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June 2021



Cyprus ICT 2020 Analysis and 2021-2023 Forecast

IN THIS WHITE PAPER

IDC and the Cyprus Computer Society (CCS) cooperated to produce this comprehensive report covering the Cypriot information and communication technology (ICT) market. The report focuses on all ICT market segments, including the IT equipment, IT services, software, and telecommunications markets, with 2021 market sizing, forecasts until 2023, and trend analysis. The in-depth analysis for 2021 covers the IT services segment. It is based, inter alia, on a representative end-user survey of Cypriot companies, as well as on a survey of ICT companies operating in Cyprus.

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EXECUTIVE SUMMARY

The Cypriot ICT market (including telecommunications) reached a value of €692.10 million in 2020, representing year-on-year growth of 2.1%. The IT market (excluding telecommunications) was valued at €230.91 million, representing year-on-year growth of 3.6%. Spending on IT services reached €113.16 million, up 3.9% year on year.

The COVID-19 pandemic has had painful effects on the Cypriot economy, temporarily reversing the positive trends following the financial crisis culminating in 2013. The country's GDP plummeted more than 5% in 2020, with traditional contributors like tourism and shipping being hit severely. Although growth is expected to resume this year, it will not fully compensate for the previous decline. However, thanks to the government's coordinated initiatives, the economic downturn is less severe than anticipated and below the EU average. Nevertheless, both the unemployment and the public debt increased substantially. These developments have just made it more critical than ever to speed up the diversification of the economy and secure long-term growth. On a positive note, Cyprus reached an agreement with Israel on the exploitation of large gas deposits. The natural gas deposits near the Cypriot coast could (in addition to bringing in investments) reduce the dependency of Cyprus and the wider EU on natural gas supplies from Russia.

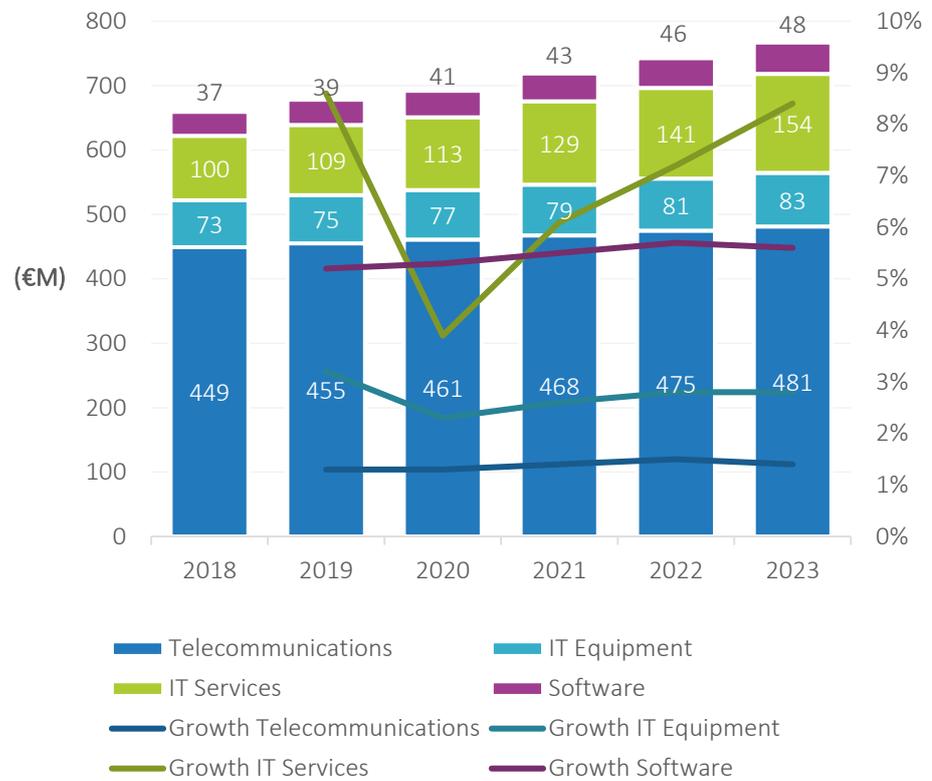
Contrary to the economic decline, the ICT sector looks set to expand as a result of new opportunities, as many areas in both the public and private sectors will be digitized. The COVID-19 pandemic has had a positive rather than negative effect on the business performance of many ICT companies operating in Cyprus, the majority of which are planning to launch new services. The impact on end-user organizations' IT budgets has been similar: half of companies saw no change in their IT budgets during the pandemic, while more than 15 % have even increased them, and only about a third saw their IT budgets reduced or frozen.

These positive trends will necessitate an active role to be played by the Cypriot government. An important step in this direction was the establishment of the Deputy Ministry of Research, Innovation, and Digital Policy. The deputy ministry has been very active, with some remarkable achievements already, such as finalization of the National Digital Strategy and drafting a new bill on Blockchain technology. The Government of Cyprus also encourages the market to invest in fiber to the home (FTTH) and 5G infrastructure (licenses were awarded at the end of 2020).

Support and training services continued to be the largest IT services primary market (followed by project and outsourcing services), although its overall share decreased somewhat compared to 2018. The finance sector is the largest spender on IT services, followed by the public sector and telecom operators, as there are often tender-based projects with long durations, and thus extended revenue streams for contract winners. More than 40% of Cypriot companies expect to increase their IT services spending, while another 40% will keep their investments

at the current level. Companies will mostly invest in security, which is also cited as the main internal challenge.

FIGURE 1
Cyprus ICT Market by Segment (€M)



Source: IDC, 2021

This IDC White Paper examines the state of the IT industry in Cyprus in 2020 and 2021 with a focus on the IT services segment and forecasts industry spending for 2021-2023. The study contains market size and distribution by both foundation and vertical markets.

The study answers the following questions:

- What are IDC’s predictions for ICT and IT services spending in Cyprus? What are the driving forces and the expected market dynamics, and what impact will the related issues have on the market in 2021-2023?
- What do end users in Cyprus say about their IT and IT services priorities, concerns, and preferences?
- What are the latest trends in IT services delivery in Cyprus, and what are the main drivers of change?

SITUATION OVERVIEW

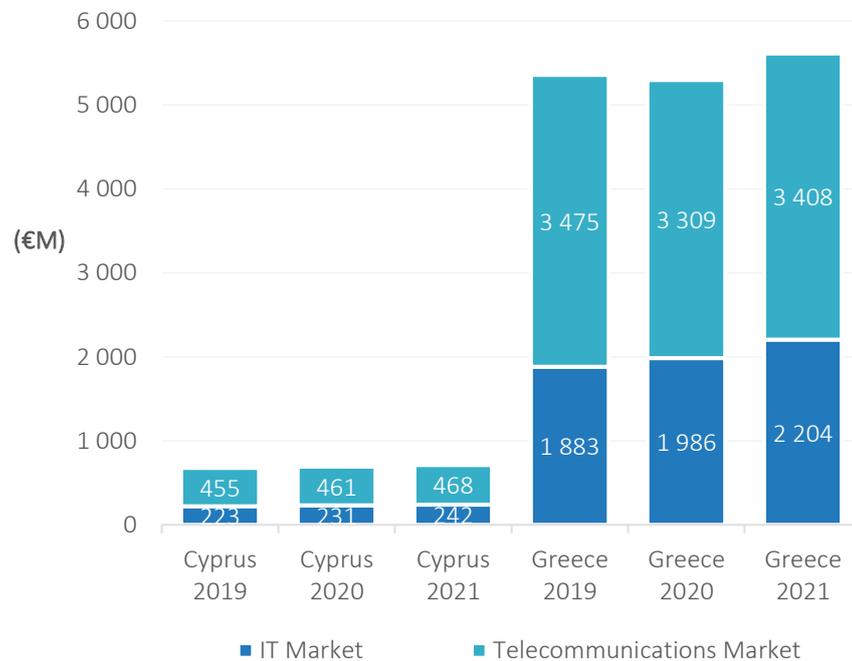
Spending on ICT (including the telecom market) grew 2.1% year on year in 2020 to reach €692.10 million.

Spending on IT (excluding the telecom market) grew 3.6% year on year in 2020 to reach €230.91 million.

The value of the IT services segment increased to €113.16 million in 2020, representing year-on-year growth of 3.9%. Figure 2 presents a comparison of ICT spending in Cyprus and Greece.

FIGURE 2

ICT Market in Cyprus and Greece, 2019-2021 (€M)



Source: IDC, 2021

In 2020, ICT spending in the whole of Western Europe (WE) totalled €649.5 billion, which broke down to IT spending of €457.48 billion and telecom spending of €192.05 billion. Compared to Cyprus, more mature WE markets are characterized by stagnating telecommunications markets and a higher proportion of IT services and software spending on the overall IT market. WE organizations have been showing a larger appetite for outsourcing and a faster pace of innovation, thus driving demand for services and software.

The IT Market in the Context of Current Economic and Business Environment

The COVID-19 global pandemic has had a significant negative impact on the Cypriot economy. In 2020, the country's GDP contracted by 5.8%, according to several national sources — which is, however, less than originally anticipated and somewhat less than the EU average. The economy is set to recover this year with forecast average growth ranging from 3.0% to 4.0% but still not reaching pre-pandemic levels. Similar growth is currently projected for 2022.

