **Progressive Micro, Small and Medium Sized Enterprise** – similar to individuals' small businesses must be open to digital channels that may allow them to tap into much needed financial products to help their businesses not only survive but grow fast. Small businesses struggle to access loan

and equity financing from traditional banks and venture capital firms. Fintech led business models such as peer to peer lending and crowdfunding opens new channels to vital business financing.

The Fintech survey did not include individual households or small business, and the previous survey (in this area) undertaken by the Central Bank of Montenegro ("CBCG"), is relied upon to analyse the demand side components of the digital financial services ecosystem.

Supply Side

1. **Forward Thinking Incumbents** – Traditional financial services firms play a key role to transforming the financial system using digital channels and new business models made possible by Fintech. Incumbents already have a large client base, and they can provide better access to finance by using technology to overcome barriers that prevented access to finance to underserved individual and business communities. Incumbents have the capital and human resources to develop new technology led business models that can open untapped markets and thus enhance greater access to finance. Incumbents are also essential for the launch, survival, and growth of Fintech entrepreneurial firms. These start-ups can accelerate their entry into the market by leveraging regulatory licenses already held by incumbents, through partnerships. Newcomers can gain quick traction by delivering Fintech led products and services to the existing customer base of incumbents.

2. **Entrepreneurs and Intrapreneurs** – are vital to Fintech led transformation. They open new markets by spotting opportunities that are untapped by incumbents, often in underserved markets. They are therefore vital to increasing financial accessibility for marginalised individuals and businesses that are not currently being served by incumbents. Enabled by technology, these entrepreneurs or intrapreneurs launch products and services that are easy to access and cost effective. New data sources and technology solutions make it easier to assess risks of groups that lack traditional credit history or insurance risk data (which made it difficult for traditional financial services firms to serve such communities).

3. **Big Tech** – **Although not included in this survey**, big technology companies such as utility firms and telecommunications companies, or social media firms have demonstrated that they can utilise their extensive reach to add on financial services products and services. In Africa, for example, telecommunication companies provide digital wallets to underserved communities allowing them to use air time as currency to make payments, receive money (e.g., from government) and make remittances to friends and relatives, without ever needing a bank account.

Enabling Environment & Infrastructure

1 **Progressive Government** – Government play a vital role in communicating the country's strategic direction to drive digital financial services to provide greater accesses to finance, develop a stronger financial system, and drive economic growth. Government are crucial to encouraging Fintech led innovation through mechanisms such as tax exemptions and grants for innovation and FinTech venture creation and providing other mechanisms to fund early-stage Fintech start-ups. Government plays a part in making the outside world aware of the move towards digitising their financial system. This may attract foreign Fintech entrepreneurs to launch ventures or create new mechanisms for Montenegrin businesses to trade with the outside world using these digital channels.

2 **Open Financial Services Regulators** – Regulation is often a significant barrier for Fintech led innovation or for Fintech start-ups to enter the financial system. Regulatory requirements are sometimes overly burdensome on capital constraint start-ups, who cannot meet high capital adequacy requirements or employ experienced, but expensive, compliance resources to ensure the company remains compliant. In other cases, existing regulation may not accommodate new Fintech business models, such as crowdfunding. Regulators need to create an enabling environment for Fintech led innovation by changing laws where needed, easing regulatory burden for smaller and lower risk Fintech start-ups and allow experimentation of new business models without falling foul of regulatory requirements. International experience shows that an open regulatory environment leads to quick growth of digital financial services. However, regulators need to open the financial system to innovation, ensuring safety of consumers, and the overall financial system.

3 **Infrastructure Providers** – Fintech depends on key infrastructure provided by government or technology providers. Fintech solutions primarily use digital transaction channels, and a centralised and trusted digital identity can be very helpful, as well as a legal framework that supports electronic signatures. In many countries, government provides such centralised infrastructure. Technology providers are equally key to accelerating Fintech led transformation. Often, they provide software as a service allowing start-ups to "plug and play," thus requiring no development time, and therefore quicker entry into the market to start generating revenue. If Fintech start-ups could couple this with a "borrowed" regulatory license from an incumbent, their venture could be launched within weeks instead of months or even years needed to successfully win a financial services license and building complex information technology system.

4 **Entrepreneurial Ecosystem involving strong Accelerator and Investors** – For Fintech ventures (driven by start-ups and incumbents) to succeed, they require expert technical support to build products and solutions in a complex world of financial services. Once these ventures gain traction, they then become interesting to investors who can support the growth phase of development. Without accelerators and investors, it is unlikely that a country will see many Fintech newcomers, unless they manage to find such support from foreigners. In the latter case, such Fintech ventures are more likely to leave Montenegro for larger markets where their supporters are located.

5 **Educational Institutions that develop much needed digital financial services skills and digital financial literacy**. Global experience, especially in emerging markets, highlight that consumer and small business education is often needed to encourage them to adopt digital channels. Government, schools, and other educational institutions can provide digital financial literacy

support. However, more pronounced is the significant shortage of Fintech skills needed when the sector experiences high growth because the Fintech ecosystems works well and thus create an insatiable demand for skilled resources that cannot be met by the educational institutions that supply these skills and resources. . Universities and private educational institutions need to ensure they develop a continuous stream of skilled Fintech resources that help the sector to grow.

All ecosystem players highlighted above are crucial for Fintech to succeed in Montenegro. Hence, the survey has captured a majority, except for the demand side and big technology financial services providers on the supply side. A Fintech strategy developed on the findings of the survey will need to ensure that recommendations are conceived for each stakeholder group, so that collectively, they can work together to bring about the desired outcomes conceived in a National Fintech Strategy.

4.2. Approach to the Fintech Survey

The Fintech survey is a step in the process to developing a National Fintech Strategy for Montenegro. It involves the first three steps in the journey, namely

1. **Assessing the drivers for Fintech led digital financial services**. Through the survey and post survey interviews, we assess the need (or drivers) for developing and implementing a National Fintech Strategy specifically for Montenegro. Without compelling drivers, stakeholders will not be sufficiently motivated to take action to implement the recommendations set out for them in the strategy. Once the core reason for implementing a Fintech strategy has been identified, it becomes easier to align efforts among a diverse group of stakeholders towards a common goal.

2. **Assessing the environment and ecosystem**. The survey helps us understand how ready the ecosystem is for Fintech led transformation. Current initiatives among different stakeholder groups to address digital financial services, are identified, and the survey helps to landscape current stakeholders and their initiatives.

3. **Identifying opportunities, benefits, risks, and challenges** for Fintech led transformation in the financial system. The survey helps to identify these dimensions, from the perspective of each stakeholder group. Armed with this knowledge, strategies can be recommended to capitalise on opportunities and benefits and policies to address risks challenges and barriers.

The survey, together with follow on interviews and research on local, regional, and international best practice, helps to develop appropriate recommendations for each stakeholder groups. The recommendations inform the development of a National Fintech Strategy.

4.3. Details of how the Survey was Conducted

Seven separate surveys were created for each of the following groups of stakeholders (as described in the Fintech ecosystem above). A total of 385 representatives of the different stakeholder groups participated in the survey.

1. Government (27 respondents) from the following Ministries:
    a. Ministry of Finance (11 respondents)
    b. Ministry of Economic Development & Tourism (1 respondent)
    c. Ministry of Capital Investments (1 respondent)
    d. Ministry of European Affairs (7 respondents)
    e. Ministry of Public Administration (1 respondent)
    f. Ministry of Education (1 respondent)
    g. Other (5 respondents)

2. Financial services regulators (29 respondents)
    a. Banking and Payments Regulator - CBCG (19 respondents)
    b. Securities Market Regulator (8 respondents)
    c. Insurance Regulator (2 respondents)

3. Established financial services firms (including banks, insurance firms, securities firms, and payment companies) (230 respondents)
    a. Banks (157 respondents)
    b. Microfinance Institutions (21 respondents)
    c. Payment Providers (9 respondents)
    d. Securities ^ Investment Institutions (8 respondents)
    e. Insurance Firms (25 Respondents)
    f. Intermediaries (brokers) (4 respondents)
    g. Pension Providers (1 respondent)
    h. Other (15 respondents), including leasing, and factoring institutions.

4. Fintech based alternative finance players and technology providers to the financial services sector (38 respondents)
    a. Alternative Finance Institutions (non-bank lending and other financial institutions) (9 respondents)
    b. Digital Assets Businesses (1 respondent)
    c. Fintech based Financial Services Provider (16 respondents)
    d. Software Providers to the Financial Sector (9 respondents)
    e. Service Providers to Financial Sector (6 respondents)
    f. Other (6 respondents), including an advertising platform, an AdTech company and a Central Securities Depository

5. Entrepreneurial Ecosystem, including accelerators and investor Groups – this group also included Donor and Development Agencies who promote entrepreneurship and development in Montenegro (15 respondents)
    a. Accelerators or Incubators (5 respondents)
    b. Tech Hub providing Office & Other Support (1 respondent)
    c. Investors (4 respondents)
    d. Development Partners or Donor Agencies (1 respondent)

    e. Other (1 respondent) from a Start-up Consulting firm

6. Associations of the difference sectors of the financial system, as well as technology providers (19 respondents)
    a. Banking Association (2 respondents)
    b. Insurance Association (3 respondents)
    c. Association of Insurance Brokers & Entrepreneur Insurance Agents (1 respondent)
    d. Association of Ancillary Insurance Services (1 respondent)
    e. Association of Microfinance Institutions (2 respondents)
    f. Association of Leasing firms (1 respondent)
    g. Association of Factoring firms (1 respondent)
    h. Association of Technology Providers (4 respondents)
    i. Other (16 respondents) Associations representing consumers (consumer protection), all business entities, energy and mining institutions, trade, agriculture, metal industry, freight forwarding, tourism and forestry sector, as well as Chamber of Economy of Montenegro

7. Educational institutions including universities and private educational institutions (27 respondents).

The survey was conducted over a period of 5 weeks starting around 15 August 2022 and closing around the 21st of September 2022. Individual surveys were created for each group, however the first few set of questions were common across all stakeholders, to ensure comparable results. The survey was delivered over an electronic online platform, and a relevant link sent to each stakeholder group, as well as being made available on a centralised Fintech Survey web page developed on the CBCG website.

CBCG was instrumental in coordinating the roll out of the survey. They wrote to each identified institution, asking to name a nominated person who could help coordinate the gathering of survey responses from the specific organisation. The nominated person was provided with the relevant web link, and they took responsibility to distribute the links to relevant people in their organisation ensuring they have representation from all levels (if this was possible). CBCG created an information page on their website, providing detailed information on the survey, as well as providing responses to a list of common frequently asked questions. Regular follow ups ensured a healthy response rate

Relative to the small size of Montenegro's financial system, the response rate was statistically significant.

5. Reflection on the Demand Side Component of the Fintech Ecosystem

In January 2020, the United Nations Development Programme (UNDP) in partnership with the CBCG commissioned a survey entitled "*Digital Banking and Payment Services in Montenegro – User Perspective*" to assess the extent to which Montenegrin citizens and companies were familiar with online banking and the degree of their satisfaction with such services. The survey sampled 1,020 citizens from all three regions of the country. The survey also included a sample of 311 companies spanning a variety of sector covering all kinds of diverse businesses.

To assess a wholistic perspective on the Fintech readiness of Montenegro, in line with the model presented above, it is important to highlight the key findings of the above survey while leaving the reader to study the detailed findings. Therefore, key highlights are presented here to understand how the demand component is developed within the overall Fintech ecosystem in Montenegro.

For the purposes of this study, and relying on the previous user study, key findings pertaining to the readiness of Montenegrin citizens and companies to adopt Fintech, and therefore create the necessary demand, are set out below:

- **High Literacy Rates Bide Well for Fintech Adoption** - Montenegro has a high level of educated citizens with 50.2% of individual respondents having a university or post-graduate degree, and 42.9% have some form of post-secondary or secondary education. Only 6.9% claim to have no schooling or primary education. High literacy rates can translate in high financial literacy rates. High literacy and financial literacy rates are favourable for the adoption of digital financial services. With the right policy intervention, and commercial solutions available in the market, it is likely that Montenegrins will adopt digital financial services and therefore create the demand to drive Fintech led innovation in the financial services sector.

- **Low Unemployment Rate** – The user survey highlights a low unemployment rate of 9.7% post the COVID crisis, in 2022. Lack of money is often one of the key contributors to financial exclusion, and this does not seem to be the case in Montenegro. The high levels of employment should translate into high levels of financial inclusion. Only 15.7% of citizens surveyed, reported having no bank account. Lack of a steady income and non-need for a bank account were cited as key reason for not having one.

- **High Internet & Mobile Penetration Rate** The survey highlighted a very small share of respondents reported not having a smartphone (6.0%) or internet access (4.3%). According to Datareportal's research, Montenegro's internet penetration rate stood at 83.0% of the total population as at the start of 2022. Internet usage increased by 2% (10,000) between 2021 and 2022. A GSMA Intelligence study that highlights an equivalent mobile connection rate of 186.6% of total population with 1,17 million mobile connections for a population in 2022 of 628,000. The data highlights that people have more than one phone. Total mobile connections increased by 8.5% (91,000) between 2021 and 2022. High internet and mobile phone penetration bode well for the launch of digital financial services, as the channels of reaching the citizens, are already well entrenched.

- **Low Use of new Digital Financial Services Channels** – A majority of citizens who responded to the survey (58.0%) opted to use the ATM machine to conduct financial services transactions (mainly cash withdrawal and transacting), while 51.7% visited the bank branch, 43.7% used payment cards and only one in five used e-banking or m-banking channels. Insufficient awareness of the opportunities of online banking was cited as the main reason why citizens do not use digital financial services. The data suggest that financial services providers may need to educate their customers on the benefits of digital channels. Financial institutions must also pay close attention to better user experience when designing digital channels to encourage users to opt for these channels as opposed to traditional branches or ATMs. Despite low rate of adoption of e-banking and m-banking, the findings highlight that given the right intervention by their financial services providers, citizens will use such channels once they know how to and trust them.

- **Higher Adoption of Digital Financial Services by Companies** – One in three (32.5%) companies opted for the use of e-banking or m-banking. Although 55.6% still indicated a preference for visiting banks. Applying for loans and carrying out transactions were reported as the main reasons why companies visit a bank branch. For those that opt for digital financial services channels, 24/7 availability (59.6%) and time saving (58.2%) were the key reasons.

The previous survey highlights an encouraging trend which points to a high demand for digital financial inclusion with the right policy intervention by government and regulators and strategies by the financial sector.

6. Analysis of the Survey Results from a Supply & Infrastructure Perspective

6.1. Drivers (Need) for Fintech in Montenegro

There is unanimous agreement among survey respondents that there is a need for Fintech in Montenegro. Excluding those that did not answer the question, a staggering 99% of respondents concurred for that there is a need for Fintech in Montenegro.

Figure 2: Need for Fintech in Montenegro

Only four respondents (three from incumbents and one from an educational institution) did not see a need for Fintech in the country, citing that the Montenegrin market is too small to accommodate Fintech newcomers, especially given the existence of 11 licensed banks for a small population of just under 650,000. One respondent felt that banks are well equipped to launch Fintech products and services to cater to the changing needs of consumers. Another respondent suggested that the Montenegrin consumer are not ready to adopt Fintech products and services.

The survey responses and research highlights common drivers for the need for Fintech, including the following (these drivers are further explored in subsequent sections of the report, when benefits of Fintech are examined.

- **Better deal for Consumers & Financial Inclusion**: As evidenced by global experience, Fintech provides more choice and benefits for the consumers. Fintech players use technology to enhance user experience, and to overcome barriers to financial inclusion. New fintech players drive competition in the financial system, driving down costs of products, and bringing greater levels of financial inclusion.

- **Foreign Players & Flow of Funds** – The Montenegrin economy is primarily driven by tourism, which is the key driver of foreign direct investment or income. The changing global political landscape may change the tourism sector and a diversification of foreign flow of funds is needed. Montenegro offers an appealing lifestyle with mountains and sea side locations within a close proximity. Entrepreneurial digital nomads may be enticed to live, work and open Fintech ventures in the country, bringing inflow of foreign investments. Although a small market, Montenegro can be an attractive test country to launch a Fintech venture in, before expanding into the wider Western Balkans market. Recently, Montenegro offered citizenship to the founder of the Etherium Network, Vitalik Buterin, as part of plans to promote it as a blockchain hub. This move will certainly get the attention of blockchain entrepreneurs sparking interest in Montenegro as a potential location to launch or expand a related Fintech venture.

- **Economic Benefits** – Greater access to finance, more choice in financial services for consumers, attracting foreign Fintech entrepreneurs and diversifying away from an over reliance on tourism, can all help to boost Montenegro's economic prospects through the introduction of Fintech.

- **EU Integration** – Strengthening and aligning the financial system to global best practice, bode well for Montenegro's ambition to join the European Union. Fintech led change can help realise this ambition.

The survey highlights a compelling need for Fintech acknowledged by all key stakeholders in the ecosystem. Every stakeholder hopes to achieve their idiosyncratic benefits that Fintech can bring, however, as a collective, the responses evidence macro level benefits for Montenegro through Fintech led change in its financial system. Whilst aspiring to international best practice, Montenegrin's will not only adopt Fintech because others are doing it, but they also envisage a deeper understanding that Fintech can bring wider benefits to the economy and its people. With a strong will among every part of the ecosystem, Fintech can be successfully implemented in Montenegro through a well-crafted and coordinated National Fintech Strategy.

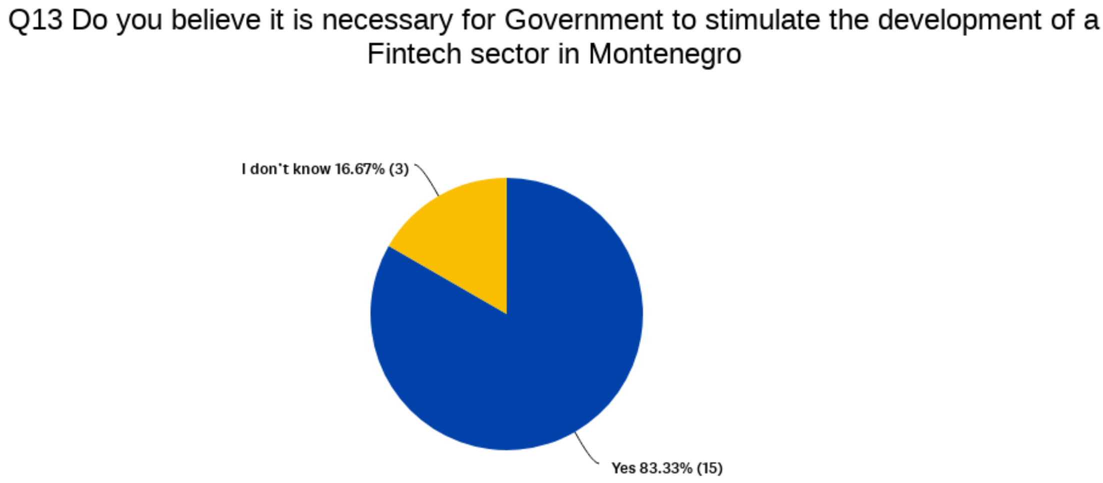
6.2. Assessing Fintech Developments, the Environment & Ecosystem

Annexure A contains a list of all organisations invited to participate in the survey, and who collectively make up the Fintech Ecosystem in Montenegro. It will be beneficial if Government or any other party can keep a track of the Fintech Ecosystem and make the information publicly available. Such an initiative will help to ensure coordination and facilitate collaboration. As the survey was anonymous, the level of participation of each of the invited participant group cannot be established, and the hope is that all the invited stakeholders had at least one participant completing the survey.

6.2.1. Government Initiatives to Promote the Development of Entrepreneurship, Technology & Fintech

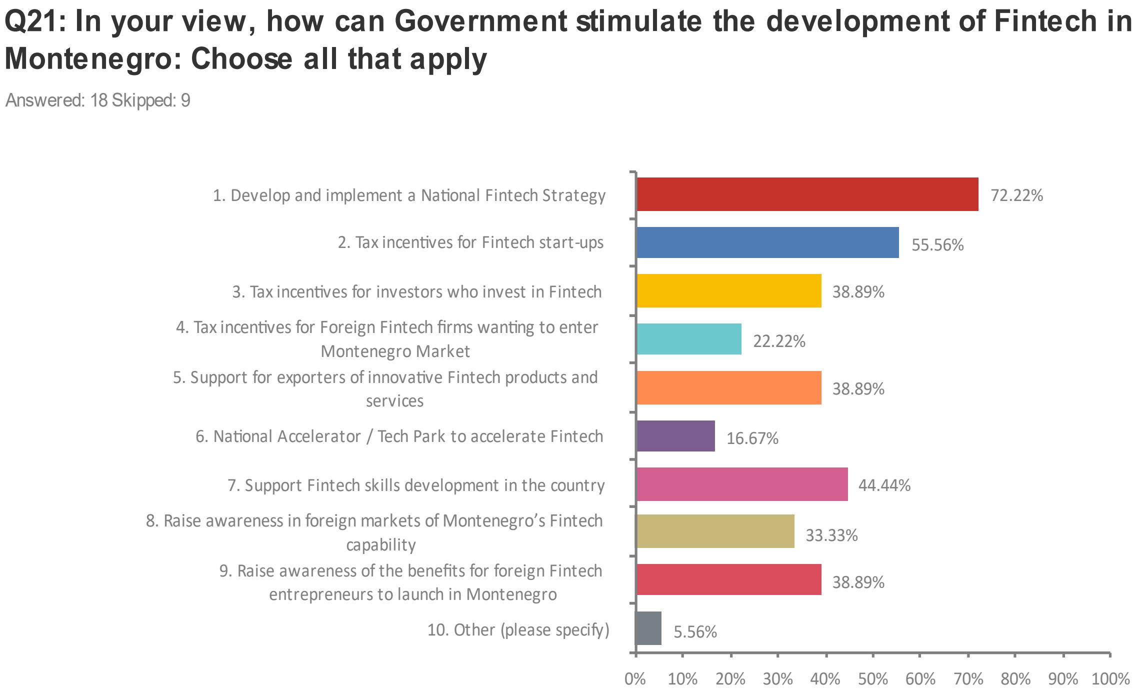
Government acknowledges that they have a role to play in stimulating the development of the Fintech sector in Montenegro, as illustrated in Figure 3, where 83.3% of Government participants responded positively to this question.

Figure 3: Does Government have a role in stimulating the development of Fintech?



Specifically, respondents concurred (72.2%) that by developing a National Fintech Strategy, Government can play a strategic role in stimulating the development of the Fintech sector, as highlighted in Figure 4. Tax incentives for start-ups and investors is another effective strategy in addition to supporting specific Fintech skills development.

Figure 4: Way in which Government could stimulate the development of the Fintech sector.



