

# Public sector digital transformation

Strategies and challenges / Data center technologies  
Cloud computing / Data management  
Financing of IT investments

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**Public sector digitization, including government and regional self-government entities, is following in the footsteps of the digital transformation of businesses.**

## Computerworld survey

Public sector digitization, including government and regional self-government entities, is following in the footsteps of the digital transformation of businesses. The main goal remains the same: optimizing processes by using digital techniques to ensure that public administration entities can respond with agility to a changing environment.

The effective realization of the public interest and efficient service for the citizens contribute to the acceleration of national economies of EU countries, allowing less prosperous countries to align their level of development with the most economically developed countries of Europe and the European Union as a whole to remain competitive in global markets, mainly to the United States and China.

A component of success in this area is the modernization of infrastructure and applications, and the way data is used in the public sector, with regulatory support at the national and European levels toward data sovereignty and sustainability. The technological driver of these changes should be a wider implementation of cloud solutions.

In this context, one should not forget the current challenges for the entire IT sector: the increased level of cyber threats, geopolitical uncertainty and the energy crisis. Adapting to the new situation requires further digitization of public sector entities.

A survey conducted in 14 European countries by Computerworld, HPE and AMD aimed to find answers to the question regarding the current level of use of digital technologies and solutions in public administration entities, including the level of cloud computing implementation and understanding of the data economy.

## Executive summary

### IT strategies and technologies

With the increase in cyber threats and geopolitical uncertainty, IT priorities for the government remain in line with current IT challenges. As many as 96% of survey participants noted the need to maintain a high level of cybersecurity. Attention should be given to issues specific to the public sector. The galloping development of technology entails the growing expectations of citizens for services provided electronically (91%). At the same time, the digitization of the public sector cannot proceed without taking into account national and European legal requirements (95%).

The way to address current challenges is to make greater use of IT innovations. Present-day data centers are brimming with modern technologies. Today, cybersecurity solutions (81%) and virtualization (72%) are widely used in the public sector. There is growing interest in containerization, artificial intelligence, and 5G / Wi-Fi 6. Among modern IT solutions that support the processes of public sector entities, data-sharing technologies (51%), SaaS applications (30%), and various types of multimedia systems, such as interactive screens (30%), play the biggest role.

### Data management

The public sector collects and processes huge amounts of data, which, if skillfully shared, can drive the economy and the advancement of societies. However, the value of the data produced, stored, and shared strictly depends on the level of their maturity.

71% of organizations indicate a high level of maturity in the data they process. 18% of entities in this group use business intelligence (BI) systems, another 12% can analyze unstructured data, while 23% of public sector entities reach for data from various sources when making decisions.

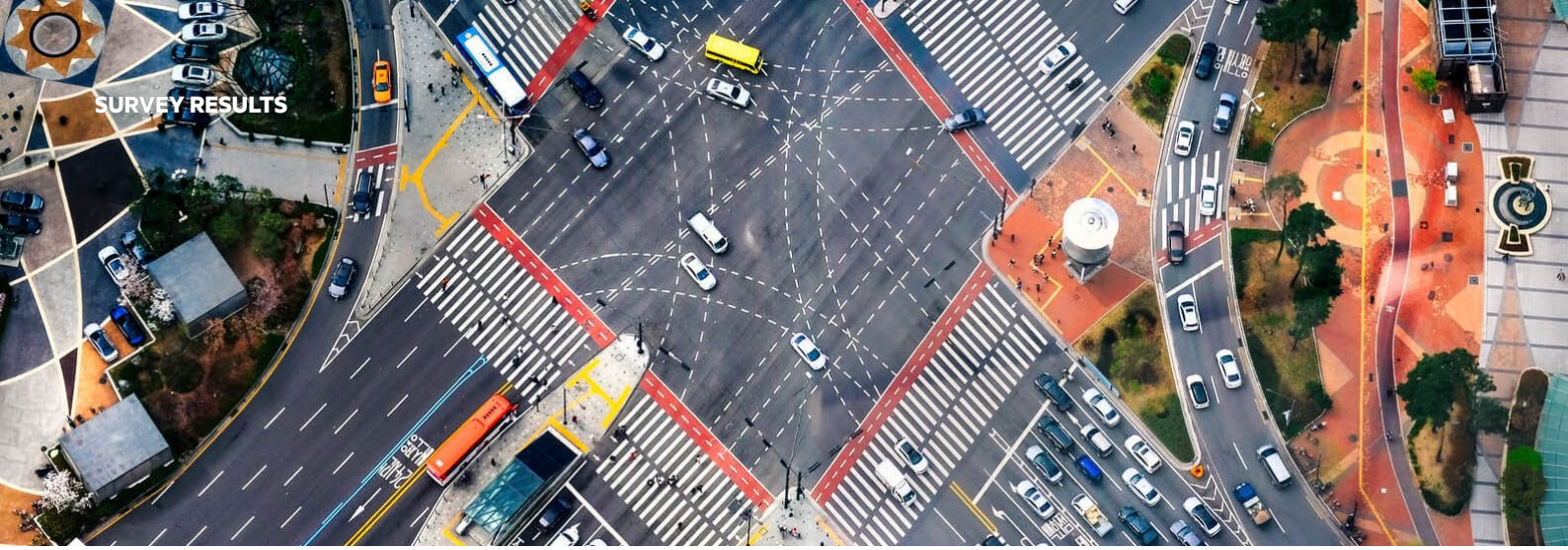
According to survey participants, the biggest barriers to creating shared data spaces seem to be storing data locally, outside the cloud (42%), and concerns about handling sensitive and confidential data (42%).