The unemployment rate, which hit a high of around 15% during the economic crisis in 2013–2016, had been declining steadily but jumped again to the current 8%. Also as a result of COVID-19, the state public debt has worsened again, going up from 95% of GDP in 2019 to 120% of GDP for 2021 (estimated). Inflation, on the other hand, is expected to be kept below 1.0% in 2021 and to slightly increase in 2022 following the recovery of economic activities.

This unfavorable environment has impacted all sectors of the Cypriot economy, with ICT being no exception. However, compared to other sectors of the economy (especially tourism), the impact was (and will be) much less dramatic — or even paradoxically positive. For surveyed ICT companies operating in Cyprus, the COVID-19 pandemic has had a positive rather than negative effect on their business performance. (See the chapter on the impact of COVID-19 on the IT sector for further details.) On a similar note, half of the surveyed end-user businesses have kept their IT budgets unchanged from 2019, more than 15% have even increased them, and only about a third stated that their IT budgets were reduced or frozen.

The natural gas deposits discovered in the last decade south of Cyprus' coastal city of Limassol have good potential to become an alternative source of energy for the EU, reducing its dependence on Russian natural gas. The development of the Aphrodite deepwater field, estimated to hold up to 4.5 trillion cubic feet of recoverable gas reserves, was halted as a small position of it stretches into the maritime zone of Israel. In March of this year, an agreement was finally reached between the two countries, paving the way for exploitation of the resources.

Key Drivers of the IT Market

Adoption of New Technologies as a Result of COVID-19

While creating serious challenges for the Cypriot economy, the global pandemic has also introduced unexpected opportunities for the IT market, both in the public and private sectors. Operational and business paradigms are undergoing a thorough revision in almost all areas of the economy, with the increased usage of ICT as a result. Cypriot companies are beginning to see the strategic importance of infrastructure optimization, consolidation, and transformation after some resistance to invest in ICT in recent years. They now understand that the adoption of new technologies is necessary to remain competitive. That is also why they will

increasingly focus on remote workplaces or videoconferencing with corresponding attention paid to the security and connectivity aspects. This represents a great opportunity for IT providers to position themselves as trusted advisors and capitalize on the uptake of innovative technologies. End user companies expect IT providers to help them address concerns around new technology adoption, business cases, best practices, and adding value to their organizational goals.

Governmental Strategic Measures

In uncertain times and exceptional situations, it is of utmost importance for the IT industry to rely on governmental strategic support. Luckily, the government of Cyprus has taken a proactive stance and has come up with numerous coordinated measures to make the country's economy competitive in the turbulent pandemic period and beyond. The establishment of the Deputy Ministry of Research, Innovation, and Digital Policy in 2020 is the most visible and impactful of the measures undertaken thus far. The new authority was behind the National Digital Strategy, a study on artificial intelligence, and a strategy and draft law on blockchain. Finally, it has played a crucial role in implementing technology-driven solutions for effective pandemic measures like the SMS-based system for lockdown enforcement, the contact tracking application, the pandemic call center, and the vaccination portal. At the center of governmental efforts is the objective to transform Cyprus from primarily a tourist destination to a sustainable business and trading hub for Europe.

Broadband and 5G Rollouts

The implementation of the national plan for comprehensive broadband coverage has been accelerated due to the pandemic, with local internet penetration standing at about 90%. As a result, data traffic increased by around 95%. In the next three years, the Cyprus Telecommunication Authority (Cyta) will be covering all urban and some rural areas with optical fiber connections (offering speeds up to 1Gbps), enabling businesses to start providing new digital services and boosting digital transformation (DX) across industries. The improvements in infrastructure are similarly taking place in mobile communications, as new 5G networks are being rolled out following the successful auction of licenses at the end of 2020.

IT Talent Shortage

As companies progress on their DX journeys and inevitably require expertise in the implementation and utilization of new technologies, they increasingly feel the effects of skills shortages. The most common ways to deal with the lack of skilled IT human resources are to upskill current employees, cooperate with universities to ensure graduates have the required skills, and to rely on external service providers with the right expertise — often alongside the adoption of standardized service delivery models such as public cloud. Some organizations also attempt to bring in workers from Eastern Europe. The lack of IT experts is likely to remain a

concern over the coming years, as it is already one of the main challenges facing organizations across the EU.

Cloud Uptake

Cloud uptake is not always linked to new spending — it often comes at the expense of traditional hardware, software, and IT services delivery models, and therefore has a strong effect on redistributing IT budgets and recruiting new IT solutions providers. Private cloud is gaining ground among large companies, even among those that state they must deal with serious security concerns and strict regulations. These large companies with strong in-house IT tend to deploy what they regard as private or hybrid cloud environments to migrate existing systems or to expand/enhance systems. Infrastructure, platform, and software public cloud adoption is also gaining acceptance among companies of all sizes.

The Impact of the COVID-19 Pandemic on the IT Sector

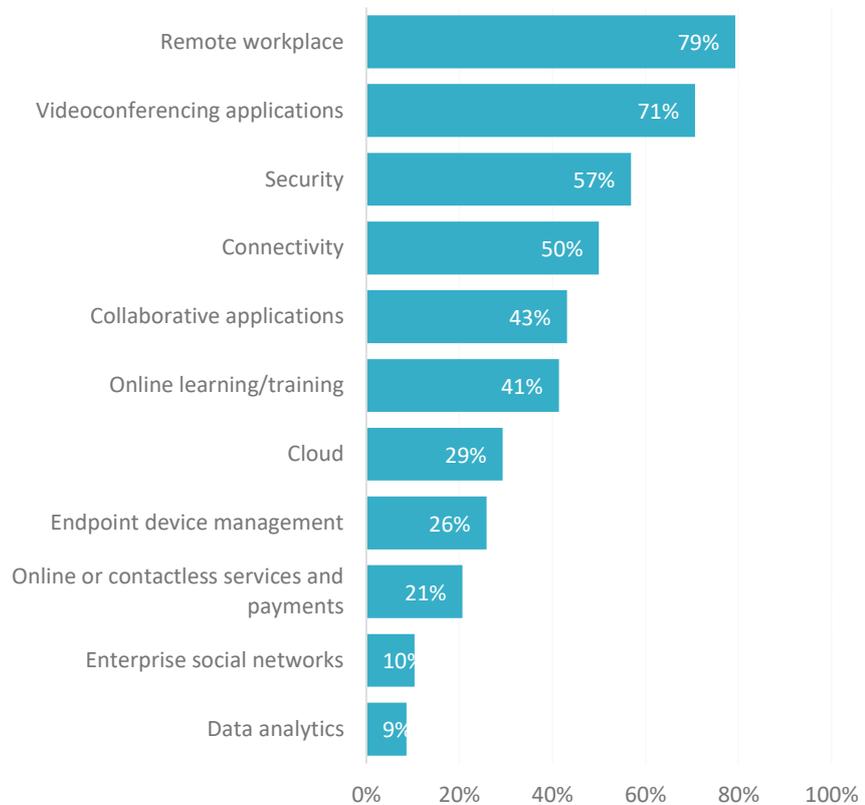
The COVID-19 pandemic has had an unprecedented impact on the economy, public services, education, business, and social activity. However, different sectors of the economy have been impacted in different ways. For example, while tourism, hospitality, and airline industries were hit severely, other market segments such as healthcare, ecommerce, and information and communication technologies recorded outstanding demand for their products and services.

While many Cypriot companies have already embarked on their digital transformation journey, the COVID-19 pandemic has accelerated their efforts. As business and social interactions quickly shifted from the physical to the online world, investments in technology, and specifically in digital transformation technologies, have allowed many businesses not only to become more resilient, but also to maintain a level of operations that was previously impossible.

The most visible impact of the COVID-19 pandemic on the IT industry was the quick shift to remote work. As shown in the chart below, almost 80% of Cypriot organizations have invested in remote workplace solutions during the crisis. Organizations were suddenly buying laptops, installing software, and providing employees with mobile devices and support so they could do their work remotely and securely via a VPN connection.

FIGURE 3 Response of Organizations to COVID-19 Challenges

Q. In 2020, which specific investments have accelerated in response to the COVID-19 pandemic?



Source: IDC Cyprus IT Buyer Survey, 2021

The new working paradigm has put a spotlight on the limits of legacy software. On-premises enterprise application deployment models were proven insufficient during the pandemic, because employees could not access the applications and could not work remotely. This led to further adoption of conferencing, collaboration, and online training applications, as well as endpoint management tools.

Some digitally advanced companies not only continued to operate effectively, but were also able to swiftly shift their businesses to either new digital customer segments or to the delivery of new digital services to support growth. This further highlighted the emphasis on software as a service (SaaS) and cloud-enabled applications, which are becoming the standard for enterprise application deployment. However, the shift to cloud is still somewhat hampered by data governance and regulatory compliance concerns.

