Market Analysis Perspective:

Worldwide Software and Hardware Support and Deployment Services, 2019

Rob Brothers

- **Industry & Market Overview**
- Competitive Landscape
- Buyer Perspective
- Future View of the Market
- Advice for the Technology Provider

Key IT Market Trends

- **Digital transformation initiatives ongoing**
  - Enterprises embrace the digital experience economy
  - LOB managers drive technology adoption to gain operational efficiency and improve customer engagement
  - For most enterprises, transforming people and processes remains the biggest hurdle
- **Transformative technologies gain traction in key areas**
  - AI and cognitive key areas of investment
  - AR/VR and IoT opportunities expand across select verticals and use cases
  - IDC expects adoption in the enterprise to continue expanding
- **Multi-cloud is the new standard**
  - Comprehensive rip-and-replace still not the norm, but transition to hybrid IT accelerates
  - Managing migration while maintaining IT service delivery is critical, creating complex IT roadmaps
- **HOWEVER: Enterprise IT organizations are still slow to change**
  - Legacy apps powering day-to-day operations will be replaced over time
  - IDC repatriation data shows savvy IT organizations optimizing workload distribution
  - New consumption models allow continued on-premises hardware and software deployments

What’s new in support?

AI/ML/cognitive, analytics, AR/VR to enable…

Home-grown cognitive platforms to improve support delivery

“Personalized” self-diagnosis and resolution:

AI,ML and M2M

AR and VR are helping field techs resolve issues faster, not just on IT issues!

Predictive analytics with automated diagnostics and repair

Multicloud = IT environments that are too complex for diagnosis/resolution by IT staff
NEED COMPREHENSIVE AUTOMATION AND ANALYTICS ACROSS IT LANDSCAPE

What's Else is New in Support?

…business process support, adoption, better customer experience

- Support providers are shifting conversations to help customers achieve business outcome SLAs
- In-product support is growing so end users can solve problems on their own
- Vendors are primarily leading this journey, as most IT organizations are not at that level yet
- Delivering customer value for entire package – solution and services – is key indicator for software organizations
- BUT: achieving desired outcomes and realizing value requires significant process, policy, and technology changes

Software and Hardware support (and use): Transition to “Customer Success”

SaaS providers “invented” the concept of customer success

IT industry has widely adopted “success” and “experience" initiatives

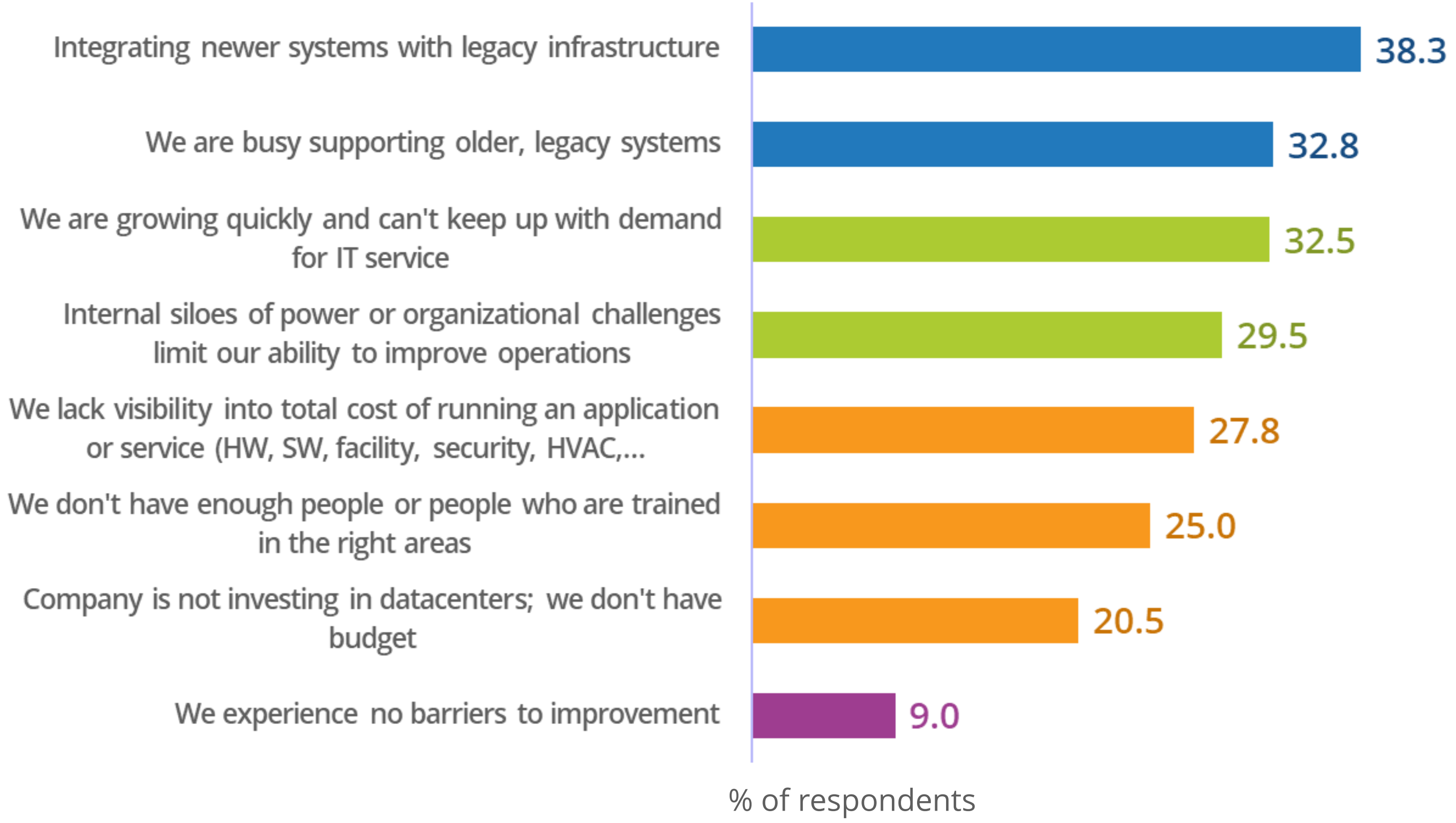
Customer results are largely mixed, with no clear leaders

Fundamentals to deliver “success” have shifted, but have not changed

Datacenters challenged to support DX

Opportunity for providers to help internal datacenters overcome barriers

Do you experience any of the following barriers to improving your internal or company-owned datacenters?