### Cloud computing

In the public sector, a certain amount of distrust regarding cloud computing is apparent. The survey found that 36% of organizations today are already using this computing model, while 35% of entities have not made the decision and have no plans to migrate their systems and data externally.

According to 51% of survey participants, the most important factor that motivates public sector organizations to move their IT systems and resources to the cloud is the opportunity to increase agility in service delivery. 43% of respondents admitted that the cloud would enable them to deploy new applications faster.

On the other hand, obsolete business applications (LOB) constitute a factor that significantly blocks the migration of systems and data to the cloud. Two different stances are evident here. 32% of participants admitted that they operate applications in their data centers that do not meet the conditions for running in the cloud. However, 37% of entities are successively rewriting and upgrading older applications to take advantage of current cloud technologies, while another 28% are using virtualization and containerization to run LOB systems in the cloud.



**For 96% of public sector organizations, maintaining a high level of cybersecurity is the top IT priority**

## IT priorities

With the rise of cyber threats and geopolitical uncertainty, government IT priorities remain in line with the current challenges facing IT departments in various sectors of the economy. As many as 96% of survey participants noted the need to maintain a high level of cybersecurity. For 63% of them, issues related to ensuring business continuity, or protecting sensitive data, are fundamental to the organization’s functioning in the digital world.

The galloping development of technology entails the growing expectations of citizens for e-government services. Meeting these expectations is a key (48%) or an important (43%) aspect of IT development for 91% of organizations.

The digitization of the public sector cannot be carried out without taking into account national and European legal requirements. 45% of respondents considered these issues a key priority for IT, while another 49% considered them at least important. What is more, the new and changing legal environment is a kind of catalyst for change toward a deeper use of digital technologies.

Rounding out the list of priorities for IT that survey participants overwhelmingly rated as important, though not necessarily crucial, were the pursuit of agility in developing new applications, ensuring sustainability, and increasing energy efficiency. In contrast, a fairly neutral approach to data management, including data sharing and analysis, can be observed in the opinion of survey participants.

### What are your strategic IT priorities?

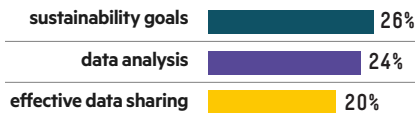
#### TOP3: most important



#### TOP3: important



#### TOP3: neutral





## Data center technologies

**81% of public entities use sophisticated cyber security solutions to defend against network attacks, data leakage or internal sabotage, among others.**

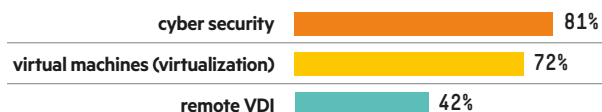
Present-day data centers are brimming with modern technologies. Today, advanced cybersecurity solutions and virtualization are widely used in the public sector. Meanwhile, there is growing interest in containerization, artificial intelligence, and 5G / Wi-Fi 6 networks.