Around 39% of Government respondents suggested that Government could support SME's indirectly by providing loans through Fintech based alternative finance firms. Such a strategy not only benefit SME's who gain access to loan financing, but it also provides capital (for lending) to new Alternative Finance firms and helps them gain traction. Similarly, around 40% of these respondents suggested that Government could provide specialised grants and funding aimed specifically at the Fintech sector. Examples cited include funding for alternative finance firms, technical and financial support for Fintech start-ups, and grants for entrepreneurs who develop blockchain technology for use by the public administration.

Research highlights various initiatives by Government to develop entrepreneurship, the technology sector, and the development of Fintech, including the following:

Entrepreneurial Support

1 **New Laws Passed to Support Entrepreneurship** - Parliament adopted two new laws to support entrepreneurship, namely the Law on Innovation Activities and the Law on Incentives for Research and Innovation Development in July 2020 under the Ministry of Science. The laws aim to strengthen the IT economy and functioning of the national innovation ecosystem and enable a wide spectrum of incentives and support measures available to domestic and international entrepreneurs. The laws aim to attract foreign direct investment by making the country an attractive destination for developing technological entrepreneurship. The incentive support includes tax exemptions for start-ups for a period of up to five years, reduction in taxes and

contribution of up to 50% of employment in innovation activities, as well as 100% income tax exemption for reinvestment in innovation projects and start-ups. The new legal framework is likely to result in more start-ups with export potential, as well as an increase in the number of employees in the technical sector.

2 **Innovation Fund** - The Law on Innovation Activities established the Innovation Fund of Montenegro (Section VI, Article 37). Article 38 sets out the (relevant) activities of the Fund as follows:

a. To implement innovation policy by providing and channelling the funds from national, international, and other sources towards the development of innovative entrepreneurship and boost cooperation between the scientific and the business sector.
b. Implement projects and programmes in the Smart Specialisation Strategy domains.
c. Define support instruments and ways of using the Fund's resources.
d. Promote and attract investment in innovation economy.
e. Exercise cooperation with local and international stakeholders.
f. Encourage public-private investment that facilitates the establishment of venture capital funds for the purposes of innovative entrepreneurship development.
g. Provide technical and advisory assistance to state administration bodies within the programmes of national, international, and interregional cooperation, aimed at development of innovative entrepreneurship and technology transfer.
h. Supervise and monitor the implementation of programmes and projects within the field of work of the Fund.

The Innovation Fund is expected to launch and implement two programs in 2022, including the Innovation Voucher Program, and the Collaborative Grant Scheme Program.

3 **Entrepreneurial Support Programmes** - The Innovation Fund of Montenegro has implemented various support programmes to drive innovation and competitiveness. The Innovation Program 2021-2024 was launched, with the main aim to present in one place, all relevant innovation support programs planned in the coming period, inclusive of all instruments that will be available and focused on the entire innovation development cycle.

4 **Accelerator (Start-up Development)** - The Government of Montenegro and specifically the Ministry of Economic Development owns and implemented Technopolis, which is an innovation and entrepreneurial centre for the development of start-up companies and entrepreneurship in Montenegro. They provide a range of infrastructure and support measures. The accelerator strengthened through partnerships with cooperation from more than 150 partners.

5 **Science Technology Park Montenegro** – aims to support and strengthen the potential economic growth and development of Montenegro, through the establishment and growth of companies in high tech activities. The facility also supports the commercialisation of innovative ideas and projects. This park was established in partnership with the Government of Montenegro, Ministry of Science and University of Montenegro

6 **Smart Specialisation Strategy of Montenegro 2019 – 2024** – Montenegro joined forces with the European Union to develop this strategy which set development priorities with the purpose of building competitive advantage by connecting own capacities in research and innovation with the needs of the economy.

Specific Regulatory Measures to Support Technology & Fintech Development

1 **Law on Virtual Assets** – Montenegro is looking to develop a Law on Digital Assets and Blockchain with support from the World Bank. Any laws created will be harmonised with EU efforts to bring regulatory certainty in this area. Most importantly, the authorities acknowledge that any laws on digital assets must consider consumer protection and protection of Montenegro's financial system.

2 **Law on Electronic Identification and Electronic Signature** – The law was promulgated in 2017 and updated in 2019 and the Ministry of Public Administration, Digital Society and Media oversee this regulation and are responsible for issuing the electronic signature. The law regulates the conditions for using electronic signatures, electronic stamps, electronic time stamps and services of electronic based legal transactions, administration , judicial and other procedures, and certificates for the authentication of websites. It also governs electronic identification systems and the conditions for recognition of electronic identification means as provided by authorities in other countries.
Whilst such a facility is in place, electronic signatures are not fully utilised and merchants as well as financial services companies still insist on physical verification of persons and transactions. The costs of electronic signature (for businesses, rather than individuals), is also a factor that limits its use. The eventual goal is to allow the use of digital signature without any cost implications.
The Ministry of Public Administration is the certifying body in relation to electronic signatures. They take responsibility for maintaining records and register in line with section VI of the Law on Electronic Identification and Electronic Signature.

Strengthening Cyber Security

Much effort is expanded to strengthen cybersecurity defences, however, more still needs to be done, as during this year, Government suffered a serious cyber security incident. Some of the initiatives to strengthen cyber security defences include:

1 Cyber Security Strategy of Montenegro 2018 – 2021 – was developed by the Ministry of Public Administration in December 2017. The document identifies the following institutions that are accountable for cyber security in Montenegro:
   a. Ministry of Public Administration within which the national CIRT (Computer Incident Response Team) operates;
   b. National Security Agency;
   c. Ministry of Defence / Army of Montenegro;
   d. Ministry of Interior / Police Administration;
   e. Ministry of Justice;
   f. Ministry of Education;
   g. Directorate for Protection of Confidential Data.

The strategy was preceded by the National Cyber Security Strategy for Montenegro 2013 – 2017.

2 Legislative and Strategic Frameworks in Place to Protect Against Cyber Security Risks:
   h. Law on Information Security (2010)
   i. Law on Amendments to the Law on Information Security (2016)
   j. Law on Classified Information (2020)
   k. Regulation on amendments to the Regulation on Information Security Measures (2015)

l. Action Plan for the implementation of Critical Information Infrastructure (CII) and Action Plan (2014)
m. Rules of Procedure for CIRT.ME (2017)

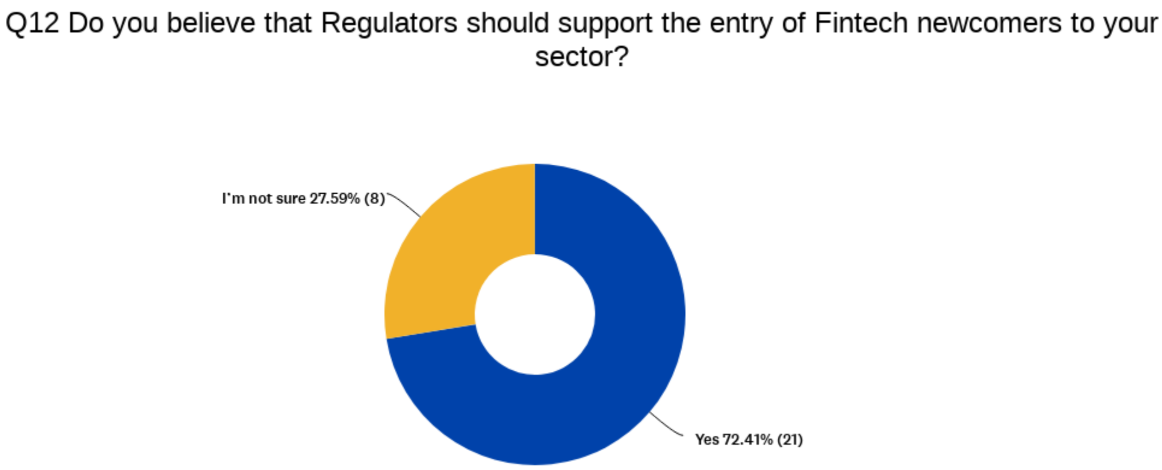
3 The Western Balkan Cyber Capacity Centre (WB3C) is the project initiated by the French Ministry of Foreign Affairs, over the French Presidency of the European Council, in partnership with the Government of Slovenia, is aimed at creating a regional structure to strengthen cyber resilience and develop cyber capacities in the Western Balkans economies and administrations. It will be developed through a systematic and gradual approach, and oriented on three core components

a) Dissemination of a Cyberculture and Awareness (Development of educational instruments and a group of trainers; Increase the public and decision-makers awareness and understanding)
b) Address the workforce by training the practitioners (Identify and overcome the lack of cybersecurity competencies in public administrations; Professionalisation in terms of skills and equipment; Provide methodology and matrixes in operational processes (forensic, incident management, assessment of the risk etc.)
c) Strengthening the Western Balkan regional platform of cybersecurity to combat against cybercrime (promote regional cooperation and networking, exchange experience and challenges).

6.2.2. Regulatory Efforts to Develop the Fintech Sector

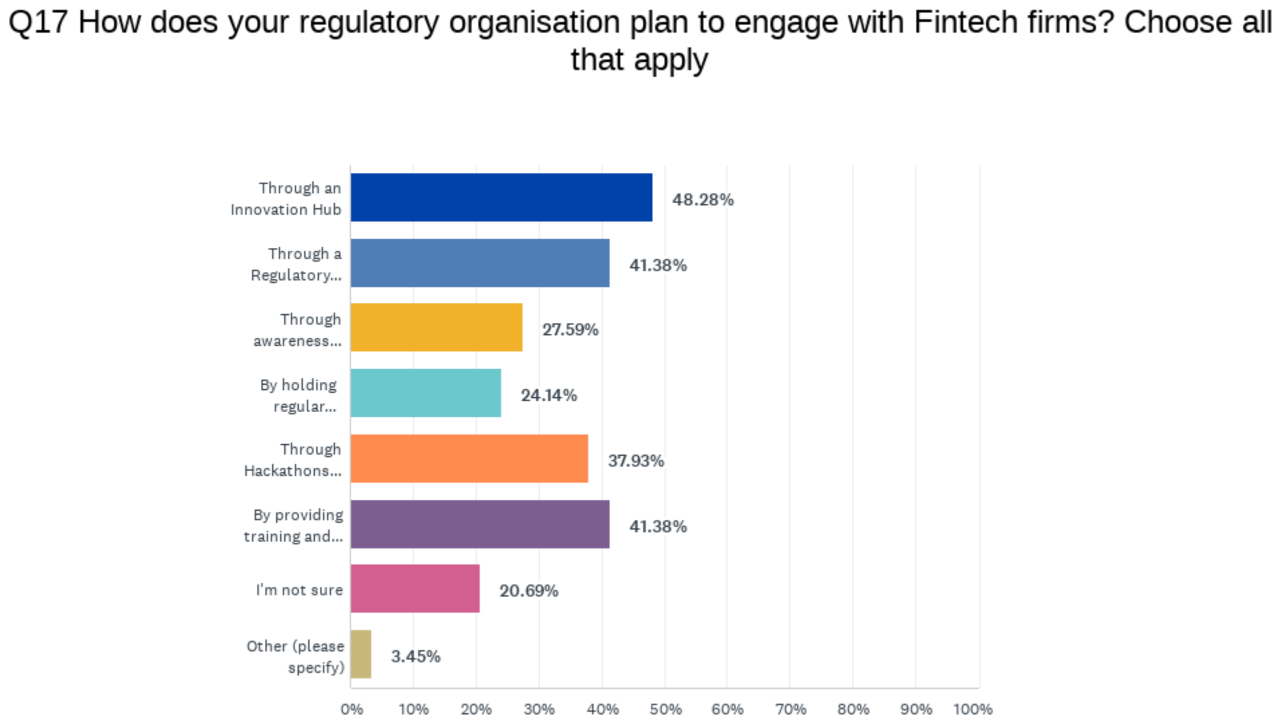
Regulators (73%) believe they have a duty to support the entry of Fintech newcomers to their sector and 27% were unsure. None of the regulators surveyed were averse to this idea.

Figure 5: Should regulators support the entry of Fintech newcomers to their sector?



Regulators can support Fintech newcomers in various ways. Majority of regulatory respondents felt that Fintech newcomers could be supported through an Innovation Hub (48%) and the Regulatory Sandbox (41%). Educating Fintech newcomers on the role of the regulator and support on compliance was considered an area of importance by 41% of the regulatory respondents.

Figure 6: Ways in which regulators can support Fintech newcomers



ANSWER CHOICES		RESPONSES	
Through an Innovation Hub		48.28%	14
Through a Regulatory Sandbox		41.38%	12
Through awareness campaigns, informing Fintech innovators of available support		27.59%	8
By holding regular meetings and exchange of ideas with Fintech innovators		24.14%	7
Through Hackathons (where ideas are tested)		37.93%	11
By providing training and education on the role of the regulator and compliance requirements		41.38%	12
I'm not sure		20.69%	6
Other (please specify)	Responses	3.45%	1
Total Respondents: 29			

Other Ideas of regulatory support cited by respondents include:

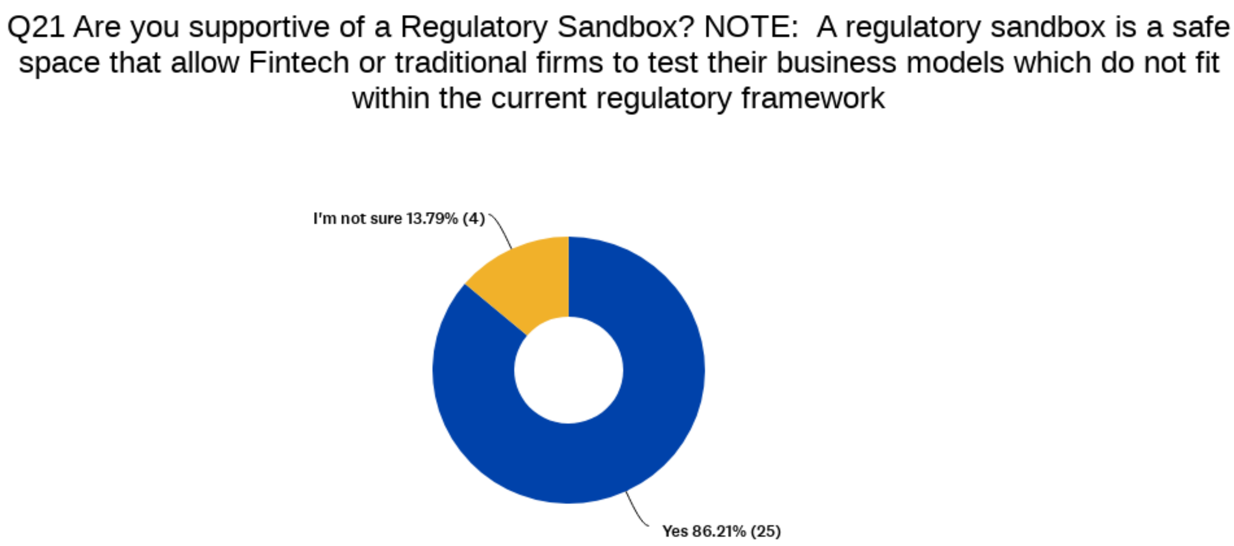
- By developing a Fintech Hub, and through seminars, conferences and TV presentations informing entrepreneurs of the support provided to Fintech newcomers.
- Through the development of a regulatory framework and specific laws that supports innovation and the launch and expansion of Fintech firms in Montenegro.

- Develop specific licensing policy that makes it easier for Fintech newcomers to acquire a regulatory license.
- Ensuring that regulators are themselves educated on matters related to Fintech, so that they are more effective at supporting, licensing, and supervising new Fintech business models.
- Incentivise financial inclusion through regulatory intervention.

By supporting Fintech newcomers, regulators recognise that wider benefits can be achieved by their sector and the economy. Majority (76%) envisage that more Fintech players entering the market could lead to better access to finance for those segments not adequately served by incumbents. Greater competition ensures that consumers are better served by financial services institutions (48%) and more players improved the breadth of financial services firms, thus strengthens the financial system, as failure of a firm is less likely to cause significant systemic risks (as other stronger firms can absorb the impact of a failed financial services firm). A minority (14% and 17% respectively) raised concerns that Fintech newcomers could pose a risk to the financial system and to consumers (including small businesses).

Regulators are supportive (86% of respondents) of a Regulatory Sandbox, 14% were unsure, however, no regulator were against the development of such a mechanism to allow Fintech firms to test innovative ideas that fall outside the existing regulatory framework.

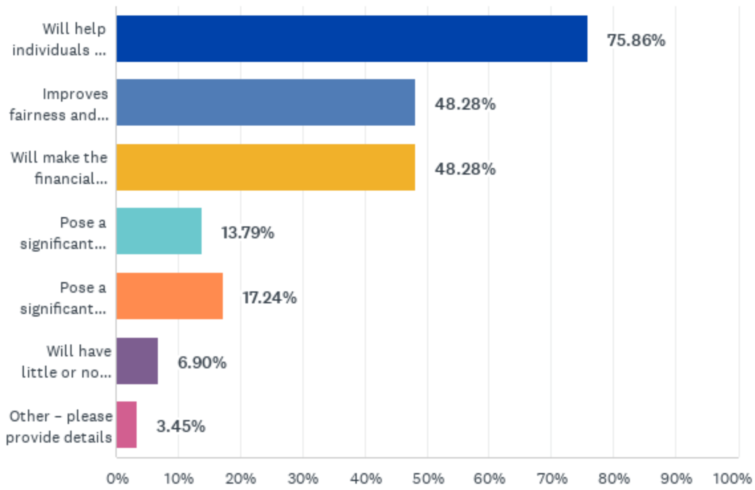
Figure 7: Regulatory Support for a Sandbox



Envisaged Benefits of Supporting Fintech Newcomers.

Figure 8: Benefits of supporting Fintech newcomers according to regulators

Q15 By supporting Fintech newcomers, do you believe it: (Choose as many as apply)



ANSWER CHOICES		RESPONSES	
Will help individuals and businesses get better access to finance		76%	22
Improves fairness and the level of service because of greater competition		48%	14
Will make the financial system stronger (as more players enter the market and compete)		48%	14
Pose a significant risk to the financial system		14%	4
Pose a significant risk to individual consumers and businesses		17%	5
Will have little or no impact on our sector		7%	2
Other – please provide details	Responses	3%	1
Total Respondents: 29			

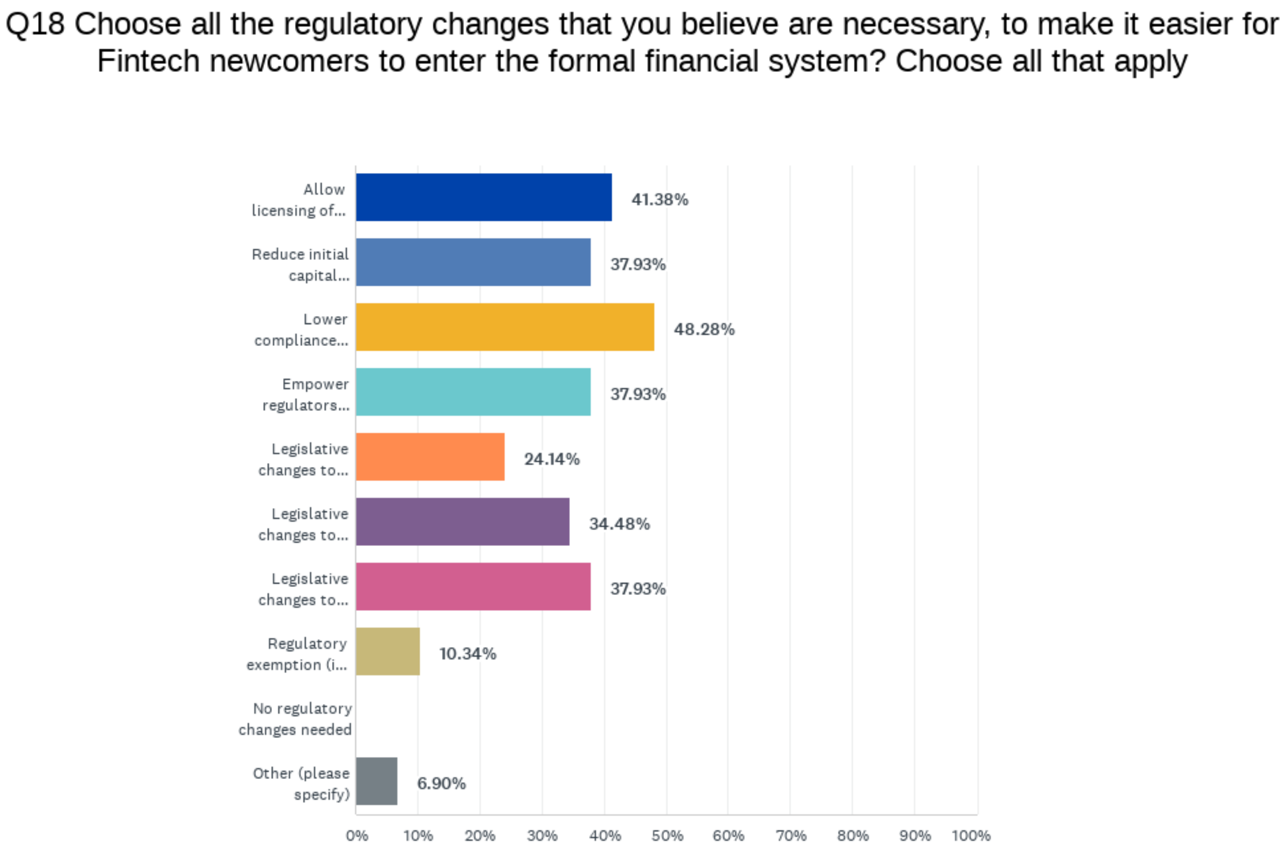
By supporting Fintech newcomers, 76% of regulatory respondents believe that individuals and businesses (especially small businesses) will have better access to finance, as technology can help to overcome barriers to accessing the underserved segments of the economy. Fourty eight percent believe that Fintech newcomers drive competition which improves fairness of products and services for consumers and small businesses. The same number of respondents also believe that competition from new Fintech players improves the breadth of the financial sector, and with more players, any failures are better withstood, and there is weakened contagion risks, as more players can absorb consumers of the failed institutions.

Only a handful (14% and 17% respectively), believe that Fintech newcomers pose a heightened risk to the financial system and consumers.

Regulators Mechanisms for Supporting Fintech Newcomers

Most of the regulatory respondents (48%) believe that proportionally lowering compliance requirements for smaller, less risky start-ups, was the best way to support the entry of Fintech newcomers into the financial system. A lighter licensing process (such as registration instead of full authorisation), is another option for easing the entry of Fintech newcomers according to 41% of regulatory respondents. Countries like the United Kingdom have implemented such regulatory light licensing process, and the once the business scales to a material level, then an application must be made for full licensing. Reduced capital adequacy requirements and legislative changes to support specific business models are other ways in which regulators can ease the entry of Fintech newcomers.

