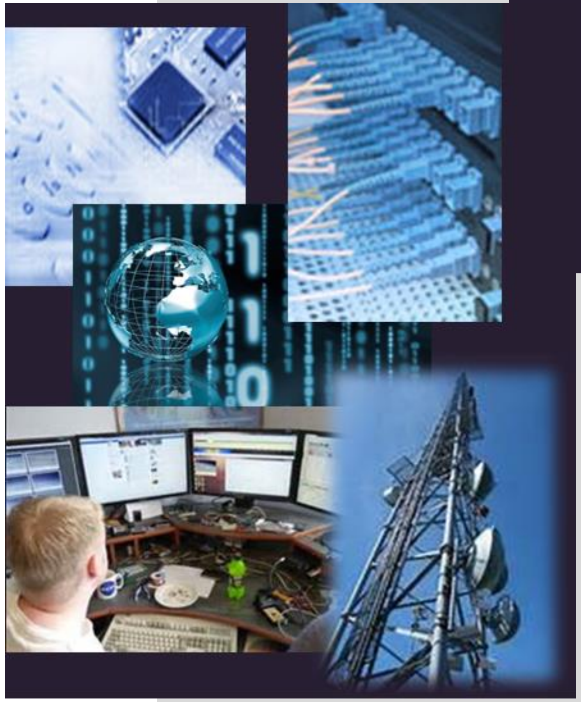
DSP 2020: Plans, Progress & Problems



Key Findings

83%

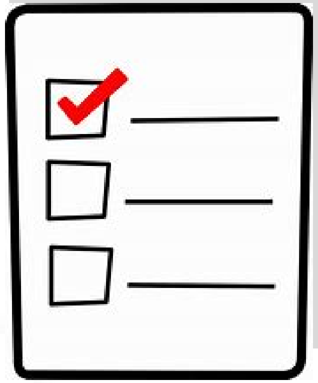
Delivering a digital customer experience

More than half of all customer transactions are digital

2017 18%

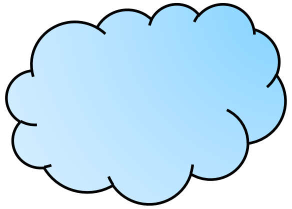
2020 56%

5G rating and charging is at the top of the BSS list



86%

87%



OSS/BSS functions deployed in the cloud

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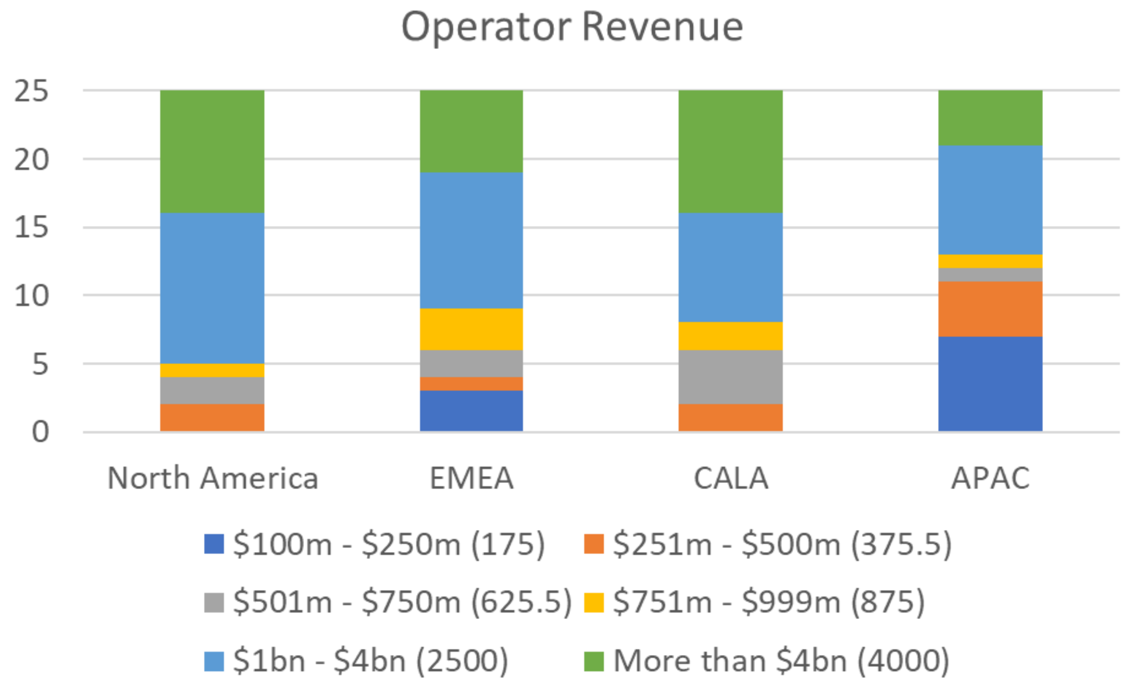
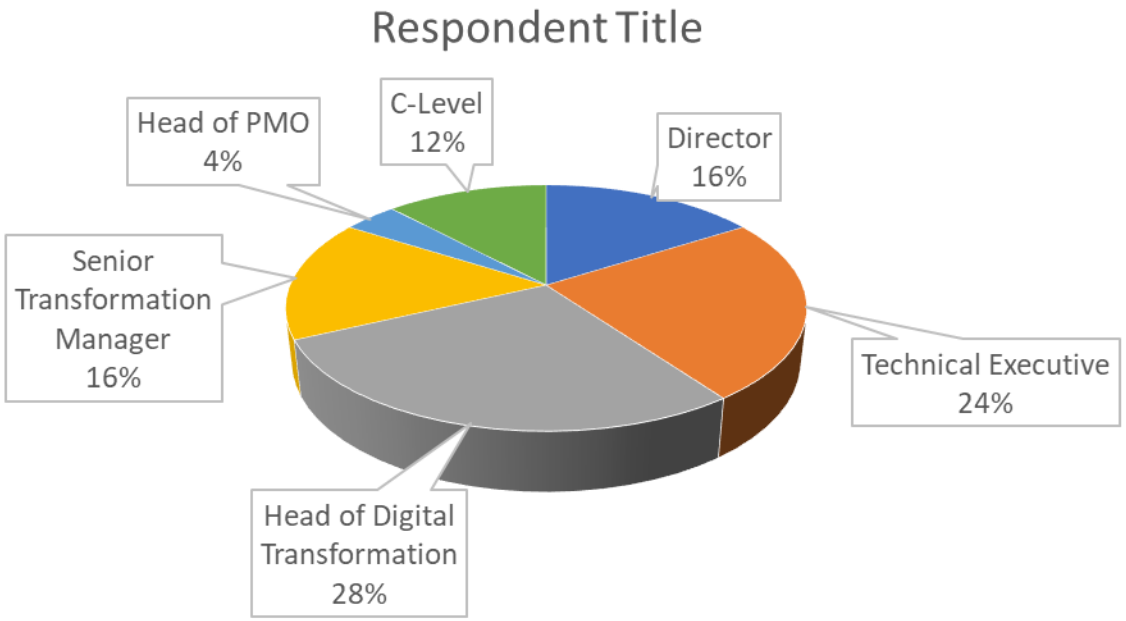
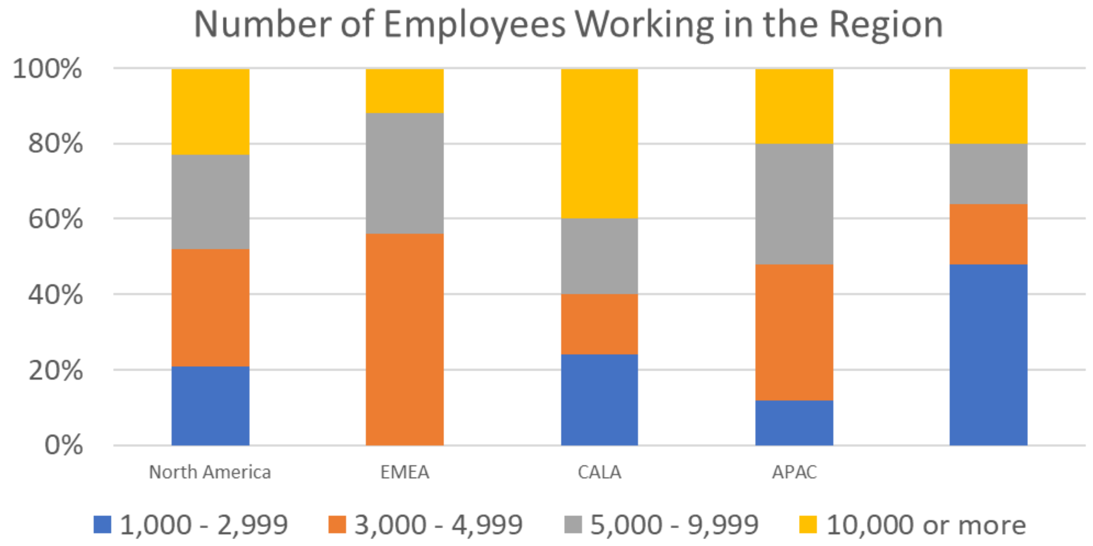
Demographics







When the last survey was conducted in mid-2017 we asked operators to tell us where they stood at the time and where they predicted they would be in 12 months, 2 years and beyond. Analysis of current v. previous data includes the accuracy of some of those predictions