81% of public entities use cyber security solutions to defend against network attacks, data leakage, internal sabotage, and other current threats. The public sector also boasts a high saturation of data centers with virtualization solutions. 72% of organizations are already using virtual machines to run computing resources, and another 8% of entities are at an advanced stage of implementing a virtual environment in their server rooms. Virtual desktops are also very popular (42%), which, in the context of remote and hybrid work, allow employees to get away from their desks.

The list of the most frequently deployed data center technologies in public sector entities today opens with containerization (22%), 5G and Wi-Fi6 networks (17%), as well as artificial intelligence and machine learning solutions (15%). The latter two are, along with the cloud, the top two solutions planned for implementation in the area of new technologies.

### Which data center services and technologies are or could be applied in your organization?

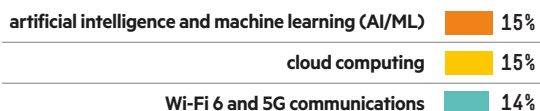
#### TOP3: we are using



#### TOP3: we are in implementation



#### TOP3: we are planning to implement





## IT embedded in processes

**51% of organizations use advanced data sharing technologies**

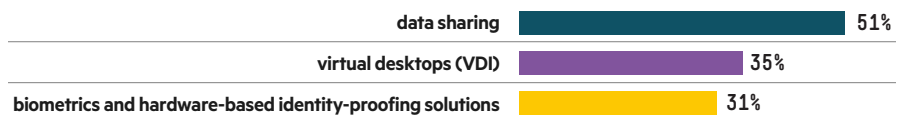
Modern IT solutions provide support for processes in public sector entities. 51% of organizations are currently using advanced data-sharing technologies, and another 21% are working on implementing them.

Roughly one in three organizations (30%) have incorporated SaaS applications into their business processes, as well as various types of multimedia systems, for example, interactive displays (30%). In terms of security measures, 31% of European public sector entities have implemented biometrics and hardware-based identity authentication solutions. This is the category of solutions that is most likely to be more widely used in the public sector. 12% of organizations are working on implementing such technologies, and another 16% plan to use them in the near future.

In contrast, public administration still makes little use of graphics processing units (GPUs) to accelerate data analysis (68% of entities do not use such solutions) or mobile Internet of Things solutions such as wearable devices. However, both of these solution categories show strong growth prospects.

### Which IT solutions support business processes in your organization?

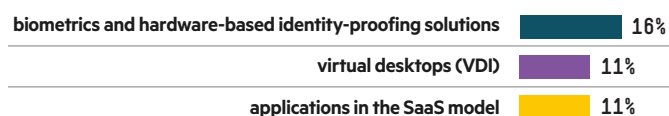
#### TOP3: we are using



#### TOP3: we are in implementation



#### TOP3: we are planning to implement



## Data management

**23% of public sector units use data from a variety of sources for the purpose of building insights about the organization and making decisions**

The key value of any organization resides in data. The public sector collects and processes huge amounts of data, which, if skillfully shared, help drive the economy and the advancement of societies. However, the value of the data produced, stored, and shared strictly depends on the level of their maturity.

The level of public sector data maturity in European countries can be regarded as average. Let's start with some rather not-so-positive information. As many as 18% of those surveyed admitted that data in their organizations is essentially useless, as it is not leveraged in any way for analytical purposes. A further 11% of government entities operate on silos of structured data, with ad-hoc reporting.

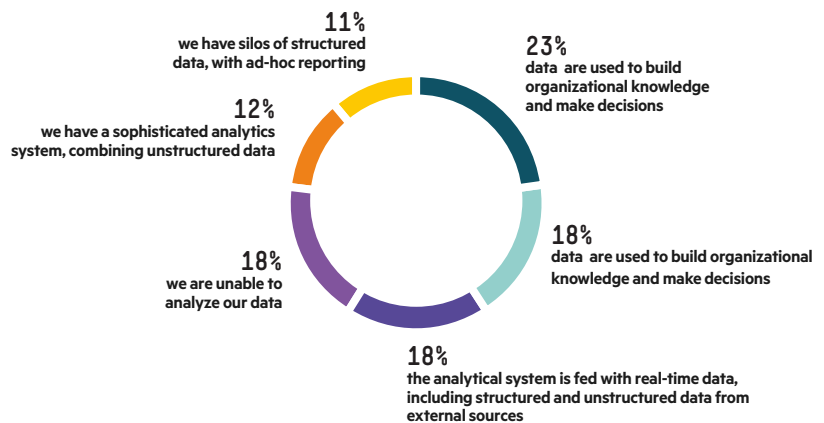
At the same time, as many as 71% of organizations indicate a higher level of maturity in the data they process. 18% of entities in this group are able to analyze and share data with the involvement of a business intelligence (BI) system, and another 12% have a sophisticated analytics system in place to tap into unstructured data. Meanwhile, 23% of public sector entities use data from a variety of sources to build organizational insights and make decisions.

