CSPs and the intelligent back office advantage

Gaining a competitive
edge through
AI and automation

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5G is here, but it does not guarantee growth for CSPs.

Key takeaways

Back office projects are too often seen as vehicles for cost reduction.
If a Communications Service Provider's (CSP's) main rationale for back office projects is cost, it risks missing an opportunity to drive essential change throughout the business.

The CSP back office can infuse the business with insights and intelligent workflows.
Re-envision back office functions as reservoirs of actionable data that influence outcomes and improve experience and efficiency for virtually all users: customers, employees, and partners.

CSPs can gain much-needed business agility through a cloud-based back office— what we call the Intelligent Operations Platform (IOP).
An IOP uses modularized industry cloud solutions and exponential technologies that analyze data and put it to work. Cost reduction can be a byproduct but is not the main goal. Instead, the objective is creating intelligent industry workflows that are adaptable, scalable, and flexible—and can contribute to innovation in the broader marketplace.

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Introduction

5G is here, but it does not guarantee growth for CSPs. When previous network generations transitioned, prices for consumer telecom services remained flat. So, as global CSPs roll out 5G, they're still compelled to find other routes to growth.

Providing a high-quality network is necessary. But an excellent network alone is not sufficient to capture economic value from 5G. In the race for 5G profits, CSPs now face disruptive challenges by global web-scalers (such as Amazon, Google, Facebook, Alibaba, and Tencent) and other cloud-native companies adept at monetizing networks. These insurgents have extracted the most profits by enhancing lives and solving problems, and they did so largely on the back of investments made by CSPs.

As evidenced by the market value of top web-scale companies relative to top CSPs, multiples of economic value have been captured from business models. These models include e-commerce, search, social, streaming, payment processing, the gig economy, as well as enterprise software such as CRM and digital marketing.

Web-scalers both shape customer expectations and exceed them. CSPs? Flawless connectivity is valued—and taken for granted in a connected world. With 5G, network performance will likely be noticed only when it fails to deliver on very high-end user expectations.

CSPs need to emulate not just the innovative services of cloud natives but also develop in-house business agility.

Still, intelligence built into networks can enable new opportunities in virtually every industry. It's expected that by 2030, USD 1.5 trillion in new revenues will be earned by Internet Communications Technology (ICT) companies from 5G-enabled products and services sold across just ten industries (see Figure 1). USD 700 billion of that value is expected to be addressable by CSPs.[1] Why less than half? One answer is that CSPs cannot innovate and scale new products, services, and business models at the pace of cloud natives, especially the web-scale giants.
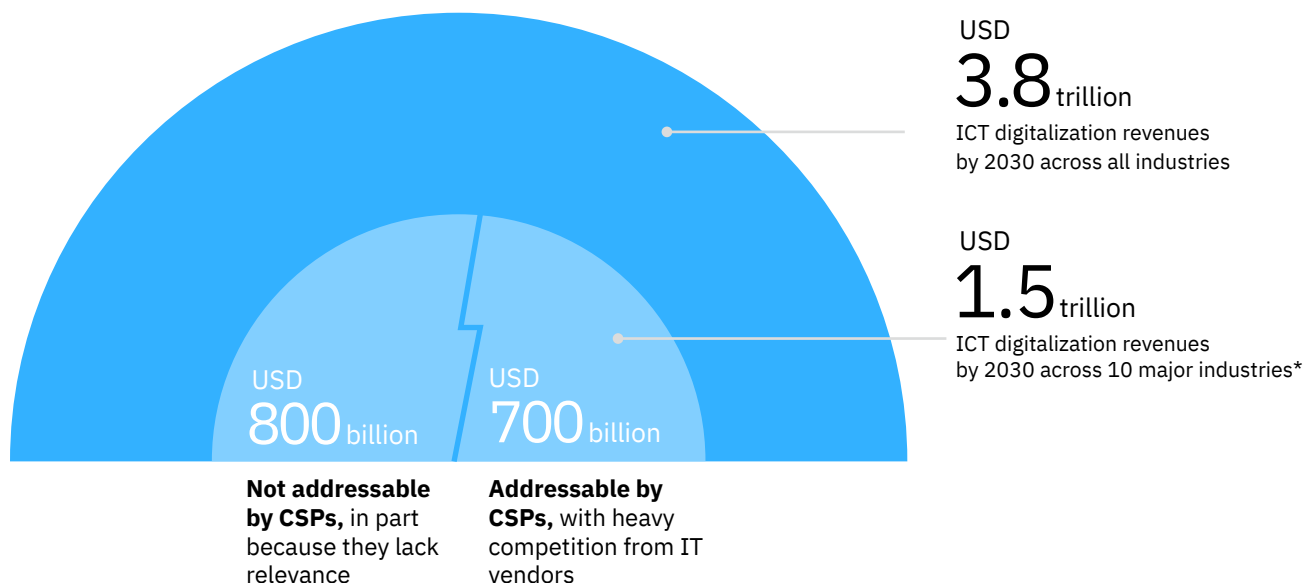
CSPs face stiff competition, even for the 5G opportunities in play for them. Their ability to compete for profits is proportionate to their ability to meet rising customer expectations. Meeting those expectations can create a winning cycle of trusted relationships that drive even more growth and new opportunities.