All sample sizes are n=100 unless otherwise stated

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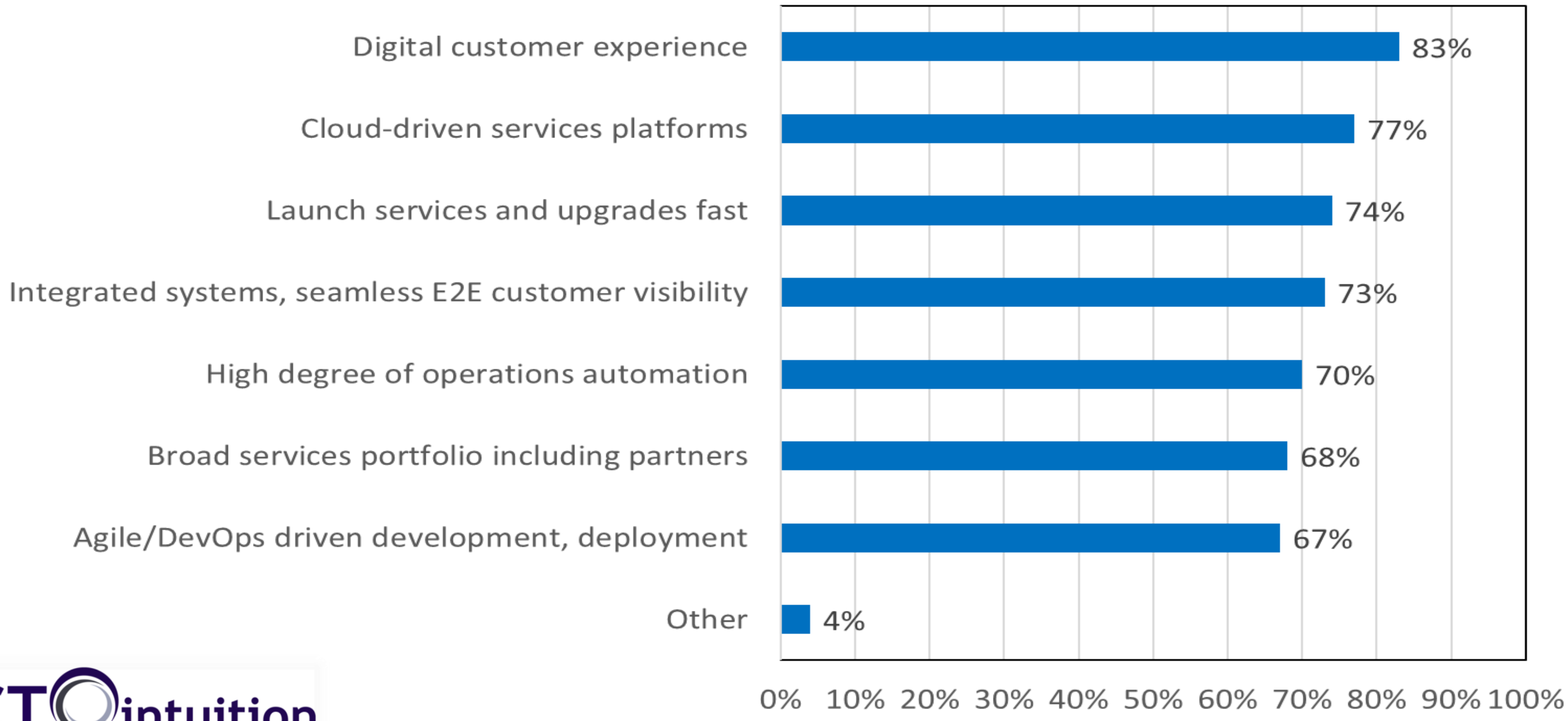
Business Strategy

What are the key elements of your Digital Service Provider strategy?
(Select all that apply)



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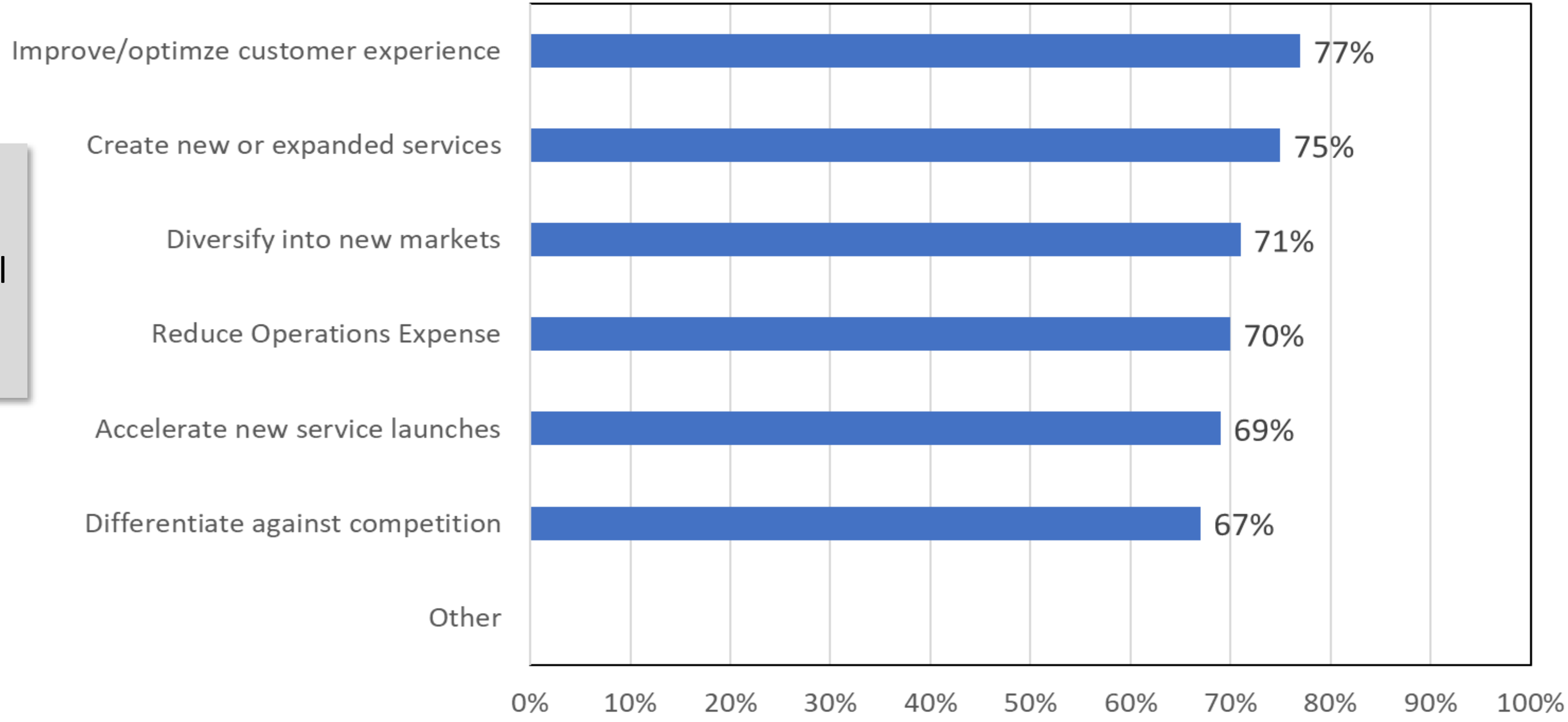
What Are the Business Goals of Your Digital Strategy?

(Critical or Quite Critical)

Everything is critical and while that might seem to be good strategy, it's not helpful when the strategy needs to be translated to projects



On average, 71% indicated all these things are critical or quite critical

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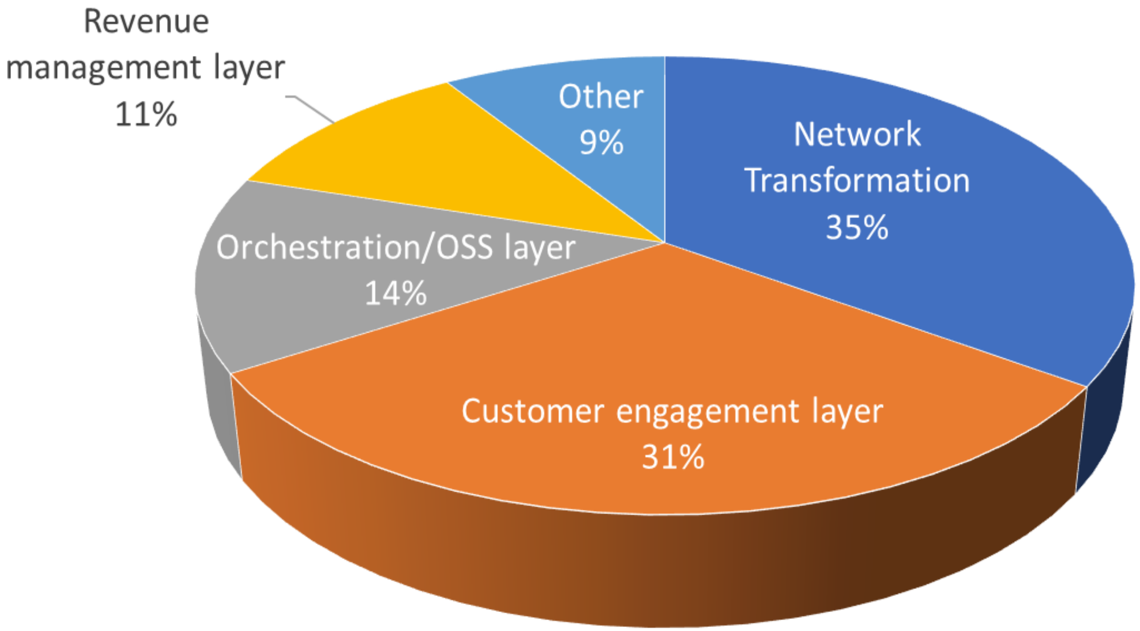
What is/was the starting point for your Digital Service Provider transformation initiatives?

(Select only one)

Operators typically start with the network. There is evidence that at least some are working customer- and network-facing efforts in parallel. OSS/BSS always trails network and product development initiatives although new network deployments will benefit from a coordinated approach. Most digital transformation started with the network or on-line customer care which are the visible customer-facing pieces. Unfortunately the backend gets modified for a quick launch and doesn't get revisited until something goes wrong. Performance, accuracy, efficiency and ROI are impacted until those backend systems are upgraded. Challenges include difficulties modifying existing systems indicating that OSS/BSS strategy is still trailing.



