



TRENDS AND OPPORTUNITIES IN THE GLOBAL SOFTWARE AND IT SERVICES INDUSTRY



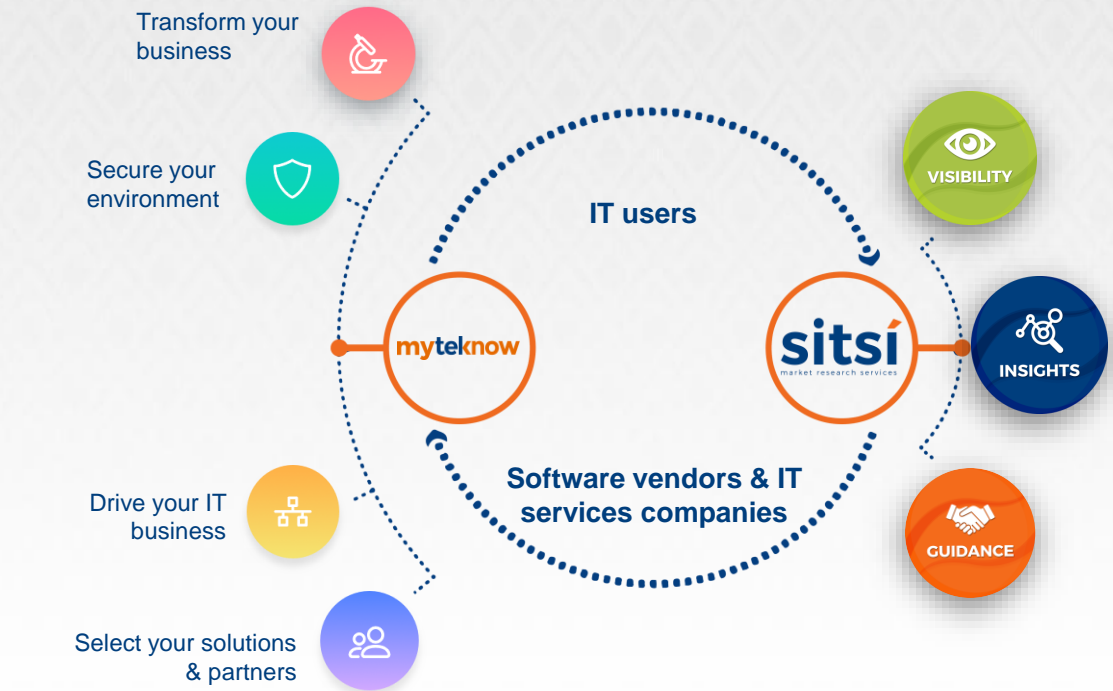
St. Petersburg | November 2019

tekno**w**logy^{GROUP}

About the teknowlogy Group



Our Group model



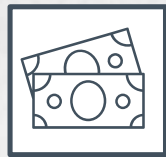
Agenda

1	Main Business and IT Challenges
2	Major IT trends – Digital, Cloud, Security
3	Rates for IT Services
4	PAC Recommendations
5	The Russian Software and IT Services market

Main Business and IT Challenges (1)

How would you rate the following economic challenges for your company?

■ Major challenge ■ Minor challenge



Cost reduction and efficiency pressure



International economic situation (Brexit, protectionism, etc.)



Reaching new customer groups and revenue areas



Achieving greater control and transparency of processes



Agility and innovative power to address the rapidly changing market environment



Current economic situation in the home country



Increased competition



Impact of exchange rates

Main Business and IT Challenges (2)

How would you rate the following IT challenges for your company?