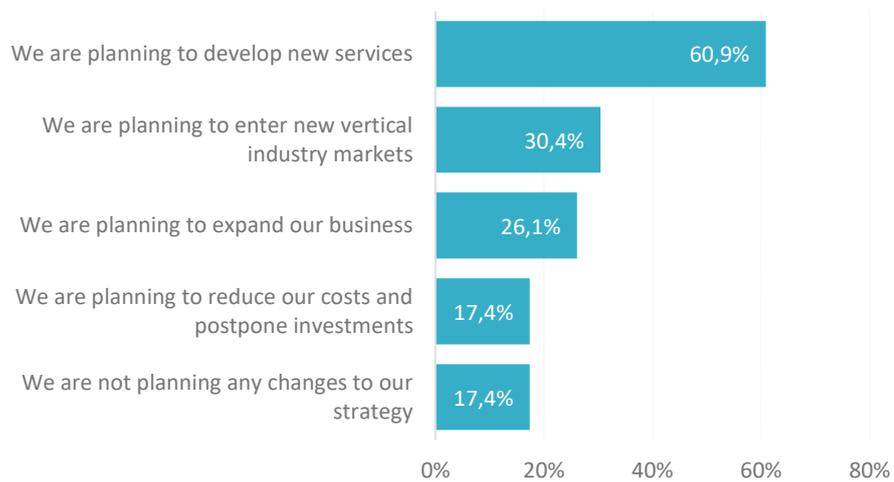
On the other hand, the impact of the COVID-19 pandemic on enterprise IT investments has also had some negative aspects. Due to new business risks and market uncertainties, senior executives have put a lot of pressure on cost management and investments. CIOs have been tasked to optimize costs of running their IT environments. In addition, some IT-related investments have

been put on hold and will be reconsidered with a view to the new business normal.

Cypriot IT providers have quickly responded to the COVID-19 pandemic challenges. According to the survey, 44% of them report that the pandemic has had a positive impact on their business performance, while 17% of the respondents did not observe any change. In terms of reshaping their business strategies, 61% of the providers are planning to launch new services, and 30% would like to enter new vertical markets. As the chart below indicates, overall, Cypriot IT players have been able to quickly identify and explore emerging market opportunities and believe that the new market environment will help them approach new customers with innovative products and services.

FIGURE 4
Impact of the COVID-19 Pandemic on IT Providers Strategy

Q. What has been the impact of the COVID-19 pandemic on your strategy?



Source: IDC Cyprus IT Vendor Survey, 2021

In summary, technology has proven to be the key in keeping businesses afloat by enabling remote work, agile operations, and external digital engagement. In the longer term, organizations will leverage technology to underpin every process, initiative, and link in the value chain as they journey to the next normal. More than ever, organizations are now looking for new ideas and emerging best practices from their technology partners.

Establishment of the Deputy Ministry of Research, Innovation, and Digital Policy

On March 1, 2020, the new Deputy Ministry of Research, Innovation, and Digital Policy was established. The ministry's mandate is to support research, innovation, the adoption of digital technologies, and expansion of communication infrastructure with the goal of developing a digital economy and society, underpinned by citizen-centric government services.

Since its establishment, the ministry has been very active and already made some remarkable achievements. To name a few: finalization of the National Digital Strategy; launch of the e-justice system; preparation of a study on artificial intelligence; governmental microservices management; finalization of the blockchain strategy; and drafting a new bill on blockchain technology.

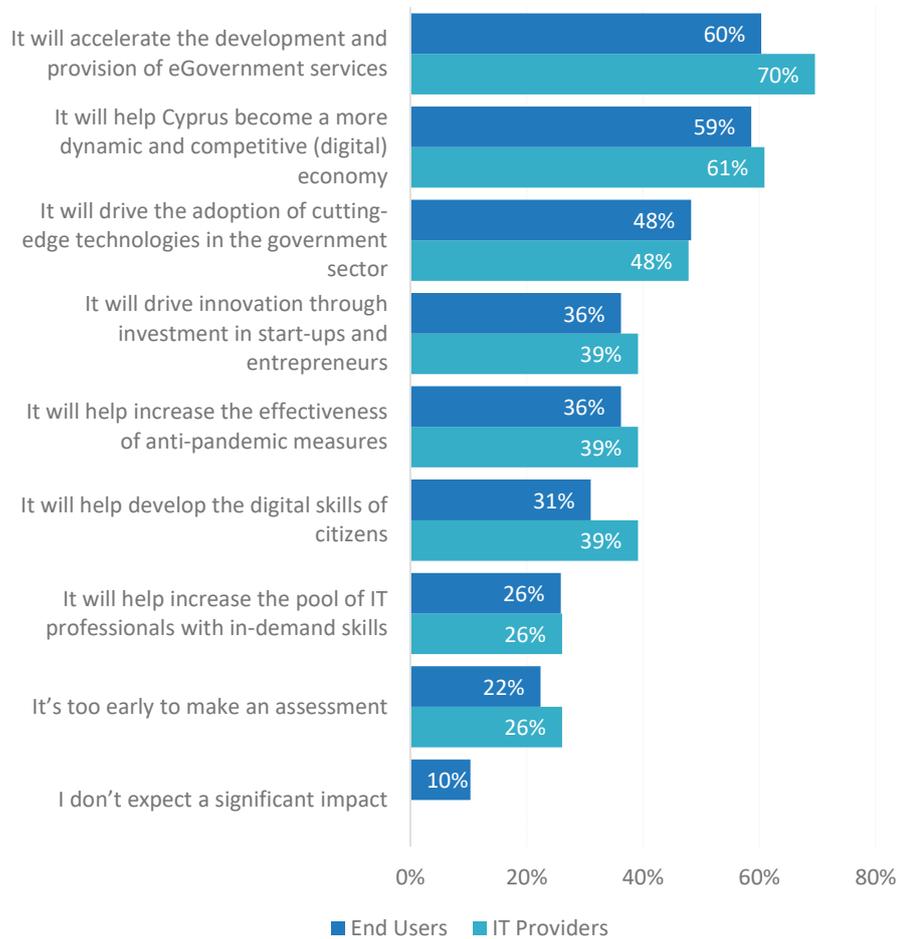
Since the COVID-19 outbreak, the ministry has been playing a critical role in implementing technology-driven solutions for effective pandemic measures. Examples of these solutions include a platform for processing of medical records, a solution for payments of COVID-related allowances for the social welfare department, the SMS-based system for lockdown enforcement, the contact tracking application, the pandemic call center, and the vaccination portal.

One of the ministry's priorities is also to increase the availability of IT professionals and enhance citizens' digital skills. The planned initiatives include tax incentives for innovative companies, specific visas for IT professionals, subsidies for IT centers, and upskilling programs for graduates.

In the survey conducted among both IT professionals from end user companies and IT provider organizations, the expected impact of the ministry's projects and initiatives on the digital economy, public services, and digital skills was put under scrutiny. The survey showed very consistent opinions from both end users and IT providers, with each group naming e-government services as the area where the highest impact is expected. This is, indeed, not surprising as e-government is the area where the ministry has the strongest mandate. Respondents also believe that the ministry will help transform Cyprus into a more digital economy. In addition, there is confidence that the ministry will make a good progress in spurring innovations — through enabling the adoption of cutting-edge technologies or supporting start-ups and innovative companies.

FIGURE 5 Opinion of IT Professionals on the Impact of the Deputy Ministry of Research, Innovation, and Digital Policy

Q. What impact do you expect from the recently formed office of the Deputy Ministry of Research, Innovation, and Digital Policy?



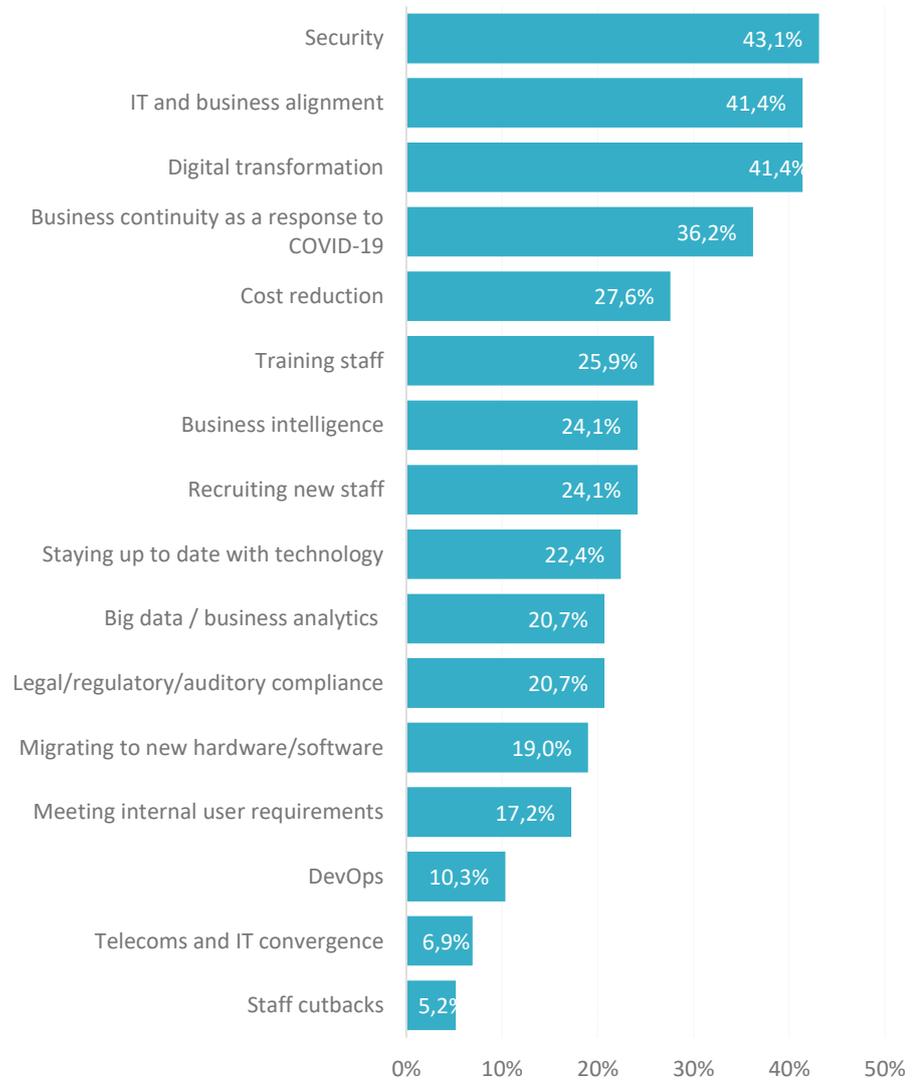
Source: IDC Cyprus IT Vendor and IT Buyer Survey, 2021

Internal Challenges and IT Investment Priorities of Cypriot Companies

Security continues to represent the most common internal challenge facing Cypriot companies (see Figure 6). However, the alignment of IT and business environments has taken on more significance. The pandemic has also brought forward the need for business continuity and the acceleration of digital transformation.