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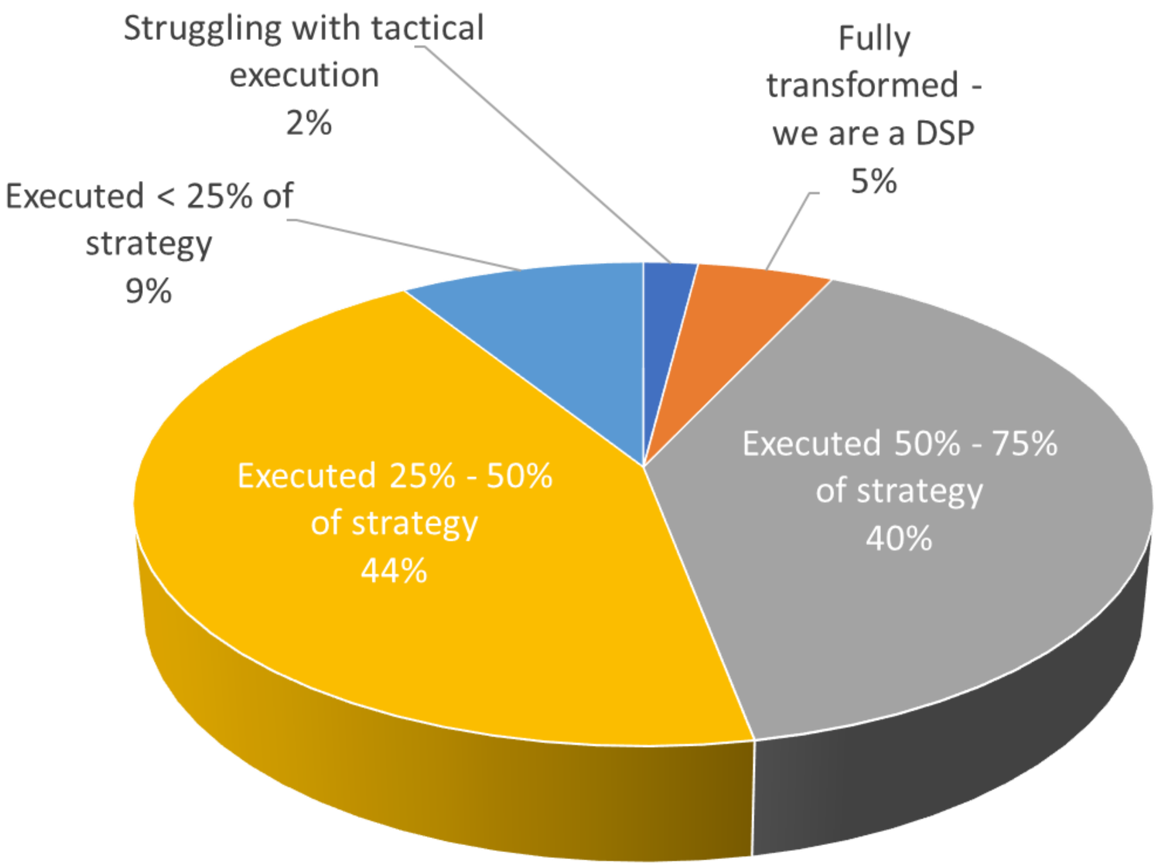
Business Strategy

Rate your progress in executing your digital transformation strategy

Half way there. In the decade or so since operators started transforming to become digital enterprises and digital service providers, they are finally making real progress. Technology has caught up, complexity is slowly being reduced with standards for APIs and XaaS offerings, cloud is becoming more reliable and customers are becoming more digital. Business customer revenue has lagged behind because enterprises are also transforming, however the last two years have seen increasing demand for turn-key digital business services and that will continue.



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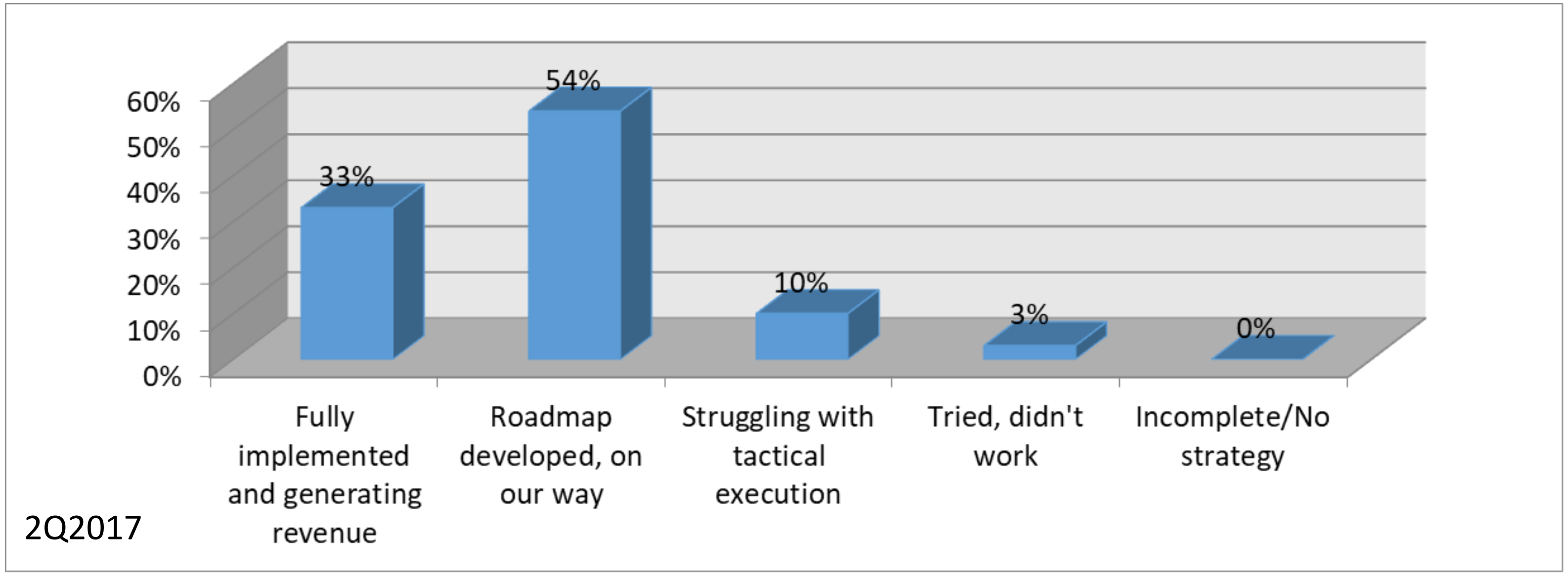
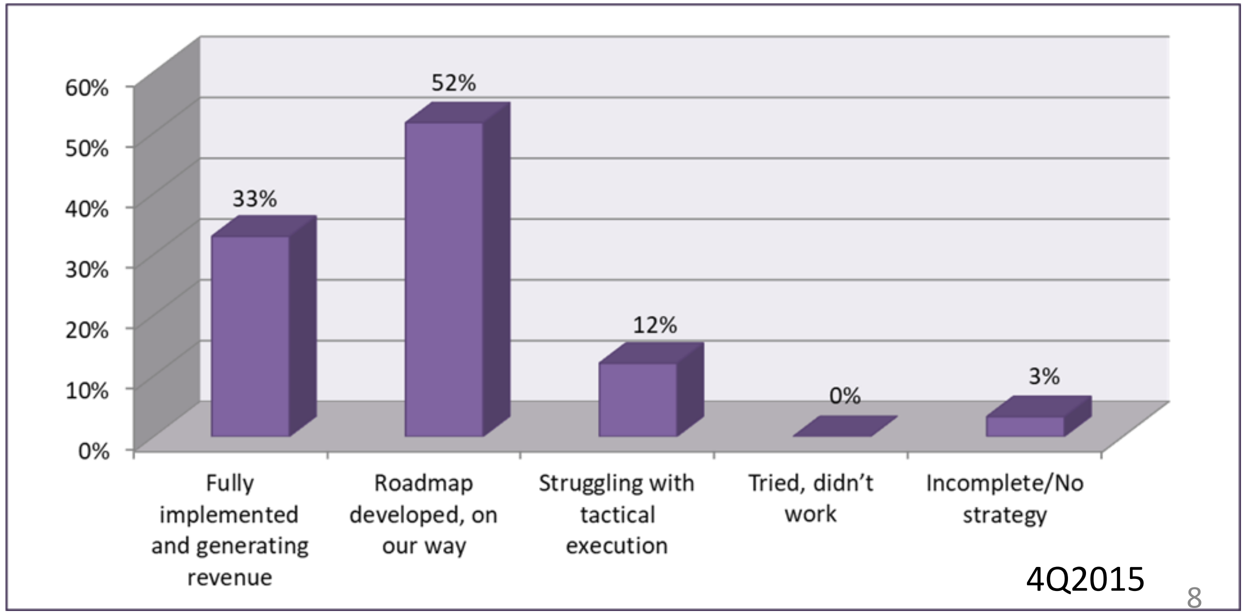
Rate your progress in executing your digital transformation strategy

Business Strategy Progress



There's been a reality check. In previous surveys fully one-third of operators declared their DSP strategies fully implemented and generating revenue, whereas now only 5% say they are fully transformed. There's a reason for that. . .