CSPs need to emulate not just the innovative services of cloud natives, but also develop and exploit in-house business agility. Traditionally, this has been a weakness of CSPs. Overcoming it could be a challenge.

To that point, most CSPs understand the need to adapt their front and middle offices to rising customer expectations and shorter product cycles. *But back office projects are too commonly seen first as mechanisms for cost reduction.* For CSPs, we envision an essential evolution from monolithic and highly customized Enterprise Resource Planning (ERP) deployments to what we call Intelligent Operations Platform (IOPs). These IOPs can integrate discrete back office domain processes with their operational cores, including Business Support Systems (BSS) and Operations Support Systems (OSS.) The result? Powerful multifunctional workflows, agility, and data-driven intelligence that can often self-fund innovative business strategies and competitive service development.

Figure 1
Enterprise digitalization revenues expected across all ICT players by 2030

USD
3.8 trillion
ICT digitalization revenues
by 2030 across all industries

USD
1.5 trillion
ICT digitalization revenues
by 2030 across 10 major industries*

USD
800 billion

USD
700 billion

Not addressable by CSPs, in part because they lack relevance

Addressable by CSPs, with heavy competition from IT vendors

*USD 1.5 trillion is expected to be earned across 10 industries: Manufacturing, Energy and Utilities, Public Safety, Healthcare, Public Transport, Media and Entertainment, Automotive, Financial Services, Retail, and Agriculture.
Source: "5G for business: a 2030 market compass." Ericsson. October 2019. https://www.ericsson.com/ en/5g/5g-for-business/5g-for-business-a-2030-market-compass

The new path forward: Increasing CSP business agility

CSPs have long served as the connective tissue of the global economy. That's the case now more than ever, with 5G, edge computing, and artificial intelligence (AI) creating groundbreaking use cases in virtually every industry. As a result, CSPs are evolving into multiservice organizations that serve a fast-paced digital marketplace. And sophisticated consumer and B2B customer expectations set an increasingly high bar.
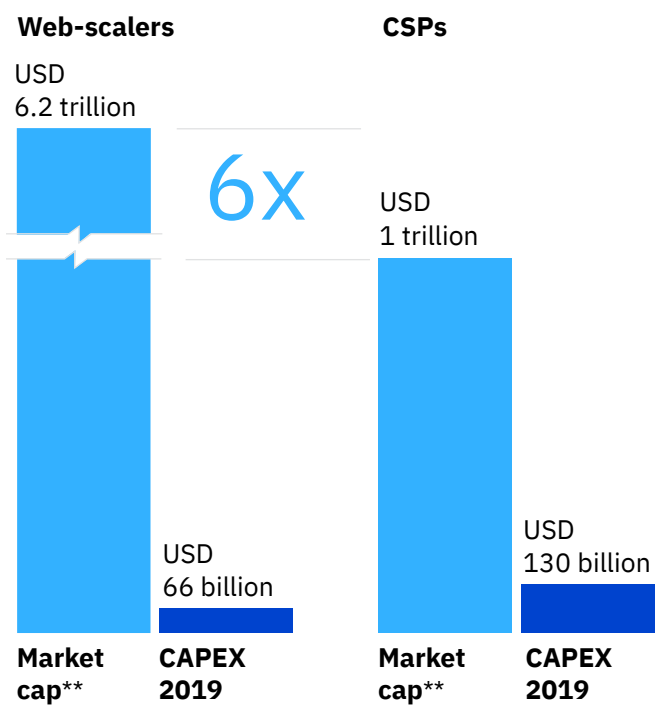
The opportunity is clear: CSPs can be both facilitator and beneficiary of the impressive economic value creation wrought by these exponential technologies. In fact, by 2035, 5G is expected to enable USD 13.2 trillion of global economic output.[2] Use cases such as Industry 4.0, autonomous vehicles, connected retail, and the mass growth of IoT—all propelled by enterprise 5G and edge— are huge drivers.[3] And COVID-19 is an additional catalyst, challenging the global economic infrastructure and hastening the pace of digitalization. As employees work from home and students learn online, the demand for lightning-fast, highly reliable connectivity is skyrocketing.