■ Major challenge ■ Minor challenge



Shortage of skilled IT professionals



Pressure on IT operations to reduce costs and improve efficiency



The changing needs of customers in a digital world



Smooth and secure IT operations (availability, security, compliance)



Active contribution of IT to optimizing business processes



Active contribution of IT to create new business models



Optimization of IT sourcing



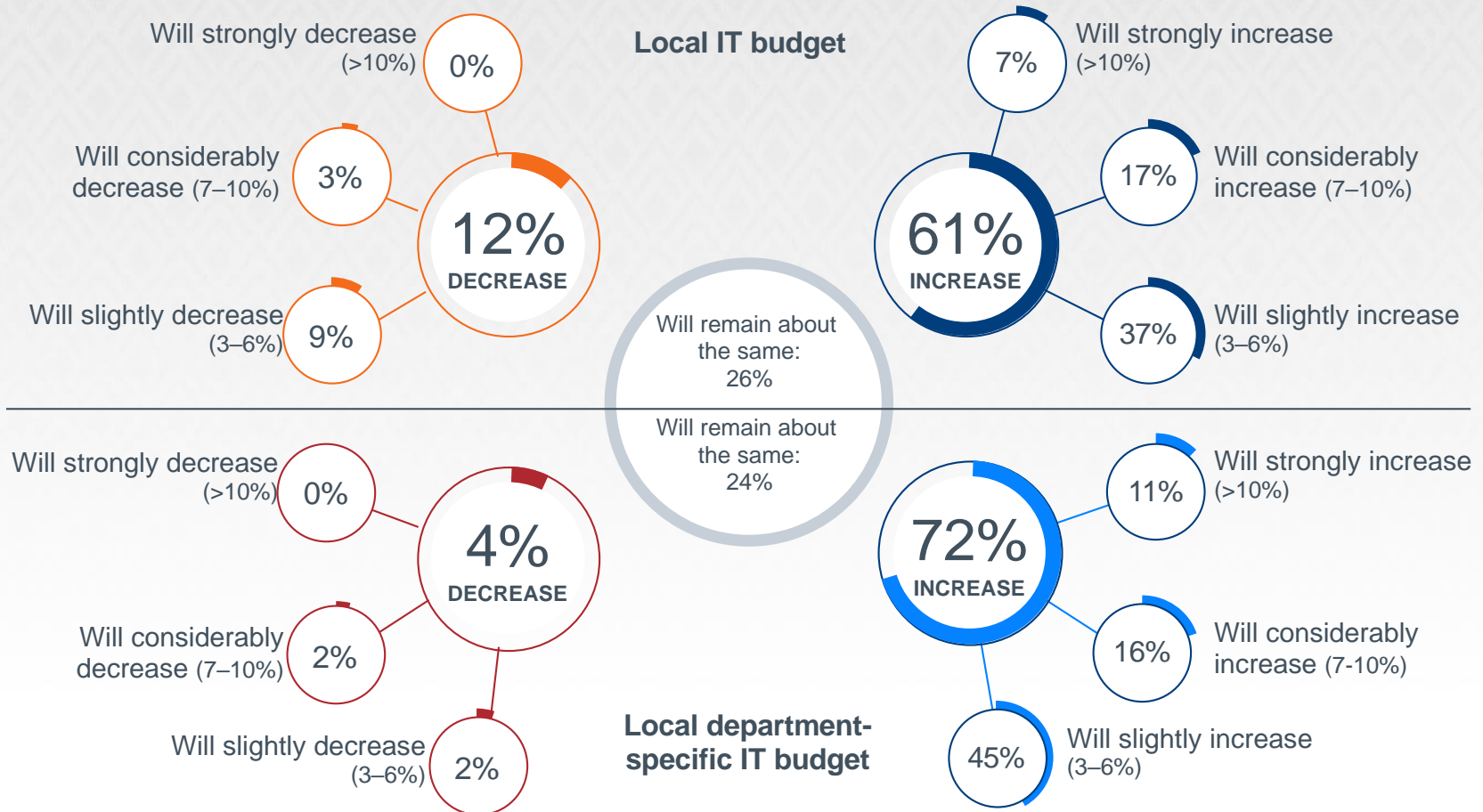
Optimization of end-user experience



IT-OT convergence / collaboration between business lines and IT

IT Budgets Evolution

How will your local IT budget change in 2020 compared to 2019?