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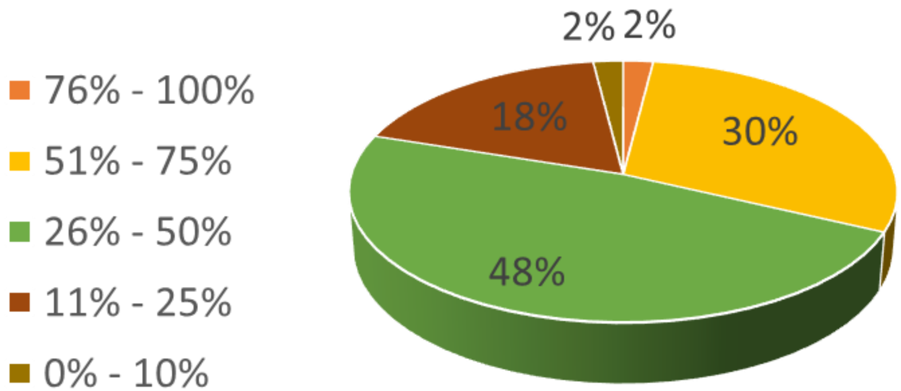
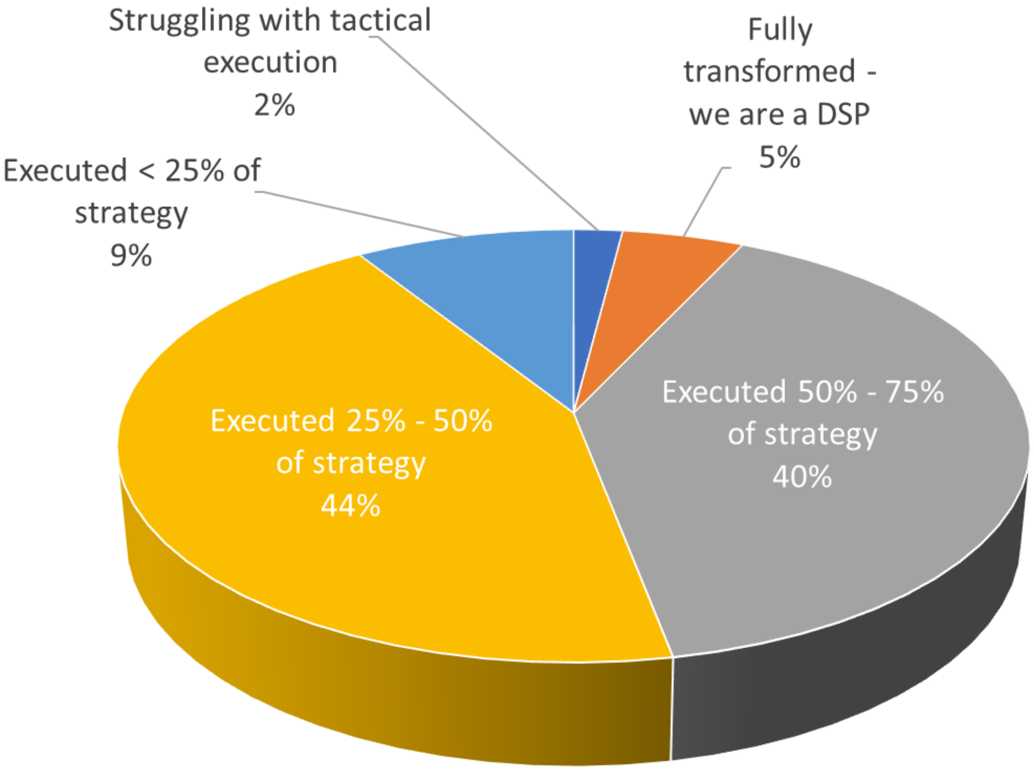
Business Strategy
Progress

What portion of *employee* business transactions (expenses, travel, time keeping, work orders) are conducted using digital channels? (mobile apps, on-line self-care)



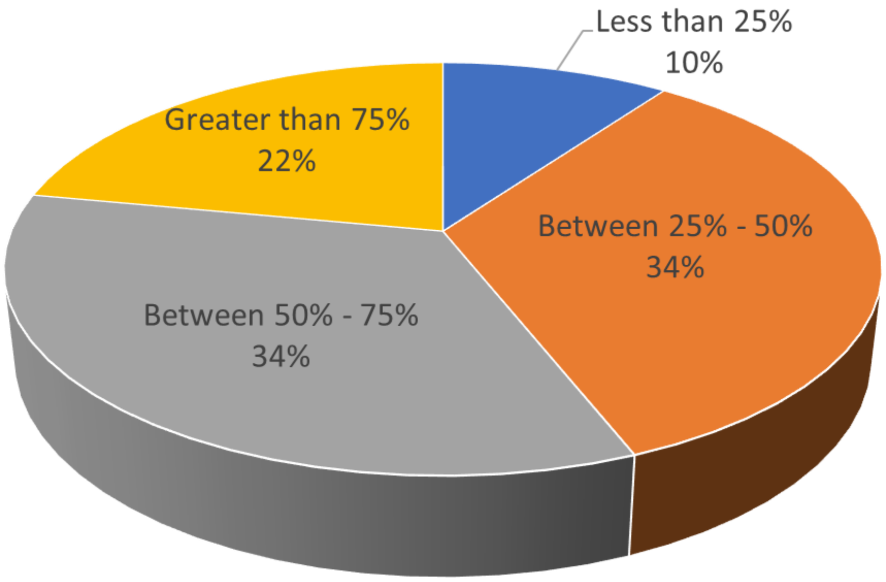
2Q2017



In the past most were talking only about network transformation, whereas now most recognize that the entire business, not just the network, has to be digitally transformed. Previously most respondents (66%) had transformed less than half of their <u>enterprise</u> to become digital. Execution figures now represent enterprise transformation and while progress is slow, it is happening.

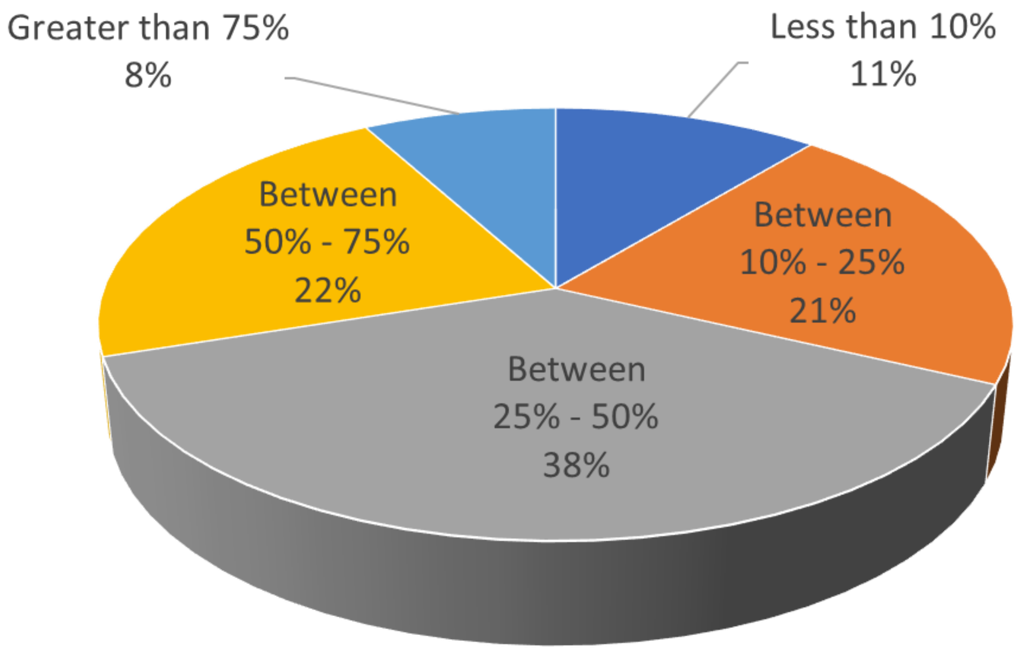
Tactical Progress

What portion of your network is targeted for virtualization?



Operators committed to more virtualization are further along. They are using virtual elements to add capacity rather than, or while they wait, for long construction cycles. As larger portions of the network become virtualized, more attention needs to be paid to orchestration, integration and interoperability.

What portion of your network that is targeted for virtualization has been completed?



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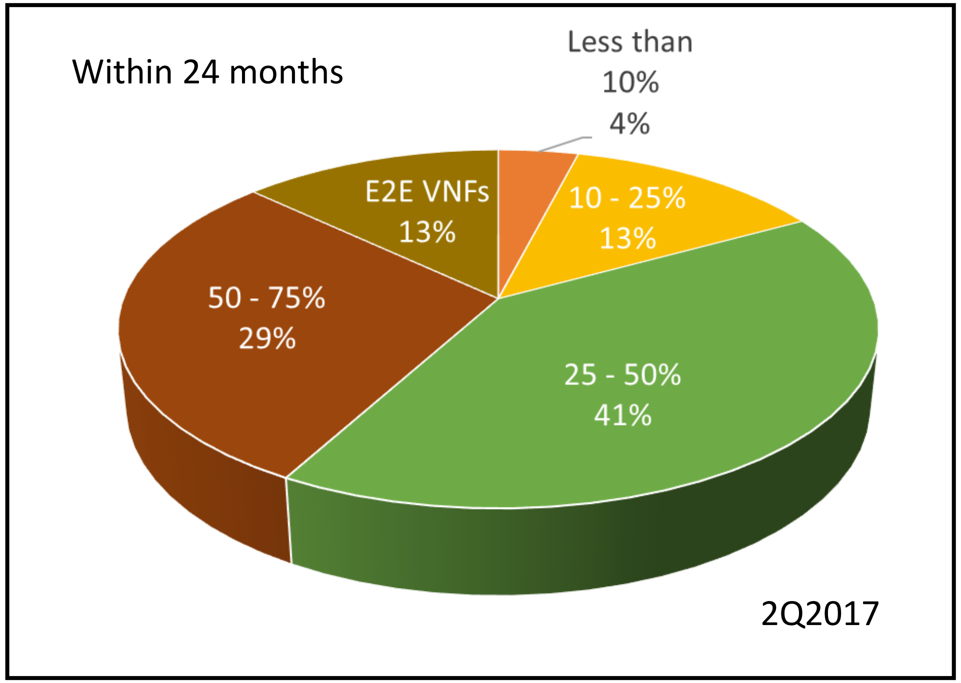
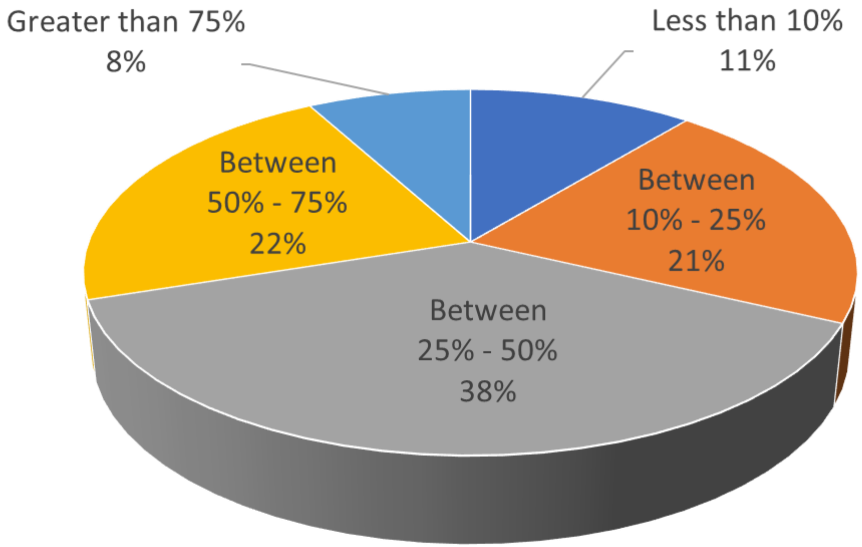
Tactical Progress



What portion of your network that is targeted for virtualization has been completed?