FIGURE 6 Challenges Facing Cypriot Companies in 2021

Q. What are the main internal challenges for your organisation in 2021? [Choose up to five]



Source: IDC Cyprus IT Buyer Survey, 2021

While regulation and compliance are generally regarded as cost generators without creating new business value, they often trigger significant IT investment. Recruiting new staff was almost a top priority two years ago, but it has been put on the back burner as the economy slid into recession. On the other hand, the impact on unemployment is not nearly as pronounced as it was during the previous financial crisis. As a result, only a small percentage of Cypriot companies consider staff reductions as the main challenges, although cost reduction ranks quite high (as indicated on Table 1). Regulation and legal compliance, another area regarded as a cost generator that does not contribute new business value, likewise often triggers significant IT investments.

TABLE 1
Challenges Faced by Cypriot Companies, 2021 vs. 2019

	2021	2019
Top challenges	Security	Security
	IT and business alignment	Recruiting new staff
	Digital transformation	Business process improvement
	Business continuity as a response to COVID-19	Leveraging company data
	Cost reduction	Legal/regulatory/auditory compliance

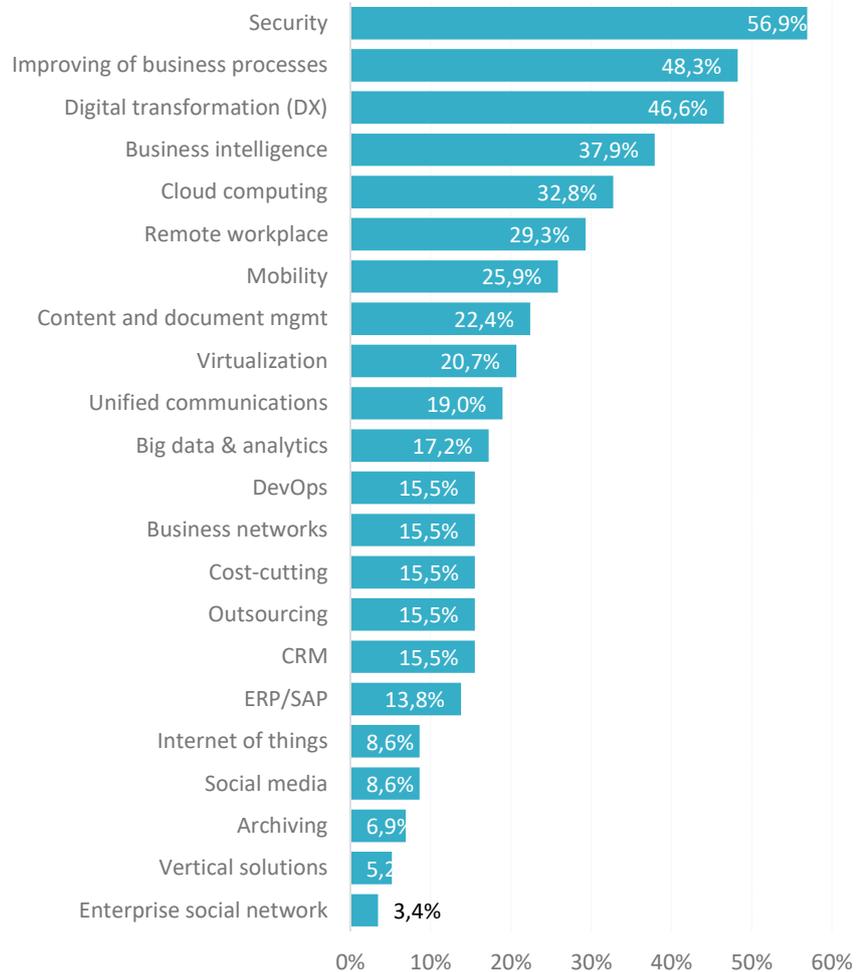
Source: IDC Cyprus IT Buyer Survey, 2021

As security is the most important challenge Cypriot companies are facing, it is no surprise that it also remains their top investment priority (see Figure 7). Other pressing priorities include improving business processes and digital transformation, which are fully in line with the perceived challenges. Correspondingly, the role of cloud computing and virtualization is expected to increase. Remote working has now emerged as a key priority due to circumstances dictated by the pandemic. For the same reason, investments into mobility have increased fourfold since 2019.

Customer relationship management (CRM), which used to be at the forefront of IT investments, particularly among medium-sized companies (50–100 employees), has temporarily lost significance. For more details, refer to the 2021 vs 2019 comparison of IT investment priorities in Table 2.

FIGURE 7 IT Investment Priorities in 2021

Q. In which of the following IT areas is your organization planning to invest in 2021?



Source: IDC Cyprus IT Buyer Survey, 2021

TABLE 2
IT Investment Priorities, All Companies — 2021 vs. 2019

	2021	2019
Top investment areas	Security	CRM
	Improving business processes	Security
	Digital transformation	Business Intelligence
	Business intelligence	Content and document management
	Cloud computing	Cloud computing

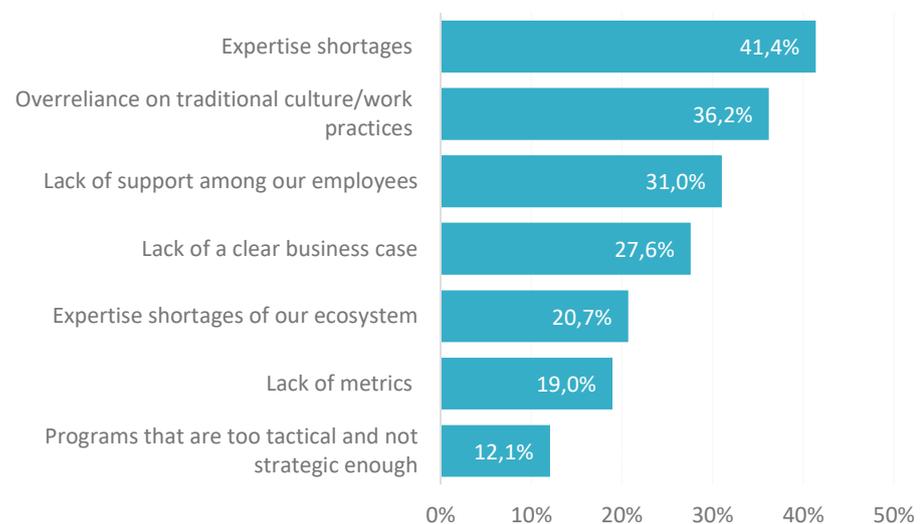
Source: IDC Cyprus IT Buyer Survey, 2021

Digital Transformation Challenges in Cyprus

Digital transformation clearly stands out as the overarching priority of companies in Cyprus, across all industries. Accordingly, as already mentioned, DX has now become one of the top investment priorities in the IT area. While about 9 out of 10 companies claim to have a digital transformation strategy in place, they struggle with a series of obstacles when executing it. Expertise shortage is cited as the most prominent of these challenges, which arises from a gap in the technology- and business-related needs and the existing capabilities. This is further accentuated by the difficulty in finding and hiring new talent. Important challenges are also the legacy culture and business environment, missing business cases, and the inability to measure the progress of digitization efforts.

FIGURE 8
Challenges to Digital Transformation Strategy

Q. Which of these challenges represent the most serious obstacles to the success of your digital transformation strategy? [Choose up to three]



Source: IDC Cyprus IT Buyer Survey, 2021

Table 3 below provides interesting insights into skills gaps perceived by Cypriot companies in relation to implementing their digital strategies. Skills demanded for cloud have risen from a low-ranked gap to the most prominent among respondents. The COVID-19 pandemic has also highlighted the need for relevant skills related to security and mobile technologies. On the other hand, the gap associated with IoT skills has somehow lost importance.

TABLE 3
Skill Gaps Perceived by Cypriot Companies

	2021	2019
Frequent gap (25%+)	Cloud Big data/data science Mobile technologies Security Traditional application development (e.g., Java, Python)	IoT Artificial intelligence Traditional application development
Moderately frequent gap (20-25%)	Project management Artificial intelligence	Security Big data/data science Mobile technologies
Low frequency gap (below 20%)	Processes (e.g., ITIL) Networking IoT technologies Robotics process automation	Networking skills Cloud Robotics process automation Processes (e.g., ITIL)

Source: IDC Cyprus IT Buyer Survey, 2021

ANALYSIS OF THE IT SERVICES MARKET IN CYPRUS

Overview of IT Services Spending in Cyprus by IDC Foundation Markets

This section of the study examines the IT services industry by IDC's three primary markets, which are further segmented by foundation markets. The 13 foundation markets presented in this study represent the total addressable IT services market in its entirety (collectively exhaustive), and these individual markets do not overlap with each other (mutually exclusive).