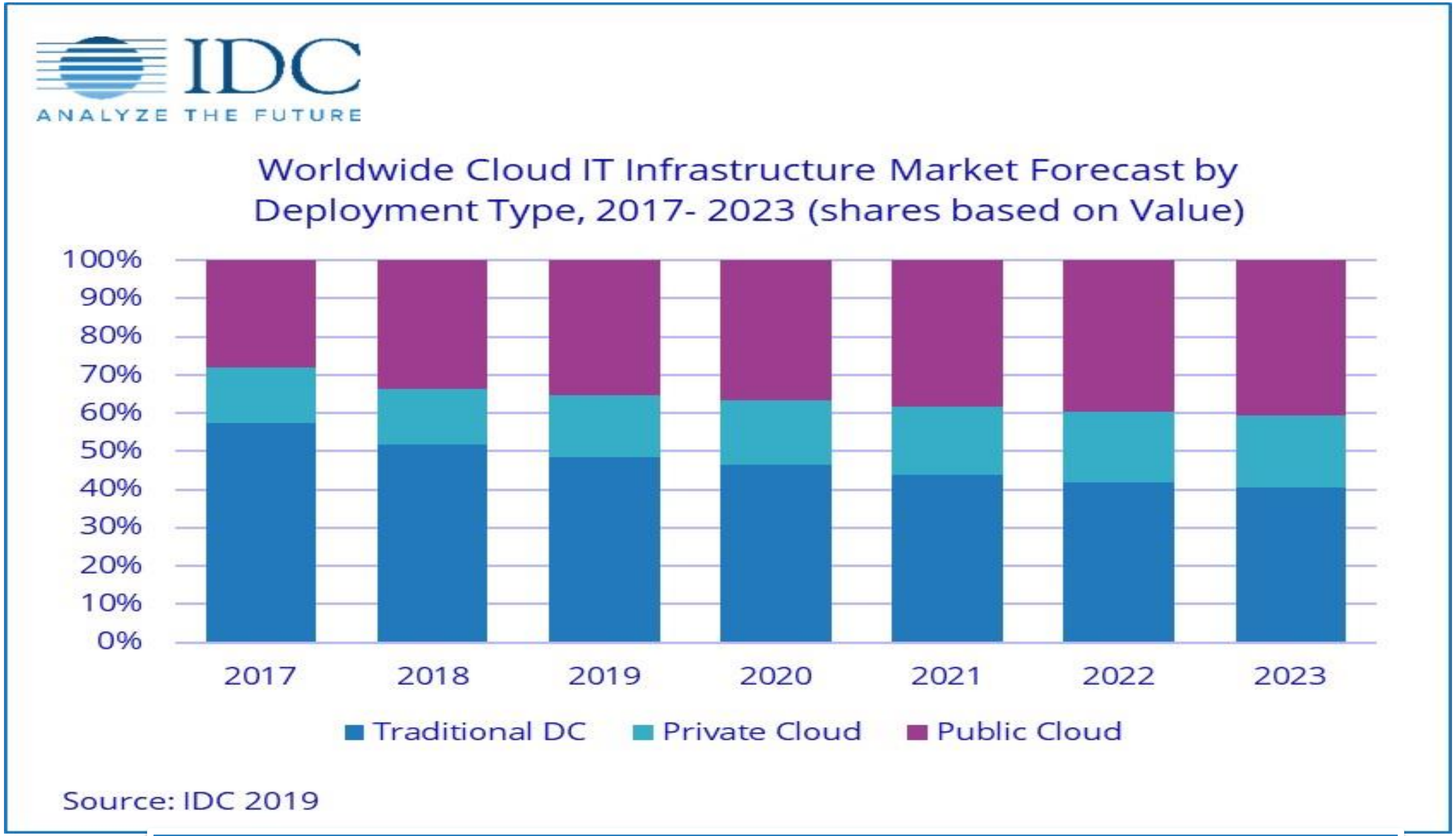
Organizations are busy supporting older, legacy systems and struggle to integrate the old and the new

For many, organizational siloes stand in the way of rapid progress. 25% of organizations don't have staff that are trained in the right areas. Partners are needed that can facilitate building a team to embrace a new datacenter vision and commitment to innovation.

1 in 5 organizations struggle to find budget

Source: IDC's Datacenter Operational Survey, January 2019, N = 400
Source: *HPEFS Analyst Day: Using Investment Strategies and Business Models to Accelerate Digital Transformation* (IDC #US45085419, May 2019)

Where are assets going, more cloud = less hardware support opportunities?