Figure 9: Regulatory Challenges to the Development of Fintech



ANSWER CHOICES		RESPONSES	
Allow licensing of small Fintech firms through the lighter registration process, rather than full authorisation (like in EU)		41.38%	12
Reduce initial capital requirements for low volume, low risk businesses		37.93%	11
Lower compliance requirements for small start-ups		48.28%	14
Empower regulators through legislative changes, to encourage innovation and allow Sandbox testing		37.93%	11
Legislative changes to allow Peer to Peer Lending and Crowdfunding		24.14%	7
Legislative changes to allow non-bank payment service and e-wallet providers		34.48%	10
Legislative changes to accommodate digital currency and blockchain based Fintech business models		37.93%	11
Regulatory exemption (i.e. no license) for small lenders who lend to SMEs		10.34%	3
No regulatory changes needed		0.00%	0
Other (please specify)	Responses	6.90%	2
Total Respondents: 29			

Regulatory Enquiries from New Fintech Business Models

The CBCG has already implemented a Regulatory Innovation Hub (or Fintech Hub), and the Capital Markets Authority has implemented a Regulatory Sandbox. However, collectively, only 28% of regulatory respondents confirmed that they have received enquiries into the Fintech Hub or Sandbox, whilst 49% claim they have had no enquiries from Fintech newcomers seeking support. Enquiries have emerged from entrepreneurs or intrapreneurs looking to launch the following types of Fintech ventures:

- Electronic banking services
- Mobile and online payments
- E-Wallet and e-money solutions
- Digital Asset Exchange and tokenisation of financial assets (and real estate)
- Global clearing and settlement system for digital assets
- Crowdfunding
- Interest rate comparison web site
- Online loan application, approval, and disbursement of the loan amount
- Digital identity solutions to facilitate identity verification using digital means
- E-commerce solutions, possibly providing payment gateways for merchants to accept online payment at the point of sale.

Majority of regulators (79%) are supportive of open banking, while 3.5% are not, and 17.2% are unsure. Regulators believe that open banking brings increased transparency and opens possibilities for new products and services through the sharing of bank account data. It offers faster transaction speed and potentially reduce price of fund transfers or other financial services products. Open banking can bring about greater competitive pressures that benefits consumers. However, those opposed to open banking suggested that confidence in financial markets is fragile and levels of financial literacy is low, so open banking may not be the most appropriate solution for the country. Such a view is held by a small minority of regulators (3.5%).

Existing Regulatory Initiatives to Support Fintech Newcomers

Regulators have made steady headway in supporting the development of Fintech. Examples include:

1. **Central Bank New Appointment** – the Central Bank of Montenegro (CBCG) created the role and appointed into it the Directorate of Payment Systems and Financial Technology to drive efforts to opening the financial sector to Fintech led innovation and competition, for the benefit of consumers and financial stability.

2. **New Payment System Directive (PSD2) Implementation** – The new payment regulation aligned with EU's payment services Directive has been drafted and Parliament accepted the Law on Amendment to the Payment System Law in September 2022. The new law will allow for new Fintech payment providers to enter the market and provide consumer and business friendly and cost-effective payment solutions. Fintech often starts with transformation of the payment system, which is the backbone of the financial system. Fintech led transformation could accelerate thereafter, bringing other business models in the lending, securities, and insurance sectors.

3. **Fintech Hub, Regulatory Innovation Centre** – The CBCG established this hub in July 2021 as a site where the Fintech sector and commercial banks will be able to present their innovation and request the views and interpretations of the central bank, on issues within its competence, related to innovation in the financial operations and payment services. This centre is specifically limited to these areas highlighted, given the imminent launch of the new payment regulation, as well as the first innovation likely to emerge from this sector, as demonstrated by Fintech developments in the world. Focus on niche areas will also ensure that the central bank is better able to manage its resources without compromising on the quality of support provided to Fintech innovators.

4. **First Fintech Conference** – In October 2021, the CBCG, the Ministry of Finance and Social Welfare and the Ministry of Public Administration, Digital Society and Media hosted the first Fintech conference titled "The Impact of Fintech on the Future of Banking and Financial Services". The conference was organised by the CBCG in cooperation with ICT Cortex and Association of Montenegrin Banks. CBCG hosted their second Fintech conference in October 2022 entitled the Role of Fintech in the Democratisation of the Financial Landscape, which was well attended by the financial sector community, at the highest level. .

5. **Fintech Hackathon** – After the conference, the central bank launched a forty-eight-hour team competition to encourage the best Fintech idea with a special emphasis on digital banking and digital payments. By organising such a hackathon, the central bank aims to promote and encourage innovation in digital banking and thus contribute to financial education in digital banking and payment services. They also aim to promote creative and innovative ideas for applying modern technologies in banking with particular focus on open banking and payment services domain. The Hackathon was considered as a remarkable success as forty-one qualifying ideas were received and evaluated during the two days. The CBCG ran the second Fintech Hackathon between 7th and 9th of October 2022, around the theme of Know your Customer (KYC) solutions development.

6. **Survey of the Fintech Ecosystem** – in August 2021, the CBCG conducted a survey to understand and assess the Fintech ecosystem focusing specifically on the banking sector:

7. **Survey of Digital Banking and Payment Services – Customer Perspective** – In January 2022, the CBCG and the United Nations Development Programme (UNDP) commissioned a survey (led by CEED Consulting) entitled "Digital Banking and Payment Services in Montenegro – Users Perspective". The survey got input from 1,020 citizens from all three regions in Montenegro, and 311 companies operating in central, southern, and northern regions. Broadly, the survey highlighted that the adoption of digital financial services is slow. However, it was encouraging to see a rise in adoption in some sectors of the population, and the COVID 19 pandemic accelerated this trend.

8. **National Programme for Financial Education** – with support from OECD, the CBCG launched a National Programme for Financial Education. In 2020, the OECD published "Financial Literacy of Adults in South East Europe" highlighting that adults in this region scored on average 57% of the maximum possible score on financial literacy. This is lower than comparable scores obtained through the same methodology from surveys of the EU and OECD economies (64% and 65% respectively). Montenegro scored 55% which is slightly below the average for the region and far below the average of EU. Although the survey highlighted that the financial knowledge score of adults in Montenegro is relatively stronger compared to scores showing how they behave from a financial perspective or their attitudes to financial services.

9. **MOU with ICT CORTEX** – in June 2021, the CBCG entered into an MOU with ICT Cortex on implementing joint activities. It forms the basis for developing institutional mechanism for joint initiatives aimed towards creating innovative solutions in financial technologies and developing new business models adapted to the modern market requirements. The two institutions will cooperate in areas of common interest, such as research and solving regulatory and institutional challenges for Fintech developments in banking and payment services, financial education in this area, and the exchange of knowledge related to the application of regulation in this sector.

10. **Instant Payment System** – The CBCG has implemented a project to make instant payments operational by the end of 2023. Such a system will allow citizens to effect payments quickly, securely, and easily without cash or credit cards. Merchants will also benefit because they receive funds immediately instead of having to wait for up to a week or longer to get payments processed. Instant payments can have a significantly positive impact on the cash flow of small businesses. The aim over the next five years, is for instant payments to reduce cash usage by a fifth compared to cash usage in 2020. Such a move could increase tax collections and bring greater transparency of the flow of money through the economy.

11. **Standardisation of the National QR Code** – This activity will be conducted as a pre-condition to the introduction of innovation in the payment system. When adopted, the QR code mechanism offers consumers and merchants yet another convenient channel for making and taking payments. The World Bank's technical assistance facility is supporting this project.

12. **Regulatory Sandbox** – The CBCG is exploring the launch of a Regulatory Sandbox and is currently receiving support in this area from various international development agencies. It

will allow Fintech innovators to evaluate solutions that may fall outside the current regulatory framework but need some form of licensing that can be developed in future.

13. **Capital Markets Authority Regulatory Sandbox** – Reacting to strong demand from their sector, the Capital Markets Authority developed "Rules on Regulatory Framework for Financial Innovation (Sandbox)" in September 2019. The sandbox aims to enable the Authority to identify the possible effects of financial innovation to customers and the financial system, potential risks of innovation, identify potential disadvantages with respect to the capital markets and to eliminate or reduce these regulatory disadvantages and any possible negative effects associated with innovation in financial services.

How Easy or Challenging it is to Engage with Financial Services Regulators in Montenegro

Whilst regulators are open to supporting Fintech led innovation at incumbents and alternative finance firms, if they are not perceived as being open, then progress may be slower. When asked how easy it is to engage with Montenegro's financial services firms, only 7% of incumbents and 6 percent of alternative finance firms thought it was very easy. A sizeable proportion of respondents in both groups felt it was difficult to engage with their regulator or get their support on regulatory matters related to innovation (39% of incumbents and 50% of alternative finance firms find it difficult to get support on innovation, from their regulators). .

Figure 10: Ease of getting Support from Regulators on Innovation (Incumbents)

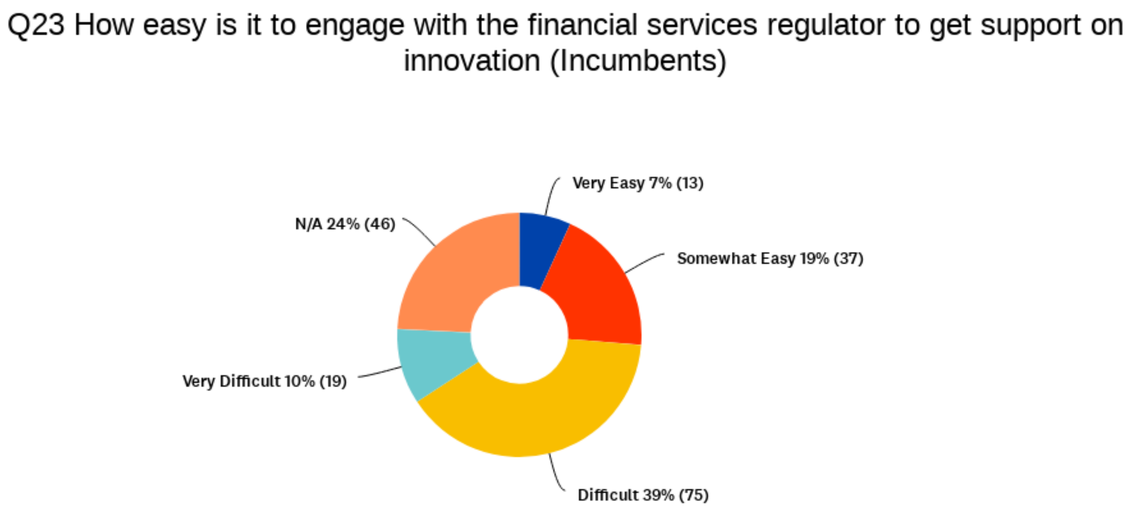
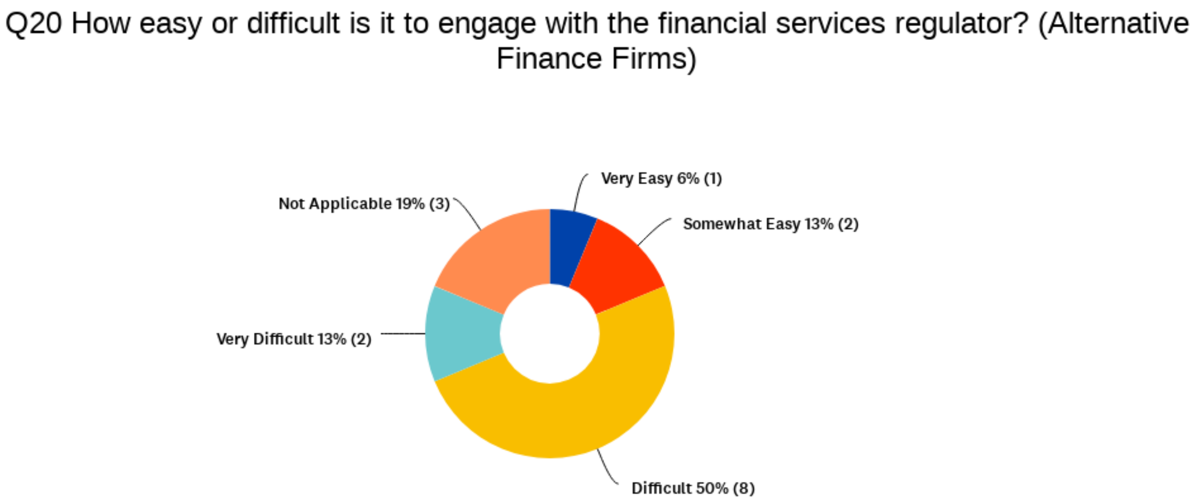


Figure 11: Ease of getting Support from Regulators on Innovation (Alternative Finance Firms))



Regulators must communicate their progressive stance to supporting Fintech led innovation. In addition, they must develop mechanisms that make it easy for incumbents and alternative finance firms to engage with them on innovative ideas and get their support. Such mechanisms could include:

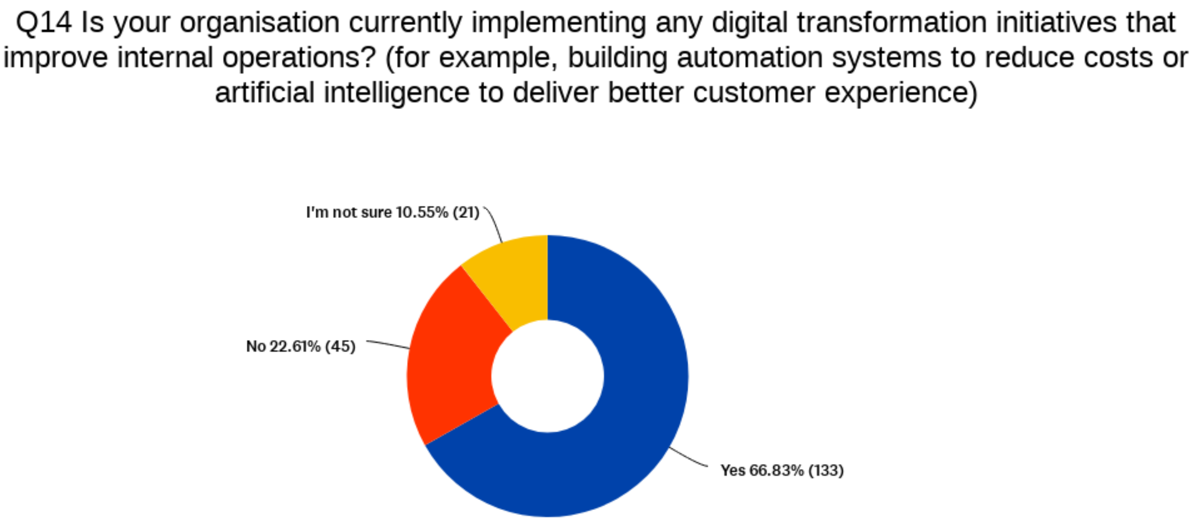
- A dedicated website and customer support telephone lines making it easy to engage with regulators on topics related to innovation.
- Regulators could provide regulatory live update sessions on their stance to supporting the development of Fintech, and communicate the channels implemented to engage with them on such topics.
- Representatives from the Regulators Innovation Hub, could spend some time at accelerators and incubators, making themselves available (on the spot) for quick regulatory advice and guidance related to innovative ideas.
- Supervisors could engage on the topic of innovation with their firms, during onsite and offsite supervision initiatives, giving their firm the chance to ask questions or get more information on how the regulator can support innovation at incumbents.

6.2.3. Taking Stock of Digital Transformation & Fintech Initiatives by Established Financial Services Firms (Incumbents)

Digital Transformation & Fintech Initiatives at Incumbents

Incumbents are taking advantage of developments in digital financial services technologies. Many (67% of respondents from financial services firms) are implementing digital transformation in some form, mainly to drive internal efficiencies. A minority (23%) claim not to be pursuing any digital transformation activities.

Figure 12: Incumbents are embarking on digital transformation

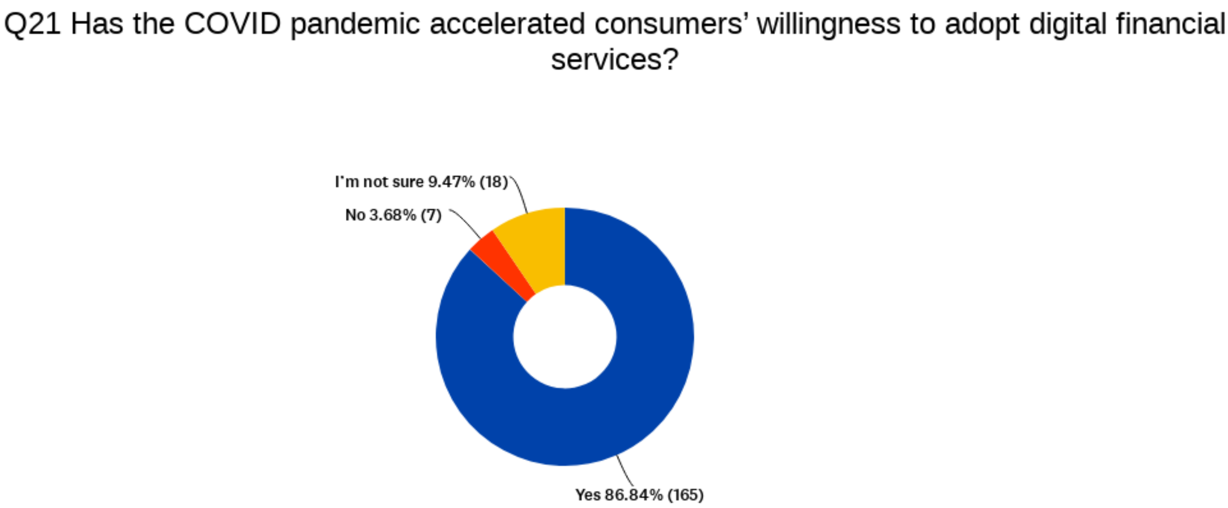


Digital transformation initiatives cited by respondents include:

- Online account opening done remotely
- Online lending
- Digital means to verify identity, for example, using video.
- Providing e-wallet solutions to clients
- Facilitating online purchase of financial products with the ability to pay for the products online
- Online claim notification from clients to their insurer.
- Digitization of lending activities
- Automated communication with clients such as chat bots
- Automation of internal and regulatory reporting
- Cloud computing and data warehousing
- Efforts to digitise all manual processes
- Use of artificial intelligence in processes, such as automated reading of documentation and acting on the information based on rules.
- Automation of processes and workflow.
- Creating online client portal

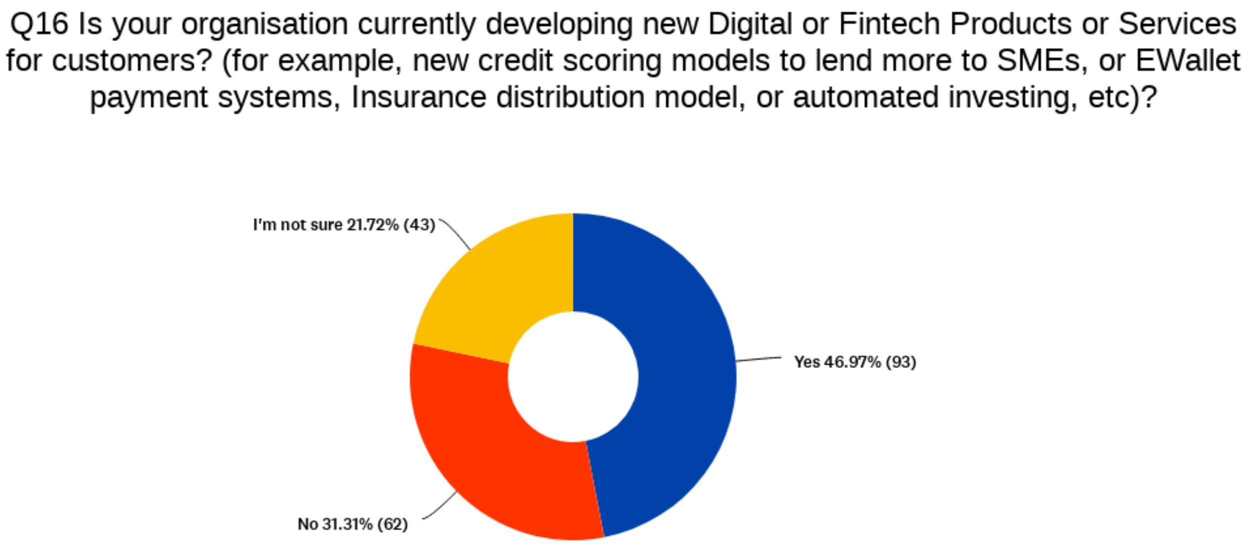
Incumbents pursue digital transformation to improve efficiencies, reduce costs, gain greater market share by delivering better customer services, and potentially open new untapped markets because technology can help overcome previous barriers. Judging by the incumbent responses, it is evident that the traditional players are focused on using technology to drive efficiencies and gain greater market share. They are not as yet exploring ways to use technology to reach underserved market segments that can provide greater levels of access to financial services.

Figure 13: Impact of COVID on Accelerating Adoption of Digital Financial Services



Digital initiatives are fuelled by a greater demand for digital financial services directly because of the COVID-19 pandemic. A majority of incumbents (87%) witnessed an accelerated consumer willingness to adopt digital financial services. It is enco. ging to learn that 47% of incumbents are developing some form of digital or Fintech product or service.

Figure 14: Incumbents Developing new Fintech Products and Services



The types of Fintech products claimed to be developed, include the following:

- Payment without the need to present a card
- End to end digital loan application and disbursement of funds.
- Upgrading credit scoring models so that loan applications can be fully digital, including credit assessment.
- A respondent firm is cooperating with a telecommunications provider and travel booking platforms to develop new digital distribution channels for their financial products and services.
- E-wallet, including the possibility to pay through Apple Pay
- Online insurance platform allowing customers to carry out all insurance related transactions.
- Alternative lending platform.