The IT services market in Cyprus reached €113.16 million in value in 2020, representing growth of 12.8% from the levels seen in 2018. Support and training services accounted for the largest share of IT services market revenue in 2020 (44.9%), followed by project services (38.3%), and outsourcing services (16.8%).

Support and Training Services

The support and training services primary market in Cyprus totalled €50.80 million in value in 2020, making it the country's largest primary market, with

44.9% share. Spending on these services was up 7.1% compared to 2018, with growth stemming primarily from software support and maintenance services.

The majority of Cypriot companies still prefer to keep the management of their on-premises infrastructure and applications in-house, using their own resources, rather than outsourcing or using managed service providers. This results in high demand for hardware support and maintenance services.

Cypriot companies continue to invest in software support services, as they are adopting new software-centric solutions such as front-end processes; business intelligence (BI), analytics, and data management software in their back-end processes; and private and hybrid cloud infrastructure management for their infrastructure. These are all driving spending on software support and installation services.

IDC forecasts growth in IT training and education services spending. This is due to a deficit of skills required for digital transformation.

TABLE 4

Overview of IT Services Spending by IDC Foundation Markets in Cyprus, 2020

Foundation Markets	Value (€M)	Share (%)
Hardware Support and Installation	20.40	18.03%
Software Support and Installation	26.11	23.07%
IT Training and Education	4.29	3.79%
Support and Training Services Subtotal	50.80	44.89%
Network Consulting and Integration	4.70	4.15%
Systems Integration	17.39	15.37%
Information System Consulting	7.69	6.80%
Application Consulting and Customisation	6.88	6.08%
Custom Application Development	6.64	5.87%
Project Services Subtotal	43.31	38.27%
Application Management Outsourcing	1.26	1.11%
Information System Outsourcing	2.81	2.48%
Network and Desktop Outsourcing Services	1.54	1.36%
Hosted Application Management	2.15	1.90%
Hosting Infrastructure Services	11.30	9.99%
Outsourcing Services Subtotal	19.06	16.84%
Total IT Services Spending	113.16	100.0%

Source: IDC, 2021

Project Services

The project services primary market in Cyprus totalled €43.31 million in 2020, reaffirming its position as the second-largest primary market in the country, with 38.3% share. This primary market was the fastest growing, with a 20.1% increase in the past two years. Application customization made up the bulk of the growth, but systems integration also expanded healthily.

Project services will remain the fastest-growing primary market. Companies are accelerating their digital transformation initiatives as a result of the COVID-19 pandemic, application modernization, and technology-based service and product innovation. This results in lucrative application consulting, customization, and development projects related to analytics, mobile and online channels, customer relationship and experience management, digitalization of processes, and cloud migration.

Although IT departments would like to keep all competencies in house, the skills shortage in emerging domains like enterprise architecture, analytics, cloud services, and cloud and hybrid infrastructure management — and even in more traditional areas like application development, testing, and security — is forcing them to rely more on external service providers.

Outsourcing Services

The outsourcing primary market totalled €19.06 million in value in 2020, making it the third-largest primary market in Cyprus, with 16.8% share.

Hosting infrastructure services accounted for the largest share of the outsourcing services primary market, with a 10.0% share of total IT services spending. Once again, outsourcing services made up the smallest portion of the IT services market. Outsourcing adoption will be limited by the fear of lock-in and the lack of on-demand scalability of outsourcing contracts, as well as by strong competition from cloud-based application and infrastructure services.

Overview of IT Services Spending in Cyprus by Vertical Market

Federal and central government was the largest vertical market for IT services in Cyprus in 2020, with €25.97 million in spending and 23.0% market share. Banking ranked second, with IT services spending of €24.16 million representing a 21.4% share. Telecommunications ranked as the third-largest vertical market, with IT services investment of €22.87 million and 20.2% market share.

TABLE 5
Overview of IT Services Spending by Vertical Markets in Cyprus, 2020

Vertical Markets	Value (€M)	Share (%)
Telecommunications	22.87	20.21%
Federal/Central Government	25.97	22.95%
Banking	24.16	21.35%
Securities and Investment Services	6.26	5.53%
Retail	5.71	5.05%
Education	5.52	4.88%
Professional Services	4.39	3.88%
Insurance	4.09	3.61%
Wholesale	2.40	2.12%
Media	1.65	1.46%
Personal and Consumer Services	2.03	1.79%
Utilities	2.16	1.91%
Healthcare Provider	1.88	1.66%
Process Manufacturing	1.01	0.89%
Discrete Manufacturing	0.65	0.57%
Transportation	1.00	0.88%
Construction	0.78	0.69%
Local Government	0.34	0.30%
Resource Industries	0.31	0.27%
Total IT Services Spending	113.16	100.0%
Aggregated Verticals		
Combined Finance	34.50	30.49%
Telecommunications and Media	24.52	21.67%
Government	26.31	23.25%

Source: IDC, 2021

Combined Finance

IT spending in the combined finance vertical (banking, securities and investment services, and insurance) in Cyprus totalled €34.50 million in 2020. The banking sector consists of two main tiers: banking institutions focused on the local market and some 30 international banks. The key players in the country's banking sector include Bank of Cyprus, Hellenic Bank, and RCB Bank, while the rest of the market consists of smaller banks and subsidiaries of foreign banks like Greek Alpha Bank and Eurobank.

The economy entered the COVID-crisis more resilient than at the outset of the 2012–2013 crisis. The combined finance vertical has coped with the crisis well,

although challenges remain. The banking system is highly liquid and well capitalized, so that the foundations for overcoming the challenges are strong. Risks of wider bankruptcies and loan repayment difficulties are high in case policy support is withdrawn prematurely or if the economic recovery, particularly in the tourism sector, is not sufficient. Dealing effectively with both legacy and potential new non-performing loans (NPLs) by banks and by the credit acquiring companies will be critical for supporting new credit and economic recovery.

In the post-COVID era, there will be a strong focus on going digital, along with implementation of innovative solutions and integrated products. Over the last decade, there has been a surge in new digital solutions, tools, and platforms coming to the market. At the same time, the uptake of the new systems has raised concerns related to transactional security and trust.

Telecommunications

The telecom industry is capitalizing on the position of Cyprus on the crossroads of Europe, Asia, and Africa. For this, Cyprus leverages a fully digital network with stable connectivity, utilizing fiber-optic submarine cables and dedicated fiber links to major international points of presence. In terms of telecom services, Cyprus has one of the cheapest call rates in the EU. The Government of Cyprus encourages the market to invest in FTTH and 5G infrastructure and provides the incentives related to regulatory certainty and measures.

The major mobile providers — Cyprus Telecommunication Authority (Cyta), Epic (former MTN), and PrimeTel — have all been awarded concessions for 5G technology. Cablenet Communication Systems also met the eligibility criteria. 5G networks will operate in the 700MHz and 3400MHz–3800MHz frequency band, which has been designated by the European Commission and the member states of the EU as the "pilot zone" for the use of 5G across the EU. The first 5G networks started operating in Q1 2021. The obligations of licensed providers include the development and operation of 5G networks that cover 70% of the Republic of Cyprus population, just like all highway areas, by the end of 2025.

The COVID-19 pandemic has so far acted as an accelerator for digital transformation in Cyprus, with data traffic increasing by 95%. Cyta is currently rolling out faster internet connectivity years ahead of schedule, in response to a surge in demand for higher speeds during the COVID-19 crisis. There has been a steady rise of companies with digital operations in the last five years, and there has been an even bigger increase in businesses offering online sales. These figures will keep on rising, as the government has acknowledged broadband connectivity as a priority and is planning further development with the support of EU recovery funds.

Online businesses (ecommerce) will also benefit indirectly from efforts to shift governmental services online. As Cypriot citizens are encouraged to access such services via digital channels, an expansion of the already high number of tech-savvy consumers can be expected. More than 50% of citizens are already using the internet to shop for products and services.

The pandemic has brought new impetus to digital transformation in Cyprus. An increasing number of local businesses are developing their online presence and related commercial activities as internet connectivity speeds continue to improve. On the other hand, foreign ecommerce businesses and high-tech entrepreneurs are contributing to this ecosystem, attracted by its potential and a business-friendly environment. All of which prepares the way for Cyprus to become a regional digital commerce hub.

Government

Until 2019, the government of Cyprus had made full use of the thriving economy and its positive prospects, which resulted in opportunities for both local and international IT companies. Though still behind the EU average, Cyprus is progressing steadily in making government services available online. The global pandemic makes these trends even more critical, and additional workloads will be shifted online.

Thanks to favourable tax conditions, a number of international ICT companies have established regional or global headquarters in Cyprus as a hub for software development, systems integration, testing services, research and development, and marketing and sales. On top of that, the Cyprus Economy and Competitive Council (Ecompet) proposed a long-term strategy to make Cyprus “Europe’s sustainable business and trading hub” and to secure long-term growth through widening its productive base. Cyprus will leverage its competitive advantage in the services sector and place special emphasis on ICT and attracting multinational companies. The overall objective is to significantly lower the GDP contribution of the five sectors currently with the highest share of output.

To further promote Cyprus as a suitable location for international ICT business, the Cyprus Tech Association was established in April. The association offers a strong platform for all international ICT companies active on the Cypriot market to promote new opportunities and partnerships. Mr. George Campanellas, Chief Executive of Invest Cyprus, which was behind the foundation of the new association, said: “Cyprus offers enormous potential to help ICT companies of all sizes to flourish and grow, and the creation of the new association is an exciting development that will allow all companies to come together under one umbrella to shape the future of the sector in Cyprus.”