**46% of survey participants identified local, non-cloud data storage as the biggest obstacle to data sharing**

Leveraging data to build public sector value requires seamless sharing between internal and external entities, including commercial entities. However, there are a number of factors that have been real constraints to the creation of shared data spaces. 46% of respondents cited storing data locally, outside the cloud, as the most important obstacle to data sharing. Another 42% of respondents are clearly concerned about handling sensitive and protected data, perceiving taking data to the cloud as a security risk.

According to survey participants, inadequate regulations (32%), insufficient knowledge and skills in this field (37%), and the quality and integrity of the data held (26%) still contribute significantly to the reluctance to create shared data spaces.

**At what level of maturity are the data produced, stored, and shared within the organization?**



**Which factors limit the creation of shared data spaces?**





**36% of public sector organizations use cloud computing**

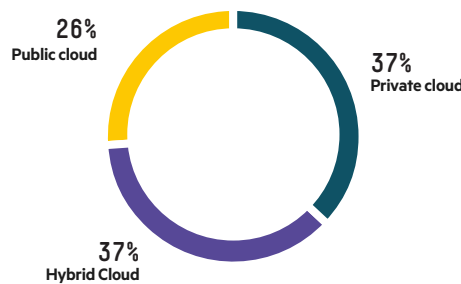
## Cloud in the public sector

In the public sector, a certain amount of distrust of cloud computing is perceived. The survey shows that 36% of organizations are already using this computing model today, while another 35% of entities have not decided and have no plans to migrate their systems and data externally. However, it can be assumed that in line with the strongly promoted „cloud first” strategy, cloud adoption in the public sector will proceed. Here are the facts: 14% of organizations are currently

implementing the cloud in their IT environments, and another 15% plan to do so in the foreseeable future.

The details are as follows: 37% of entities use a private cloud, 26% use a public cloud, and the remaining 37% use a hybrid cloud, combining the resources of the other two cloud computing models.

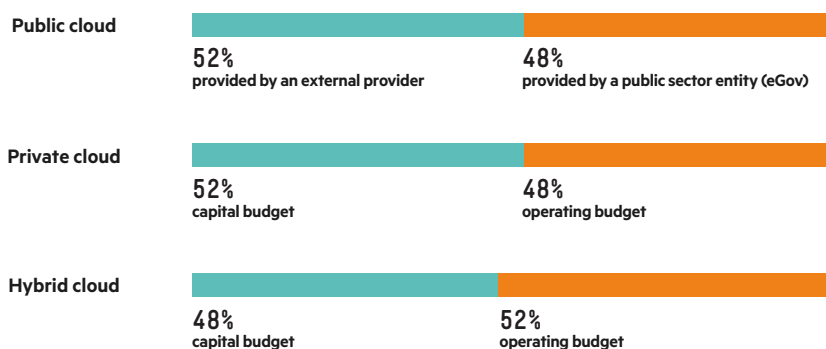
### According to your answer above - which type of cloud computing?



In the case of the deployment of private cloud and hybrid cloud, there is a balance between organizations that have chosen to fund such projects with investment (capital) funds and those that fund the cloud with operational funds.

In the case of the public cloud, 48% of organizations have chosen services provided by public or government entities (eGov) while the other half (52%) have moved their IT resources to an external provider.

### What kind of cloud solutions do you use?





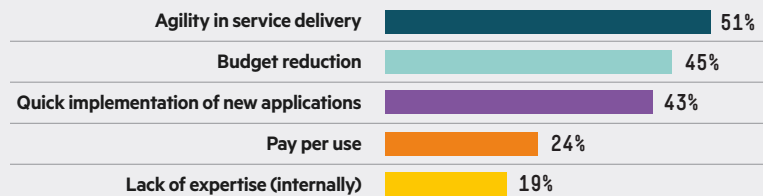
## Advantages and constraints of migrating to the cloud

**51% organizations see the cloud as an opportunity to increase agility in service delivery**

According to 51% of survey participants, the most important factor that motivates public sector organizations to move their IT systems and resources to the cloud is the opportunity to increase agility in service delivery. 43% of respondents acknowledged that the cloud would enable them to deploy new applications faster.