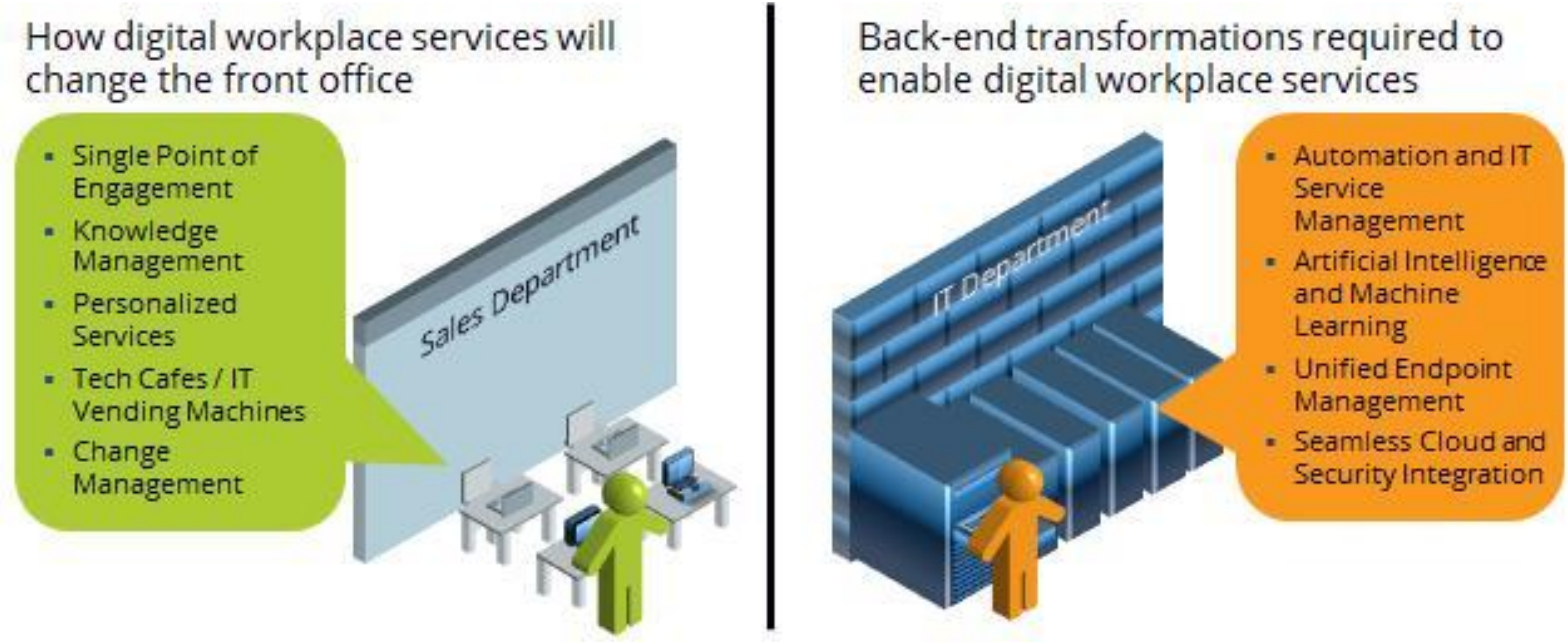


Cloud IT infrastructure will reach $99.9B in 2023; representing almost 60% of total IT infrastructure spending

This new IT infrastructure model will impact IT asset life cycle behaviors and support and deployment market

Source: *IDC's Quarterly Cloud IT Infrastructure Tracker, Q4 2018*

Workplace Services (the new service desk)



63% of European CEOs are under considerable pressure to deliver digital transformation strategies

- Pace of technology change has accelerated dramatically
- Driven by hyperscalers' practices
- Innovation and speed-to-market are key

Source: IDC's *European Digital Transformation Maturity Model Benchmark*, 2017; n = 403, May 2017

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Data: Storage Revenue External Storage OEM

	Year	2012	2013	2014	2015	2016	2017	2018
Americas	Entry	$2,700	$2,463	$2,500	$2,570	$2,303	$2,261	$2,235
Americas	High End	$4,186	$4,347	$4,235	$3,982	$3,694	$3,615	$4,139
Americas	Midrange	$6,032	$6,032	$6,281	$6,217	$5,811	$5,668	$6,759
APJ	Entry	$1,468	$1,583	$1,716	$1,946	$1,903	$1,915	$2,131
APJ	High End	$2,038	$1,821	$1,368	$1,168	$1,099	$1,044	$1,123
APJ	Midrange	$2,585	$2,554	$2,750	$2,905	$3,200	$3,404	$4,297
EMEA	Entry	$1,753	$1,812	$1,787	$1,763	$1,402	$1,298	$1,325
EMEA	High End	$1,923	$1,771	$1,546	$1,286	$1,347	$1,900	$2,177
EMEA	Midrange	$3,727	$3,969	$4,335	$4,084	$3,837	$3,797	$4,656

	Year	2019	2020	2021	2022	2023
Americas	Entry	$2,208	$1,994	$1,922	$1,900	$1,928
Americas	High End	$3,276	$2,731	$2,674	$2,694	$2,740
Americas	Midrange	$7,356	$7,359	$7,635	$7,956	$8,311
APJ	Entry	$2,062	$2,286	$2,424	$2,503	$2,495
APJ	High End	$1,248	$1,183	$1,236	$1,292	$1,323
APJ	Midrange	$4,950	$5,198	$5,472	$5,795	$5,972
EMEA	Entry	$1,324	$1,450	$1,427	$1,430	$1,352
EMEA	High End	$1,835	$1,912	$1,858	$1,748	$1,618
EMEA	Midrange	$4,882	$4,731	$4,898	$5,007	$5,221