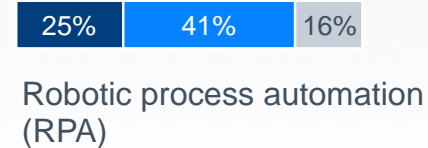
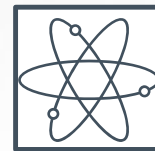
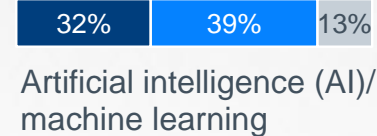
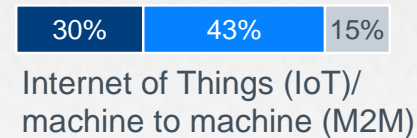
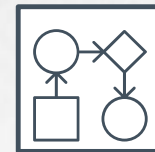
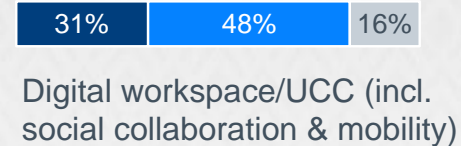
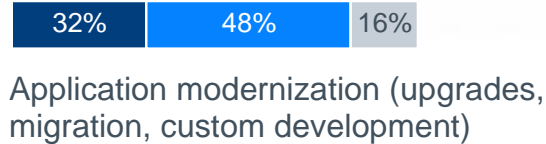
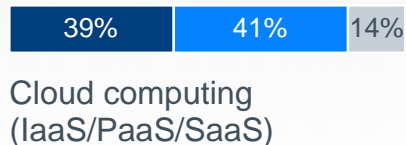
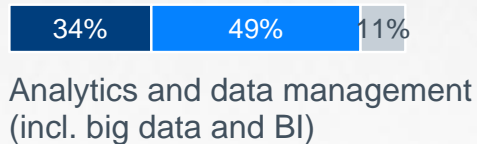
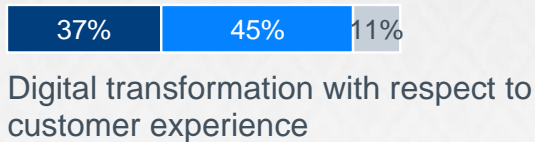


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IT topics - the most important to invest in

Does your company intend to spend more, about the same, less or nothing on the following IT topics over the next two years?

■ More ■ About the same ■ Less

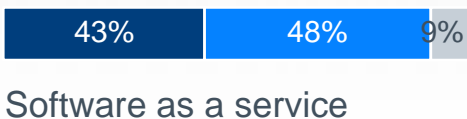
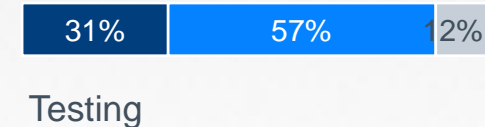
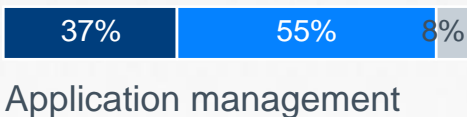
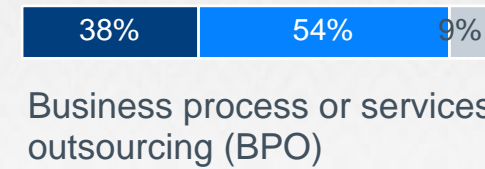
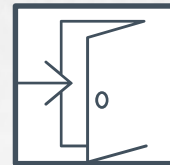
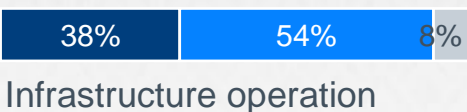
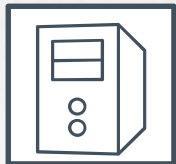
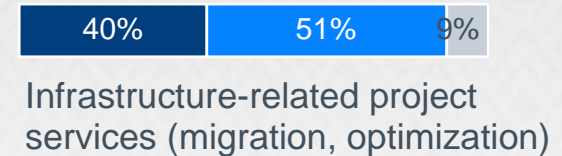
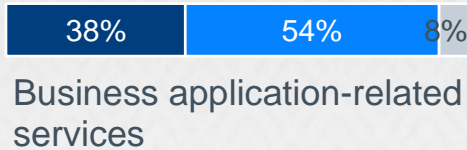
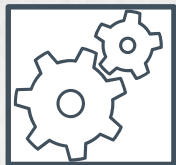