Customers are counting on these technologies to improve how they communicate, consume content, and work together. To that end, the only loyalty most customers express is to the best experience. For example, research shows they would not hesitate to switch providers for 5G-quality speed that would enhance augmented reality/ virtual reality (AR/VR), ultra-high resolution video, and gaming.[4] An additional complexity is that web-scalers could exploit newly forged relationships to vie for connectivity services—for example, by building private networks directly into large corporations.

The pressure to provide the sharpest engagement is intense. When it comes to commercializing digital experiences, web-scale companies dominate CSPs. Their range of business models captures massive revenue stream—from advertising and e-commerce to subscriptions and the gig economy (see Figure 2).

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Figure 2

CSPs spent twice as much on networks in 2019, but web-scalers have earned most of the market value*

Web-scalers — Market cap** USD 6.2 trillion; CAPEX 2019 USD 66 billion

CSPs — Market cap** USD 1 trillion; CAPEX 2019 USD 130 billion

6x

Source: Internal IBV analysis of publicly available financial information.
*Top ten web-scalers are Amazon, Alphabet, Facebook, Alibaba Group, Tencent Holdings, Salesforce.com, PayPal Holdings, Netflix, Meituan-Dianping, and Adobe. Top ten CSPs are Verizon, AT&T, China Mobile, SoftBank Corporation, Nippon Telegraph and Telephone, Deutsche Telekom, American Movil, Vodafone Group, Orange, and China Telecom.
**Market cap as of market close 8/28/20

Infrastructure-providing CSPs are feeding the beasts that could devour them.

As for connectivity itself, even if CSPs can deliver on 5G service expectations, the financial returns are questionable, with 5G requiring substantial investments to implement.[5] Unfortunately, even when networks are upgraded, competition limits price increases.

For example, in March 2020, Verizon CFO Matt Ellis said, "When you deliver a differentiated service, you can get a differentiated price point." Yet Verizon abandoned plans to charge an additional USD 10 for its high-end 5G pricing plans when no other US carrier followed suit.[6]

Consumer markets aren't likely to drive substantial profits for CSPs. The current scope of consumer-related services revenues is expected to remain essentially flat, with an annual growth rate of .75 percent through 2030.[7] As industry association TM Forum reports, the true 5G growth opportunity focuses on enterprise and B2B2X markets.[8] Yet, especially in that realm, CSPs risk being the lumbering elephants in a market filled with web-scaling jaguars.

Today's cloud natives have their choice of cloud infrastructures on which to develop and scale apps—unlike legacy players that had to build their own foundations. Web-scalers can also rely on software development kits (SDKs), APIs, and microservices to enable or launch their own global product with a fraction of the investment and time to market traditionally required. With such low barriers to entry, it's seldom been easier or less expensive to become a disruptor. In some respects, infrastructure-providing CSPs are feeding the beasts that could devour them.

To compete, CSPs need to emulate their lean competitors by offering innovative services, and in many cases serve an essential role in partner and supplier ecosystems. But another point is critical: CSPs also need to seek inspiration from the leaner *internal processes* of web-scalers. In short, CSPs need to look *within* their enterprise for additional speed, agility, efficiencies, and innovation.

From ERP to the IOP

Our perspective? A cloud-based, flexible back office—coupled with a culture of innovation—can directly contribute to the agility that CSPs need to succeed in the broader marketplace. Think of exponential technologies such as AI, machine learning, and automation not just as serving the business. Think of them as *infusing* the business with insights and intelligent workflows. Re-envision finance, human capital, and operations not just as discrete functions, but as reservoirs of business intelligence that, when cross-pollinated, influence outcomes. The back office is not an island unto itself—its functionality, adaptability, and data-generated insights impact the front-end experience, and by extension, CSP growth and competitiveness.

The back office has to move and improve with the business. Instead of executing on the status quo, it should be an active force in informing and enabling decisions and continuous change. This starts with talent and organizational culture.

CSP talent needs to envision, implement, manage, and operate new capabilities. This requires new skills in cloud, data, and AI. Systems and operating models should support distributed teams and facilitate sudden shifts to remote work. Waterfall development and custom deployments should give way to continuous integration and optimization.