Tourism

The tourism industry in Cyprus traditionally accounts for 14-15% of the country's GDP and is one of the main engines of GDP growth. However, the sector has suffered a serious setback since the global pandemic, with earnings down by 85% year on year in 2020. International tourism is expected to recover to around 30% of its pre-crisis level in 2021. The government has adopted a proactive approach and speeded up testing and vaccination processes. Cyprus was one of the first countries that required tests to travel to its territory.

Starting from May 10, the country opened itself to vaccinated (regardless of the time of the second injection) tourists from 65 countries. These visitors will be allowed entry without the need of a negative COVID-19 test or compulsory quarantine. It is especially important that the entry conditions are eased for the largest clientele, British and Israeli tourists. The United Kingdom is the largest contributor to Cyprus' tourist trade, with one third of nearly four million tourist arrivals in 2019, while nearby Israel is the third biggest source. Russia, the second-largest tourist contributor, initially put chartered flights on ice due to worsened epidemiological data in Cyprus but gradually opened them again.

Also from May 10, the Cypriot government lifted a number of COVID-19 restrictions for tourists, among them the cancellation of the mandatory notification of the authorities regarding the intention to leave the place of stay or hotel territory. For non-vaccinated tourists, it is still necessary to present a certificate with a negative PCR test for coronavirus. According to the Deputy Ministry of Tourism, only about 0.1% of all arrivals last year tested positive. There are designated hotels for those tested positively, and Cyprus covers the costs associated with accommodation, medication, food, and drink.

Since March, a massive digital marketing campaign has been in place with significant funding to all source markets, aimed at boosting Cyprus' presence online and its image abroad. The COVID-19 pandemic has accelerated many of the plans for the national tourism strategy.

Shipping

According to the most recent official statistical data by national authorities, the contribution of shipping to the country's GDP is estimated at 7%. The shipping sector continues to serve as a generator of foreign direct investment and is even set to profit further as a result of Brexit. A number of UK-regulated ship insurers have set up subsidiaries in Cyprus out of fear that Brexit will make access to EU financial markets more difficult. Greek shipowners based in Piraeus and London have also relocated operations to set up additional offices in Cyprus.

However, the COVID-19 outbreak impacted shipping traffic and the shipping industry, especially due to:

- the limitations in movements of passengers and crew members (dramatically affecting passenger ships), which reduced both the income-generating side and the operational side of the passenger ship segment of the overall shipping industry.
- the lockdown measures in many EU Member States, reducing income generation from international trade and increasing competition for the remaining routes/sources of income.

The Cyprus Government is actively supporting recommendations from the International Maritime Organization (IMO), European Union, International Labour Organization, and the International Chamber of Shipping and has been adopting measures to facilitate crew changes in Cyprus ports, while ensuring public health.

Cyprus is also one of the countries which has designated seafarers as “key workers.” More recently, Cyprus has recognized the whole shipping sector as one of the “essential services” that do not have to operate under the current restrictive measures applied to all segments of the overall Cyprus service industry.

In these difficult times related to the global pandemic, it is crucial for Cyprus to maintain or even strengthen its position as a world shipping power. Before the pandemic, the Cyprus registry was the third-largest merchant fleet in Europe and the largest center of ship management in the EU, with a fleet of 2,500 vessels of many types under its control. Around a quarter of global third-party ship management activities are controlled from Cyprus. The country boasts some 200 shipping and shipping-related companies, most of which are world-renowned in the industry.

With the need for more transportation of necessary raw materials, consumer goods, and medical products, shipping rates have been substantially improving in recent months in most of the shipping segments (except the passenger ship segment, which is expected to gradually start operations in the summer months).

IT Services Trends

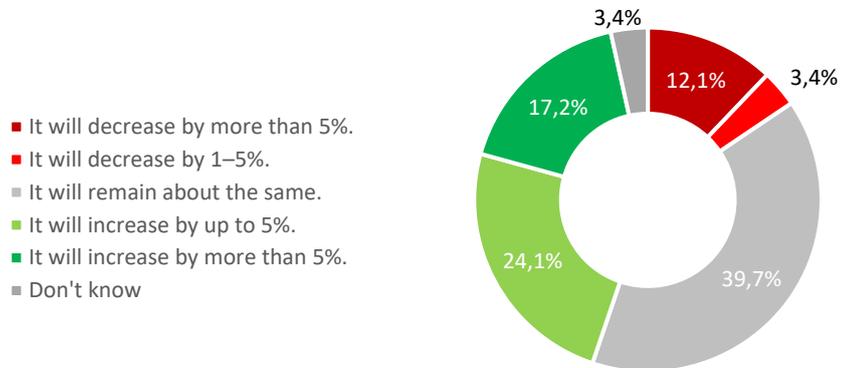
Budgets and Sourcing

The COVID-19 pandemic and the subsequent economic turmoil forced organizations to reconsider their costs, and IT budgets were typically impacted. However, the impact of the pandemic was not as dramatic as expected: According to the survey, only 24% of organizations reduced their IT budgets (10% had their budgets frozen), whereas 50% kept their budgets unchanged. Moreover, 16% of companies invested more into IT than initially planned.

Regarding future spending on IT services, the appetite for procuring external IT services will increase in more than 40% of Cypriot organizations. This trend of increasing budgets supports our expectations for dynamic growth of the IT services market in 2021.

FIGURE 9 Spending Dynamics on External IT Services in 2021

Q. Compared to 2020, what do you expect will happen to your organization's total IT services spending in 2021?

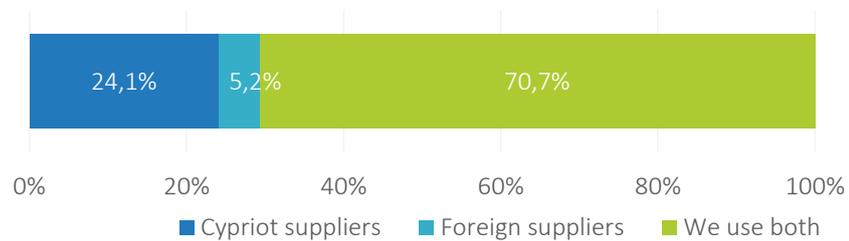


Source: IDC Cyprus IT Buyer Survey, 2021

As regards the preference for working with local versus international IT service providers, 24% organizations would like to partner with local service providers, while only 5% cite a preference for international vendors.

FIGURE 10 IT Services Vendor Preference by Origin

Q. Do you prefer to use local vendors international vendors for IT services?



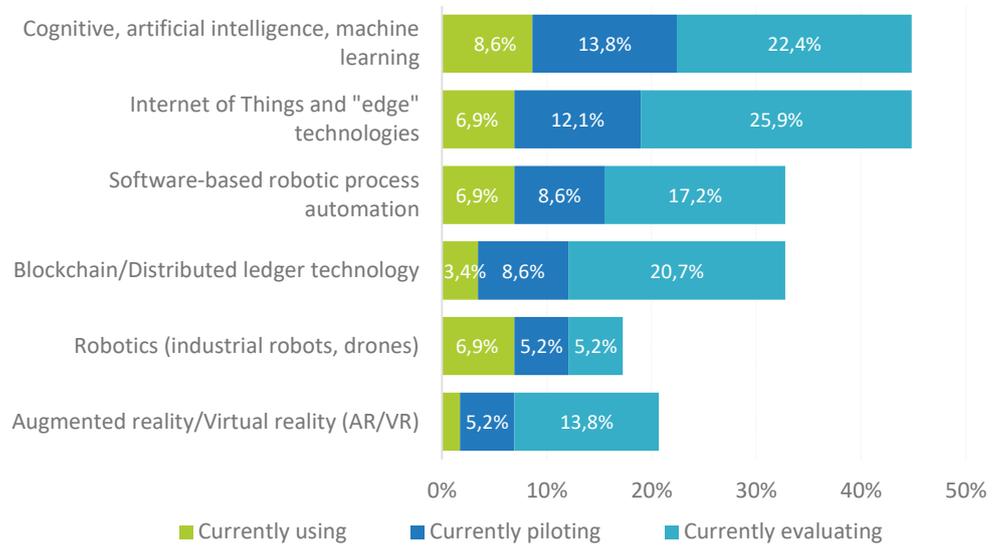
Source: IDC Cyprus IT Buyer Survey, 2019

Emerging Service Types

The figure below displays interesting insights into Cypriot organizations' adoption of emerging technologies. As companies are progressing on their DX journeys, many are exploring new technologies with their IT services partners and evaluating the potential business benefits of these technologies.

FIGURE 11 Emerging Technology Services in 2021

Q. Is your organization currently using, or planning to use in the next 24 months, an external IT services provider to help plan, pilot, or deploy any of the following new technologies?