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Major trends in IT services

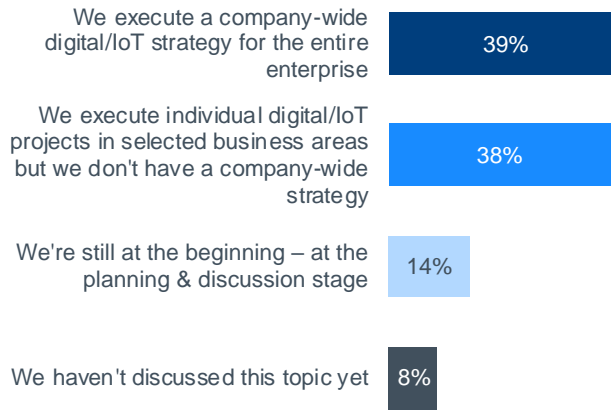
Do you expect the following services to gain, maintain or lose in importance for your company over the next two years?

■ Gain in importance ■ Maintain importance ■ Lose in importance



Companies' approach to digital transformation

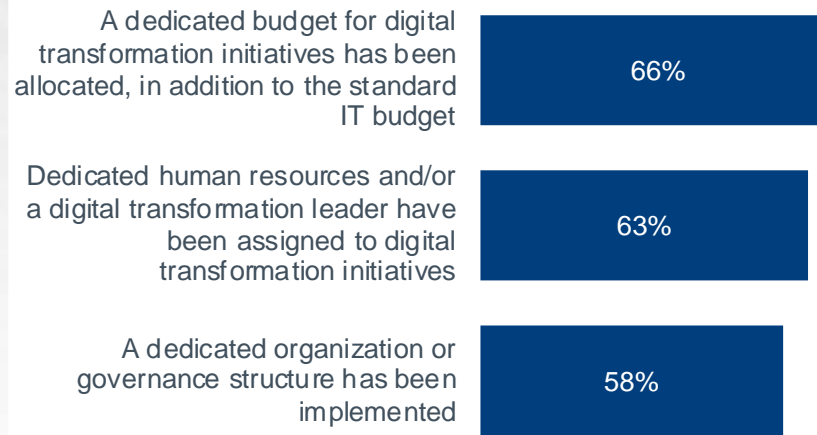
Which statement best describes your company's approach towards digital transformation/IoT?



(single selection)

Breakdown of responses from companies worldwide, expressed in % (n = 1575)

Which statement applies to your company?



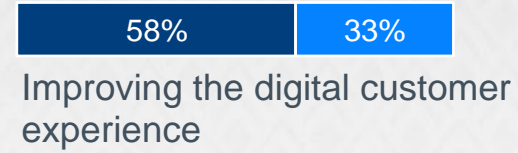
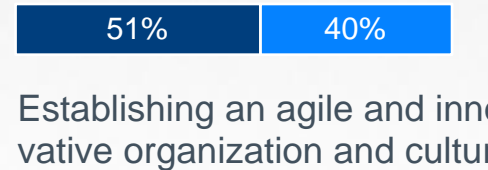
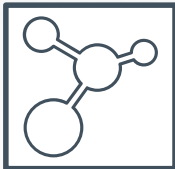
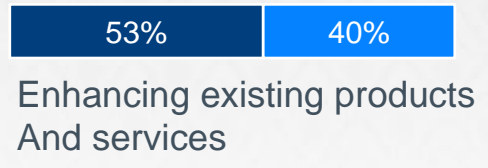
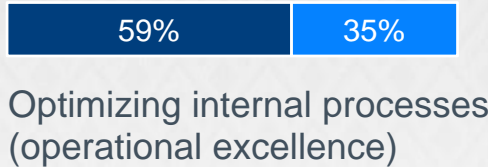
(multiple selection)

Breakdown of responses from companies worldwide, expressed in % (n = 1575)

Goals of Digital Transformation projects

In general, which of the following aspects is a major goal, a minor goal or not a goal at all in your current digital transformation projects?

■ Major goal ■ Minor goal



("Not a goal at all" not shown)

Relevance of digital technologies

In which of the following solutions and technologies does your company plan investments within the next 2 years?