Based on responses in 2017, the two year estimates were fairly accurate and operators are only slightly behind the progress they predicted

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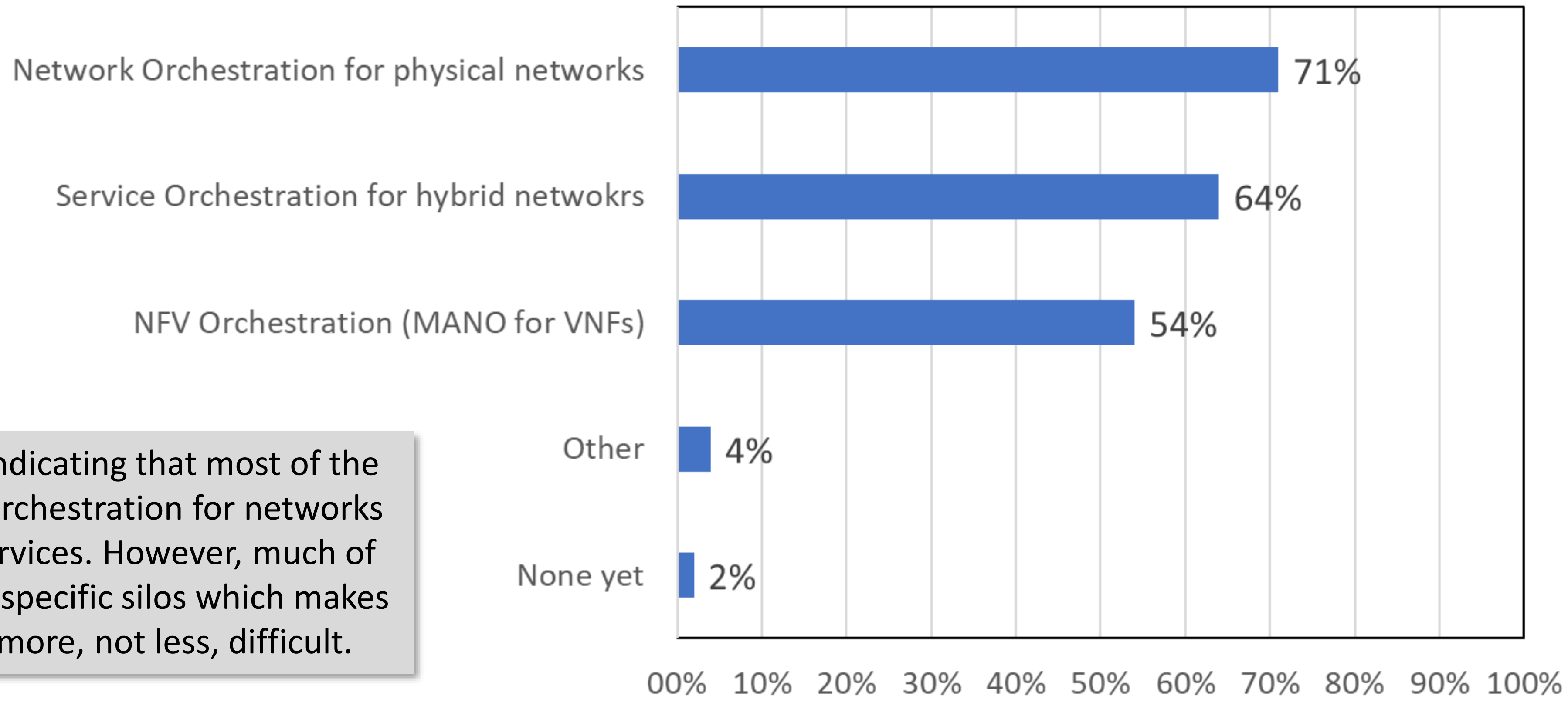
Tactical Progress

What orchestration systems have you implemented to date to automate network and service deployments and lifecycle management?

(Select all that apply)



There were 195 responses indicating that most of the respondents are deploying orchestration for networks (physical and virtual) and services. However, much of the orchestration remains in specific silos which makes integration and operation more, not less, difficult.

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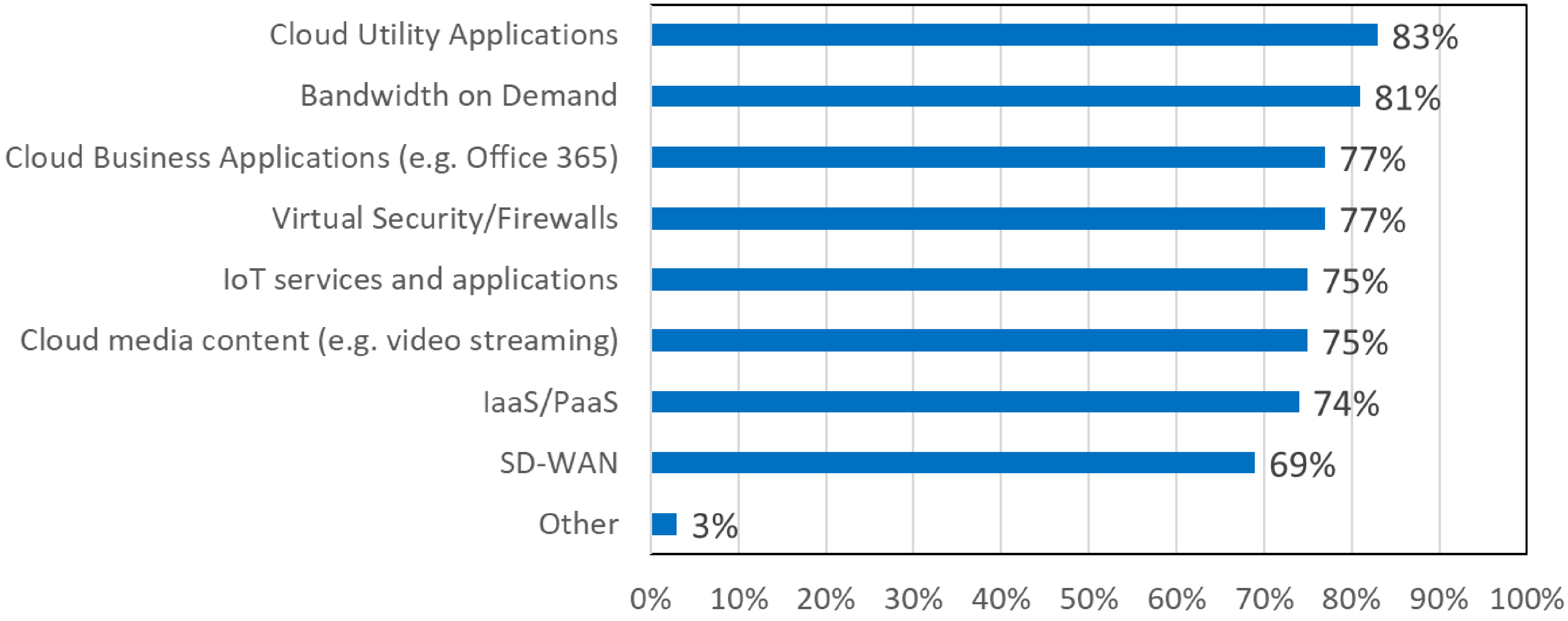
Tactical Progress

Which digital services do you currently offer to your customers?



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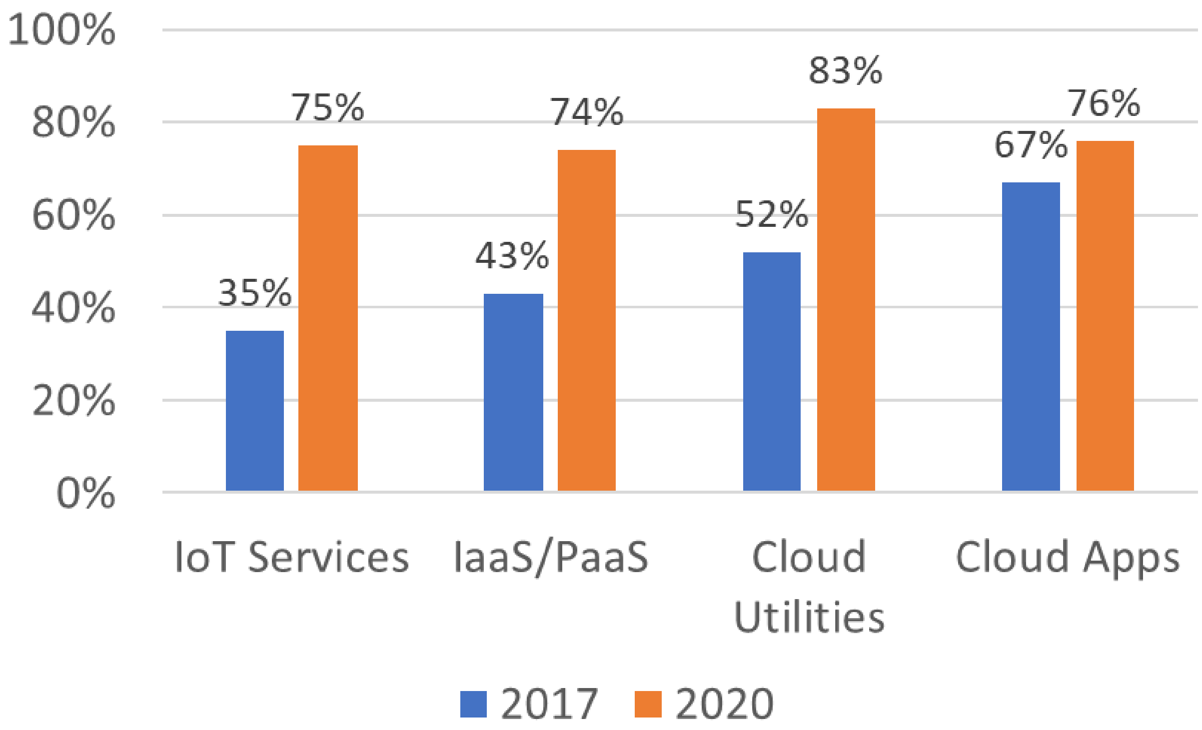
Tactical Progress

Which digital services do you currently offer to your customers?

While we didn't ask about all the same services in 2017, the ones that did overlap show significant growth. The exception being cloud applications with one reason being that now operators are adding complex apps, like video streaming, which requires a longer partnering process while representing only one app.