At the same time, 45% of respondents see using the cloud as an opportunity to reduce IT spending (smaller budgets). At the same time, only 24% of those completing surveys indicated that the reason for migrating to the cloud is the ability to change the billing model and pay for services according to their use (pay per use).

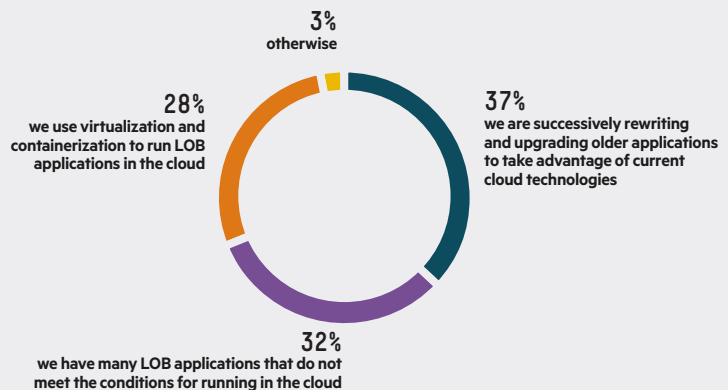
**What factors would make you move to the cloud?**



On the other hand, a factor that significantly blocks the migration of systems and data to the cloud are obsolete business applications (LOBs). In the public sector, similarly to the overall IT market, two approaches to this issue are evident. 32% of participants admitted that they operate applications in their data centers that do not meet the conditions for running in the cloud and thus do not see an opportunity to move them externally.

The other approach is to take steps to enable the migration of LOB applications to the cloud. 37% of public sector entities are already successively rewriting and upgrading older applications to take advantage of current cloud technologies. Another 28% of entities use virtualization and containerization to run LOB systems in the cloud.

**Are branch-office (LOB) and obsolete applications blocking the transfer of systems and data to the cloud in the organization?**



## Data in the cloud

What motivates public sector entities to move data to a private or public cloud? The largest number, 81% of respondents, concur that the cloud helps ensure a higher level of business continuity. 43% of respondents out of that number are strongly positive about this.

**According to 81% of respondents, the cloud provides a higher level of business continuity**

71% of organizations have reached or will reach for cloud computing because of its ease of management and ability to delegate responsibility for assigned tasks. Another 70% of public sector entities see the cloud as an opportunity to address current end-user demands. At the same time, respondents provided divergent opinions on whether the cloud commits to IT budgets for the long term. 31% maintained a neutral stance on the issue.

On the other hand, the list of the most frequently cited arguments with which survey participants disagreed includes increased cyber security (20%), the possibility of ensuring data sovereignty (17%), and the possibility of optimizing costs (13%). Although the percentage of respondents expressing such a negative opinion is relatively low, it perfectly conveys the doubts of those employed in the public sector about the cloud.

### Which factors and arguments are good reasons for moving data to a private or public cloud?



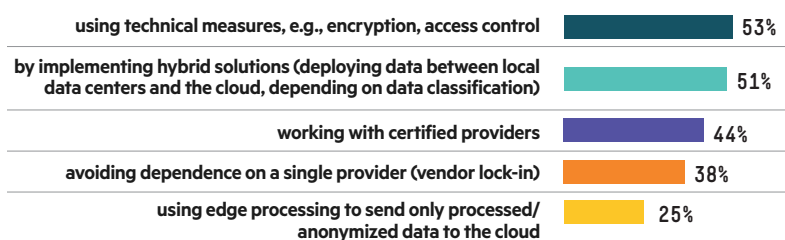
**51% of respondents believe that the way to preserve data sovereignty is to deploy hybrid solutions**

A wide range of technologies and solutions are available today for organizations to maintain control over data moved to the cloud. According to 53% of survey participants, organizations can use technical measures (encryption, access control systems) to effectively secure data processed in external data centers.

51% of those surveyed believe that in order to maintain data sovereignty, organizations should implement hybrid solutions, i.e. processing data locally or in the cloud depending on their classification.

To maintain control over data, it is necessary to use certified providers (this is the opinion of 44% of IT managers) and to design the architecture of the cloud environment in such a way as to avoid dependence on a single provider, the so-called vendor lock-in (38%).