Artificial intelligence/machine learning

48%

Tracking and traceability

48%

Robotics (man-machine collaboration)

35%

Augmented/virtual reality

33%

IoT-enabled data gathering & transmission

30%

IoT platforms

29%

Robotic process automation (RPA)

24%

Blockchain

23%

3-D printing

20%

IoT-enabled payment

16%

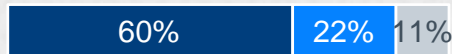
Low-code/no-code platforms

5

Usage areas for Cloud Computing

In which areas is the usage of cloud computing already realized, planned within the next two years, or at least conceivable?

■ Already realized ■ Planned ■ Neither in use nor planned, but conceivable



Web hosting



IaaS-based hosting of traditional business applications



Server capacity



Platform for application development, testing, and operations (PaaS)



Storage and/or backup



Data-centric services (e.g. for Machine learning, AI, IoT)



SaaS for specific solutions (e.g. CRM, SRM, HCM)



SaaS as a strategic software platform, such as ERP

Cloud deployment models in IT departments

For which of the following topics is the cloud already in use, planned for the next two years, or at least conceivable?

■ Already in use ■ Planned for the next two years ■ Neither in use nor planned, but conceivable



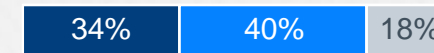
IT/Cyber security



Setup of a new (digital) business area/unit



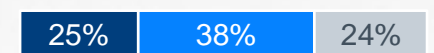
Industry-specific applications



Internet of Things (IoT)/ machine to machine (M2M)



Office and digital workspace (incl. collaboration & ECM)



Artificial intelligence (AI)/ Machine learning



Business usage areas for cloud computing

In which of the following business areas is the cloud already in use, planned for the next two years, or at least conceivable?

■ Already in use ■ Planned for the next two years ■ Neither in use nor planned, but conceivable



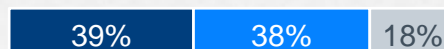
Finance and accounting management (F&A)



Supplier relationship management (SRM)



Human resource management (HRM)



Supply chain management (SCM)



Customer experience management and CRM

Cyber Security Challenges

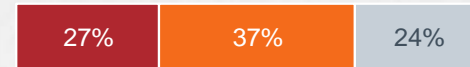
To what extent do you agree with the following statements regarding cyber security in your company?

■ Strongly agree
 ■ Agree
 ■ Neither agree nor disagree

We are experiencing an increase in external cyber attacks and new threats.



New and/or advanced regulations are forcing us to be compliant and to give cyber security higher priority



Generally, our employees do not pay much attention to cyber security and do not behave in a responsible way.



We are not sure of the perimeter we have to protect (visibility).



The cloud is making it harder to control data and applications.



We lack cyber security skills.



The IoT (Internet of Things) makes it harder to control operational technologies (OT) such as ICS and SCADA.



Drivers for implementing security measures

Which of the following aspects are a major reason, a minor reason or no reason at all to initiate security measures in your organization?

■ Major reason ■ Minor reason



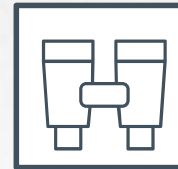
A deadline for becoming compliant with new regulatory obligations



The deployment of cloud, IoT, Industry 4.0, and other digital solutions



A recent audit and internal risk analysis



A supplier and/or partner from our ecosystem has been a victim of a cyber attack



Pressure from our customers



We have been a victim of a cyber attack

Status quo of cyber security measures

Which cyber security measures and activities have already been implemented in your company and if so, would you recommend them to other companies based on your experience?

Already implemented



Recommended to other companies



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Investments in different cyber security areas

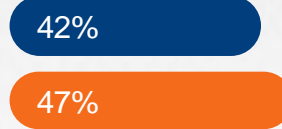
In which of the following cyber security areas are you planning to invest heavily, make some investments or not invest at all in the next 12 months?

■ Heavy investments ■ Some investments

Governance, risk and compliance
(SIEM, SOC, GDPR and NIS, AML, fraud detection, risk management, etc.)



Application and data security
(encryption, password, DLP, DevSecOps, white/blacklisting, CASB, etc.)



Identity and access management solutions
(IDM, SSO, ID federation, biometrics, access, etc.)