Operators are moving quickly to offer new services. SD-WAN wasn't even an option in 2017 and now nearly 70% of operators deliver it!

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Digital Services are Finally Paying Off

Tactical Progress

- Every operator has different menu of services
- As enterprises become digital, decades of security and trust allows DSPs to become preferred providers of premium services that enable businesses to move data and applications to the cloud
- Value-added revenue from bundled business services is rising rapidly although most still do not offer access to a wide variety of apps. That will change as more capable partner settlement solutions are implemented.
- SD-WAN is becoming popular with business customers and replaces expensive MPLS VPNs
- SD-WAN enables operators to retain revenue that would be lost to competitors, MVNOs and SIs
- Virtual security and firewalls are not high margin services but have become table stakes for consumers and SMBs
- Providing on-demand bandwidth to customers helps DSPs manage capacity and generate revenue

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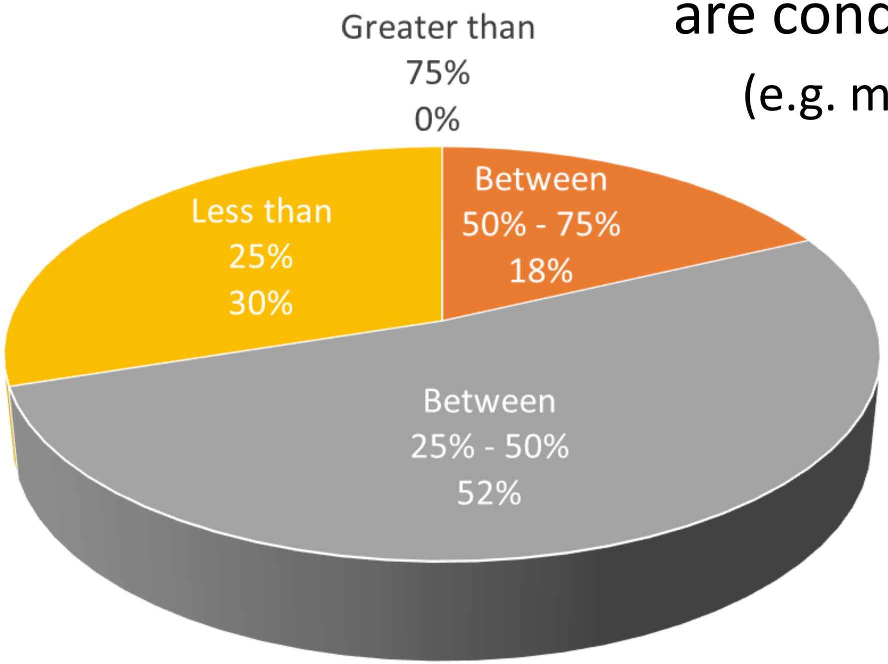
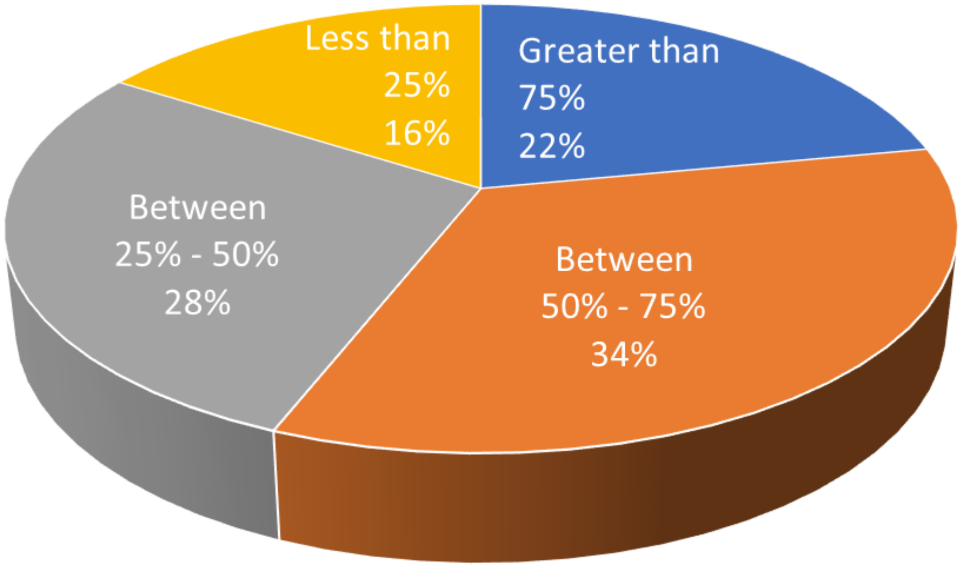
Digital Transactions
Progress

What portion of customer transactions (e.g. orders, help, support) are conducted using digital channels (e.g. mobile apps, on-line, self-care)?



2Q2017



1Q2020

DSPs are making tremendous progress in getting customers to go on-line for support/care. None were over 75% in 2017 but 22% are exceeding that mark today and the number recording less than 25% has been cut in half.

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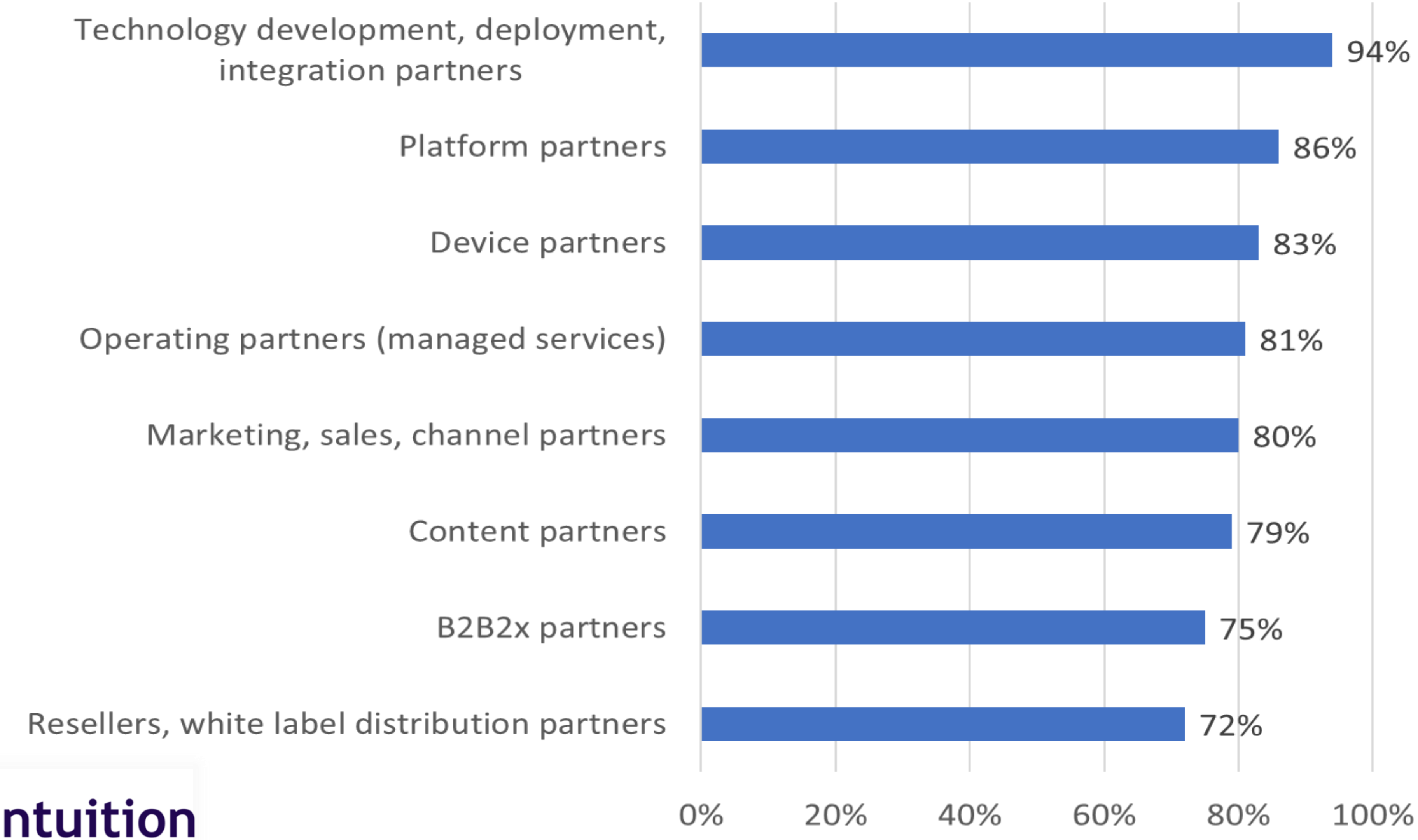
Partner Progress

Have you enlisted partners for creation and/or delivery of service solutions?