Data: Server Units Sold

Product	Region	Year	2012	2013	2014	2015	2016	2017	2018
Non-x86	Americas	Units	53,468	40,807	31,839	31,989	23,814	27,156	64,983
Non-x86	APJ	Units	52,233	43,484	32,816	27,987	21,145	18,667	16,560
Non-x86	EMEA	Units	30,006	23,776	22,534	22,380	18,526	14,809	14,009
x86	Americas	Units	3,606,562	3,780,435	3,777,107	3,829,244	3,673,605	3,974,890	4,817,217
x86	APJ	Units	2,672,261	2,866,053	3,123,147	3,549,338	3,665,754	4,040,991	4,738,891
x86	EMEA	Units	2,259,927	2,211,648	2,247,983	2,246,978	2,154,508	2,164,521	2,194,843

Product	Global	Year	2019	2020	2021	2022	2023
Non-x86	Americas	Units	133,603	279,416	445,482	580,917	661,422
Non-x86	APJ	Units	17,388	16,054	17,522	19,071	21,137
Non-x86	EMEA	Units	13,747	13,095	13,237	13,536	13,073
x86	Americas	Units	4,256,964	4,014,634	4,265,915	4,514,728	4,629,529
x86	APJ	Units	4,620,427	4,943,686	5,245,282	5,549,881	5,845,004
x86	EMEA	Units	2,120,177	2,145,501	2,175,274	2,204,387	2,102,917

Competitive Landscape: SW & HW deploy/support services market shares

HW Support and Deployment Revenue Top 10 Vendor, 2017 vs. 2018

	2017	2018
Cisco	$8,061.57	$8,242.38
Dell Inc	$7,503.48	$7,724.34
IBM	$6,595.99	$6,332.85
Hewlett Packard Enterprise	$5,472.74	$5,526.48
Oracle	$2,115.09	$2,058.39
Hitachi	$1,923.32	$1,960.73
Fujitsu	$1,829.53	$1,818.20
NetApp	$1,226.58	$1,176.77
NEC	$1,102.69	$1,109.04
Lenovo	$923.00	$1,000.02

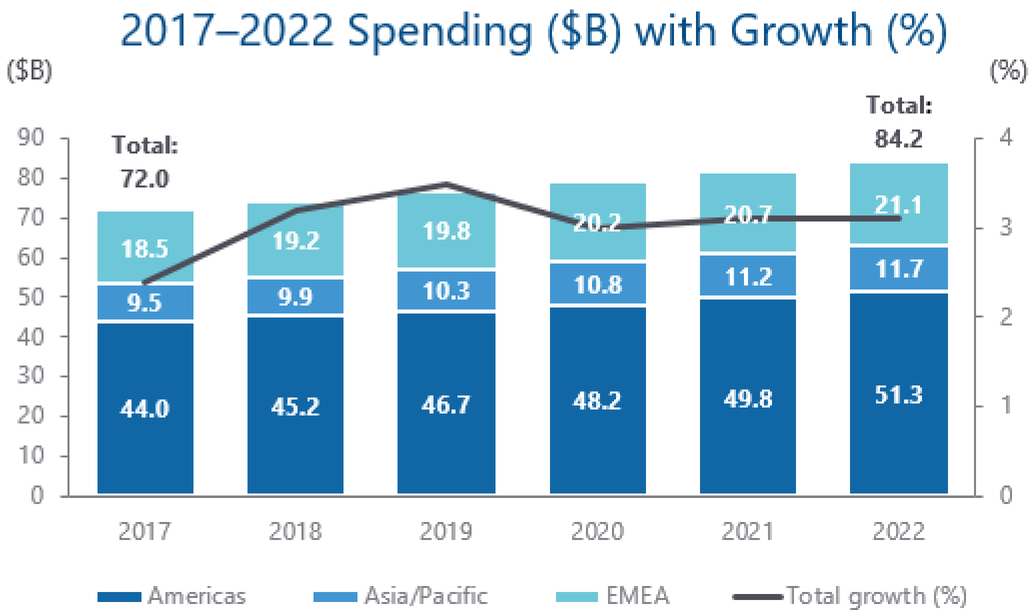
Source: IDC, 2019

SW Support and Deployment Revenue Top 10 Vendor, 2017 vs. 2018

	2017	2018
IBM	$5,630.38	$5,510.25
Oracle	$4,006.18	$3,906.72
Microsoft	$3,422.63	$3,546.23
Hewlett Packard Enterprise	$1,482.87	$353.42
Dell Inc	$1,217.49	$1,215.70
Cisco	$1,058.50	$1,108.33
Fujitsu	$928.08	$948.97
NTT DATA	$855.27	$881.24
SAP	$826.08	$854.07
Avaya	$778.67	$680.92