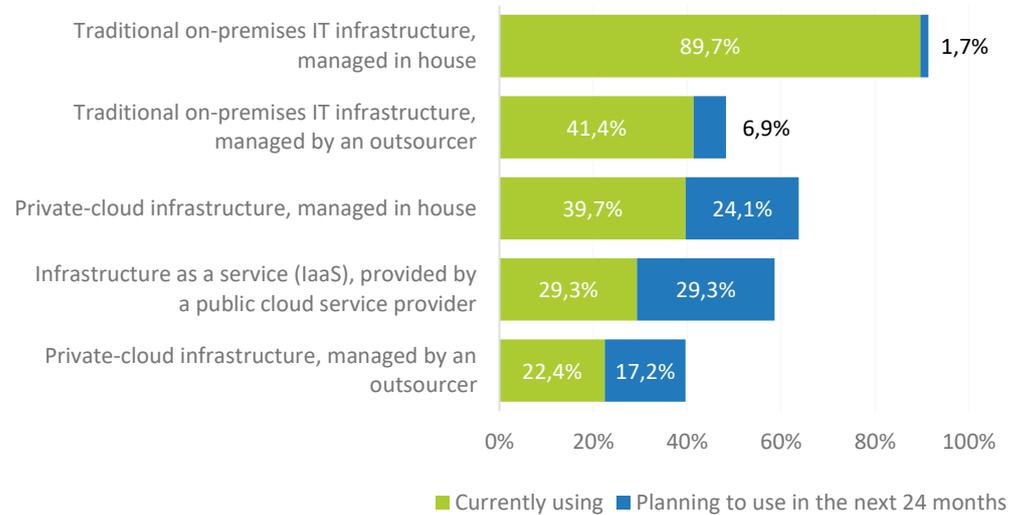
Source: IDC Cyprus IT Buyer Survey, 2021

Infrastructure Services

The bulk of Cypriot organizations are managing their existing traditional infrastructure in house, and 41% of organizations rely on an external service provider. No dramatic change is expected in the future; however, the future adoption trend is different for cloud services. As Figure 12 indicates, many organizations are on their cloud adoption journey. Private cloud and IaaS are expected to become popular deployment models in the next 24 months. The main reasons, in terms of the cloud benefits recognized by Cypriot organizations, are analyzed in more detail later in this report.

FIGURE 12 Adoption of Infrastructure Services

Q. Is your organization currently using, or planning to use in the next 24 months, any of the following infrastructure services?



Source: IDC Cyprus IT Buyer Survey, 2021

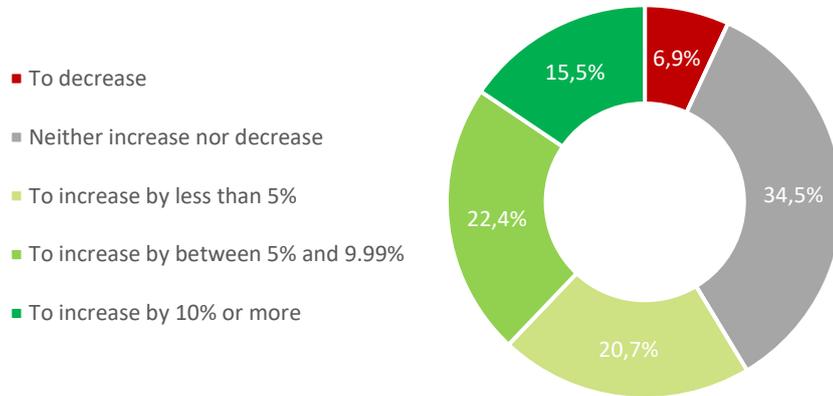
Organizations are generating, collecting, and processing more and more data. In addition, they are investing in digital products and services, which are marketed and delivered to their clients through digital channels. As the previous Figure demonstrated, public and hybrid cloud deployments are becoming the preferred IT infrastructure models. All of these factors are creating unprecedented demand for datacenter and infrastructure management services.

Figure 13 below describes Cypriot organizations' plans to invest in datacenter and infrastructure management services. Only a tiny portion of organizations are reporting a decrease in spending. The majority — almost 60% of companies — are expecting significant investments in these types of services.

FIGURE 13

Spending Dynamics on Datacenter and Infrastructure Management Services

Q. How do you expect your overall spending on external datacenter outsourcing and IT infrastructure management services to evolve over the next 24 months?



Source: IDC Cyprus IT Buyer Survey, 2021

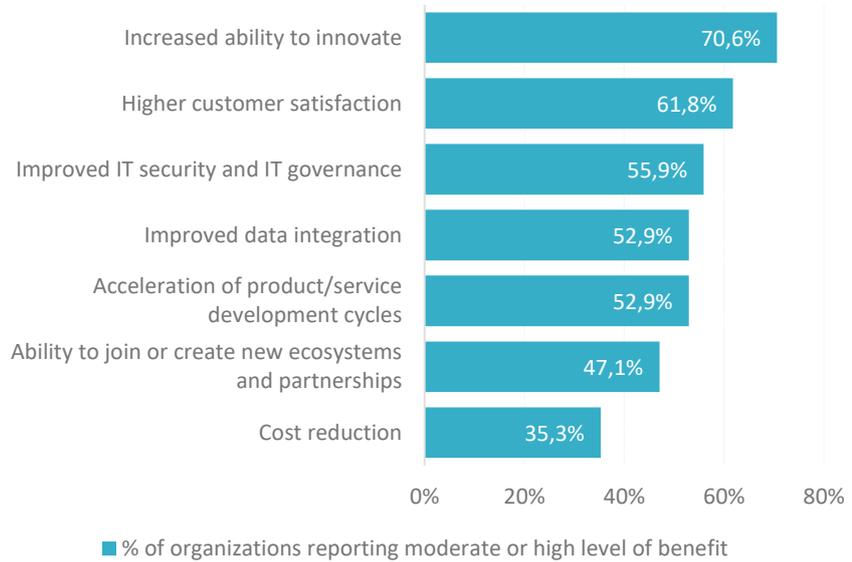
Cloud Services

Cloud, in all its permutations (public/private/hybrid/multi/edge) and market segments (hardware/software/services/as a service) will play an increasingly important role across the IT industry, representing the dominant driver for the foreseeable future. Like any other technology that yields tangible benefits, cloud also introduces challenges that need to be addressed.

In the past, organizations reported notable benefits of cloud deployment mainly on the IT side — e.g., cost reduction, move to an OPEX model, or improved IT governance. Today, the benefits of cloud cross the boundaries of IT departments and help organizations achieve business objectives. For example, Figure 14 indicates that Cypriot organizations have identified innovation capability, customer satisfaction, and product development as the business areas most enabled and accelerated by the adoption of cloud services.

FIGURE 14 Cloud Benefits

Q: To what extent has your organization's deployment of cloud services produced the following tangible benefits?



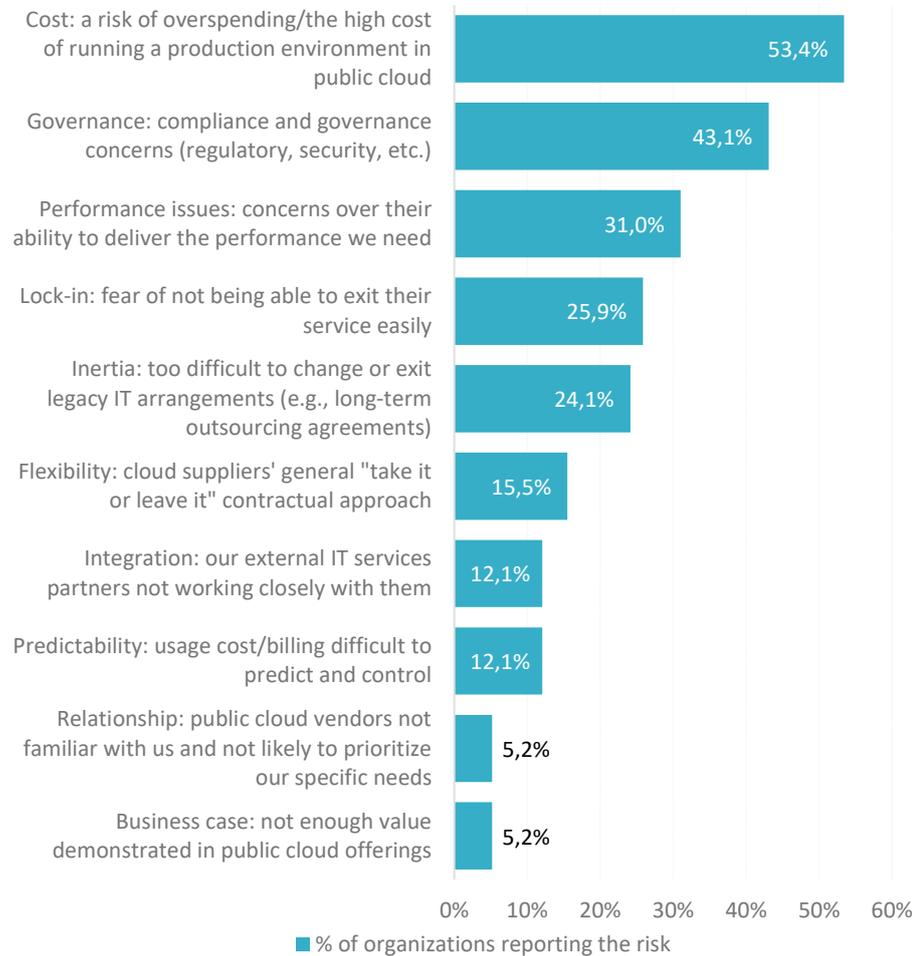
Source: IDC Cyprus IT Buyer Survey, 2021

On the other hand, there are still a number of challenges hampering the further adoption of public cloud. Surprisingly, more than half of Cypriot organizations see the high cost of running public cloud services as the main barrier. We are of the opinion that more transparent public cloud pricing models or building a detailed business case for public cloud could help Cypriot organizations overcome this concern.