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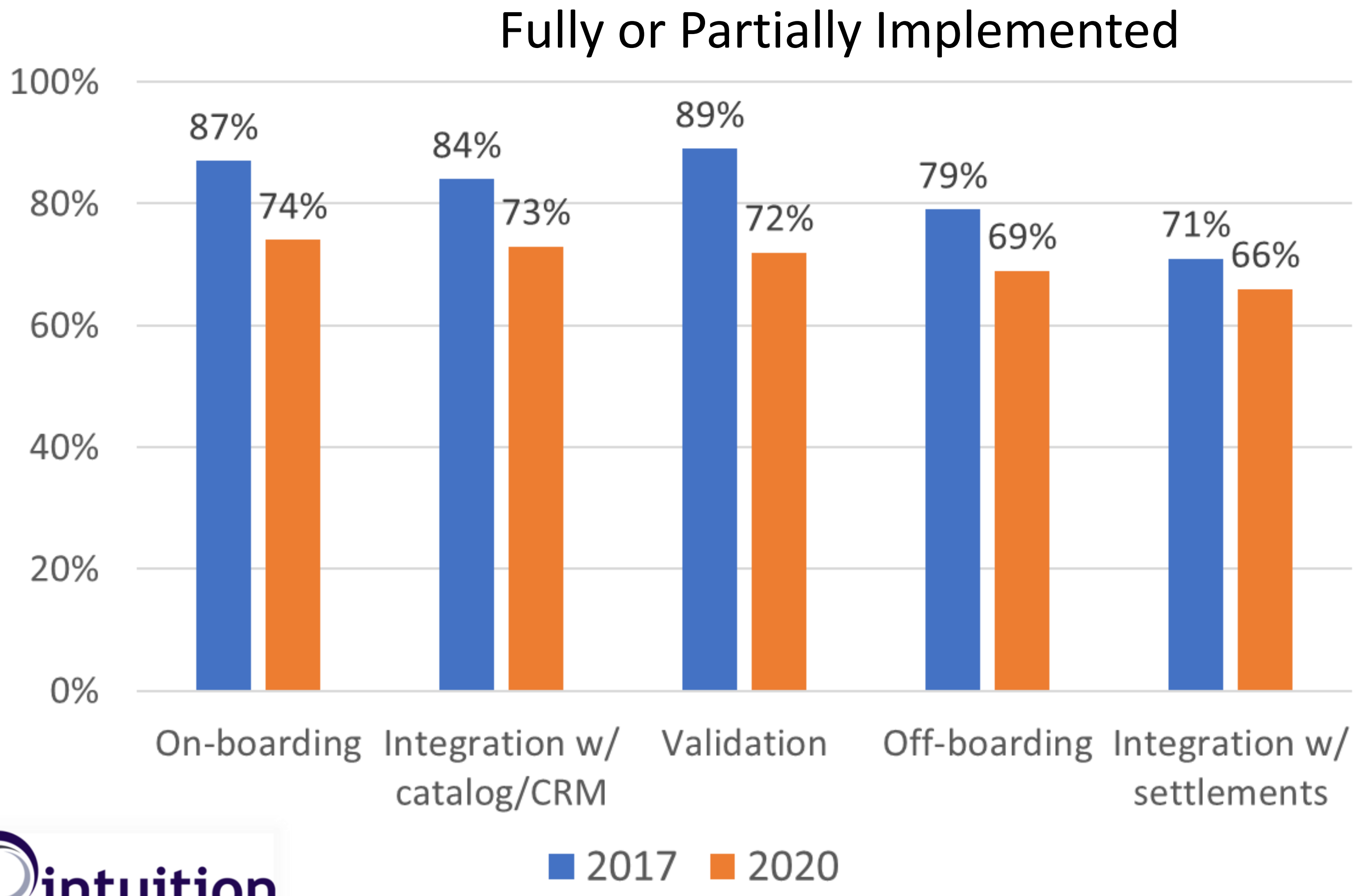
Partner Progress

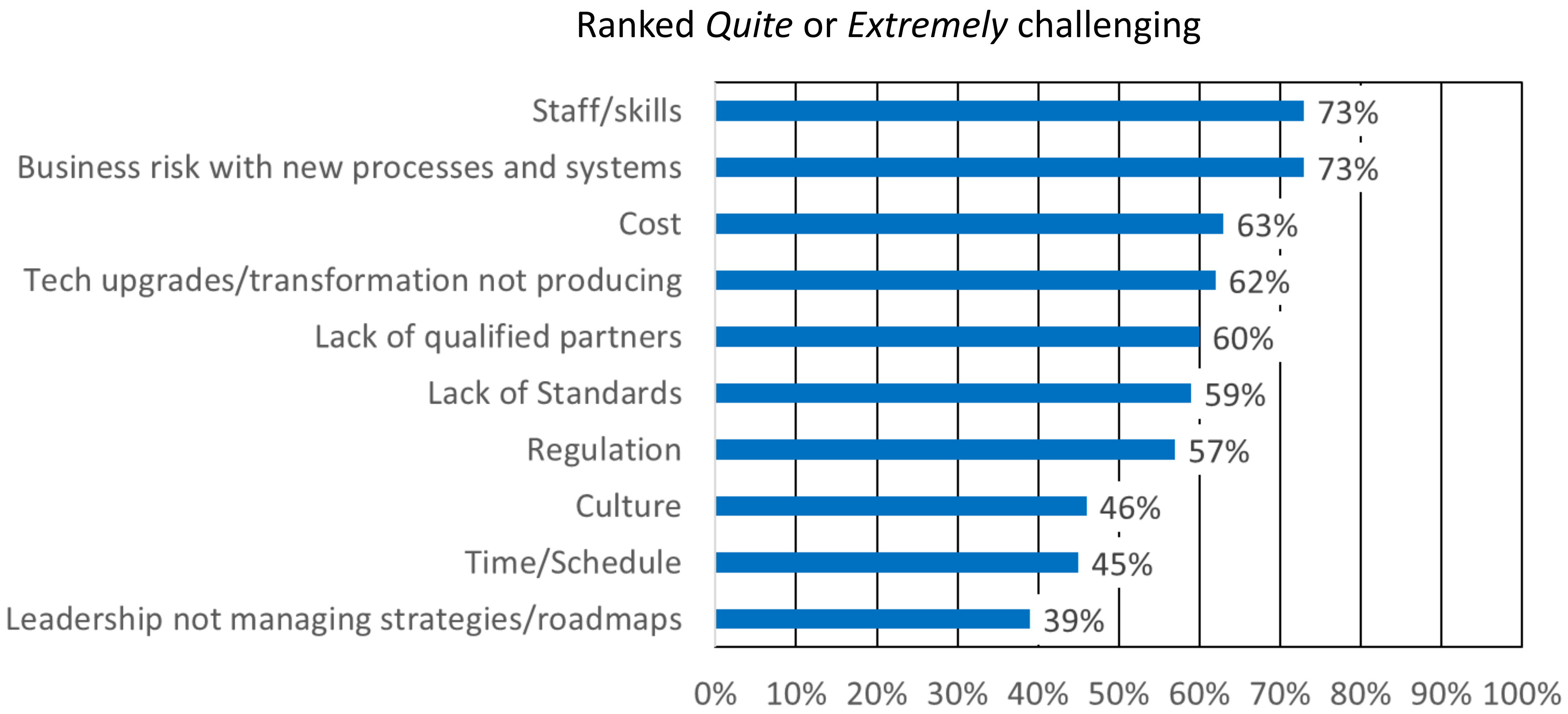
Rate your progress in implementing a dedicated partner platform to date
(1 is Unable to Implement; 5 Fully Implemented)



Operators have made progress in partnering but not to the extent predicted in 2017

Business Challenges

Rank each of the following business challenges to successful digital transformation
(1 – not a challenge to 4 – extremely challenging)



Operators are having difficulty attracting and retaining the needed skills. While that creates an opportunity for professional services, many operators have been burned by system integrators. Regardless, operators still need in-house network, IT and systems expertise for daily operations and proprietary development.

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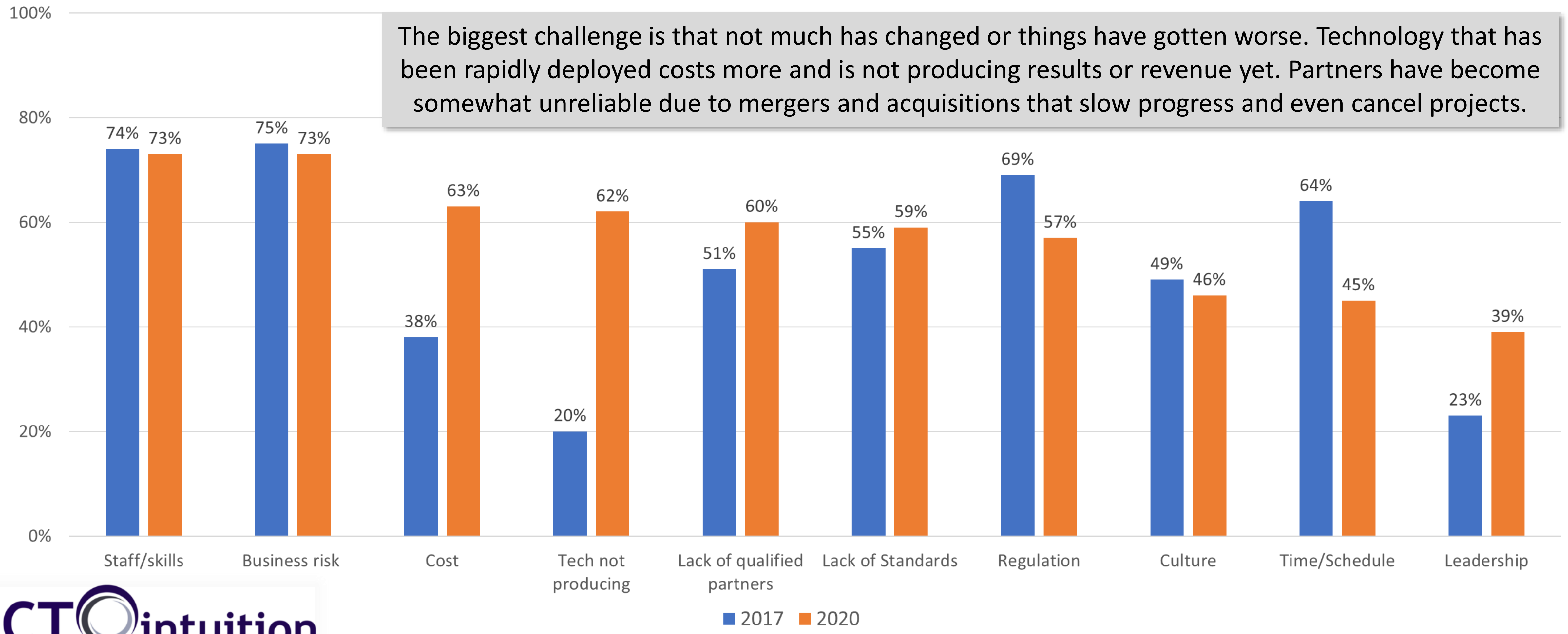
Business Challenges
Progress

Rank each of the following business challenges to successful digital transformation
(1 – not a challenge to 4 – extremely challenging)

Ranked *Quite* or *Extremely* challenging

The biggest challenge is that not much has changed or things have gotten worse. Technology that has been rapidly deployed costs more and is not producing results or revenue yet. Partners have become somewhat unreliable due to mergers and acquisitions that slow progress and even cancel projects.