Source: IDC, 2019

Worldwide Software Deploy and Support Services Spending Snapshot



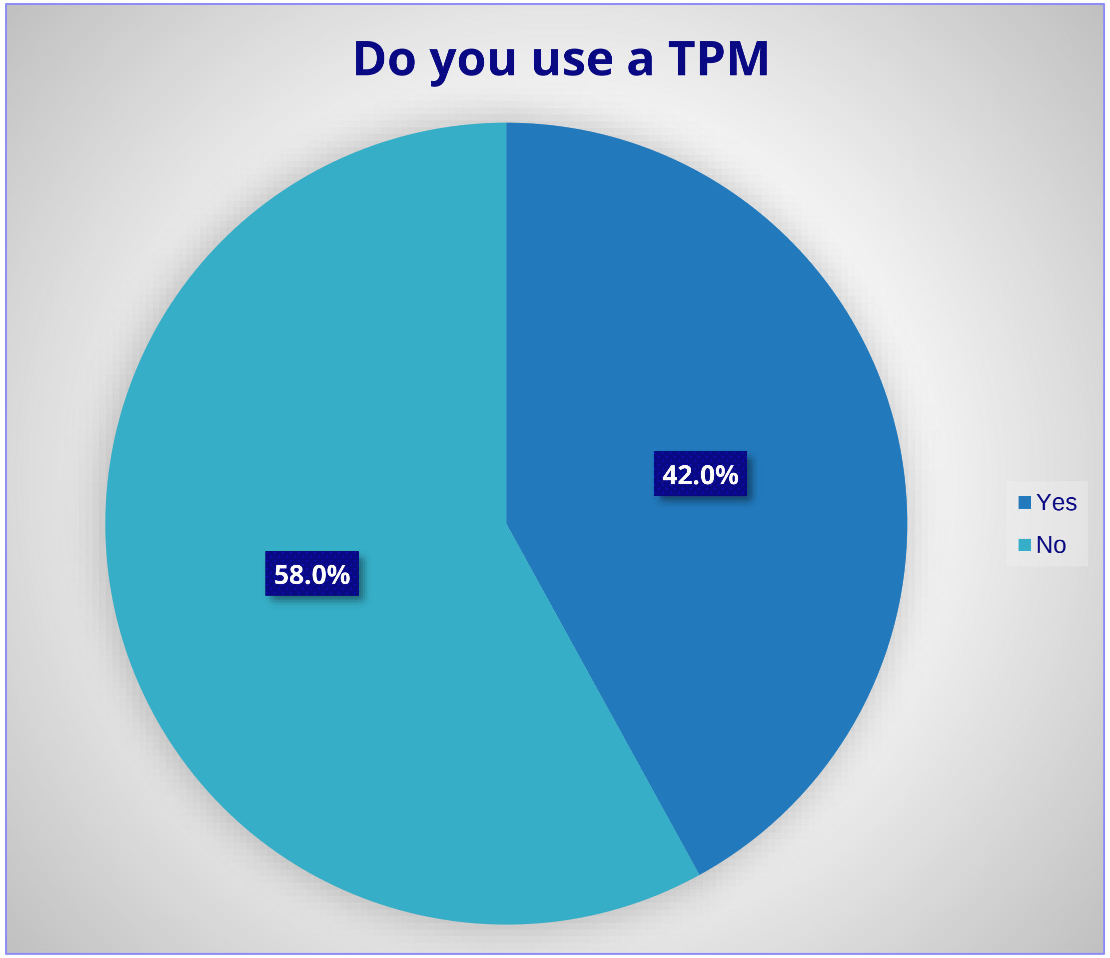
Selected Segment Growth Rate	Total Market CAGR
▲ Americas CAGR 3.2% ▲ Asia/Pacific CAGR 4.4% ▲ EMEA CAGR 2.7%	3.2%

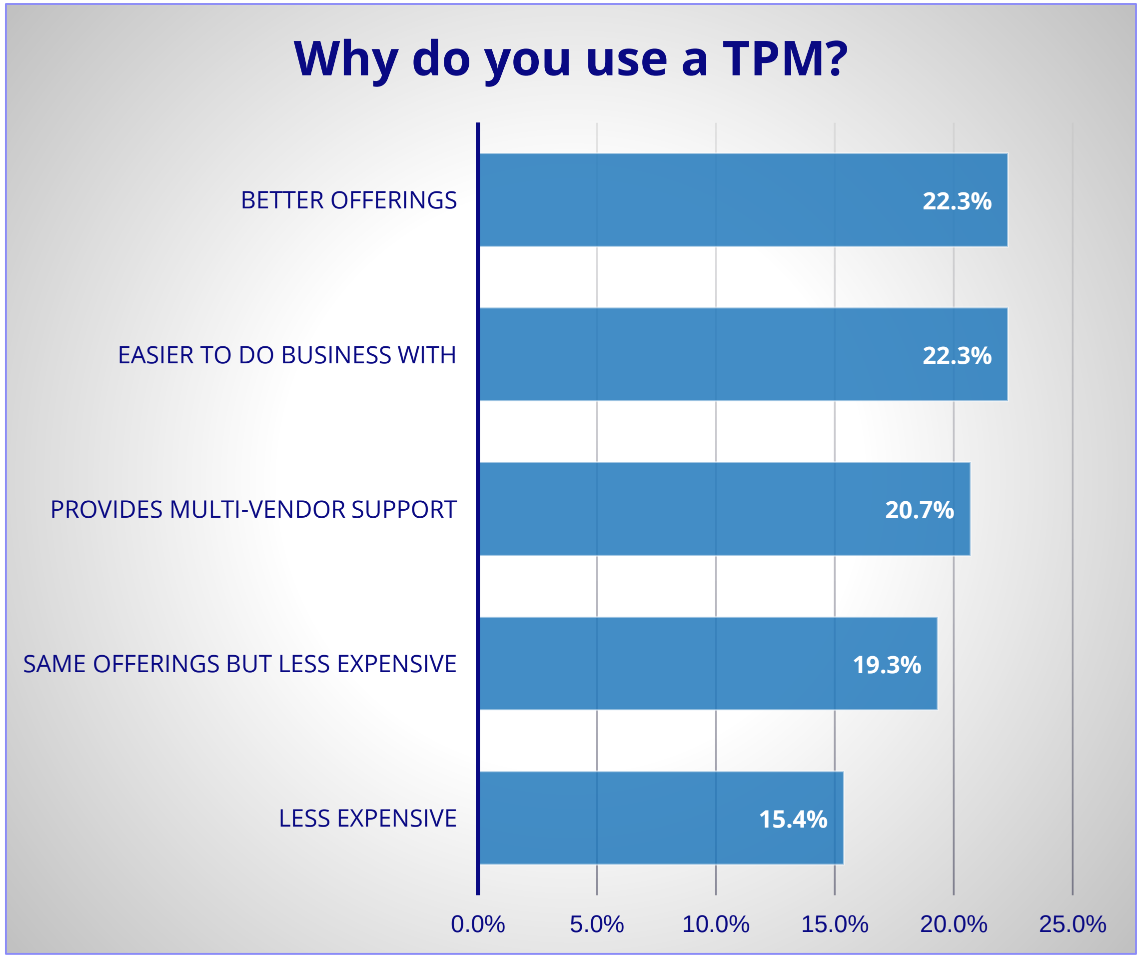
WW Hardware Support Services Spending, 2018-2023 ($M)