In the survey, the governance factor was mentioned as the second biggest barrier. This obstacle is not specific to Cyprus but is reported consistently across European countries. The implementation of GDPR in the EU has revealed how challenging it is to manage compliance, regulatory, and enforcement aspects in public cloud environments. Data governance and regulatory compliance issues are among the main reasons many European organizations are reluctant to migrate to public cloud and prefer private or hybrid deployment models.

FIGURE 15 Barriers to Cloud Adoption

Q: Considering public cloud services vendors which of the following would be the most important reasons for your organization NOT to use them or to restrict engagement with them?



Source: IDC Cyprus IT Buyer Survey, 2021

FUTURE OUTLOOK

Market Forces

As reflected in our forecast, the following factors will have the major direct impact on the Cypriot market in the coming years.

- Embracement of IT in the post-pandemic era:** The economy is set to gradually recover from the COVID-19 pandemic. However, the changes to the structure of the economy and business activities will be more profound than was the case after the previous financial crisis. At the core of these changes will be the increased adoption of information technologies. Their usage has surged in the public sector (e.g., education,

healthcare, and egovernment), while a high number of private organizations have adopted various digital business models.

- **Government support for ICT infrastructure:** The government is aware of the potential of ICT to improve the performance of all major segments of the economy. That is why it introduced the ambitious broadband plan with high-speed coverage. The circumstances related to the COVID-19 pandemic have only streamlined the process. Additionally, 5G mobile services have been given the green light following the successful award of respective licences to all major domestic players.
- **Innovation and start-ups:** As the above-mentioned drivers could be limited by the lack of qualified ICT personnel, the government also offers financial incentives for innovative start-ups, including start-up visas for international talents from non-EU countries. Also, local universities and technology institutes are stepping up their efforts to educate an increasing number of highly skilled graduates in order to meet the demand from Cypriot companies.
- **Digital transformation:** Digitalization of core processes is crucial for organizations in both the public and the private sectors to remain competitive in an increasingly dynamic environment and to provide improved services to internal and external users. The result of digital transformation should be the restructuring of organizational processes, especially those pertaining to customer services and data management.

Market Forecast

IDC expects ICT spending (including the telecom market) in Cyprus to increase 2.6% year on year in 2021 to total €709.72 million.

IT spending (excluding the telecom market) is expected to increase 4.8% year on year in 2021 to total €242.06 million.

IT services spending is expected to increase 6.1% year on year in 2021 to total €120.06 million.

The Cypriot economy is expected to continue to recover and digital transformation to accelerate as a result of the global pandemic. IDC predicts that spending across all ICT market segments in Cyprus will grow.

IT services and software will be the highest-performing segments over the forecast period, posting compound annual growth rates (CAGRs) of 6.8% and 5.5%, respectively, due to increased demand for digitally enhanced solutions and services.

TABLE 6
Overview of ICT Markets in Cyprus 2018-2023 (€M)

Market Segments	2018	2019	2020	2021	2022	2023	CAGR (%) 2018–2023
Total ICT Market	659.39	678.14	692.10	709.72	730.05	752.36	2.7%
Total IT Market	210.05	222.87	230.91	242.06	255.38	271.05	5.2%
Total Telecommunications Market	449.34	455.28	461.19	467.65	474.67	481.31	1.4%
Total IT Equipment	72.60	74.90	76.62	78.62	80.82	83.08	2.7%
Total IT Services	100.33	108.91	113.16	120.06	128.71	139.55	6.8%
Total Software	37.13	39.05	41.12	43.39	45.86	48.43	5.5%

Source: IDC, 2021

ADVICE FOR THE TECHNOLOGY SUPPLIER

Making Use of COVID-19 Pandemic and Jumping on the Tech Wave Bandwagon

The Cypriot economy has undergone a serious blow following the global pandemic. That said, compared to other countries in the region and the EU as a whole, it has been coping with the economic repercussions relatively well. The post-COVID era will be characterized by the increased use of IT that will transform business models and operations in many industries. The government is facilitating this process by its proactive approach, underpinned by the establishment of the Deputy Ministry of Innovation, Research, and Digital Policy, but more importantly, through practical steps like the recent strategy and draft bill for blockchain technology. Apart from the already thriving fintech industry, a similar potential lies in other hi-tech areas. Major ICT investments and infrastructure projects can be expected across the economy. Finance organizations will invest in GDPR and regulatory compliance, and other projects will take place in the telecom, shipping, tourism, and public sectors (including education). It is important that local suppliers, in collaboration with leading global vendors, meet the increasing demands for sector-specific services and solutions. For Cyprus, being a small market, it is critical to look at opportunities (and technology alliances) abroad, particularly in countries with which it traditionally has close ties.

Facing the Digital Transformation Challenges with Skilled Workforce

Digital transformation among Cypriot companies is underway, benefitting notably from governmental support. It is crucial that IT companies have the necessary professionals with adequate skills to cope with the challenges of digital transformation across verticals. The level of IT skills among local graduates is generally considered very good, but they are too few to meet the demand of IT companies in Cyprus, which often need to seek relevant skills abroad. Collaboration with innovative start-ups, supported by financial incentives, might be a way to alleviate this challenge.

Meeting Expectations and Addressing Concerns in Cloud Adoption

Cloud, in all its permutations will play an increasingly important role across the IT industry, representing the dominant driver for the foreseeable future. Like any other technology that yields tangible benefits, cloud also introduces challenges that need to be addressed. It is crucial that suppliers meet organizations' expectations in terms of cost reductions, innovation capability, or product development. At the same time, suppliers need to address challenges hampering the further adoption of public cloud. We are of the opinion that more transparent public cloud pricing models or building a detailed business case for public cloud could help Cypriot organizations overcome concerns related to costs. It is equally important to deal with the governance factor, especially in relation to data protection.

APPENDIX

List of Abbreviations

5G	— Fifth generation (of mobile service technologies)
BI	— Business intelligence
CCB	— Cyprus Cooperative Bank
CCS	— Cyprus Computer Society
CIO	— Chief Information Officer
COVID-19	— Coronavirus Disease 2019
CRM	— Customer Relationship Management
DX	— Digital transformation
EU	— European Union
FTTH	— Fiber-to-the-home
GDP	— Gross Domestic Product
GDPR	— General Data Protection Regulation
Gbps	— Gigabits per second
IaaS	— Infrastructure as a Service
ICT	— Information and communication technologies
IDC	— International Data Corporation
IoT	— Internet of Things
IT	— Information technology
ITIL	— Information Technology Infrastructure Library
Mbps	— Megabits per second
MHz	— Megahertz
NPL	— Non-performing loans
OPEX	— Operating expenses
PCR	— Polymerase chain reaction
SaaS	— Software as a service
SMBs	— Small and medium-sized businesses
SMS	— Short message service
UK	— United Kingdom
VPN	— Virtual Private Network

Research Sources

IDC utilizes both qualitative and quantitative approaches. For this study, analysts conducted interviews with both end users and major IT services providers operating in Cyprus. Qualitative interviews were further complemented by quantitative online and offline surveys covering both the demand and supply side.

IDC also evaluated publicly available quantitative and qualitative information, such as annual reports, homepage listings of financial information, and filings with security commissions, as well as secondary source literature, academic texts, and publicly available government information. It is important to note that no one source is dominant. In each case, IDC analysts weight all sets of inputs and use

their judgment as to which sources are more likely to be accurate. The weight of any one variable changes based on the revenue being evaluated, the relationship with the supplier, the detailed information available through public sources, and other relevant factors.

IDC carried out a survey of a representative sample of Cypriot companies of various business sizes, the *IDC Cyprus IT Buyer Survey, 2021*, to assess technology buyer priorities, preferences, and trends. The universe of companies with more than 50 employees provides more than 90% of the spending on IT services, software, and enterprise hardware in Cyprus and therefore constitutes the primary target market of IT vendor companies. The survey was carried out online in the period of April-May 2020.

Market Representation

All charts sourced from the *IDC Cyprus IT Buyer Survey, 2021* show results for the market composed by companies of all sizes. Companies with more than 100 employees constitute almost three quarters of the sample.

Revenue Recognition

To attain an aggregate number for the IT services market, IDC has isolated revenue that was generated through third-party IT services providers. It is necessary to understand subcontracting between service providers in order to comprehend this procedure. The prime contractor records a contract as a source of revenue, and so does the subcontractor, and so on. As IDC's 13 foundation market categories are based on demand-side spending (reporting on end-user purchases of services from third-party providers), subcontracted revenue to third parties must be eliminated when determining the total size of the IT services market.

Notes on Forecasting

IDC uses surveys, technology assessments, country demographics, and economic data to develop forecasts. All of these factors were important in this study. IDC is often asked about its economic assumptions and their relationship to spending trends in the technology marketplace under examination. IDC usually takes a neutral approach to the economy, essentially building their forecasts on historical rates of economic growth. Neutrality is also a goal in the treatment of areas such as inflation. In the estimation of IT services-related expenditure, for example, inflation is considered to be zero or insignificant.

About Cyprus Computer Society (CCS)

The Cyprus Computer Society (CCS) is a professional and independent not-for-profit organization, seeking to improve and promote high standards among informatics professionals, in recognition of the impact that informatics has on the economy, society, organizations, and citizens' quality of life. Established in 1984, the CCS has been active in the areas of education and training and research and

development through the organization of high-quality events and working groups, collaborations with local and foreign public and private organizations, the implementation of European projects, and active participation in international associations and consortia.

This report signifies the commitment of the CCS to further enhance the quality and portfolio of its services to the ICT and the business community. We envisage that it will prove a useful tool both for foreign investors in the ICT field and the domestic business community.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.