A culture shift needs to permeate the entire organization. CSPs need to seize opportunities to streamline processes and infuse workflows with intelligence. Professionals with broad cross-functional skills must ask the right questions. Experience-led design should be guided by design thinkers prepared to rebel against the status quo. Talent should be encouraged to experiment and fail fast as opposed to adhering to conventions. Systems and applications should empower talent with speed. All of this requires best practice for change management.

From talent and culture, we move to the technical. Traditionally, back office business processes have depended upon BSS, OSS, and ERP solutions. But while these suites of systems can be effective at fulfilling established requirements, implementations can be prohibitively lengthy. More often than not, those carefully documented initial requirements evolve, outdating the implementation before it's even complete. And these obsolete processes require IT budget to pay technical debt instead of driving the business forward.

To be truly transformative, evolving technology adoption demands the corresponding reinvention of business processes (see case study, "A multinational CSP"). It's time to jettison proprietary technologies, rigid systems, and mass customization. What's called for now are modular, agile methodologies that provide business value in incremental phases. It's about:

– Adaptive data and scalable platform architectures built on hybrid cloud

– Ecosystem environments that facilitate collaboration both within and across enterprise

– AI, automation, and intelligent workflows that support the lean operations and agility needed for CSPs to compete.

A multinational CSP: Transforming source-to-pay with intelligent workflows[9]

After multiple acquisitions, a leading multinational CSP lacked standard procurement processes and systems of record. Supplier onboarding, master data management, transaction management, and performance were all siloed processes that were arduous and difficult to audit. This resulted in wasted productivity, a poor user experience for both employees and third-party vendors, and suboptimal spending decisions.

This CSP turned to IBM Services and SAP to re-envision and re-engineer the procurement process and corresponding talent, skills, and culture. Ten major systems and processes were unified into a single workflow powered by AI-driven insights and automation.

Within weeks of going live, thousands of requisitions valued at USD 16 million were created and automatically routed for approval and processing to purchase orders. The new system is also able to meet unique requirements such as searching for existing inventory before sourcing and adapting to the client's unique requirements for complex sourcing.

The CSP has reduced both supplier onboarding time and sourcing project execution time by greater than 50 percent.

An IOP is adaptable—no more installations that are obsolete before they're even launched.

To help back office functionalities both keep pace with and inform cutting-edge frontline technology, CSPs should consider a concept we call the *Intelligent Operational Platform* (IOP) (see Figure 3).

An IOP starts with the big picture: *experience-led design*. CSPs can visualize the ideal customer and employee experiences and conceptualize from there. What type of workflows would drive those experiences? What data both within the enterprise and across the ecosystem would make those experiences smarter? What customer needs does that data expose, and how can CSPs create services to address those needs? How would these enhanced experiences contribute to bottom-line productivity improvements and revenue increases?

Using a hybrid cloud platform, CSPs can build an IOP with *modularized industry cloud solutions*. The solutions are designed to take advantage of industry-specific machine learning models, with industry-aligned best practices pre-bundled and modularized. Increasingly, this requires industry cooperation between peers and with standards bodies to foster collaboration, reduce redundancy, and accelerate time to value.

The modularized solutions are empowered by the use of *exponential technologies* such as data insights, AI, and automation. These technologies create *intelligent industry workflows* that help craft experience by both analyzing data and putting it into action (see "Insight: Building on process improvements to achieve intelligent workflows" on page 7). And by design, the modularized solutions are flexible and adapt to evolving business needs. Ultimately, these workflows embed exponential technologies into the end-to-end business processes, with the fluidity and intelligence that implies.

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Figure 3
Adopting an IOP and modernizing or migrating applications to cloud go hand-in-hand.

IOPs transform the operational core to deliver business value

Applications
- Enable user insights
- Apply intelligent workflows powered by exponential technologies
- **Improve agility and outcomes**

Operations
- Adopt industry best practices
- Use standard data and operating models
- Employ agile development methodologies
- **Reduce complexity and time to value**

Cloud
- Deploys open hybrid cloud model
- Uses API and microservices architecture
- **Adapts quickly at scale**

Benefits of intelligent workflows are far reaching, and can generally yield material increases in productivity. For example, by digitizing employee interactions, enterprises may train talent in critical skills while improving Net Promoter Scores (NPS). By digitizing finance operations, enterprises may reduce errors in invoice validation and payment processing. By digitizing supply chains, enterprises may resolve nearly all disputes and queries, while offering visibility into spend levels. By digitizing networks and operations, most traffic flows may be automated and issues resolved through proactive, automated insights. Similar benefits may be extended within and across every back office functional domain.