### According to you, how can organizations use the cloud so that they don't lose control of their data?



# The role of central institutions in the digitization of the public sector

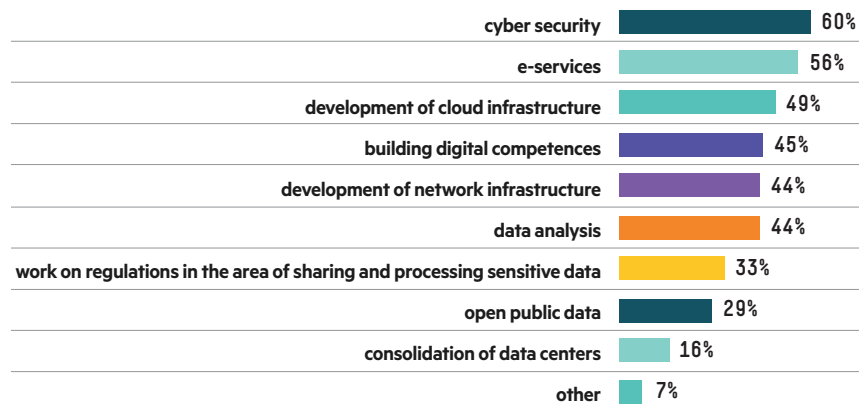
National central institutions play a significant role in the digital transformation of public sector entities. According to 60% of respondents, the starting point in the move toward the digitization of public administration entities is ensuring the expected level of cyber security.

According to 56% of survey participants, central initiatives and solutions can constitute a catalyst for change toward further development of electronic services. 49% of respondents see an important role for central institutions in adopting the cloud, and another 44% recognize their role in developing and upgrading network infrastructure.

In the context of efforts to accelerate the digital transformation of public sector organizations, it is impossible not to raise the data processing issue. Between 29-44% of respondents expect central institutions to continue working in areas of open public data, sharing and processing sensitive data, and analytics.

**According to 56% of survey participants, central /government initiatives and solutions can be a catalyst for change towards further expansion of electronic services**

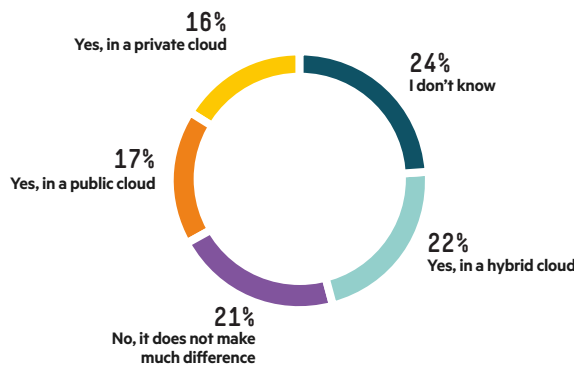
**According to you, which initiatives and solutions are accelerating digital transformation?**



How does cloud computing fit into this context? Can central, that is, governmental initiatives contribute to faster cloud adoption in public sector entities? More than half of the survey participants (55%) agree with such a statement, though there is no absolute unanimity here as to whether it will be the public cloud (17% of that number), private cloud (16%), or hybrid cloud (22%).

On the other hand, 21% of respondents believe that central initiatives have little impact on the speed of cloud adoption in the public sector while the remaining 24% have no clear opinion on the subject.

**In your opinion, do central, governmental initiatives contribute to faster adoption of cloud computing in government entities?**



**In 51% of public sector organizations, IT purchasing decisions are made at the top management level**

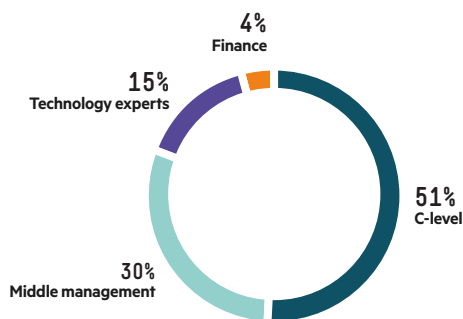
## Purchasing process and financing

In 51% of public sector organizations, IT purchasing decisions are made at the level of top management, i.e., those with executive titles in the organization. For another 30% of entities, middle-level managers have the most influence on purchasing, and only in the remaining 15% of entities do people directly involved in IT.