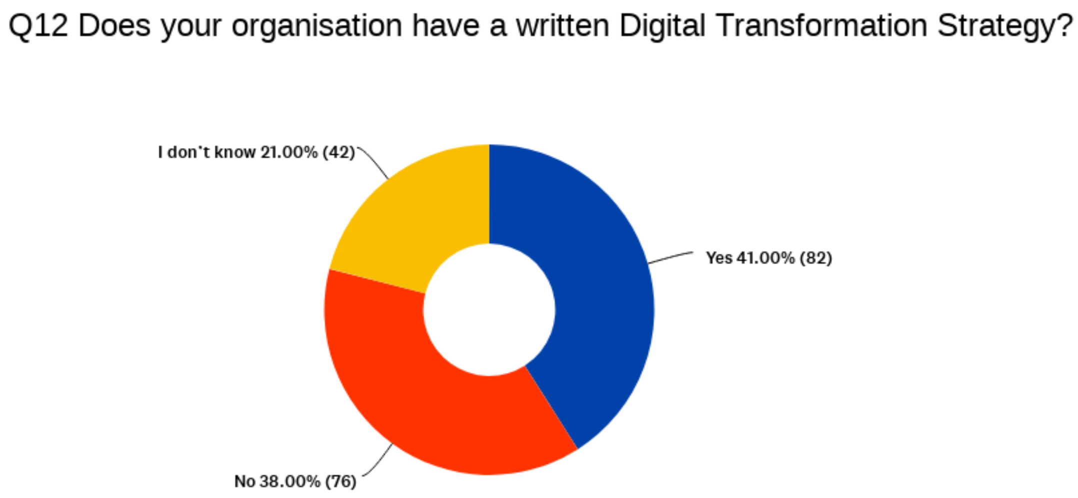
From examples cited above, it is evident that Montenegrin incumbents are digitising existing products and services in the main, rather than evolving totally new business models, such as peer to peer lending or open banking. Such developments may be more evident once the Fintech market matures and there is greater levels of regulatory certainty.

The new Payment Services legislation (PSD2 equivalent) adopted in September 2022, could provide an opportunity to incumbents to develop new and innovative payment solutions that can benefit their business as well as their customers. However, the survey highlights a mixed response to the introduction of the new payment regulation. Just over a third of respondents (38%) see commercial opportunities arising from the new regulation. However26% felt it would increase costs, and 19% felt it would increase competition by encouraging new payment providers to enter the market, directly because of the new legislation. In such a case, incumbents fear losing market share. Non-banks will not be affected by this new legislation and the survey data highlights this fact, as 24% said that it will not affect their market and 19% confirmed that it will have no impact on their firm specifically. Qualitative comments highlight that many respondents were not aware of the new regulation or did not feel sufficiently knowledgeable about the contents of the legislation and therefore the impact it can bring to their market or their firm. Given the legislation has recently been introduced, incumbents will need more time to assess its content and impact on their market and their firm.

How Incumbents Drive Digital Transformation

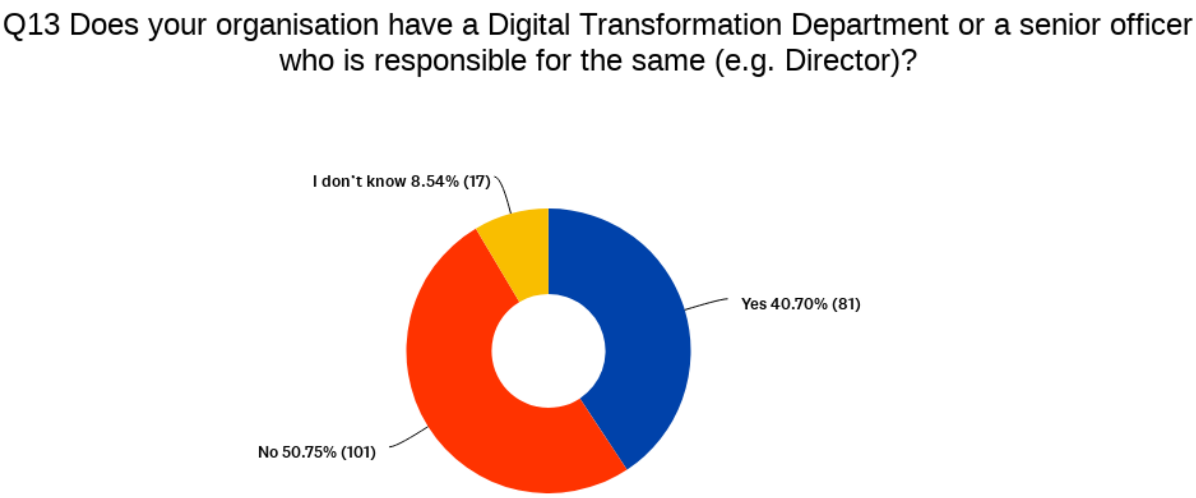
Out of 200 respondents, only 82 (41%) confirmed that their organisation has a written Digital Transformation Strategy document that governs their initiatives. Many (42%) were unaware of the existence of such a document, reflecting that the organisation may not be communicating their digital transformation strategy effectively. A sizeable proportion (38%) confirmed that no such document exists within their organisation.

Figure 15: Existence of a written Digital Transformation Strategy



Again only 41% confirmed that they have a Digital Transformation Department or a senior manager (such as a director) who takes responsibility for driving digital transformation in their organisation. A sizeable proportion (51%) confirmed that their organisation did not have such a department or an assigned official to drive digital transformation.

Figure 16: Senior Official or Department Dedicated to Driving Digital Transformation at Incumbents



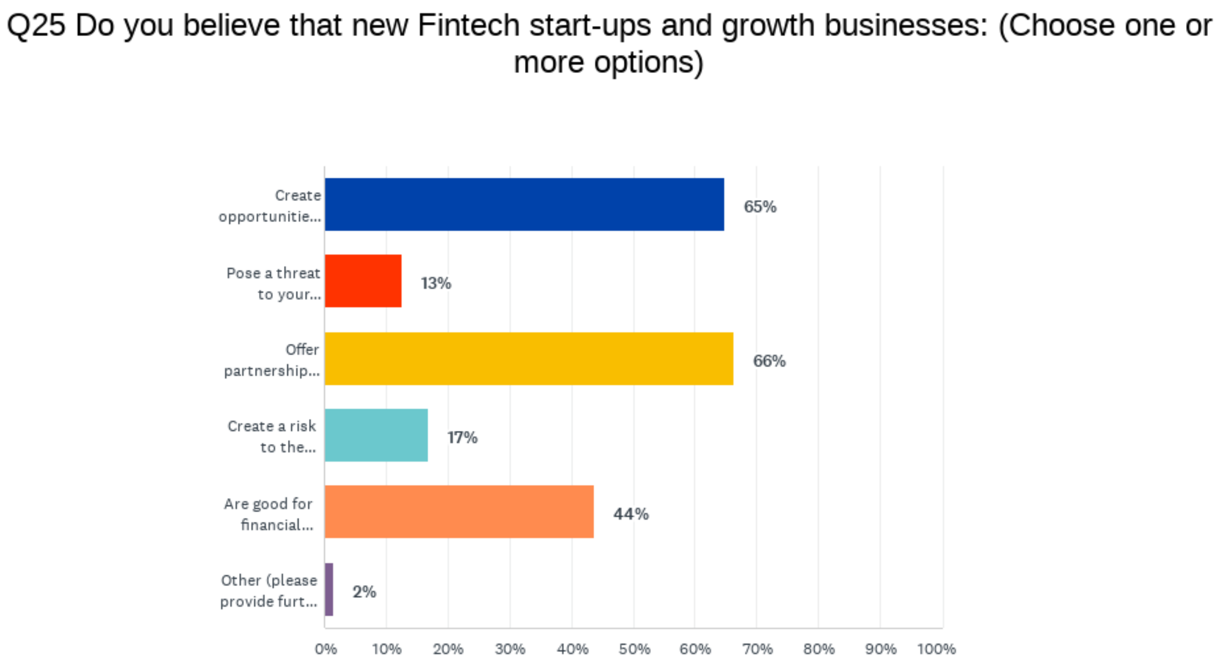
Without a written digital transformation strategy and in the absence of a dedicated department or senior manager to drive such initiatives, current digital transformation initiatives may only be on an ad hoc basis. For example, certain departments are more progressive than others and take it upon themselves to drive digital transformation in their specific and narrow area of the business. Such a fragmented approach is not only suboptimal (as other parts of the organisation do not benefit from the investment in the initiative), but it may also in fact lead to destructive competition between departments.

A fragmented approach could also lead to such digital transformation initiatives not being aligned with the overall strategic direction and objectives of the firm. Incumbents could get more value out of their digital transformation efforts, and more importantly, accelerate this change, if they develop a well-crafted strategy that aligns with the overall organisational strategy, and they appoint a senior manager to take charge of driving such initiatives through the support of a formally established department with digitally skilled staff.

How Fintech Newcomers are Perceived by Incumbents

If Fintech is seen as a destructive force by incumbents, then progress to drive change may be slower, as established firms adopt defensive strategies to react to what they perceive as disruption in their market. Fortunately, 65% of incumbents surveyed thought that Fintech developments could create opportunities for their organisations, as they offer partnership opportunities that can help them expand into new markets. International experience has demonstrated that Fintech newcomers are more apt at finding untapped niches and overcoming barriers to provide digital financial solutions. Incumbents are often constrained by high cost of providing products and services to such underserved markets, and a partnership with a Fintech newcomer, could help them reach these previously unreachable market segments. Overall, such partnerships can substantially increase the level of financial inclusion.

Figure 17: How Fintech Newcomers are Perceived by Incumbents



ANSWER CHOICES		RESPONSES	
Create opportunities for your organisation?		65%	123
Pose a threat to your organisation and your market positioning?		13%	24
Offer partnership opportunities that will help us expand our business?		66%	126
Create a risk to the financial services sector as a whole?		17%	32
Are good for financial inclusion as they will be able to serve markets we cannot?		44%	83
Other (please provide further details)	Responses	2%	3
Total Respondents: 190			

However, a minority (13%) believe that Fintech newcomers can pose a threat to their organisation and their market positioning, possibly fearing a loss of market share to such newcomers. A small proportion of respondents (17%) fear that Fintech newcomers could expose the financial services sector to risks, perhaps through contagion or reputational damage that may erode consumers trust in the financial services sector as a whole.

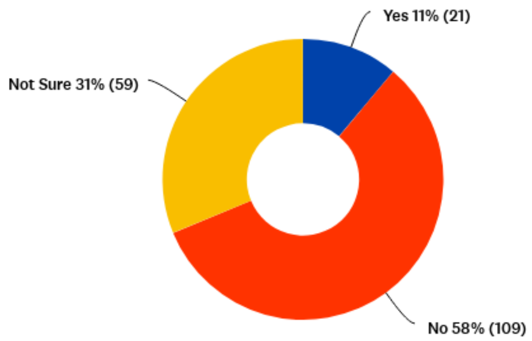
How are Incumbents Engaging with Fintech Newcomers

Incumbents can engage with Fintech newcomers through partnerships, by supporting them through proprietary accelerators or investing in or acquiring Fintech ventures that gain traction. In Montenegro joint venture partnerships between Fintech ventures and incumbents are rare, as only 11% of respondents suggested that their organisation is in such a joint venture. A vast majority (58%) confirmed that their organisation was not pursuing such arrangements, and 31% of respondents were unsure. The results are understandable, given the evolving nature of the Fintech sector. As more

Fintech newcomers enter the financial system, banks may be willing to explore such partnerships, or acquisition opportunities.

Figure 18: Joint Venturing between Incumbents and Fintech Newcomers

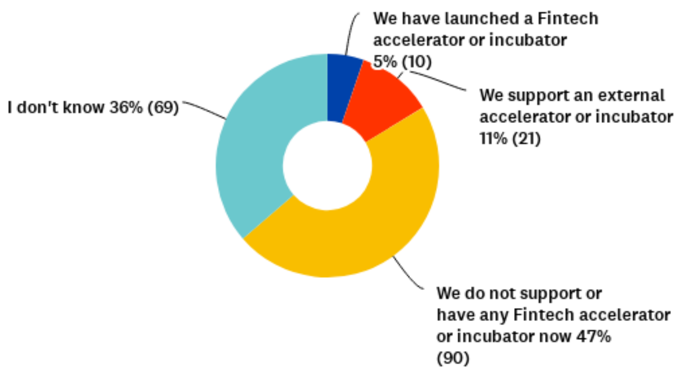
Q28 In the last 12 months, has your organisation acquired or joint venture with a Fintech entrepreneurial venture?



Similarly, only a minority (5%) indicated that their organisation has launched some form of a Fintech accelerator or incubator. Some (11%) support third party accelerators rather than establishing their own. However, the majority (47%) confirmed that such accelerators or incubators do not exist within their organisation, and 36% were unsure.

Figure 19: Incumbents launching or Supporting Fintech Accelerators and Incubators

Q27 Does your organisation have a Fintech Incubator or Accelerator that partners with entrepreneurial innovators or do you support one?



In an environment where the Fintech ecosystem is under developed or in the process of development, Fintech entrepreneurs are likely to face significant hurdles to launch and scale their venture. Partnering with an incumbent can bring about a win|win outcome, and it's something incumbents must consider in accelerating their drive towards digital financial services. Accelerators could provide much needed seed funding and technical support for cash strapped and inexperienced start-up founders, whilst incumbents would stay at the cutting edge of innovation, by searching for and supporting innovative businesses. Partnerships can provide benefits to both parties. Incumbents can gain access to markets they found challenging to access, and Fintech newcomers could leverage the vast customer base of incumbents to deliver new and innovative products and services.

6.2.4. Mapping Efforts of Associations to Drive Digital Transformation within their Sector

Associations play a key part not only in advocacy on behalf of their members, but also to develop their sector. One way in which associations can support their members, is by launching initiatives to help their members implement digital transformation. Sixty three percent of associations claim to have initiatives that help their members with digital transformation. Fifty six percent claimed to support their members not only in digital transformation, but also in developing digital products and services. Ways in which such support is provided includes the following:

- Various educational activities, including workshops, seminars, and roundtables
- Specific training on blockchain, electronic signature, and digital banking services was also mentioned
- Running industry specific hackathons
- Raising awareness of the vital necessity of digital transformation
- Bringing industry experts to speak to their member on areas of interest
- Provision of a digital catalogue of vehicle prices that are updated annually. This data helps insurers price vehicle insurance
- Data on average insurance claims handling timeframe that acts as a benchmark for insurers
- By organising study visits for member firms so that they get first-hand experience of the benefits of digital transformation and how it can be implemented
- Arranging a "Digital Day," that introduce technology providers to potential financial services firms who could become potential customers.

Associations (38% of respondents) acknowledge that they have a role to play in helping their sector build digital skills. However, 38% also believe that each individual organisation must take it upon themselves to build digital skills for their organisations. A small proportion (6%) believe that it should not be the role of associations to build digital skills within their member firms.

For those who felt that associations have a role to play in building digital skills within their member firms, they suggested that this can be achieved through various initiatives including:

- Provide guidance and resources around digital transformation and Fintech (69%)
- Hosting digital and Fintech events and conferences (63%)
- Training programmes (56%)

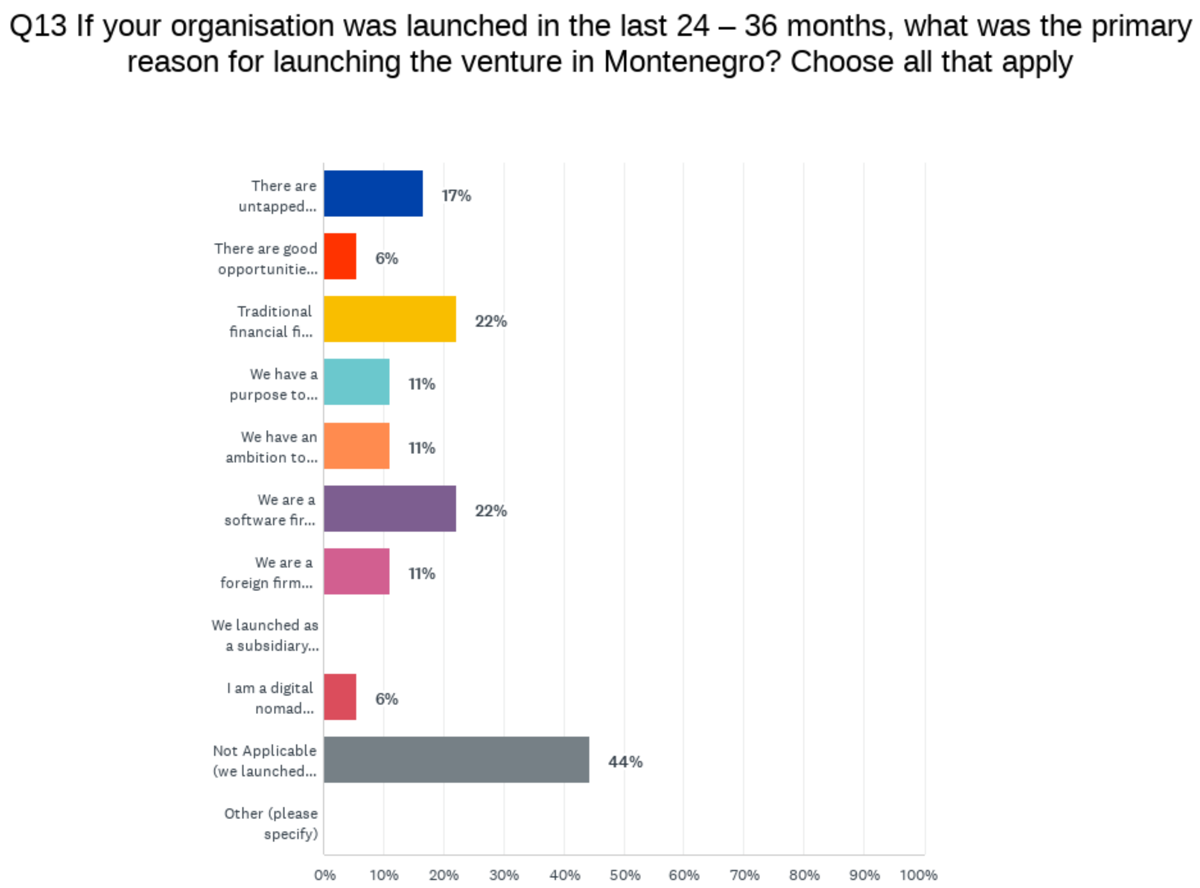
- Practical digital transformation workshops (56%)
- Provide in house paid and customised training for individual member firms (19%)
- Mapping a pool of digital transformation experts and making this database available to members
- Connecting Fintech firms with other firms through round tables

6.2.5. Fintech and Alternative Finance Firms on the Rise – Mapping Current Developments

Fintech Brings Opportunities for Newcomers

The survey participant list in Annexure A, highlights the emergence of alternative finance firms or Fintech technology providers who support the development of digital financial services. Alternative finance firms (22%) launched because they saw an opportunity left open by traditional players who are inefficient in tapping the market opportunity. Despite Montenegro's small market size, 17% still spot untapped opportunities to exploit. Others (22%) see growing opportunity for software providers to the financial services sector, as digitisation efforts intensify.

Figure 20: Reasons for Launching a Fintech Venture



ANSWER CHOICES		RESPONSES	
There are untapped opportunities even in our small market		17%	3
There are good opportunities to outsource our services to foreign firms		6%	1
Traditional financial firms are inefficient, thus creating gaps for us to exploit		22%	4
We have a purpose to increase financial inclusion in Montenegro		11%	2
We have an ambition to disrupt the financial services sector		11%	2
We are a software firm that see growing opportunities in Montenegro		22%	4
We are a foreign firm expanding into Montenegro		11%	2
We launched as a subsidiary of our parent financial institution to exploit new markets		0%	0
I am a digital nomad entrepreneur who chose Montenegro because of the lifestyle it offers		6%	1
Not Applicable (we launched more than 3 years ago)		44%	8
Other (please specify)	Responses	0%	0
Total Respondents: 18			

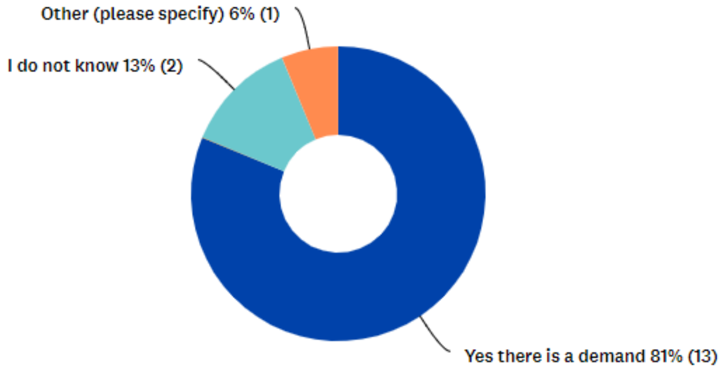
It is interesting to discover that one respondent claim to be a digital nomad entrepreneur who chose Montenegro as their base because of the lifestyle it offers. This is a strategy that Government is looking to encourage. However, only 2 respondents (11%) were from a foreign firm, looking to expand their business in Montenegro. With such a small market size, it's unlikely that foreign firms would view this market as commercially viable. However, for smaller firms, it can represent an ideal test market before expanding into the Western Balkans, the wider Eastern Europe, or in deed, the European Union.

Entrepreneurs will only launch a venture if they see a market demand, the survey highlights a positive trend, in that 81% believe that there is a demand for Fintech products and services in Montenegro, despite lower levels of digital financial literacy, and a market that is over banked. Digital financial literacy and ease of acquiring such digital products and services could accelerate demand.

Figure 21: Market Demand for Fintech Products and Services

Do you believe there is a market demand for Fintech products and services i Montenegro?

Answered: 16 Skipped: 22

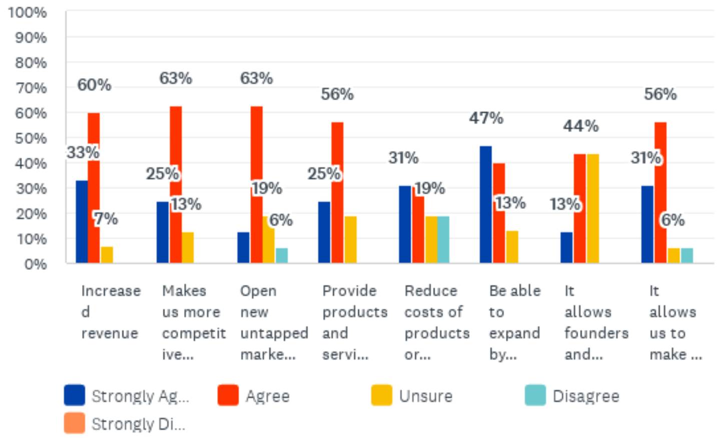


ANSWER CHOICES		RESPONSES	
Yes there is a demand		81%	13
No – businesses and individuals prefer dealing with traditional players		0%	0
No - businesses and individual prefer using cash		0%	0
I do not know		13%	2
Other (please specify)	Responses	6%	1
TOTAL			16

For newcomers, Fintech brings various benefits such as the ability to enhance revenue and reduce costs, tap untapped market opportunities, and for software providers to be able to sell their solutions to companies outside Montenegro. However, it also allows founders to make a difference by providing products and services not previously available in the market. Some see the opportunity for a lucrative exit if they build and can sell or merge their business to a bigger player.