From a technical implementation perspective, an IOP is *adaptable, flexible, and scalable*—no more rigid installations that are obsolete before they're even launched. An API-centric platform approach with microservices architecture promotes low-code and no-code development, simplifies and automates integrations, and is built to scale on flexible hybrid clouds with containers.

Adopting an IOP and modernizing or migrating applications to cloud go hand-in-hand. Ideally, digital projects delivered via agile development can more often deliver on business cases and within delivery times.

Importantly, the platform is designed to be highly secure, with flexible pricing models—often consumption based. The net result is actionable data and insights that are extended into business applications across an ecosystem of customers, partners, employees, and suppliers.

Insight: Building on process improvements to achieve intelligent workflows

An IOP can not only implement back office intelligent workflows to create more seamless customer experiences and improve loyalty while reducing costs. The platform can "layer" processes and exponential technologies for enhanced benefits. An IOP can facilitate a shift from individual technology-enabled process improvements, such as target prospecting, through multiprocess, single function intelligent workflows, such as customer acquisition, to multifunction or business platform intelligent workflows, such as integrated customer care. A similar strategy can be applied across each back office domain, from new product development, human resources, finance, and supply chain.

This drives significantly more impact and benefits for enterprises than standalone processes. For example, internal IBM analysis found that a single-process improvement can drive a 15-to-20 percent improvement in expected outcomes; a multiprocess/single function improvement can drive a 25-to-50 percent improvement; and a multifunction workflow can drive a 50-to-70 percent improvement.

One example: to support the business case for the back office transformation, IBM and SAP have partnered to launch the SAP® Model Company for Telecommunications.[10] This is a set of preconfigured best practices, master data design patterns, and intelligent workflows. The initiative's objective is to reduce deployment efforts, risks, and implementation costs to accelerate SAP-derived business benefits, and to accelerate benefits from exponential technologies including AI, machine learning, and automation. Built on hybrid cloud and open, cloud-native technologies, it seeks to provide an industry reference architecture and operating model for common CSP-specific domain functions. As a result, SAP and IBM see the potential to reduce deployment efforts by as much as 30 percent.

Re-considering the CSP back office: An expansive perspective

It's time to elevate the back office to center stage.

Rather than viewing the back office as routine administration, a forward-thinking CSP needs to reframe it as the "operational core" of the organization, in short, as an IOP. The IOP back office is more fluid and more connected, with processes that ramp up to the pace of middle and front offices.

With AI and automation at work across the spectrum, CSPs can better highlight correlations between traditional administrative functions and the front-end user experience, providing data-driven insights into both business processes and potential service offerings. And a more holistic, cognitive IT infrastructure enables business strategies. For example, by understanding customer experience and monitoring the network for conditions that might interfere, operators can intervene proactively, breaking down silos and reducing costs and churn.

CSPs have been here before. But they failed to exploit the opportunities that their investments in broadband, 3G, and 4G created—and others took most of the value. Once again, CSPs have the opportunity to create innovative business strategies to exploit the evolution to 5G.

Consider these daunting questions. What will happen to CSPs if they choose not to emulate the lean, agile operations of cloud natives? What if they fail to develop new consumer and enterprise revenue streams? How will they capture a share of revenues that are driven by their very own infrastructure investments?[11] Almost half the value of 5G digitalization can be addressable by service providers.[12] What is different this time is that 5G is one of a wave of exponential technologies. AI, data, automation, cloud, and AR/VR can be orchestrated through intelligent workflows. It's a strategy that can improve core organizational functionalities that have traditionally held CSPs back.

An important point: internally, CSPs may bump up against conventional expectations for cost takeout, but this is no longer the primary driver. If a CSP's main rationale for back office projects is cost, it risks missing an opportunity to drive essential change through data insights, intelligent workflows, agility, and enhanced customer services and experiences. An IOP is about meeting operating cost objectives *while also pursuing innovation*. It cannot be an either/or choice.

In fact, rather than evaluating back office decisions in cost takeout terms, characterize them as *business innovations* that can enhance cost reductions—an IOP that can increase business equity. It's no longer sufficient to abstract the operational and administrative functions of the enterprise from the insights and business applications that grow topline. An IOP avoids lock-in and provides flexibility, both financial and technical, for future needs and use cases— an indispensable advantage in an era of rapid change and brutal competition.