	2018	2019	2020	2021	2022	2023	2018-2023 CAGR
Networking	$14,898	$15,255	$15,670	$16,121	$16,608	$16,957	2.6
Servers	$12,927	$13,443.3	$13,913	$14,312	$14,830	$15,290	3.4
Storage	$6,984	$6,859.6	$6,766	$6,750	$6,823	$6,885	-0.3
Total	$34,810	$35,558	$36,351	$37,184	$38,263	$39,132	2.4

IDC ANALYZE THE FUTURE

Third Party Maintainers





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CIOs and IT Managers: Primary Challenges for 2020

Managing migrations to enable the digital business	▪ Enabling digital business transformation while maintaining business processes – and often legacy systems ▪ Managing complex hybrid environments that require new skills to install, operate and optimize	**Support is often a critical differentiator**
Expanding automation across the IT landscape	▪ Eliminating customizations and adopting standard deployments to improve operations ▪ Security and accessibility are still hurdles for automated predictive/preventive remote support	**Technology adoption at scale can help delivery**
Shifting to business process support	▪ After initial technical issues, IT must make sure the business is realizing the promised value from XaaS solutions ▪ Many IT organizations are not prepared for the level, type, breadth and depth of questions and issues	**Consider non-traditional support deliverables**
Vendor management	▪ Increasingly important with rise of cloud/as-a-service solutions ▪ Time and resources required interfere with digital transformation initiatives	**Opportunity for multi-vendor support**

Navigating the Edge

- Cloud is Going Local to Support IoT
- Define an edge strategy
  - Understanding performance/cost
  - Build, buy, or rent?
- Solve customer pain points
  - Fleet/Asset management
  - Governance
  - Financing
  - Security

Most Important Support Features

IDC Customer Satisfaction Survey – Infrastructure Support

Technical features

- Technical expertise and effective communication of support staff
- Support of operating systems and/or hypervisors
- Ability to patch without scheduled downtime
- Proactive/preventive support services

How important are the following technical features in deciding what type of support services agreement to purchase for your enterprise?

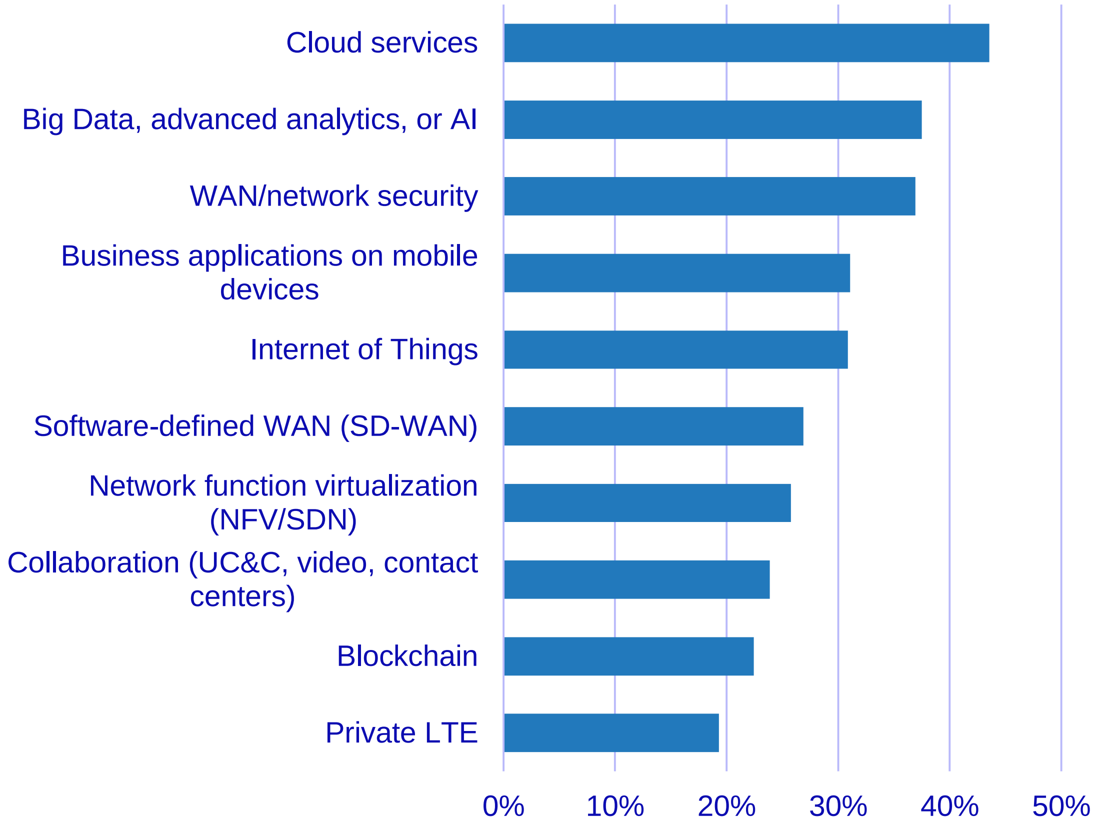
Management features

- Quick access to updates/upgrades/ patches through portal or website
- Price/cost of support
- Multiple ways to contact support (email, phone, webchat)
- Ability to provide consistent support experience globally
- Availability of on-line self-support