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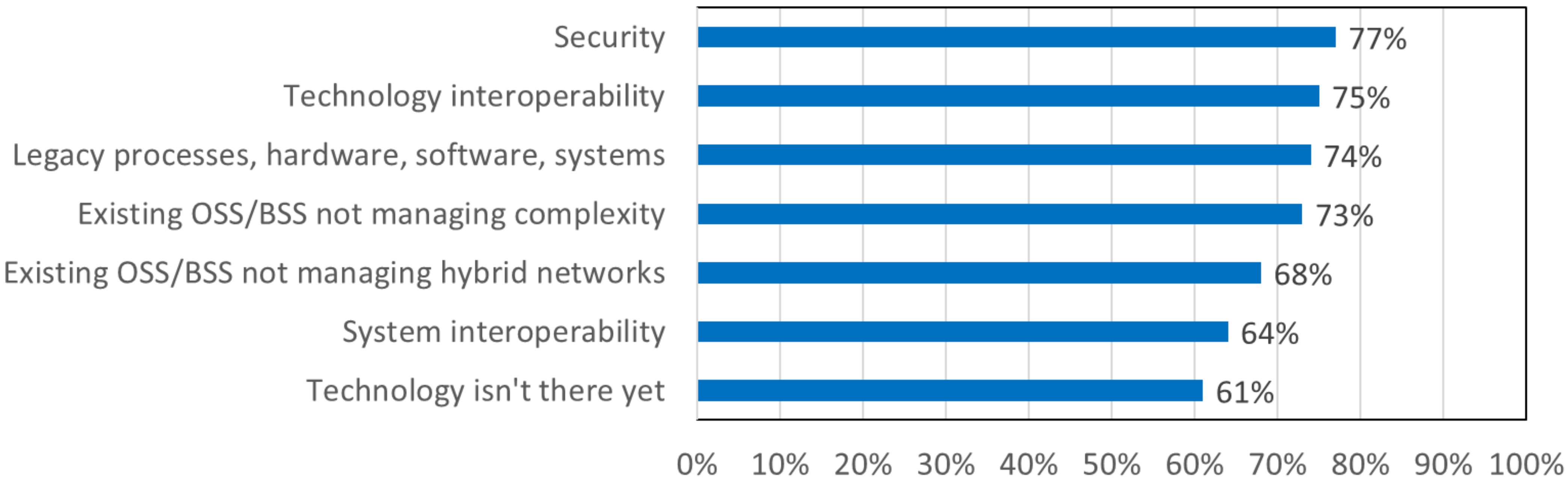
Operational Challenges

Security will always be a major challenge



Existing OSS/BSS solutions were not built to handle the demands and complexity of today's networks. Replacing, rather than upgrading, legacy can solve interoperability issues as long as operators make interoperability, standard APIs, etc. contract requirements. New systems should be built to capture data from old systems and when data is validated and consolidated, legacy systems aren't needed. Use existing systems for data but operate using new solutions.

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Business Plans

Progress Against Predictions

Operators are trying to do everything at once and accomplishing less

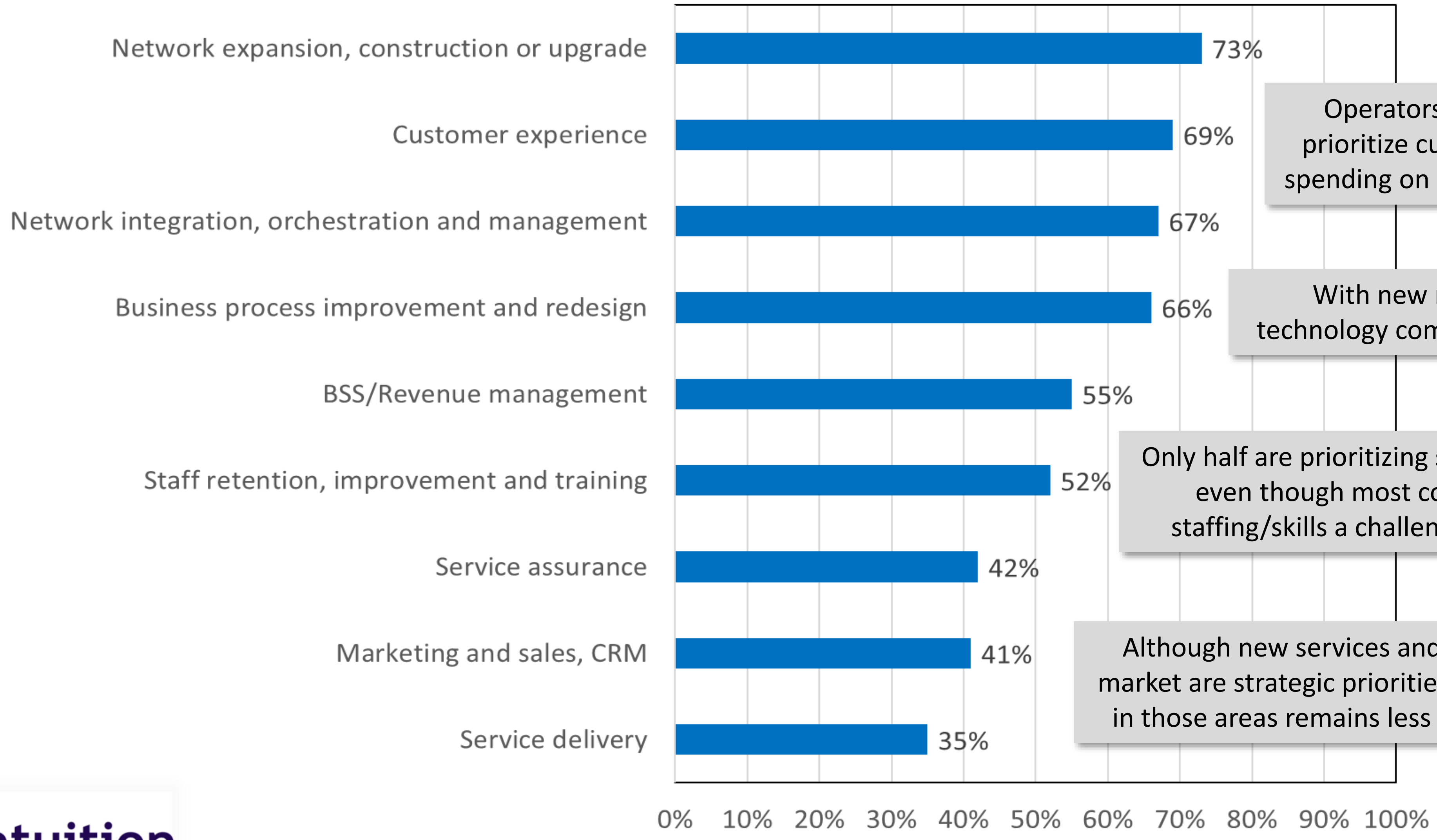
	2020	2017
IoT Enablement	65%	74%
IoT as a Service	62%	78%
Infrastructure consolidation/ virtualization	64%	70%
Billing as a Service	54%	79%
Cloud-based OSS/BSS	87%	75%
Bundling OTT services	73%	80%
New partner models	55%	68%
New revenue models	69%	80%
Operational Analytics/AI/ML	60%	87%
Marketing Analytics/AI/ML	60%	95%
Customer Analytics/AI/ML	66%	90%
Product Development Analytics/AI/ML	63%	89%

Progress isn't what operators thought it would be in 2017. Analytics/AI/ML have been the victims of poor data quality and insufficient skills. As intelligence is built into systems rather than remaining a unique function, utilization will improve and perhaps already has since many vendor solutions employ these tools.

Business Plans

Top 5 Spending Priorities

Percentage of operators that named these categories in their top 5



Operators continue to prioritize customer-facing spending on network and CX

With new networks and technology comes new processes

Only half are prioritizing staff spend, even though most consider staffing/skills a challenge (73%)

Although new services and time-to-market are strategic priorities, spending in those areas remains less of priority

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Summary Analysis

- Network transformation has become enterprise transformation and that positions operators to better understand the priorities and projects of business customers
- Business services is the growth market for operators going forward whether remaking their enterprise into a media/app retail company or providing cloud and turn-key IT services to digital businesses in multiple vertical markets
- There are multiple strategies for addressing digital markets and operators need to settle on a strategy, put an organization in place to execute and get going; if they won't an OTT will
- As the number and velocity of projects increases, the need for a Program Management Office becomes apparent. Beyond ensuring that strategies are properly executed, PMOs coordinate between and among projects and vendors and enforce corporate standards for data modeling, APIs, infrastructure and software architecture. Integration, testing and validation also require coordination across the enterprise to ensure interoperability and reliability while reducing errors.
- Foundational strategies – digital customer experience, Agile, partnering – must be established so "make do" doesn't become "makeover". Don't evolve legacy. Wrap around or continue with it until replacements are integrated, tested, validated and verified for operation at scale.
- Cloud adoption of OSS/BSS has exceeded all expectations indicating that operators were ready and vendors weren't

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Summary Analysis

- IoT services and applications require more sophisticated partnering, fulfillment and revenue management capabilities
- As the number of partners and suppliers increase, DSPs will require more robust on-boarding, off-boarding and settlements
- Existing OSS/BSS was not built to handle the demands and complexity of today's networks. Although not identified as a priority, there is an opportunity to define new, optimized, automated processes and systems that implement them rather than trying to extend legacy OSS/BSS. Retain valid and accurate data, cap and replace the systems.
- New systems should not be required to work with the old systems. The requirement should be to capture, cleanse, validate and retain necessary data from legacy systems. Wrap legacy systems with new to accelerate deployment and limit risk.
- If operators do not specify requirements for standard interfaces, data models and interoperability; suggest them
- Flexible architectures allow room for new technology and techniques to avoid new silos as 5G, SD-WAN and other network solutions and services come on-line

Summary Analysis

Who accelerated digital transformation in your company?

A) CEO
B) CIO
C) CORONAVIRUS
D) CFO
E) Board

This was originally posted as a sarcastic comment, however it might represent real opportunity to accelerate digital transformation in multiple industries, not just telecom

- Recent events suggest that there is a new and important window of opportunity to accelerate digital transformation in operator enterprises and for their business customers. Operators remain the most trusted source for digital business services.

- Operators will benefit from expanding network and operational capabilities in parallel, creating an opportunity for vendors to expand partnerships and alliances that expedite delivery of new, complex solutions for 5G, IoT, advanced applications and security

- Staffing in all areas matters and operators and vendors need to offer more than a paycheck to get the caliber of people desired and required to monetize digital transformation both internally and for customers

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