Insurgents are fast on their feet. They pivot from data insights to ideating to innovating to market ready— enhancing profitability through data and starting anew. For CSPs, this level of agility can require substantial adjustments. Operating models and processes, speed of decision making, organizational culture, modes of work, and IT systems require scrutiny and adaptation.[13] The IOP back office is a critical step toward that holistic business transformation.

Action guide
CSPs and the intelligent back office advantage

CSPs are losing ground to cloud-native disruptors, and they must finally enact the holistic changes they largely failed to make during earlier stages of digital transformation. A new vision has emerged for back office transformation, one that's essential for CSPs to develop innovative digital products and services. Following are three recommended strategies for how CSPs should evaluate their back office transformation, vendors, and strategic partnerships.

Shift the technical.

– Shift from transaction processing to innovation and insight.

– Shift from data warehousing to new data platform architectures.

– Shift from static, siloed processes to intelligent workflows, automation, and machine learning models.

– Shift from coding factories to asset hubs.

– Shift from custom waterfall deployments to a culture that embodies Continuous Integration and Continuous Delivery.

– Shift ERP from a system of recordkeeping to a platform for future insights.

Pivot to data.

– Unify security, applications, development, and technology architectures with a common data platform and data services layer.

– Add business value by extending data and insights from core to customer.

– Develop or engage with platforms for sharing data, insights, and industry best practices.

Align the workforce.

– Source cloud, data, and automation talent and skills to envision, implement, manage, and operate new back office capabilities.

– Embrace crucial cultural changes that encourage innovative thinking, experimentation, and agile development methodologies.

– Prepare your operating model and supporting back office systems for sudden shifts to remote work by distributed teams.

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Notes and sources

1 "5G for business: a 2030 market compass." Ericsson. October 2019. https://www.ericsson.com/en/5g/5g-for-business/5g-for-business-a-2030-market-compass

2 "5G Economy to Generate $13.2 Trillion in Sales Enablement by 2035." Press Announcement. Qualcomm Technologies, Inc. Nov 7, 2019. https://www.qualcomm.com/news/releases/2019/11/07/5g-economy-generate-132-trillion-sales-enablement-2035

3 Fox, Bob, Marisa Viveros, and Rob van den Dam. "Telecom's 5G future: Creating new revenue streams and services with 5G, edge computing, and AI." https://www.ibm.com/thought-leadership/institute-business-value/report/5g-telecom

4 Ibid.

5 "The 5G Guide: A Reference for Operators." April 2019. https://www.gsma.com/wp-content/uploads/2019/04/The-5G-Guide_GSMA_2019_04_29_compressed.pdf

6 Dano, Mike. "Verizon kills plan to charge $10/month for 5G." August 17, 2020. LightReading. https://www.lightreading.com/5g/verizon-kills-plan-to-charge-$10month-for-5g/d/d-id/763238?itc=lrnewsletter_5gupdate&utm_source=lrnewsletter_5gupdate&utm_medium=email&utm_campaign=08192020

7 "5G for business: a 2030 market compass." Ericsson. October 2019. https://www.ericsson.com/en/5g/5g-for-business/5g-for-business-a-2030-market-compass

8 "A future vision for the software market that the telecom industry needs to survive and thrive." TM Forum. May 2020. https://www.tmforum.org/resources/whitepapers/a-future-vision-for-the-software-market-that-the-telecom-industry-needs-to-survive-and-thrive/

9 Internal IBM client information.

10 "IBM and SAP Announce New Offerings to Help Companies' Journey to the Intelligent Enterprise." IBM News Room. June 23, 2020. https://newsroom.ibm.com/2020-06-23-IBM-and-SAP-Announce-New-Offerings-to-Help-Companies-Journey-to-the-Intelligent-Enterprise

11 "A future vision for the software market that the telecom industry needs to survive and thrive." TM Forum. May 2020. https://www.tmforum.org/resources/whitepapers/a-future-vision-for-the-software-market-that-the-telecom-industry-needs-to-survive-and-thrive/

12 "5G for business: a 2030 market compass." Ericsson. October 2019. https://www.ericsson.com/en/5g/5g-for-business/5g-for-business-a-2030-market-compass

13 "A future vision for the software market that the telecom industry needs to survive and thrive." TM Forum. May 2020. https://www.tmforum.org/resources/whitepapers/a-future-vision-for-the-software-market-that-the-telecom-industry-needs-to-survive-and-thrive/