Figure 22: Perceived Benefits of Fintech for Alternative Finance and Fintech Firms

Q16 What are the biggest benefits that Fintech and financial technologies can bring to your organisation specifically?



	STRONGLY AGREE	AGREE	UNSURE	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
Increased revenue	33% 5	60% 9	7% 1	0% 0	0% 0	15	4.27
Makes us more competitive because of lower costs	25% 4	63% 10	13% 2	0% 0	0% 0	16	4.13
Open new untapped markets (which incumbents cannot access	13% 2	63% 10	19% 3	6% 1	0% 0	16	3.81
Provide products and services not currently available in Montenegro	25% 4	56% 9	19% 3	0% 0	0% 0	16	4.06
Reduce costs of products or services for our customers	31% 5	31% 5	19% 3	19% 3	0% 0	16	3.75
Be able to expand by selling our products and services to customers outside Montenegro?	47% 7	40% 6	13% 2	0% 0	0% 0	15	4.33
It allows founders and shareholders to exist with high reward	13% 2	44% 7	44% 7	0% 0	0% 0	16	3.69
It allows us to make a difference in Montenegro's financial sector	31% 5	56% 9	6% 1	6% 1	0% 0	16	4.13

Support Available to Alternative Finance & Fintech Entrepreneurs

The launch and growth of Fintech and alternative finance ventures depends on the level of support they get from government and private sector stakeholders. However, despite the plethora of initiatives by government and the regulator to develop the entrepreneurial and Fintech sector, respondents (63%) where unaware of government support available to them. For those aware, they manage to tap into various forms of support, with examples including the following:

- A grant of €10,000 and technical support
- Support for internationalisation of a venture in the form of a 50% contribution of costs to an international business-to-business fair. Such grants are available through the Ministry of Economy.
- Similarly, the Ministry also supports the purchase of large equipment by reimbursing 50% of the costs.
- The Ministry of Science provide tax breaks for investment in innovation.

However, the entrepreneurial sector would like to see more Government support specifically for the development of the Fintech sector. A majority (69%) want more technical support in the form of training and mentorship. Respondents gave examples of the specific type of technical support they would like to receive:

- Technical support for developers (possibly through classroom and on the job training)
- Provision of information and knowledge on the financial sector, with focus on specific sectors such as credit ratings, payment systems, etc.
- Facilitating knowledge and exchange of ideas between Montenegrin entrepreneurs and international Fintech companies
- Education on Fintech related regulation and compliance
- Education and seminars on new Fintech topics and developments.

More grants and funding (50%) should be made available. Fintech ventures are capital intensive and a grant of €10,000 may prove insufficient especially considering the costs associated with successful licensing, as well as development of systems and processes. Respondents desired for higher grant levels. More export support would be welcome, and this group would find it beneficial if government launched a specialised Fintech Park. Zero VAT rate for Fintech firms was a suggestion favoured by one respondent.

Tapping into Regulatory Support

The CBCG has done a good job in promoting their Fintech Hub, as 69% of respondents claimed to be aware of such regulatory support for Fintech innovators. Many (45%) have engaged with the Hub in some shape or form. However, none of the respondents felt this engagement was valuable. One respondent felt that the overall experience was valuable, however, they did not get any direct benefit because of this regulatory engagement. The majority (60%) felt that the engagement with CBCG's Fintech Hub was not a valuable experience.

On the other hand, 75% of respondents were unaware of the Regulatory Sandbox facility established by the Capital Markets Authority. For those aware of the facility, none have actively participated in the Sandbox facility although one individual plans to do so in the near future.

Private Sector Support for Fintech Entrepreneurs

The entrepreneurial ecosystem would also like to see more support from the private sector, with the following specific types of support cited by respondents to the survey:

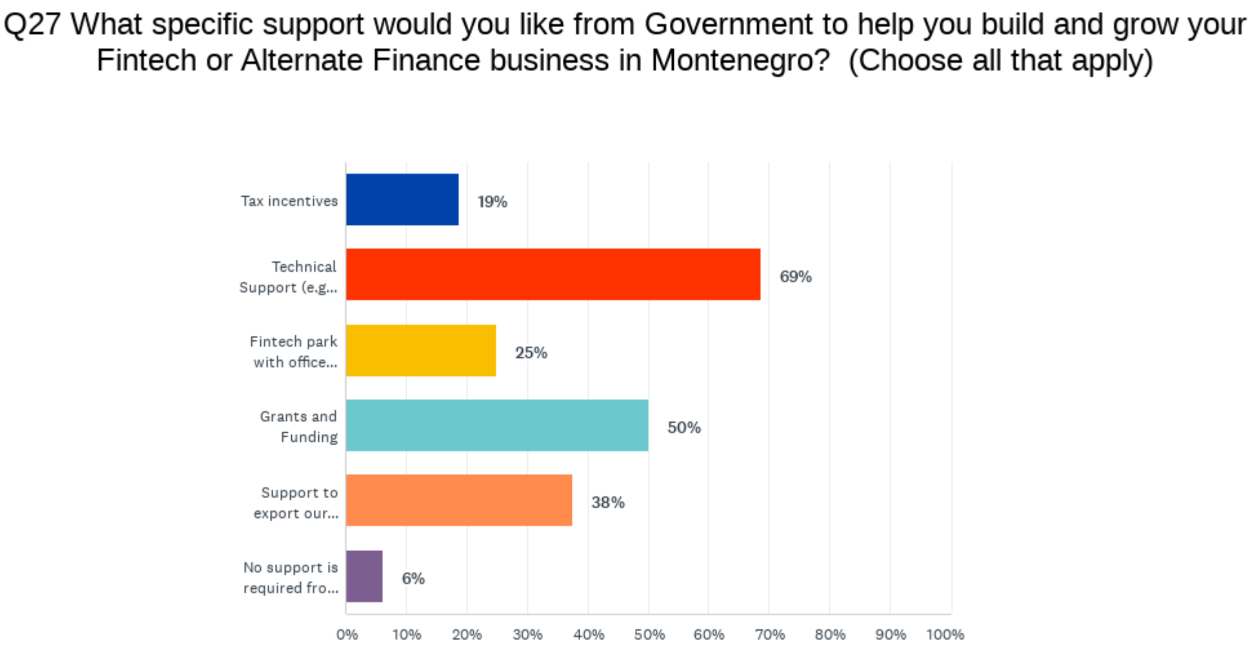
- Facilitating introduction to larger banks
- Facilitating partnerships with incumbent institutions
- Networking with banks and other incumbents, through regular get together and meetings
- Support in accessing investors locally and abroad
- Availability of more Fintech accelerators and incubators, and ensuring that there is a promotion of such facilities so that entrepreneurs can tap into the benefits they provide (there is a lack of awareness of accelerators and incubators)

Securing funding for an entrepreneurial venture is challenging (according to 50%) of respondents, and 25% find it almost impossible. Only 13% suggested it was relatively easy to secure investor funding. The key challenge is an under developed investor landscape in Montenegro. Current investors may be hesitant to invest in Fintech ventures because they fear existing laws may not support innovative Fintech business models, and hence they avoid investments in Fintech ventures.

Partnering with Incumbents

Entrepreneurs or smaller organisation find it “Challenging” (75%) to partner with incumbent institutions, and 6% find it almost impossible. However, 19% felt it was relatively easy to forge such partnerships.

Figure 23: Specific Government Support Desired



Respondents provided various reasons why it may be challenging to forge partnerships with incumbent firms:

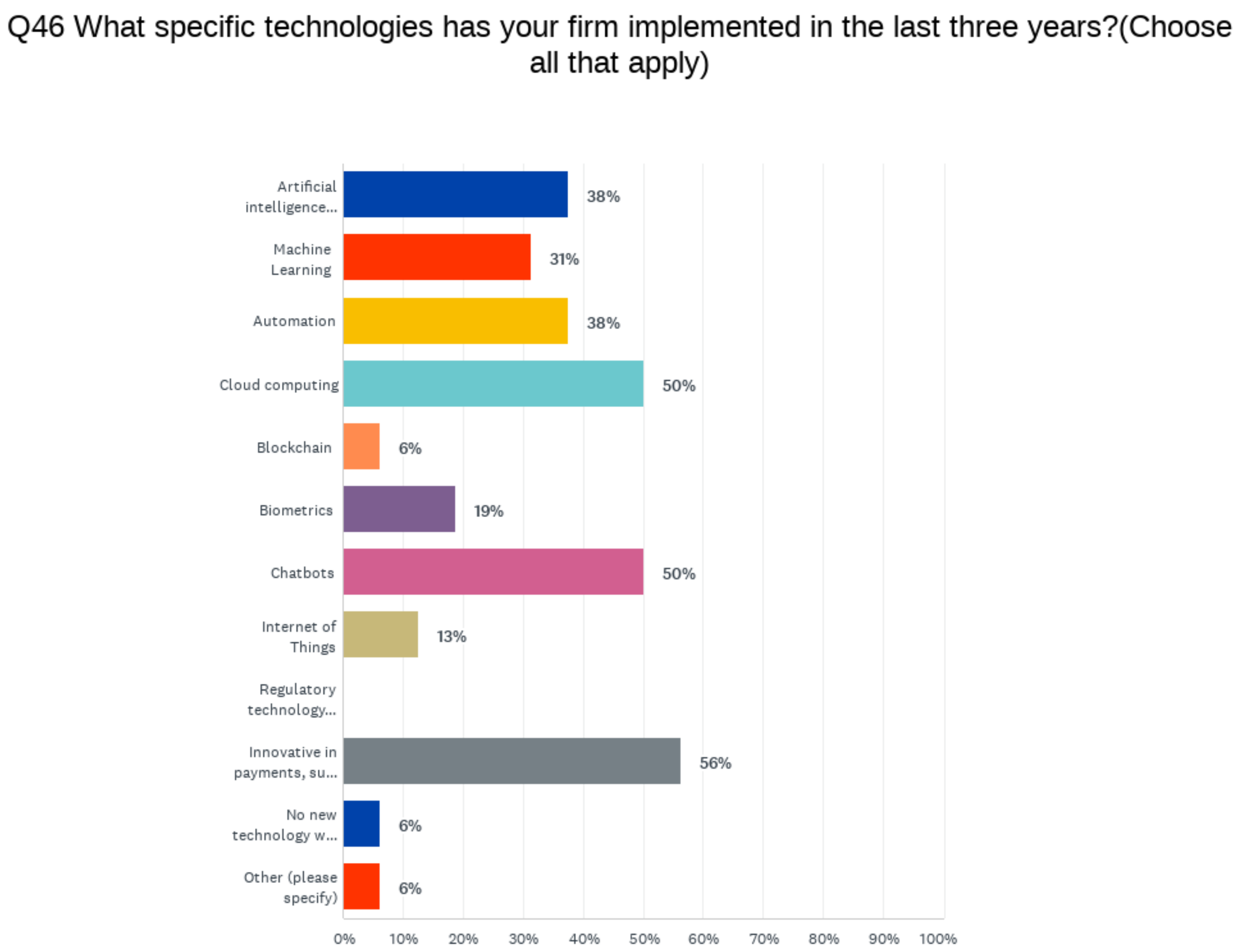
- Larger firms have a dominant market positioning and may not be open to collaborating with start-ups
- Current regulatory requirement may prevent incumbents from investing in or joint venturing with start-ups who are perceived as risky
- Incumbents work in traditional ways and are slow to adopt change, and therefore, they may be averse to exploring joint opportunities with fast moving Fintech ventures who are often at the cutting edge of technological and business model innovation
- Incumbents may be nervous of disruptors who could threaten their market share, and hence they avoid engaging with ventures who are perceived as disrupters.
- Incumbents do not have sufficient knowledge and expertise about new technologies and business models to constructively engage with new ventures.
- Incumbents have a conservative approach and complex governance arrangement that may present challenges for them to engage with Fintech ventures.
- Incumbents are dominant and may prevent Fintech led disruption to protect their market share and dominance.

What are Fintech & Alternative Finance Firms Implementing

Innovative payment solutions (such as e-wallets and QR code, is the most common initiative that this group is implementing in their organisations or developing solutions for financial firms (according to 56% of the surveyed population). This is not surprising given the imminent coming into force of new payment regulation in Montenegro. Fifty percent are implementing chatbot technology solutions and cloud computing. Automation, machine learning and artificial intelligence are being rolled out by a third of the sampled population.

It is interesting to learn that only three (19%) respondents are implementing biometric solutions and only one (6%) is working on blockchain technology. One would assume that digital identification solutions should be in high demand as Fintech newcomers and incumbents digitise end to end customer journeys. Similarly, with Montenegro's drive to set itself up as a blockchain hub, more solutions should be evident in the market place. The low adoption rate of these technologies may be explained by the type of respondents captured to complete the survey (in other words, people who were not adopting these solutions were captured in the sampled respondents, rather than those that were), or regulatory uncertainty (especially regarding digital assets) may explain the low numbers.

Figure 24: Technologies being implemented by Fintech and Alternate Finance Firms



ANSWER CHOICES		RESPONSES	
Artificial intelligence/Business Intelligence		38%	6
Machine Learning		31%	5
Automation		38%	6
Cloud computing		50%	8
Blockchain		6%	1
Biometrics		19%	3
Chatbots		50%	8
Internet of Things		13%	2
Regulatory technology (Regtech)		0%	0
Innovative in payments, such as e-Wallet, or QR Code		56%	9
No new technology was implemented in the last 3 years		6%	1
Other (please specify)	Responses	6%	1
Total Respondents: 16			

Another interesting finding reveal that none of the respondents were exploring any form of Regtech solutions, either to streamline risk management and compliance processes, or to develop automated regulatory reporting. Such solutions have the potential to significantly reduce compliance costs and enhance operational efficiencies that lead to lower operational losses when risks manifest. Although when asked which technologies could have the biggest impact on their firm in the next twelve months, many cited biometric and blockchain solutions. Payment solutions, artificial intelligence, and machine learning where other technologies than can have a big impact on the firms in future. Other interesting technologies that could appear in the Montenegrin financial sector in future, includes:

- Integration of Non-Fungible Token (NFT) in an e-wallet solution
- Business intelligence solutions using artificial intelligence and machine learning to data mine and drive efficiencies
- Internet of Things

6.2.6. Assessing the Entrepreneurial Ecosystem that Supports Venture Creation

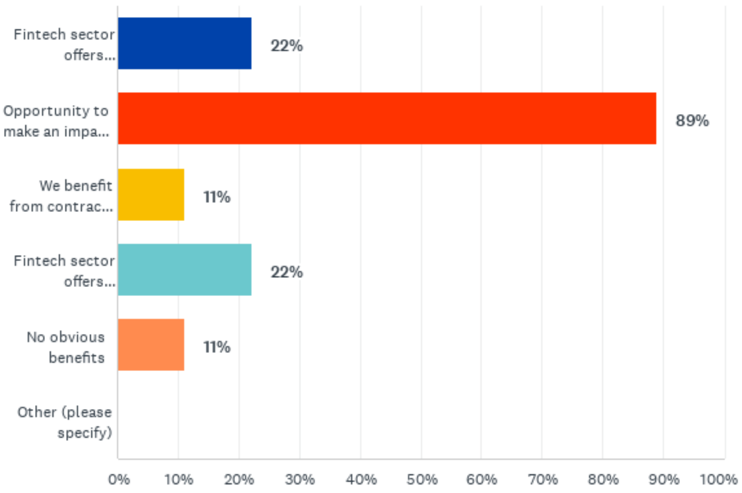
This group represented accelerators, incubators, technology hubs, investors, and development agencies (or donors). It's a small group with only 15 respondents, however, the small number is reflective of the fact that the entrepreneurial support private network is still under developed in Montenegro.

Majority (67%) do not at this stage support any Fintech or alternative finance ventures within their portfolio. The minority that are supporting Fintech ventures, provide traditional financial and technical support (e.g., mentoring) provided by accelerators. None of the respondents have developed a specific Fintech accelerator and instead provide generalised acceleration support available to all kinds of ventures. It can be argued that Fintech ventures may require specialised support, given the complex regulatory environment in which they operate.

For this group, Fintech provides an opportunity to make an impact in the financial system and the wider economy, according to 89% of respondents. For others, they offer lucrative investment and consulting opportunities, or the opportunity to provide technical support through development agency technical development facilities.

Figure 25: Benefits that the Entrepreneurial Supporters can gain from supporting Fintech Ventures

Q18 What are the biggest benefits that Fintech, offer to your organisation specifically?

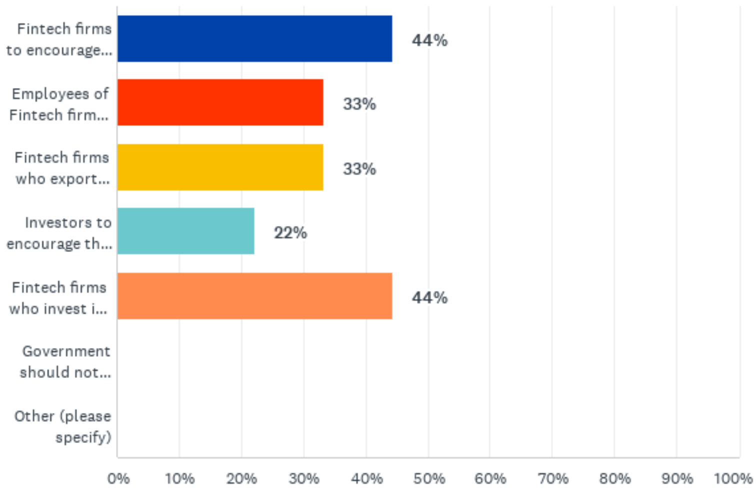


ANSWER CHOICES		RESPONSES	
Fintech sector offers lucrative investment opportunities		22%	2
Opportunity to make an impact in Montenegro (e.g. financial inclusion or economic development)		89%	8
We benefit from contracts awarded to support the development of Fintech.		11%	1
Fintech sector offers lucrative consulting opportunities		22%	2
No obvious benefits		11%	1
Other (please specify)	Responses	0%	0
Total Respondents: 9			

However, support may be slower, especially from investors, because 56% believe that current Fintech and alternative finance firms are not sufficiently geared to scale their business. They will require a lot more funding and support to become sustainable and then scale.

This group believes that Government tax incentives could stimulate the launch and growth of Fintech ventures (according to 44% of respondents). Tax incentives for research and development could see more Fintech innovation emerging in the Montenegrin financial sector. Tax incentives could also incentivise investors to actively look for and invest in Fintech ventures.

Q21 I believe Government should provide the following tax incentives to:Chose all that apply



ANSWER CHOICES		RESPONSES	
Fintech firms to encourage them to launch and grow?		44%	4
Employees of Fintech firms to encourage talent acquisition?		33%	3
Fintech firms who export their products and services		33%	3
Investors to encourage them to invest in Fintech firms		22%	2
Fintech firms who invest in Research and Development		44%	4
Government should not provide tax incentives for the development of Fintech		0%	0
Other (please specify)	Responses	0%	0
Total Respondents: 9			

The development of a National Fintech Strategy with realistic goals and activity plans may help to encourage more sustainable Fintech ventures to launch. Accelerators, incubators, and investors can then find a sizeable pool of start-ups to support, once the market starts to develop.

6.2.7. Assessing the Readiness of Educational Institutions to Support Fintech Skills Development

Twenty-seven representatives of educational institutions completed the survey specifically designed to capture the capacity building aspects of the Fintech ecosystem. Twelve respondents (52%) indicated that their educational institution does not offer any specific qualification or course in digital financial services or Fintech. Thirty five percent were unsure, and only 13% claimed to offer such specialised education. For this latter group, the following qualifications are available:

- Financial Innovation (Masters course)

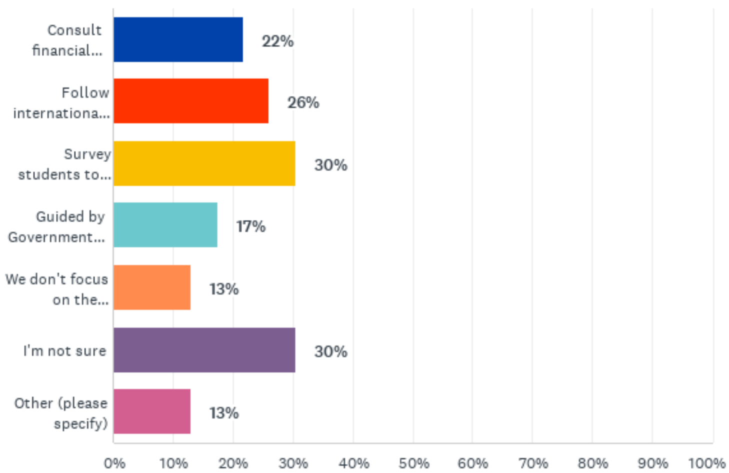
- Fintech at post graduate level within a few faculties

Sixty five percent were unsure whether their educational institution will offer DFS, or Fintech related specialised education qualifications in the next 12 months. Only 17% believed that their organisation has such future plans.

Educational institutions respond to student demand, and it is encouraging to see 61% of respondents believing that there will be sufficient student demand if their institution offer specialised DFS and Fintech qualifications.

Whilst educational institutions appreciate that sufficient numbers of students will demand Fintech qualifications, they must ensure that they respond to the skills demanded by the financial sector so that they develop courses and qualifications that are going to be useful to financial firms. Only a small proportion of respondents (22%) said that they would consult financial institutions to understand future Fintech skills needs, which will help them develop industry specific qualifications. A majority (30%) were unsure on how to assess this demand or survey students. Some follow international trends and develop courses emerging at international educational institutions.

Q15 How does your institution identify the specific training needs of the financial services sector?Choose all that apply



ANSWER CHOICES		RESPONSES	
Consult financial services institutions to understand emerging skills needed by the sector		22%	5
Follow international developments and replicate courses and qualifications developed by other universities		26%	6
Survey students to understand future demand for courses in DFS and Fintech		30%	7
Guided by Government policies and strategies to develop the Fintech & DFS sectors		17%	4
We don't focus on the financial services sector and therefore do not develop any related courses		13%	3
I'm not sure		30%	7
Other (please specify)	Responses	13%	3
Total Respondents: 23			

If educational institutions develop courses and qualifications without consulting the financial sector, who will utilise such skills in future, they risk developing curricula that is irrelevant or not readily utilisable by financial institution when they hire graduates. Under such a scenario, it's up to the financial institutions to provide further training, before the graduate reaches a level where they become useful to their employer. This added training period delays the development of Fintech and impose additional costs on financial institutions. These institutions may be reluctant to provide the practical layer of training, in the fear that once qualified, the employee is poached by a competitor and their investment in the individual is lost without any return being achieved.