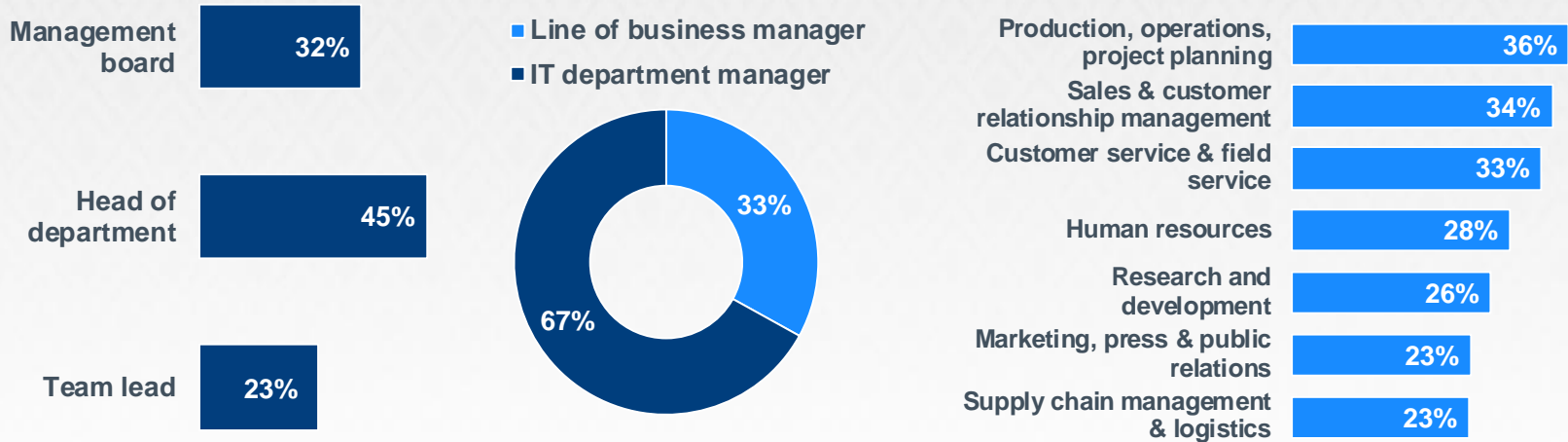
Infrastructure-based solutions
(network/endpoint protection, EDR, EPP, mobility, anti-virus, firewalls, UTM, IPS, gateways, etc.)



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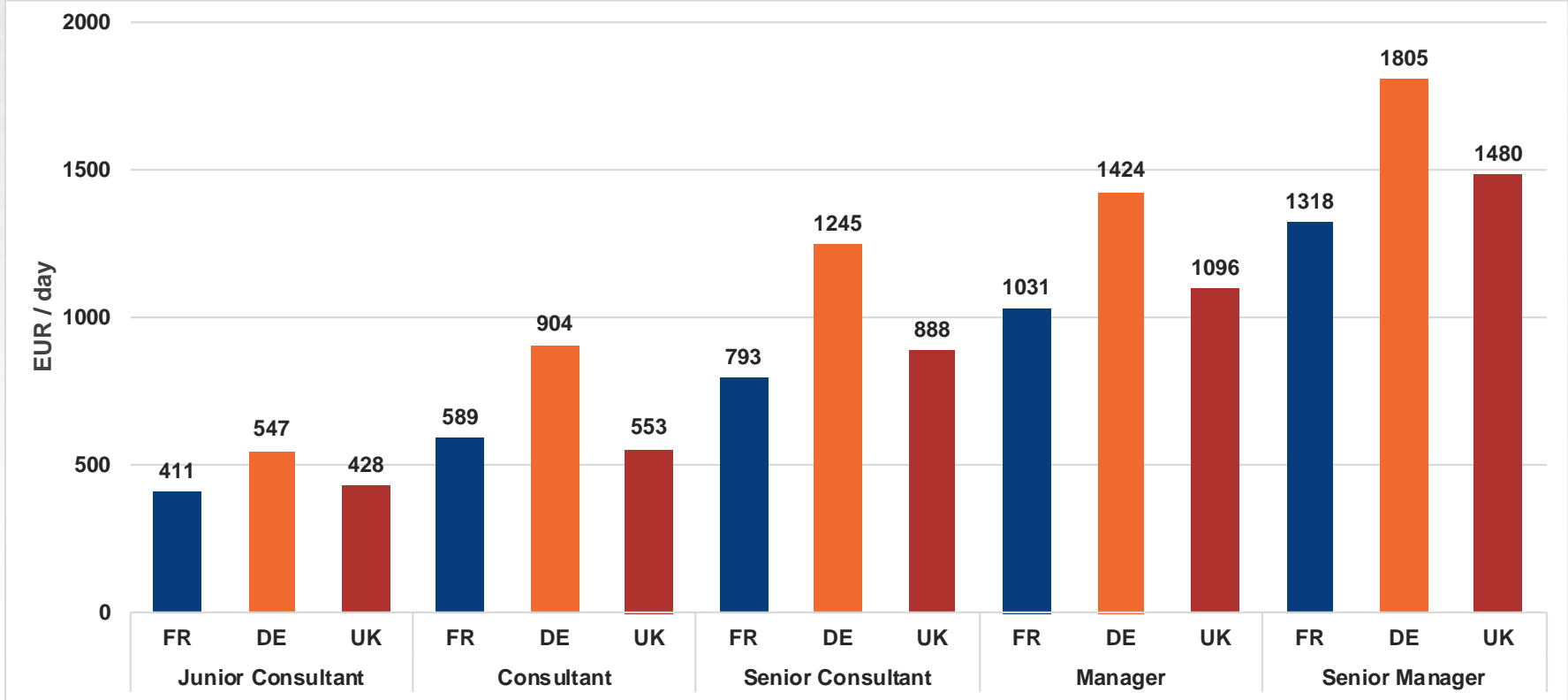