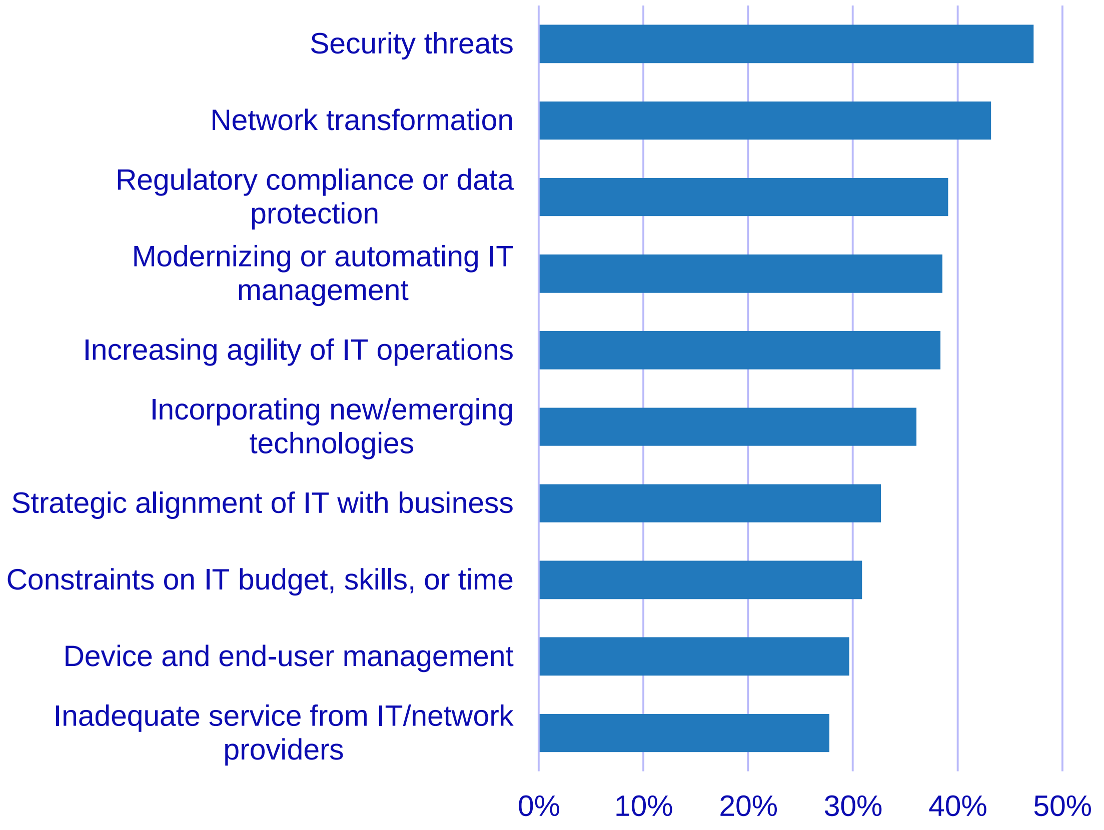
How important are the following management features in deciding what type of support services agreement to purchase for your enterprise?

Cloud, Big Data Analytics and AI are the priorities, but enterprises need to secure and transform their infrastructure to support these:

What are your top 3 technology investment priorities over the next 2 years?



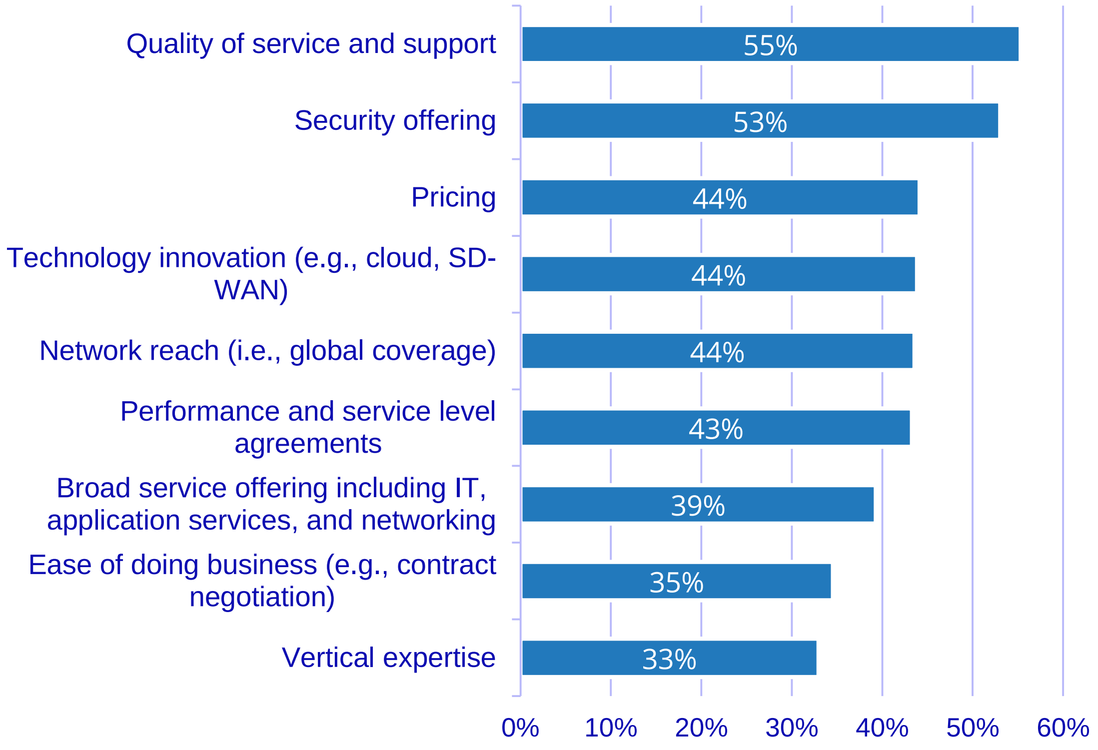
What are the biggest IT or network challenges for your organization over the next two years?