Most survey respondents (61%) from educational institutions believe the financial industry themselves are best placed to develop Fintech skills. However, 61% also felt that Fintech can best be delivered at undergraduate and post graduate level, whilst 30% believed that Fintech is a sufficiently specialised subject that is more suitable at post graduate level only. One respondent suggest that Employment offices could facilitate industry practitioners to provide Fintech and DFS training to re-skill people, especially who are unemployed or people leaving educational institutions and entering the employment market.

To be valuable to the financial sector, Fintech education must incorporate a component for students to acquire practical skills. Sixty five percent of respondents believed that secondment to financial institution (as part of the course or qualification) is the best way for students to get the practical skills. However, other avenues to acquire practical skills include:

1. Joining a Fintech accelerator who can provide the practical training (according to 61% of respondents)
2. After qualifying, students must gain practical work experience before they are certified as Fintech or DFS professionals (according to 57% of respondents)
3. Hackathons was mentioned as an option by 48% of respondents, and
4. Joining a sandbox was cited as an option by only 13% of respondents.

In addition to the financial services industry and educational institutions themselves developing Fintech and DFS skills, respondents (91%) felt that government have a significant role to play in this area.

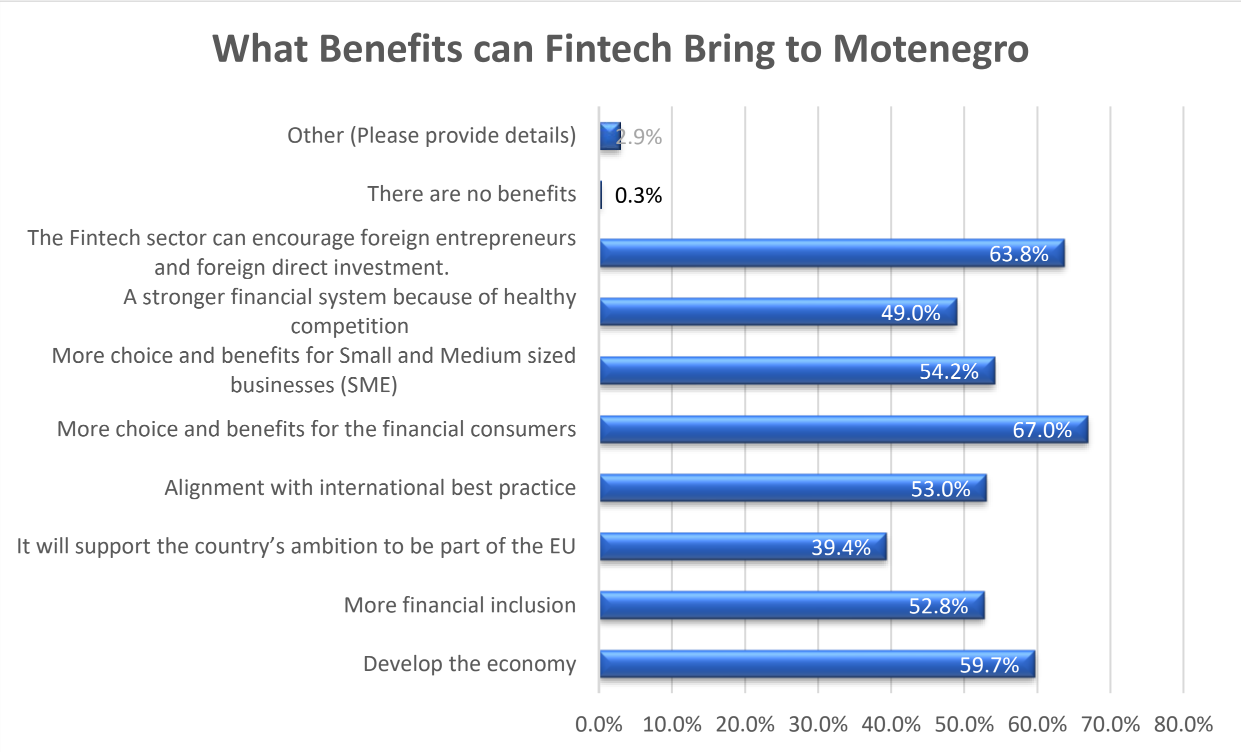
6.3. Perceived Opportunities and Benefits of Fintech for Montenegro

Collectively among the seven stakeholder groups surveyed 67% believe that Fintech provides more choice and benefits for financial services consumers and 54% believe that SMEs can benefit, perhaps because they are able to access financial services that they may not have been able to access through traditional channels. Overall, 53% of respondents believe that a well-developed Fintech ecosystem can drive greater levels of financial inclusion and financial accessibility.

A well-developed Fintech ecosystem can be used to encourage foreign entrepreneurs to launch Fintech ventures in Montenegro (according to 64% of respondents)), possibly testing their solution in a small market before expanding into the wider Western Balkans markets or beyond. Fintech has the potential to provide greater access to finance to underserved communities. Businesses that can access finance, can build more resilient and fast-growing businesses that creates products and services demanded by consumers, and they also are an engine of job growth. Overall, Fintech can indirectly benefit the wider economy (according to 60% of respondents from all stakeholder groups).

Fintech developments can help align the financial services sector with international best practice according to 53% of respondents, and 40% therefore believe that it improves Montenegro's chance to become an EU member state.

Figure 26: Consolidated Perception of the Opportunities and Benefits that Fintech can bring to Montenegro



Individual stakeholder responses on the wider benefits of fintech are highlighted in Annexure B.

Incumbents welcome the opportunity to increase operational efficiencies and drive cost reduction using technologies. They also highlight the possibility to deliver more products and services to consumers, which may not have been possible with legacy systems. Alternative Finance and Fintech newcomers look forward to opening new untapped markets where they can avoid competition from incumbents, at least in the early stages, until their business model proves successful. Investors envisage lucrative returns from Fintech ventures, once the ecosystem is sufficiently well developed to produce high quality Fintech start-ups. Government and regulators welcome the opportunity to drive greater levels of financial inclusion and more choice for consumers. There is consensus that Montenegro can position itself as an attractive foreign destination for entrepreneurs and digital nomads who use the small market to prove their concept before expanding beyond the borders of the country, perhaps into other Western Balkans countries or further afield.

Based on the highest response rate for this question among each stakeholder group we can establish the primary benefit specifically for each stakeholder group. Government envisage greater level of financial inclusion (60%), while regulators welcome more choice and benefits for the financial consumer (69%). Interestingly, incumbents also welcome more choice and benefits for consumers (59%), however it's not clear whether they envisage this benefit for their clients or for underserved communities who are not yet customers of incumbent's firms. Alternative finance firms and educators envisage that Fintech can bring economic benefits to the country (72%). The accelerators and incubators believe that the biggest benefit of Fintech is that it can encourage foreign entrepreneurs to establish local Fintech ventures. Associations believe that the biggest benefit of Fintech is the choice and benefits it brings for SMES.

6.4. Perceived Barriers, Challenges and Risks of Fintech for Montenegro

Lack of Fintech skills with the supply side of the Fintech ecosystem, and lack of digital financial literacy on the demand side was perceived (by 60% of all respondents to the seven surveys, collectively) as the biggest challenge for the implementation of Fintech in Montenegro. Next in line is the perception by 53% of respondents who believe that the regulatory environment is challenging and may pose a challenge to the launch of innovative Fintech products and services. Apart from new payment regulation, Montenegro does not currently have specific laws on new business models such as crowdfunding or businesses operating in the digital assets space. Therefore, this concern may be justified.

Despite Government's efforts to support the development of entrepreneurship, 45% of all respondents concurred that there is insufficient support to launch Fintech ventures. Lack of government support specifically in this space may be explained by the relatively under developed Fintech ecosystem in Montenegro that is not as yet producing healthy Fintech ventures. Forty nine percent want to see more incentives from government specifically aimed at encouraging the launch and growth of Fintech ventures.

Montenegro has a relatively small financial services sector, however, only 34% of respondents felt that this was one of the biggest obstacles to the launch of Fintech ventures. International experience highlights that incumbents leave gaps open in the financial sector for Fintech newcomers to exploit. Incumbents may be cost constrained to serve certain segments of the individual or business population, or these segments may not be commercially viable for them. The survey data suggest that entrepreneurs are aware of these market gaps and for those who are savvy, the small market size does not seem to hinder their ambitions. Of course, as competition grows, these untapped market segments close quickly, and Fintech entrepreneurs may need to look to external markets to scale their businesses.

Similarly, with an under developed investor ecosystem, it is also surprising to find that only 23% of all respondents felt that Montenegro lacks investors who are willing to fund Fintech ventures. If the right opportunities present themselves, investors will become more interested in this sector, as it does offer high growth potential in a very short space of time, as is highlighted by international experience. Given the right opportunities, investors will emerge locally and from foreign venture capital markets.

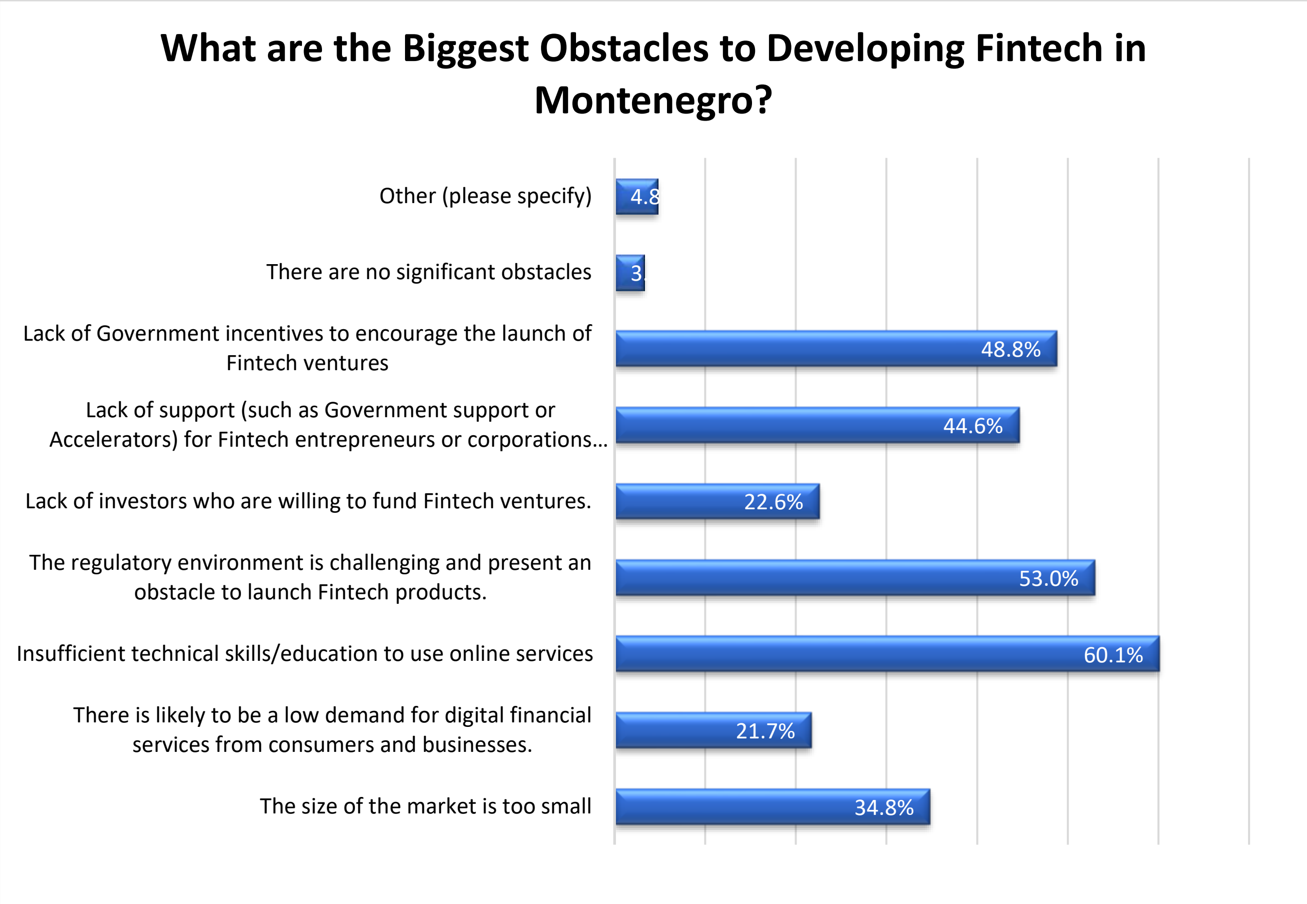
A further encouraging finding is that only 22% of all respondents expressed concern that there is unlikely to be strong demand for Fintech products and services by individuals and businesses. The data suggest that there is a recognition that demand will be generated if Fintech innovators offer greater access to financial services in a more convenient and cost-effective manner. International experience also highlights an accelerated adoption of digital financial services because of the social distancing constraints imposed by the COVID-19 pandemic.

Qualitative responses provide greater insights into potential challenges that could emerge for the development of the Fintech ecosystem:

- The changing political landscape could pose an obstacle, as new Ministers may bring their own focus, and de-prioritise Fintech developments, or counter strategies already adopted.
- An unsupportive environment may be the key obstacle to the development of Fintech in Montenegro. As already highlighted, the entire Fintech ecosystem must work harmoniously to develop the Fintech sector. Efforts in isolation may be ineffective to bring about transformative change across the financial services industry. For example, regulators forming a Fintech Hub and Sandbox will only bear fruits if there are specialised Fintech accelerators and incubators who work to get entrepreneurial Fintech ventures ready for licensing and to gain market traction once they successfully win over a license.
- Despite data suggesting otherwise, there is still concern expressed at the lack of demand, because of a lack of financial literacy, or lack of trust in online payments. Fears about abuse of personal data may prevent the adoption of digital financial services.
- An unwillingness by incumbents (and mainly banks) to collaborate with Fintech newcomers, may pose a significant obstacles. New ventures can gain quick market traction if they can rely on incumbents' regulatory license and get technical and financial backing from established players.
- The regulatory framework is outdated and may constrain the development of Fintech.

- The country has a negative perception internationally and may not be able to attract foreign Fintech entrepreneurs. This may be due to the small market size, or the fact that the country is relatively less well known across wider Fintech markets.

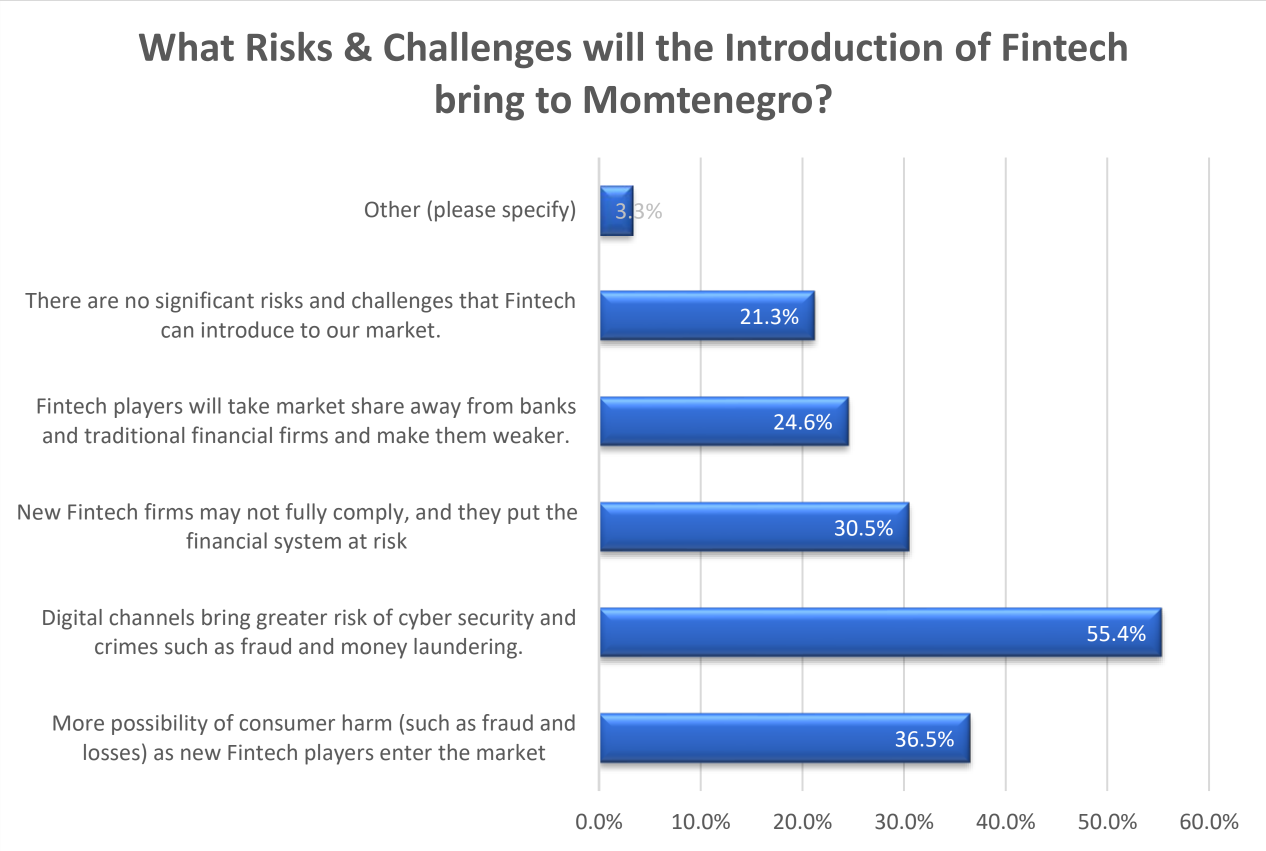
Figure 27: Consolidated Perception of Obstacles, Risks and Challenges that Fintech can bring to Montenegro



Introducing Fintech led change to the financial system changes the risk assessment of the entire system. The threat of cyber security is considered the most significant risk of Fintech (by 55% of all respondents collectively). As more products and services are delivered through digital channels in a Fintech world, the transactions, systems, and customer data are exposed to hacking that can result in client impersonation, flaws in systems and automated processes, and the threat of greater levels of fraud if cyber criminals are able to get access to confidential financial and personal data.

Consumer harm is a concern expressed by 37% of all respondents across the seven stakeholder groups. It can result directly because of cyber-attack, or because unscrupulous or negligent Fintech newcomers expose customer funds to risk. Regulators in other countries like the United Kingdom found that unfair, misleading, or enticing financial promotions can lead to consumers making the wrong financial decisions that can cause harm. Early-stage businesses are at pressure to gain market traction and may therefore be motivated to use sharp marketing practices to sell products and services to consumers.

Figure 28: Risks and Challenges Introduced by Fintech



Concern was expressed by 31% of all respondents that Fintech newcomers are not as apt at complying with complex regulatory requirements as their incumbent counterparts are. Non-compliance with financial promotion rules, suggested above, is one example of consumer harm arising from compliance failures. Start-ups may lack regulatory knowledge within their team and may thus inadvertently breach regulatory requirements designed to protect consumers. They may also struggle to recruit experienced compliance professionals, either because they are prohibitively expensive or the entire financial system face compliance skills shortage. Regulators could impose a certain level of regulatory skill requirement on the founding team; however, such a move could burden start-ups who may be unable to meet the requirement and thus denied a license.

A minority of incumbents (25%) are rightly concerned about losing market share to Fintech newcomers. If they lose sufficient market share, smaller banks could be forced to close, exposing the system to contagion risk. However, it is also clear from international experience, that Fintech newcomers generally seek out untapped markets rather than encroach on market share already held by incumbents. Their presence increase the overall size of the market rather than redistribute market share. So, it's unlikely that in the early days, Fintech newcomers will succeed at taking market share away from incumbents. However, there are areas where this dynamic is possible, for example small business lending, where Fintech solutions prove more effective in assessing credit risk of small firms that lack traditional credit history. Overall, more players in the financial system increase the breadth of the market, creating room for failure of weaker sub-standard players, without affecting the entire financial system, through contagion risk, for example.

Other significant risk factors captured through an open question include the following:

- Regulators fear that mechanisms created to support Fintech newcomers, may divert resources away from day-to-day supervisory oversight, which can lead to unintended consequences and unexpected risk exposures, which requires firefighting instead of proactive mitigation.
- There is a challenge to achieve consumer protection whilst loosening regulatory requirements to accommodate Fintech newcomers.
- There is a heightened threat of data breaches as information goes online.

A small but sizeable proportion (21.3%) of the total respondent population perceives no risks or challenges arising from the introduction of Fintech within Montenegro. This may be an uninformed response reflecting the positive and eager stance of the industry, or the responses could be well thought out with respondents already having plans to identify and manage any arising risks. Based on their qualitative comments, respondents have in some cases offered risk mitigating strategies, so it is hoped that their response is informed.

Each stakeholder group perceive their own specific obstacles risks and challenges, and their responses are summarised in Annexure C. Consistently, all stakeholder groups are concerned about cyber security risks arising from Fintech and digital financial services. More specific risks and challenges for each stakeholder group are analysed in subsequent sections.

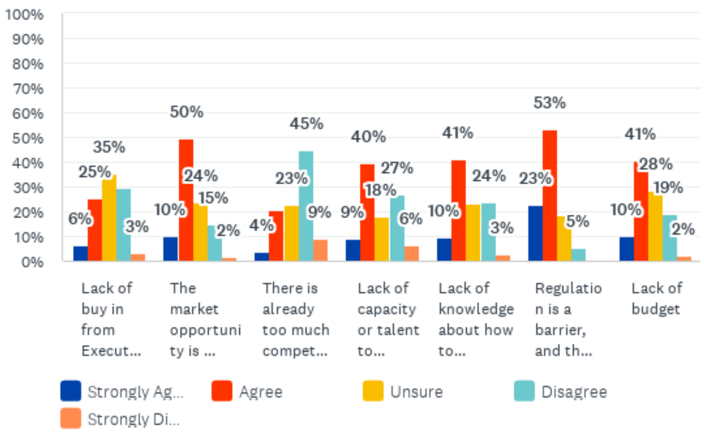
6.4.1. Specific Fintech Related Obstacles & Challenges & Risks for Traditional Financial Services Firms.

Incumbents approach Fintech through digital transformation initiatives or through a cohesive strategy. Incumbents believe that regulation is the biggest challenge to implementing digital transformation (according to 76% who answered, “Strongly Agreed” and “Agreed”). Sixty percent believe the market is not big enough to justify the investment in digital transformation. Lack of budget is a constraint highlighted by 51% of incumbent respondents and 49% acknowledged that lack of capacity or talent is a constraint to achieving digital transformation.

It is encouraging to reflect on 54% of respondents who did not feel that there is already too much competition and therefore, efforts to digitally transform, are futile. Despite the competition among incumbents, they still perceive value in pursuing digital transformation to strengthen their competitive positioning.

Figure 29: Biggest Challenges of Fintech for Incumbents

Q19 What are the biggest challenges you are likely to face when implementing digital transformation strategies or launching digital products and services?