IT Decision Makers – changes and evolution of the responsibilities



Rates for IT Services – Europe

Average by Major Country



PAC Recommendations (1)

IT Suppliers

Cloud

Service providers should strive for coherent concepts for hybrid and multi-cloud environments that enable customers to create a vendor and business agnostic IT environment for digital business models.

Digital

Providers should align their own capabilities and capacities to digital topics and also build up complementary ecosystems in order to expand the resource pool with trained specialists.

Efficiency

Suppliers should align their offerings with customers' efficiency needs such as automation, as well as cost saving services, e.g. outsourcing. In times of agile software development and DevOps, providers need to find answers to how to combine in agile projects an onsite presence on the one hand and nearshore/offshore on the other.

Security

Companies want to open their IT systems in the course of the platform economy and digitalization but are often unable to guarantee security due to a lack of skills. Security providers can help with innovative services here.



PAC Recommendations (2)

IT Users

Analyze

Companies should carefully analyze new technology in order to assess its potential and benefits. AI, for example, is an interesting and much-discussed topic that can have an effect in almost all segments but is not yet mature enough in many areas.

Partners

Co-development and co-business models with partners and providers should be extended to the development of all new products/services. Digitalization can only be achieved with a range of different skills, which cannot be found within a single company.

IT departments

IT users should make sure to not bypass the IT department if they want to boost digital transformation. Bypassing IT may give the impression of being quicker, but problems (technical, financial) will undoubtedly arise when the solution is rolled out to the whole company.

Security

IT users need security expertise, processes, and strategies, not to mention awareness of potential threats. Security is a long-term issue, so companies should not expect quick solutions.



The Russian Software and IT Services market **telknowlogy**^{GROUP}

Maturity Curve

	Cloud computing	Custom Software Development	
	Core banking modernization	Finance & Accounting SW (on premise)	
	CRM	Legacy Modernization	
	Cyber Security	Operating Systems	
	eGovernment	SAP C&SI	Hardware installation and support
Artificial Intelligence (AI)	Enterprise Applications	Testing	Office automation (on-premise)
Big Data	Infrastructure consolidation		
Internet of Things (IoT)	Omni-channel Solutions		
Real time Analytics	SaaS		
Robotic Process Automation (RPA)			



Emerging

new topic
still small volume

Growing

young topic
already sizeable volume

Mature

mature topic
substantial volume

Declining

established topic
substantial volume

THANK YOU

for your
attention



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