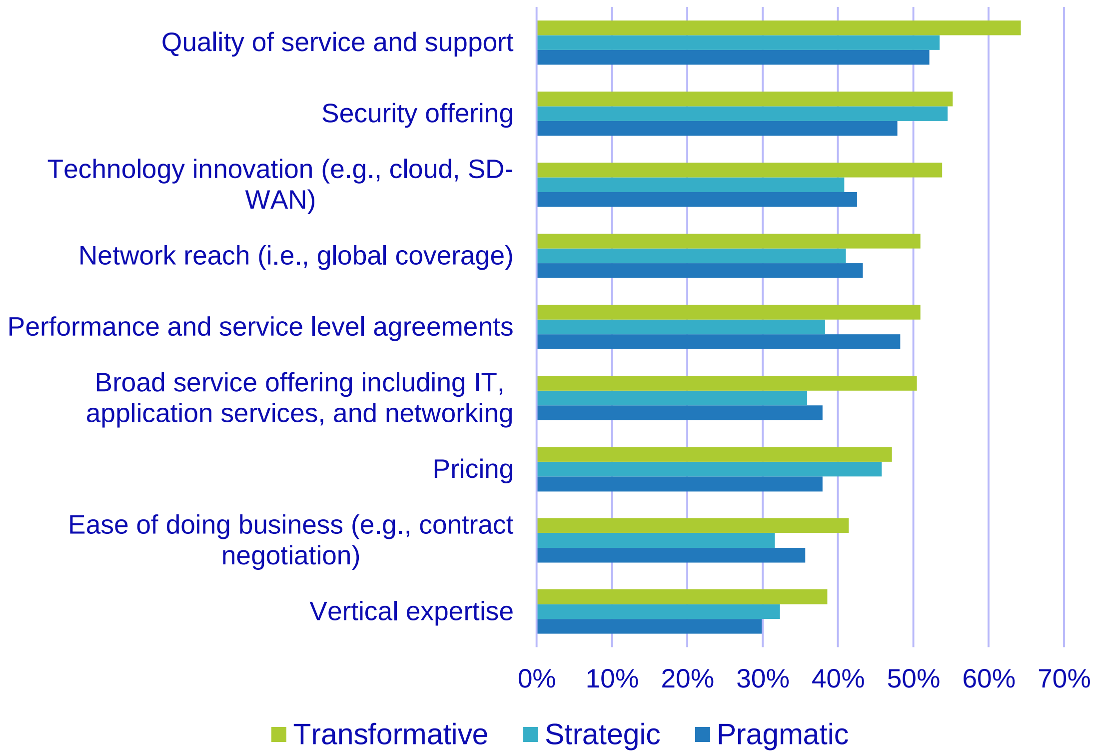


Source: IDC's *European Enterprise Communications Survey*, 2019 (n = 1,056 [Western Europe])

Overall quality of service, security and pricing are the leading selection criteria. However, organizations with a transformative investment strategy prioritize technology innovation and network reach as well.

When choosing an ICT solution provider, what are the most important selection criteria for your organization? [Choose all that apply]





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Software and hardware deploy and support: Key forecast assumptions

SOFTWARE AND HARDWARE SUPPORT CLOSELY TIED TO INSTALLED BASE FOR UNDERLYING TECHNOLOGY

- Support market grows and contracts very slowly
- Recent spike in all system sales sales
- Software-defined infrastructures are changing the balance of hardware/software support

- Modest economic growth
- More enterprises considering “add-on” support for as-a-service software
- Greater usage of support contracts among medium and large businesses

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Advice for the Technology Supplier

- Asset management, still a big deal, understand the datacenter through tools and automatic asset detection and you will provide that company with very important data. Overlay software interdependencies and now you have real stickiness.
- Software support continues to be more important as the "software-defined" world moves ahead
  - Portfolio, pricing and entitlement key to "Internet of Things" delivery
  - Patch and upgrade management best practices critical
  - Focus on adoption evolves over time as training and support merge
- Plan for expanded automated operational support, especially around critical decision points for infrastructure/app management
  - Opt-out is key for widespread adoption
  - Any plans to retrofit into existing deployments require a high-touch approach

Advice for the Technology Supplier

- As-A-Service as a service! Watch out for vendors packaging systems as a true service. That means they get to use the asset on a monthly basis (includes all support) then replace that asset as needed.
- Workplace Services
  - Enterprises looking to deliver best practices for services
  - Willing to invest in customer experience to keep talent from leaving
- Look to develop edge solutions for support of “dark” spaces
- Consider programs and initiatives that help customers measure better business outcomes.
  - Program to help drive alignment between IT and business managers
  - Portfolio rationalization to integrate IT assets with business processes

Support Fundamentals: Building Blocks for Success

- Optimize and maintain support portfolio
- Eliminate “one-size-fits-all” support
- Promote preventive, but practice reactive
- Integrate and modernize back-office systems
- Deliver support through teams, not tiers
- Empower frontline support

Customer Success Fundamentals: Building Blocks for Success

For More Information

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Related Research CY19

Document Title	Document Number	Publication Date
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IDC's Customer Datacenter Hardware Support Survey, 2019	IDC #US45105619	June 2019
Secure Asset Disposition: It's Not Just Security; It's the Environment, the Steps an Enterprise Should Take to Sustainability	IDC #US45085519	May 2019
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