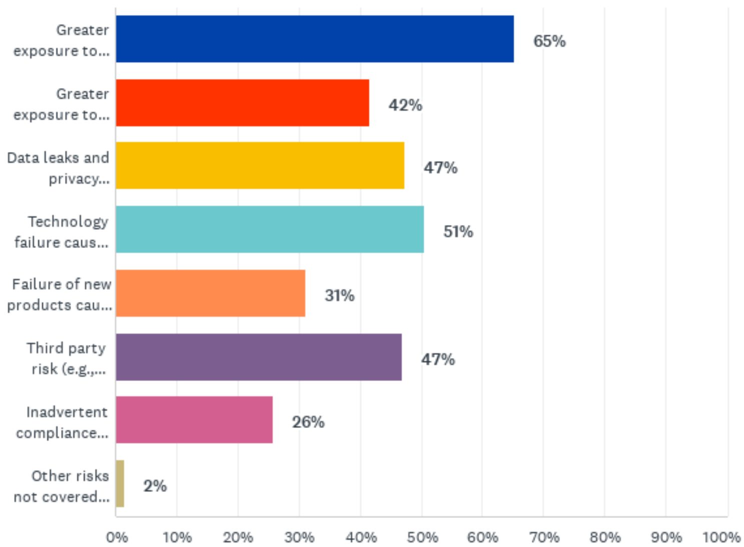
	STRONGLY AGREE	AGREE	UNSURE	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
Lack of buy in from Executives or Managers	6% 12	25% 47	35% 66	30% 55	3% 6	186	2.73
The market opportunity is not big enough to justify investment	10% 19	50% 93	24% 44	15% 28	2% 3	187	3.37
There is already too much competition in our sector	4% 7	20% 37	23% 41	45% 81	9% 16	182	2.21
Lack of capacity or talent to implement digital solutions	9% 17	40% 75	18% 34	27% 51	6% 12	189	2.91
Lack of knowledge about how to implement digital transformation or build digital products	10% 18	41% 77	23% 43	24% 44	3% 5	187	3.08
Regulation is a barrier, and they need to change?	23% 42	53% 99	18% 34	5% 10	1% 1	186	3.87
Lack of budget	10% 18	41% 75	28% 52	19% 35	2% 4	184	3.18

Fintech introduce new risks for incumbents and the top five risks revealed from the survey include:

1. Greater exposure to cyber security risk (65%)
2. Technology failure causing business disruption and losses (51%)
3. Third party risk (e.g., vendor failure in cloud computing solutions) (47%)
4. Data leaks and privacy breaches (47%)
5. Greater exposure to external fraud.

Figure 30: Biggest Risks of Digital Transformation for Incumbents Firms

Q20 What are the biggest risk exposures of digital transformation for your organisation? Choose a Maximum of Five (Top five Risks)



ANSWER CHOICES		RESPONSES	
Greater exposure to cyber risks		65%	124
Greater exposure to external and internal fraud		42%	79
Data leaks and privacy breaches		47%	90
Technology failure causing business disruption and losses (Operational Risk)		51%	96
Failure of new products cause strategic and reputational damage		31%	59
Third party risk (e.g., vendor risk in cloud solutions)		47%	89
Inadvertent compliance failures (e.g., laws on distance marketing)		26%	49
Other risks not covered above (please provide details)	Responses	2%	3
Total Respondents: 190			

6.4.2. Specific Fintech Related Obstacles & Challenges & Risks for Fintech & Alternative Finance Firms.

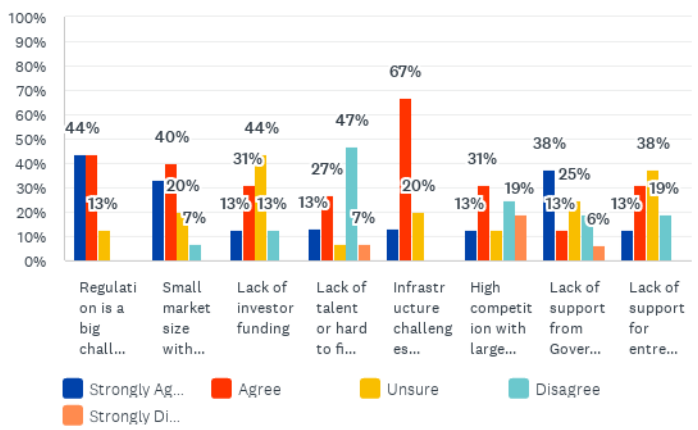
Consistent with the response of incumbents, alternative finance and Fintech firms also rank regulation as their biggest obstacle or challenge to the development of Fintech products and services (according to 88% of respondents). Seventy three percent believe that the small market offers little commercial opportunities to launch new digital ventures, products, and services.

Eighty percent highlight infrastructure challenges as a barrier to development of Fintech. Infrastructural issues can include things like electronic signature laws and infrastructure, or for non-banks to get access to payment solutions in a cost-effective manner. Forty four percent acknowledge lack of investor funding is a constrain to their launch and growth of a Fintech venture.

It's encouraging to learn that 54% of respondents did not believe that a lack of talent is a constraint, and 44% did not think that they will face a high level of competition from incumbents.

Figure 31: Biggest Challenges faced by Alternative Finance Firms to launch Fintech Ventures

Q17 What are the biggest challenges that your firm faces in Montenegro?

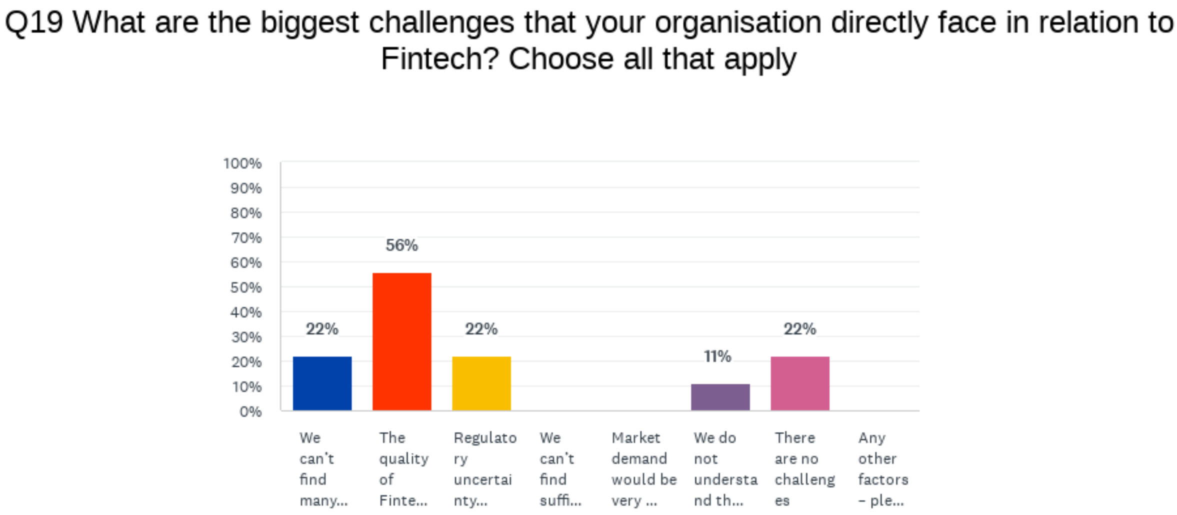


	STRONGLY AGREE	AGREE	UNSURE	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
Regulation is a big challenge for us and our sector	44% 7	44% 7	13% 2	0% 0	0% 0	16	4.31
Small market size with little commercial opportunities	33% 5	40% 6	20% 3	7% 1	0% 0	15	4.00
Lack of investor funding	13% 2	31% 5	44% 7	13% 2	0% 0	16	3.44
Lack of talent or hard to find talented staff	13% 2	27% 4	7% 1	47% 7	7% 1	15	2.93
Infrastructure challenges (e.g., access to payment gateway, or electronic signatures)	13% 2	67% 10	20% 3	0% 0	0% 0	15	3.93
High competition with large traditional players	13% 2	31% 5	13% 2	25% 4	19% 3	16	2.94
Lack of support from Government	38% 6	13% 2	25% 4	19% 3	6% 1	16	3.56
Lack of support for entrepreneurs and start-ups	13% 2	31% 5	38% 6	19% 3	0% 0	16	3.38

6.4.3. Specific Fintech Related Obstacles & Challenges & Risks for Accelerators, Incubators & Investors

The most significant challenge faced by this group is the lack of quality Fintech ventures that can be supported (according to 56% of respondents). Significant development is needed before quality players emerge in the ecosystem. Regulatory uncertainty around Fintech prevent this group from providing support to these ventures (according to 22% of respondents). Some accelerators and investors (11%) do not understand this sector and will therefore stay away from supporting it.

Figure 32: Specific Challenges faced by Accelerators, Incubators, and Investors to Support Fintech Development



ANSWER CHOICES	RESPONSES	
We can't find many Montenegrin Fintech firms to support or invest in	22%	2
The quality of Fintech ventures that we see, is still low and needs further development	56%	5
Regulatory uncertainty prevents us from supporting or investing in Fintech ventures	22%	2
We can't find sufficiently skilled mentors to support Fintech ventures	0%	0
Market demand would be very low for Fintech products and therefore we do not support Fintech ventures	0%	0
We do not understand this sector and therefore prefer to stay away	11%	1
There are no challenges	22%	2
Any other factors – please provide as much details as possible Responses	0%	0

6.5. Key Regulatory Barriers for the Development of Fintech

As regulation was cited as one of the biggest barriers to the development of Fintech, it deserved focused attention, so that in future, regulators can develop strategies to overcome such limitations. In response to being asked which laws present the biggest hurdles, 54% of all respondents combined, suggested that lack of specific laws for Fintech decentralised finance and alternative finance business models is one of the biggest regulatory barriers. Legal uncertainty constrains the development of the

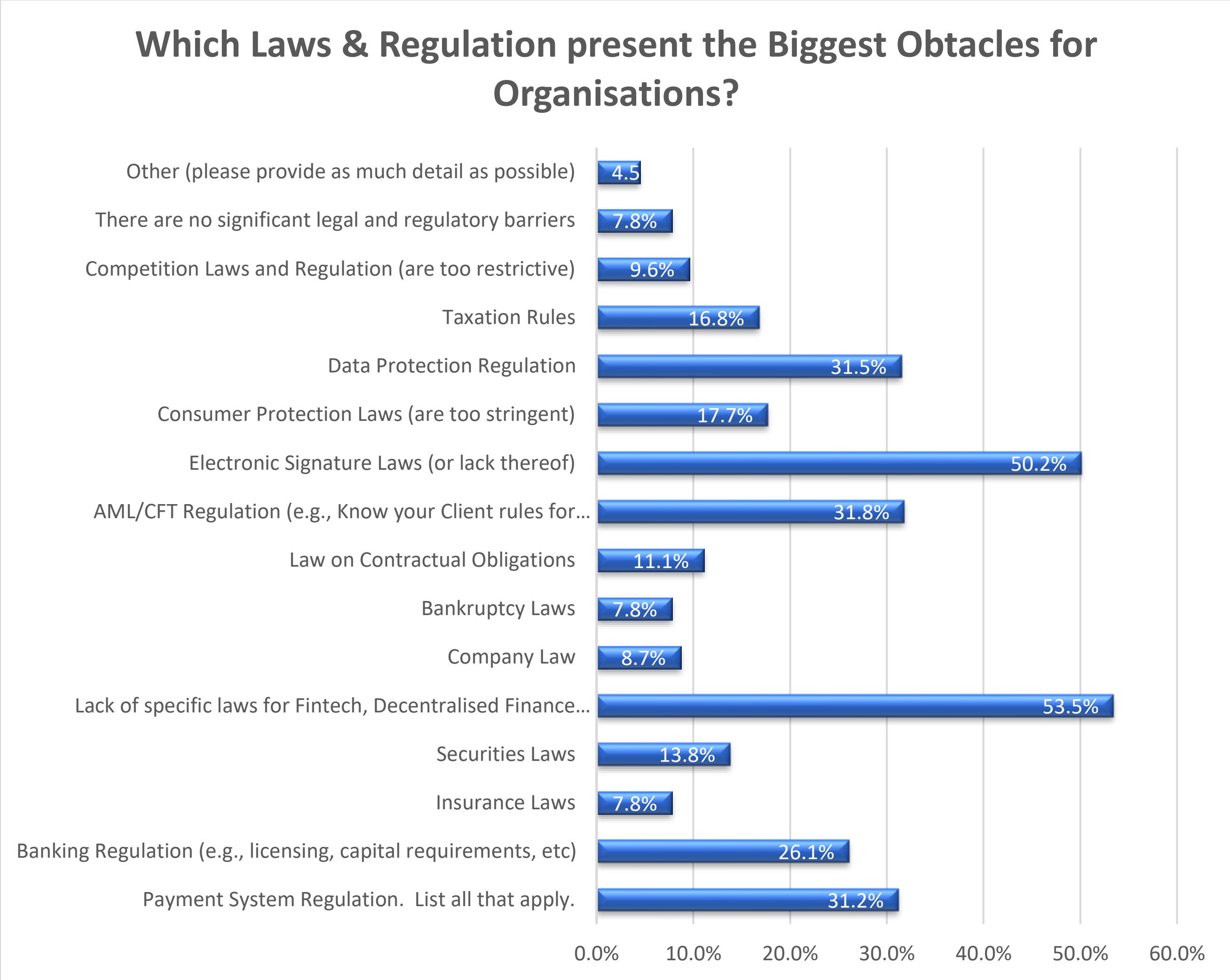
Fintech sector in Montenegro according to the surveyed group of people from diverse stakeholder groups.

Lack of electronic signature laws comes in as the second biggest challenge according to 50% of respondents. As expected, AML/CFT regulation is bound to be a challenge if electronic signature law is absent and prevents digital identification of customers and remote transaction verification.

Consistent with responses to other questions highlighted above, data protection regulation can pose a challenge to the development of Fintech, although it is not clear what aspects of data protection law pose a particular challenge. Payment (according to 31% of respondents) and banking (according to 26% of respondents) laws are thought to pose regulatory barriers for the development of Fintech. Whilst the survey did not delve into specific aspects of these laws, we can assume that the respondents are referring to existing payment regulation (based on PSD 1) rather than the new regulation that will come into force in the near future.

Banking regulation could be challenging because of limitation imposed on banks to acquire Fintech ventures. Banking regulation is onerous and requires high capital adequacy levels, which can be prohibitively expensive for start-ups. One respondent suggested that the banking regulation is not aligned with international best practice and therefore may not be able to accommodate digital banking and digital financial services.

Figure 33: Laws that Present a Barrier to the Development of Fintech



It's encouraging to see a small proportion (8%) do not envisage any legal barriers to the development of Fintech. When asked about other legal barriers (not listed in the survey question), respondents provided the following responses:

- Law on Prevention of Illegal Business (Article 5 specifically). In terms of this law, legal entities and entrepreneurs are legally obliged to open a bank account in line with the regulatory requirements. All business-related financial transactions (such as paying employees and , taxes) must be operated through this bank account so that an appropriate accounting record is maintained.
- Lack of GDPR equivalent data protection legislation may pose as a barrier
- Labour law was considered as a barrier, without any further explanation on why it poses a barrier. Perhaps labour law is overly protective of employees, making it challenging to dismiss non performing staff. However, this assertion will need to be validated.
- Even if laws on Electronic Signature are in existence and robust, courts are not sufficiently experienced to give effect to the laws, making it impossible for end-to-end digital financial services.

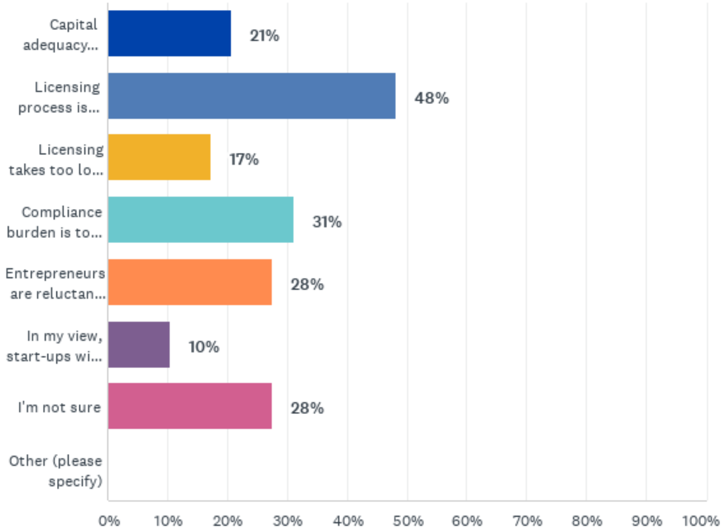
- One respondent highlighted that contradiction exists between certain laws and by laws that may result in incorrect interpretation and create legal uncertainty.
- The legislative process is slow, and the legal system may not be quick enough to follow developments of the Fintech sector. The new payment regulation is a good example, as it has taken more than three years to bring the regulation to a final stage of promulgation. The development of Fintech will be severely constrained if laws take years to come into force.
- Licensing requirements are onerous, and specifically insurance laws for authorisation was highlighted.
- Laws are too strict and, in most cases, not aligned with EU regulation (and therefore international best practice)
- Law on Obligations, Bill of Exchange, Law on Notaries, were all considered to be barriers (with no specific detail as to why they pose challenges)
- Several respondents suggested that it is not the law that is a problem, but the interpretation and implementation of the law that poses a challenge.

Suggestions for overcoming legal barriers include the need for harmonising the legal framework, revise regulation and align them with EU regulation, and streamlining the legislative process, so that laws can come into force quicker

Regulators were asked to provide their perspective on the regulatory barriers that FinTech start-ups face under the current regulatory regime. They (48%) acknowledged that the licensing process is challenging for start-ups. The process itself is onerous and the requirements that must be met to be awarded a license are also equally onerous (for example high capital adequacy requirements). Once licensed, ongoing compliance is a burden for start-ups (according to 31% of regulatory respondents) who lack adequate compliance resources, or lack in depth compliance knowledge and experience within the founder and management team. Regulatory challenges dissuade entrepreneurs from launching Fintech ventures according to 28% of the regulators that responded to the survey.

Figure 34: Key Regulatory Barriers for Fintech Start-ups from Regulators Perspective

Q16 What do you believe are the key regulatory barriers Fintech start-ups could face when launching their venture? (for example, high capital requirements, licensing process, compliance burden, etc)



ANSWER CHOICES		RESPONSES	
Capital adequacy requirements are too high		21%	6
Licensing process is challenging for start-ups		48%	14
Licensing takes too long (and start-ups have to wait a long time before earning revenue)		17%	5
Compliance burden is too high for start-ups, who lack regulatory capacity and skills.		31%	9
Entrepreneurs are reluctant to launch Fintech ventures because of complex regulatory requirements		28%	8
In my view, start-ups will face Little to NO regulatory barriers to launch their Fintech venture		10%	3
I'm not sure		28%	8
Other (please specify)	Responses	0%	0
Total Respondents: 29			

7 EXPLORING THE FUTURE TRAJECTORY OF FINTECH AND ELEMENTS OF A FINTECH STRATEGY

This landscaping survey is a step in the process to develop a National Fintech Strategy. The findings from the survey highlighted key opportunities and challenges and with additional research, they form the foundation of building a concrete set of recommendations for each stakeholder groups. The recommendations will then form the foundation on which to develop a National Fintech Strategy. The strategy will capture the important element of developing a governance, oversight and implementation mechanism that can give effect to the implementation of each recommendation for each of the stakeholder groups. At each stage of the journey, stakeholders will be consulted to ensure that the strategy is developed by the Fintech ecosystem within Montenegro, rather than being a document developed based only on theory and international developments.

The survey was an ideal platform to gauge the future developments of the Fintech Ecosystem, and to get ideas on what stakeholders would want to see included in a national strategy. Future gazing can help prepare the industry for Fintech led change, and if they are already aware of technologies and business models likely to emerge in future, work can commence to develop those solutions or regulators could gear up to prepare for supporting and licensing new business models, or internal processes based on new technologies.

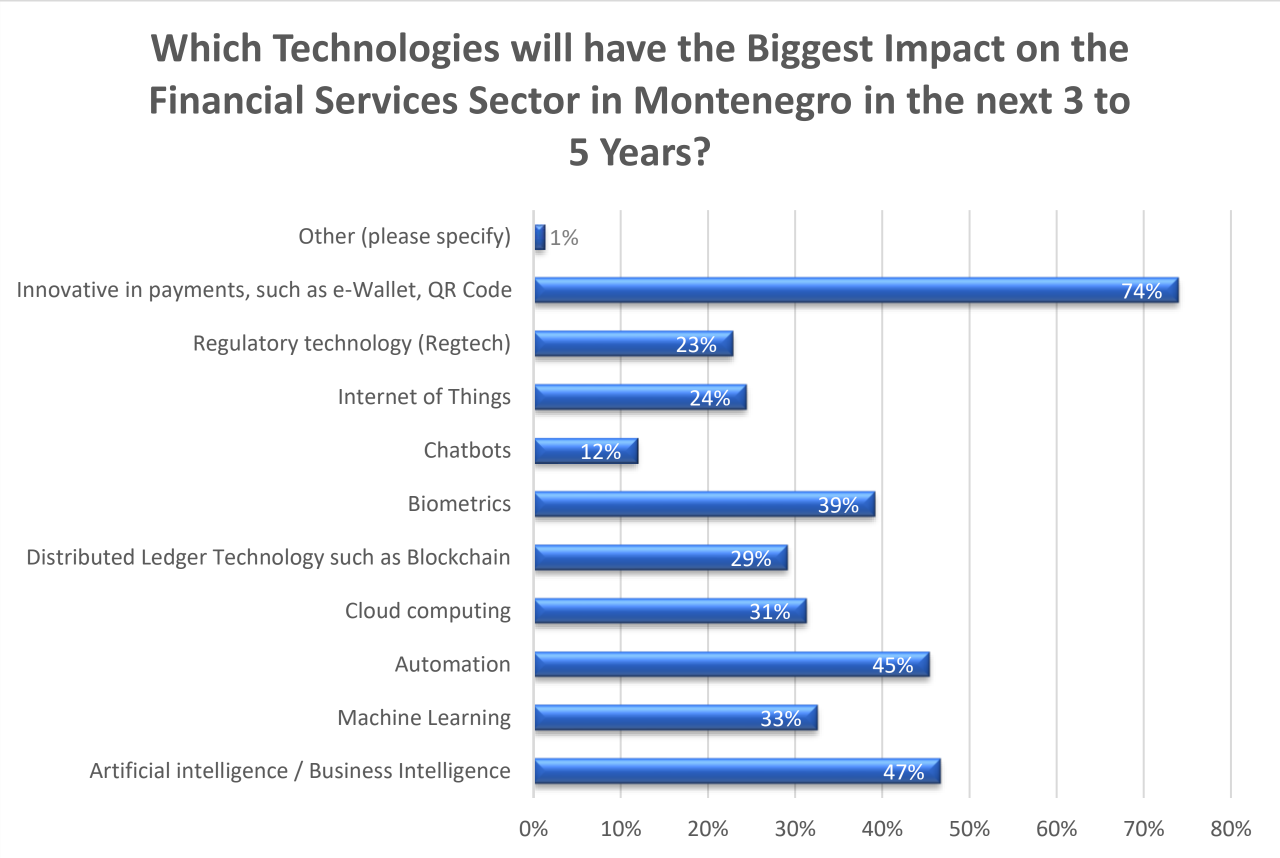
7.1. Future Technologies Likely to Emerge in Montenegro

International experience highlights that Fintech often starts with innovation in the payments area and Montenegro is no different. Seventy four percent of all respondents collectively believe that new payment solutions will have the biggest impact on the financial sector in the next three to five years. This is followed by Artificial Intelligence solutions (mentioned by 47%) and automation (mentioned by 46%). The results make intuitive sense, as the new payment regulation will drive more innovation in this area, and Montenegro will also see a few new Fintech based payment providers entering the market directly because of the new regulation. Incumbents looking for cost reduction or data mining to deliver a better customer experience will be looking for automation and artificial intelligence solutions. Fintech newcomers may incorporate these technologies into their systems and processes from day one.