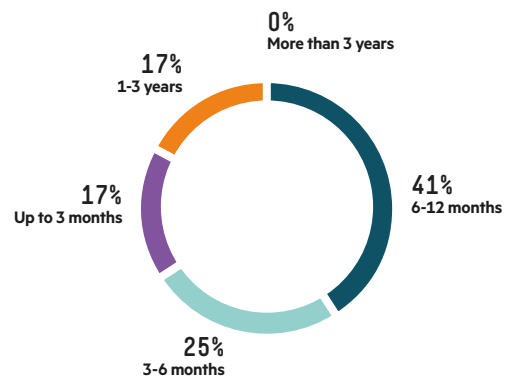
It is noteworthy that the time it takes to complete the purchasing process seems to be balanced. The largest number, 41% of public sector entities, reported that the time it takes from outlining a purchase need to placing an order is between 6-12 months.

For 25% of organizations, the purchasing process takes from 3-6 months, while the process takes more than a year for 17% of them.

**Who makes decisions regarding the purchase process?**



**How long is your buying cycle, from interest to purchase order?**





Do public sector entities have sufficient funds for developing and upgrading their IT resources? 68% of public organizations say they have funds for IT modernization, but only 12% of entities out of this number have sufficient funds of their own to carry out planned projects.

31% of organizations will have to reduce their ongoing activities in this area, focusing on addressing the most pressing needs,

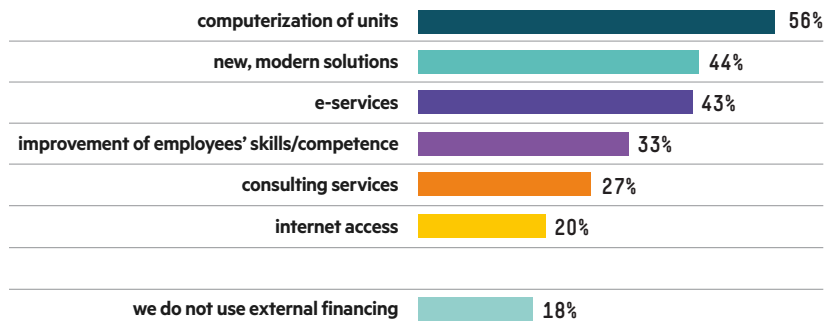
while another 25% of institutions will have to seek external funding. 16% of survey participants say straight out that without European funds they will not be able to modernize their IT, while 10% count on national or government funding in this area.

Regardless of their budgets, as many as 82% of organizations are reaching for external funding to modernize or purchase technology. 56% of public sector entities

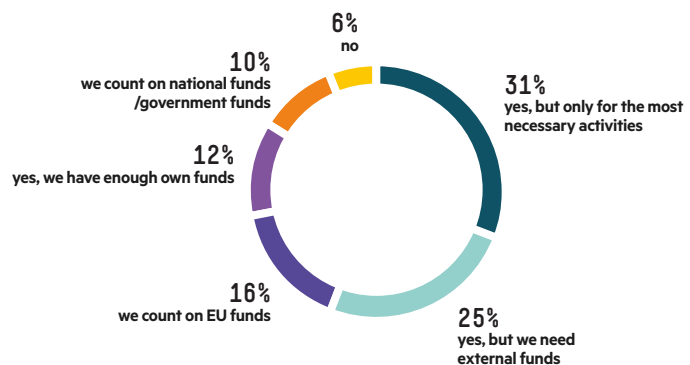
allocate additional sources of funding for general informatization, 44% for the implementation of new solutions, and another 43% for the deployment of various types of electronic services for internal use or the development of the information society. Nowadays, additional funding from national or European funds is less important when it comes to financing Internet access and the purchase of consulting services.

**82% of organizations seek external funding for technology upgrades or purchases**

**How are you going /do you plan to use national programs and European funds? \***



**Does your organization have a budget planned for modernization?**



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**Accelerating digital transformation:** Realize your digital ambition with HPE Pointnext Services. Pointnext experts help companies transform, integrate, and operate IT, regardless of their requirements.

**Partnering with an extensive ecosystem:** Adopt solutions supported by leading HPE and AMD partners offering flexibility, faster deployment, and less risk. This extensive ecosystem gives choice as companies plan their edge-to-cloud environments, with the reassurance of thousands of tested real-world implementations.

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