End to end digital financial services will require systems that can securely and remotely identify the customer and validate transactions. Therefore, it is not surprising to see 39% of respondents believing that biometric technology will have a significant impact in the coming years. Lesser focus is received by Internet of Things (only 24%) and Regtech solutions (only 23%). Global experience confirms that insurtech is often a laggard in the Fintech development lifecycle. IOT devices are key features of insurtech solutions if they are not gaining prominence in the current survey, then it indicates that digital transformation of the insurance sector may be pushed a few years into the future (in other words, beyond the three-to-five-year horizon.

Regtech solutions gain prominence, when regulators develop solutions that allow systems within financial institutions to directly communicate with regulatory reporting and supervisory systems. Regtech can be an ideal solution to automate routine compliance reporting. However, to get these solutions to work, regulators must develop infrastructure that can connect to systems of financial services firms, through APIs, and over and above this connection, regulators need to ensure an intelligent system that can read and analyse the data being submitted to them, without the need for human intervention. From the survey response, it seems like such technologies will become more prevalent beyond the five-year mark and is something to focus on in the future.

Figure 35:Future Technologies Likely to Emerge in Montenegro's Fintech Ecosystem in the next Three to Five Years



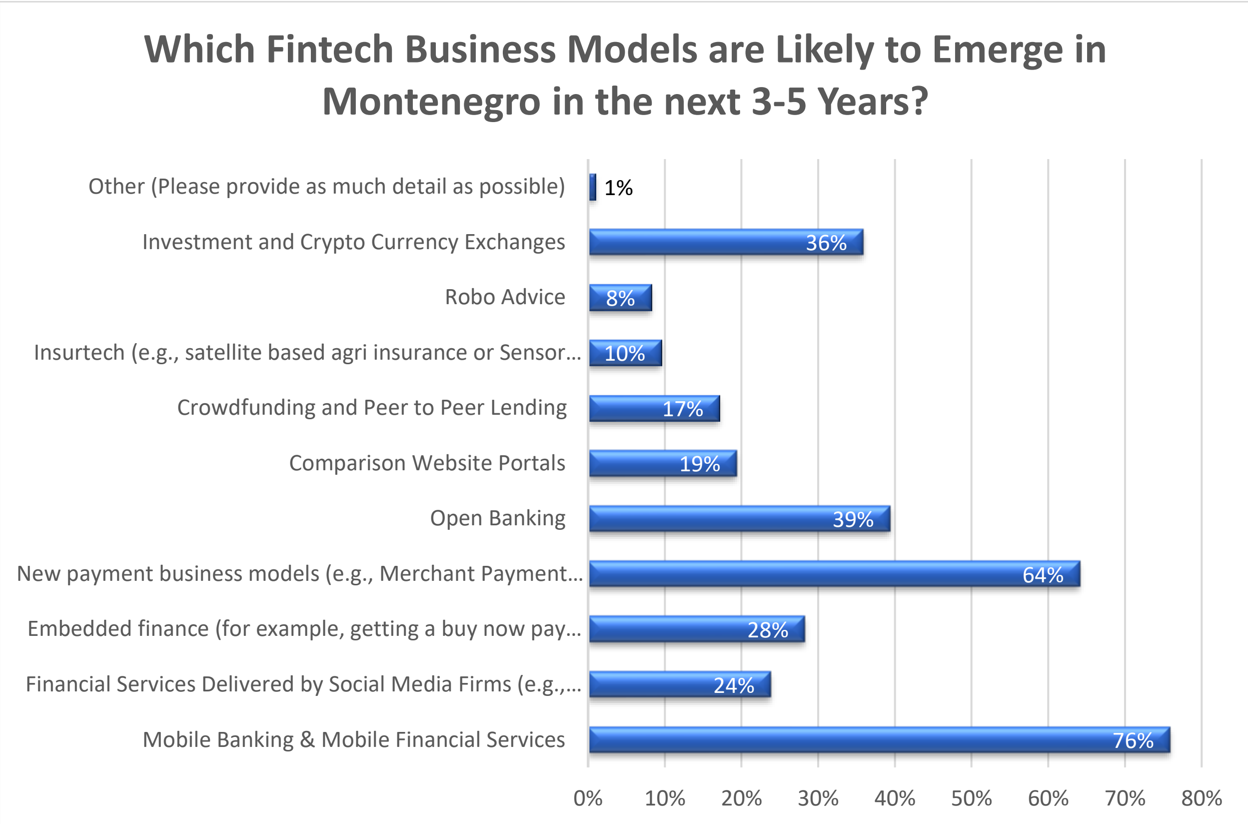
Surprisingly, chatbots feature low on the list as it was only mentioned by 12% of respondents. This may be explained by the fact that financial services firms may already be in the process to implement these solutions now rather than in the future. Distributed Ledger Technology (and Blockchain) again receive less attention than expected, as only 29% thought that these technologies will gain prominence in the next three to five years. The results make sense, as the technology is not yet fully developed for full blown commercial use (except in a few rare cases). Given they are under developed technologies, implementing solutions can be capital and resource intensive. It is right for Montenegro to focus on the basics before venturing into complex technologies such as Blockchain.

7.2. Future Fintech Business Models Likely to Emerge in Montenegro

Asking respondents what business models they believe will emerge in Montenegro in the next three to five years, provides an indication of imminent solutions that will emerge. Armed with this knowledge, technology providers can proactively develop solutions to address this market, and regulators can gear up to provide support, develop specific legislation to cover new business models and develop processes and requirements for licensing them.

As expected, because of new payment regulation imminently coming into force, and following the global trend of Fintech development, new payment business models such as merchant payment portals, e-wallets, digital assets wallets and QR code-based payments are likely to emerge sooner according to 64% of respondents. Banks and existing financial services providers have already started developing mobile financial services facilities (according to 76% of respondents) especially considering the COVID-19 pandemic restrictions.

Figure 36: Fintech Business Models likely to Emerge in Montenegro in the next Three to Five Years



There is a desire for open banking, expressed by 40% of respondents, and the new payment regulation may provide the platform to develop it. However, global experience highlights significant practical challenges that must be overcome before the full potential of open banking and wider open finance can be realised. In the United Kingdom, for example, the government established the Open Banking Implementation Entity, to facilitate the practical working of open banking at customer level.

Montenegro's government has in the past expressed an interest in developing Distributed Ledger Technology within the financial system, and respondents (36%) believe that the country will see digital assets exchanges and ore broader investment exchanges emerging in the next few years.

Surprisingly, financial services comparison web portals (19%) and crowdfunding or peer to peer lending (17%) was only envisaged entering the market by a small number of respondents. Comparison portals are relatively easier solutions to implement, with many proven business models existing across the globe, and cloud-based technology allowing for quick market entry, provided the firm gets the appropriate license. Similarly, with enabling legislation, crowdfunding is also easier to implement as there are a plethora of white label platform software providers, and the business model has evolved substantially. Therefore, the expectation was for a higher proportion of survey respondents to see these business models emerging in the next few years. The low response could be down to a lack of knowledge. Similarly, robo advice was only mentioned by 8% of respondents, and again, there are countless business models that could be successfully replicated without having to innovate from scratch.

The low response rate for Insurtech (only 10% believe it will emerge in Montenegro within the next three to five years) may indicate the need for the insurance sector to further develop before the adoption of new Fintech enabled business models emerge.

For the savvy entrepreneurs, the business models highlighted above may present sizeable commercial opportunities, as there is a likelihood (based solely on the survey responses), that such market segments will have little to no competition. Coupled with the fact that business models are proven and can be replicated, as well as the availability of technology on a white label basis, entrepreneurs would find it much easier to enter these market segments compared with more complicated sectors such as digital assets exchanges, open banking and even e-wallets.

7.3. Actions Government & Regulators could take to Accelerate the Development of Fintech

Respondents were asked what more policymakers can do to encourage the development of the Fintech sector in Montenegro. Their qualitative responses were analysed, and common themes presented in the list below. These recommendations could form the basis of developing a National Fintech Strategy. However, government and policymakers can already start to factor some of the below recommendations into their plans going forward into 2023.

- **National Fintech Strategy** - There was convergence on the thinking that a well-crafted, practical, and implementable National Fintech Strategy will provide the necessary direction to the Fintech ecosystem to accelerate its development.

- **Embark on and Speed Up Regulatory Change** – The survey highlight some of the regulatory challenges faced by Fintech innovators. Policymakers could commission a study to get a deeper understanding of regulatory barriers for the development of the Fintech sector and take necessary steps to either amend regulation or develop new regulation to accommodate Fintech business models, or adoption of digital financial services.

- **Digital Financial Literacy** – Consumer willingness to adopt digital financial services will generate the necessary demand for entrepreneurs to launch commercially viable Fintech and digital financial services ventures. Government could play a role in providing mechanisms to enhance the level of knowledge about digital financial services. Such initiatives may be in the form of courses, however, awareness raising may also be an effective channel.

- **Fintech Capacity Building at Government & Regulators** – Respondents felt that the development of Fintech is likely to be accelerated if the policymakers themselves are knowledgeable about Fintech technologies and business models, as well as have sufficient Fintech resources in their teams to address initiatives such as changes to laws, developing incentive schemes for Fintech ventures, or licensing specialised Fintech business models.

- **Invest in Developing Fintech & Technology Talent** – The development of the Fintech sector will be predicated on the availability of skilled people, especially if the Fintech sector accelerates. The government can consider initiatives to develop more technology and Fintech talent for the local market. There was suggestion for implementing mechanisms to open the country to foreign experts. The Montenegrin lifestyle may be sufficiently attractive for skilled Fintech experts, and an enabling and welcoming environment with the right marketing by government, could attract digital nomads who wish to benefit from this lifestyle, even if only for a few short years.

- **Accelerate eGovernment** – Citizens are more likely to be open to adopting digital financial services if they already engage with their government and municipalities through digital channels. Furthermore, e-Government may provide the necessary infrastructure for Fintech innovators to develop their solutions. For example, a national digital identity would be very helpful for full digital onboarding solutions.

- **Developing International Fintech Bridges** – Entering into memorandum of understanding with other countries to exchange ideas and learn through cooperation with other countries who may be more advanced in this area. For example, the Global Financial Innovation Network (GFIN) is a "*collaborative knowledge and policy sharing network aimed at advancing effective regulatory responses to the use of emerging and more traditional technologies in financial services, by sharing experience, working jointly on emerging issues and facilitating responsible cross-border experimentation of new ideas*". Montenegro could join such a network or form a similar network between Western Balkan countries. Fintech bridges can be explored with European countries.

- **Incentive Mechanisms to Accelerate Fintech Developments** – The right tax incentives, grants and access to funding can stimulate the accelerated development of Fintech. Grants can be used to encourage the development of specific Fintech business models that prove beneficial for Montenegrin businesses and individuals. Such finance facilities also provide the much-needed seed funding for entrepreneurs to take ideas and bring them to the market. Specialised tax incentives for investors could encourage them to invest in Fintech ventures

8. CONCLUSION

Montenegro's financial services ecosystem unanimously agrees that Fintech is needed as it can bring many benefits to consumers, small businesses, and the wider economy. It also enhances the prospects of eventual EU integration. Post COVID 19, with a well-developed Fintech ecosystem, Montenegro could attract foreign Fintech entrepreneurs or develop capability to outsource Fintech services or sell Fintech products in developed markets, which will bring a flow of foreign revenue and investment, thus helping Montenegro to diversify away from their over reliance on tourism.

However, to succeed, stakeholders need to understand the concept of a Fintech ecosystem and establish who the key players are that make up the Fintech ecosystem. They must find ways to formally bring the ecosystem together to implement policies, strategies and plans to develop a vibrant Fintech sector in Montenegro.

The survey is an excellent starting point to help the Fintech ecosystem stakeholders understand how to seize opportunities presented by Fintech and how to overcome challenges and mitigate risks brough about as a direct result of Fintech. The findings from the survey are insightful and can help to inform the development of a National Fintech Strategy that will present a path to safely implementing Fintech in Montenegro's financial system to realise the benefits that Fintech can bring and managing risks and unintended consequences along the way.

9. ANNEXURE A – LIST OF SURVEY PARTICIPANTS

GOVERNMENT MINISTRIES

1. Ministry of Finance
2. Ministry of Economic Development & Tourism
3. Ministry of Capital Investments
4. Ministry of Public Administration
5. Ministry of Science and Technological Development
6. Ministry of Education
7. Ministry of Labour and Social Welfare
8. Ministry of Foreign Affairs
9. Ministry of European Affairs

FINANCIAL SERVICES REGULATOR

1. Central Bank of Montenegro
2. SEC - Securities Exchange Commission
3. Agency for Insurance Supervision
4. Personal Data Protection Agency
5. Capital Markets Authority
6. Ministry of Economy as Consumer Protection Body
7. Insurance Supervisory Agency

ESTABLISHED FINANCIAL SERVICES FIMS (INCUMBENTS)

Banks

1. Crnogorska komercijalna banka AD Podgorica - member of OTP Group
2. Hipotekarna banka AD Podgorica
3. Prva banka Crne Gore AD Podgorica - Osnovana 1901. godine
4. ERSTE Bank AD Podgorica
5. NLB Banka AD Podgorica
6. Addiko Bank AD Podgorica
7. Universal Capital Bank AD Podgorica
8. Lovćen banka AD Podgorica
9. Zapad banka AD Podgorica
10. ZIRAAT Bank Montenegro AD Podgorica
11. Adriatic Bank AD Podgorica

Leasing Companies

1. Porsche Leasing DOO Podgorica
2. S-Leasing DOO Podgorica

Factoring Companies

1. FAKTOR ONE DOO Podgorica
2. FINANCIAL SOLUTIONS DOO Podgorica

Companies for Purchase Receivables

1. Foldana Financial DOO Podgorica
2. NLB Crna Gora DOO Podgorica

Microfinance Institutions

1. Monte Credit DOO Podgorica
2. Montenegro Investments Credit DOO Podgorica
3. Ozmont DOO Podgorica
4. Alter Modus DOO Podgorica
5. Klikloan DOO Podgorica
6. Capital-Invest DOO Berane
7. Moj Kredit DOO Podgorica
8. LABOR DOO Podgorica

Insurance Institutions

1. Lovćen Life Insurance JSC
2. Wiener Staedtische JSC, Vienna Insurance Group
3. Generali Insurance Montenegro JSC
4. Uniqa Non-life Insurance JSC
5. Uniqa Life Insurance JSC
6. Atlas Life JSC
7. Grawe Insurance JSC
8. Grawe Non-Life Insurance JSC
9. Sava Insurance JSC
10. Lovćen Insurance JSC

Insurance Brokerage Companies

1. Genius Broker Solutions LLC
2. Bromar LLC
3. Bonus Broker LLC
4. Finansije24 LLC
5. Bona Fide Broker LLC
6. Insurance financial solutions LLC
7. Amon Broker LLC
8. Omega Broker LLC
9. STATUS BROKER LLC
10. APO Plus LLC
11. BROKER INS LLC
12. WVPCG LLC

13. Adriatic AG LLC

Entrepreneurial Insurance Agents

1. Horizont MNE
2. Premium Yacht Insurance MNE

Agency for Ancillary Insurance Service

1. Professional insurance assistance LLC

Securities Companies

1. FINEVEO a.d. Podgorica
2. CG Broker Diler a.d. Podgorica
3. NK Broker a.d. Niksic
4. VIP Broker a.d.Podgorica
5. Bull and Bear Broker Diler Investicioni Savjetnik a.d. Podgorica
6. Hipotekarna Banka a.d. Podgorica
7. Prva banka a.d. Podgorica
8. Crnogorska komercijalna banka a.d.
9. Universal Capital Bannk a.d. Podgorica
10. Erste Bank a.d. Podgorica
11. Limit Prime Securities a.d. Podgorica
12. Zapad Banka a.d. Podgorica
13. AGEA International a.d. Podgoricaa
14. SASA Capital a.d. Podgorica
15. TEMPLER Securities a.d. Podgorica
16. Adriatic Bank a.d. Podgorica
17. RSI Global Investiciono drustvo a.d. Podgorica
18. Nozax a.d Podgorica

FINTECH, ALTERNATIVE FINANCE & TECHNOLOGY PROVIDERS

1. Uhura
2. Domain.ME
3. Fleka
4. Amplitudo
5. Codepixel
6. Postindustria Bar
7. Logate d.o.o.
8. Bild Studio
9. SweetSoft INC.
10. Omedacore Digital Solutions
11. PAYTEN doo/ ASSECO
12. e-moon
13. ICT INVESTMENT

14. ECS Enterprise Solutions
15. Coreit
16. BI Consulting
17. 2BI
18. Coinis
19. ProfitApp
20. Perper

ASSOCIATIONS

1. Udruzenja Banaka Crne Gore
2. National Bureau of Montenegro Insurers
3. The Chamber of Economy of Montenegro
4. The American Chamber of Commerce in Montenegro (AmCham Montenegro)
5. National Bureau of Montenegro Insurers
6. Montenegro Blockchain Foundation

EDUCATIONAL INSTITUTIONS

1. University of Montenegro
2. Faculty of Electrical Engineering
3. UDG –University Donja Gorica
4. Faculty of Economics Podgorica
5. Logate Academy
6. EduCom IT Academy
7. ICT Cortex Akademija
8. Amplitudo Academy
9. STEM Edukacija
10. Mediteran University (first private university)

ENTREPRENEURIAL ECOSYSTEM

Accelerators & Incubators

1. Science and Technology Park of Montenegro
2. Startup Montenegro
3. “Mtel digitalna fabrika” accelerator
4. BlockIS - Montenegro
5. Digital Den
6. Technopolis
7. Idea Lab
8. Innovation Centre Coworking Office
9. ICT Cortex
10. Digitalizuj.me

Investors

1. Eureka Montenegro
2. Montenegrin Business Angel Network
3. Voyoger Consulting
4. The Innovation Fund of Montenegro

International Financial Institutions, Development and Donor Agencies

1. European Fund for South East Europe
2. World Bank Office Montenegro
3. UNDP Montenegro
4. EBRD Montenegro
5. GIZ Montenegro
6. USAID Montenegro

10 ANNEXURE B – WIDER BENEFITS OF FINTECH AS ENVISAGED BY EACH STAKEHOLDER GROUP

Answer Choices	GOVERNMENT		REGULATORS		INCUMBENTS		ALTERNATIVE FINANCE		ENTREPRENEURIAL ECOSYSTEM		ASSOCIATIONS		EDUCATIONAL INSTITUTIONS	
Develop the economy	55%	11	45%	13	59%	128	72%	18	64%	7	65%	11	72%	18
More financial inclusion	60%	12	52%	15	52%	114	64%	16	36%	4	53%	9	48%	12
It will support the country's ambition to be part of the EU	30%	6	21%	6	42%	92	40%	10	18%	2	41%	7	52%	13
Alignment with international best practice	30%	6	45%	13	55%	120	48%	12	27%	3	82%	14	60%	15
More choice and benefits for the financial consumers	50%	10	69%	20	69%	150	64%	16	82%	9	59%	10	64%	16
More choice and benefits for Small and Medium sized businesses (SME)	50%	10	38%	11	52%	114	68%	17	64%	7	76%	13	60%	15
A stronger financial system because of healthy competition	30%	6	34%	10	50%	110	56%	14	55%	6	53%	9	56%	14
The Fintech sector can encourage foreign entrepreneurs and foreign direct investment.	45%	9	55%	16	65%	141	68%	17	73%	8	71%	12	68%	17
There are no benefits	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%	0
Other (Please provide details)	15%	3	0%	0	2%	5	0%	0	0%	0	6%	1	4%	1
	Answered	20	Answered	29	Answered	218	Answered	25	Answered	11	Answered	17	Answered	25
	Skipped	7	Skipped	0	Skipped	12	Skipped	13	Skipped	4	Skipped	2	Skipped	2

11 ANNEXURE C – OBSTACLES, CHALLENGES & RISKS OF FINTECH AS ENVISAGED BY EACH STAKEHOLDER GROUP

Answer Choices	GOVERNMENT		REGULATORS		INCUMBENTS		ALTERNATIVE FINANCE		ENTREPRENEURIAL ECOSYSTEM		ASSOCIATIONS		EDUCATIONAL INSTITUTIONS	
More possibility of consumer harm (such as fraud and losses) as new Fintech players enter the market	31.6%	6	44.8%	13	36.3%	77	27.3%	6	27.3%	3	41.2%	7	41.7%	10
Digital channels bring greater risk of cyber security and crimes such as fraud and money laundering.	63.2%	12	51.7%	15	57.1%	121	31.8%	7	45.5%	5	82.4%	14	45.8%	11
New Fintech firms may not fully comply, and they put the financial system at risk	36.8%	7	34.5%	10	33.0%	70	13.6%	3	9.1%	1	41.2%	7	16.7%	4
Fintech players will take market share away from banks and traditional financial firms and make them weaker.	10.5%	2	24.1%	7	26.4%	56	27.3%	6	36.4%	4	29.4%	5	8.3%	2
There are no significant risks and challenges that Fintech can introduce to our market.	21.1%	4	13.8%	4	18.9%	40	36.4%	8	36.4%	4	17.7%	3	33.3%	8
Other (please specify)	10.5%	2	3.5%	1	2.8%	6	0.0%	0	0.0%	0	0.0%	0	8.3%	2
	Answered	19	Answered	29	Answered	212	Answered	22	Answered	11	Answered	17	Answered	24
	Skipped	8	Skipped	0	Skipped	18	Skipped	16	Skipped	4	Skipped	2	Skipped	3