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White Paper

MAKING THE SMART CALL

Telcos Plot Their Digital Future

Sponsored by TATA CONSULTANCY SERVICES

Digital–Native Enterprises vs. Telcos: Eating Someone Else's Lunch

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While the demand for wireless broadband and media consumption increases rapidly, realizing potential opportunities to monetize digital engagement remains a challenge for telecommunications companies (telcos), given the massive infrastructure investments and rapid technology obsolescence.

To add to their misery, traditional telcos are losing out to digital natives, such as Netflix and Alphabet, that were born in the digital era. These digital-native enterprises and over-the-top (OTT) providers have been smartly riding on the network infrastructure investments telcos have made and are able to generate ever-growing revenues without needing to make larger-scale capital investments to stand up network infrastructure.

Despite infrastructure investments in the trillions, the average revenue per user (ARPU) for telcos has declined 13-36% globally since 2012. This has resulted in their enterprise multiples, i.e., the ratio of enterprise value (EV) to EBITDA, being in the range of 1x-2x. Meanwhile, digital natives, who took a more customer-centric approach while successfully leveraging the underlying telco infrastructure, have enterprise multiples in the range of 3x-6x.*

As a result, the digital natives have been able to fully monetize and capitalize on the infrastructure investments that telcos made, while telcos continue to struggle.

It doesn't have to be this way. The digital era will usher in an age of abundance that provides opportunities for all players. To improve their enterprise multiples, telcos need to and can compete with the digital natives within the same anywhere, anytime, any device customer experience environment.

Making intelligent choices to harness some of the bountiful new opportunities will require a mindset shift for telcos used to operating in scarcity. Telcos are in a unique position to transition from being agents of connectivity to being custodians of digital experience.

*Source: TCS white paper, "Custodians of Digital Experience, 2018"

MAKING THE SMART CALL
Telcos Plot Their Digital Future

Few industries that generate more than $6 trillion in revenues globally find themselves buffeted continuously by serious challenges, but telecommunications companies, or telcos, are in just this fix. Telcos must adjust to a world where customer experience is rising in importance as they combat new rivals such as Amazon and Google, face enormous investments in next-generation technology, and try to figure out how to best monetize their current infrastructure.

All the added complexity has created a frenzy in the sector. There are communications service providers (CSPs), digital service enablers, and various subcategories of each. But at the end of the day, these are all categories that telcos are placing themselves in as they try to innovate in the face of a disruption they laid the groundwork for.

In this disrupted digital world, telcos must select a business model that can adapt to new threats and opportunities.

The customer experience has become a paramount goal in an increasingly digital economy, spurring the need for hyper-connectivity. But other forces are at work, too; services pricing is slowly overtaking subscription models, and service platforms are becoming more commonplace across industries.

For telcos that are at the crossroads of connectivity and digital engagement, these shifts present potential prospects in vehicle-to-anything communications, gaming, health care, education, and any other sector where high density, high bandwidth, and low latency will be necessary.

"In the past 20 years, we as an industry have actually made a huge pivot from being 95% in a vertical industry dominating communications businesses to being a horizontal business that is the underlying platform for almost anything that the society now and especially in the future needs," Christoffer von Schantz, senior vice president, strategy and M&A, at the Finnish telco DNA says. "It's a platform which you need to take care of in order to be competitive. And it's a platform where the business model of providing connectivity services will also be evolving and changing."

TO TRANSITION A TRADITIONAL TELCO BUSINESS INTO THE COMPETITIVE FUTURE, EVIDENCE REVEALS FOUR APPROACHES THAT CAN BE CONSIDERED FOR GROWTH.

TCS INSIGHT

5G, MAXIMIZING ROI

5G is not just about speed. For telcos, 5G provides the flexibility to control and steer data traffic based on end-user applications, opening up newer monetization avenues. With 5G, telcos can provide real-time differential priority to smart city IoT services or a live gaming event, which requires ultra-high reliability, higher throughput, and lower latency for superior customer and end-user experiences.

5G success for telcos requires monetization models that go beyond telco offerings centered on speed (voice, data, video). With 5G unlocking a plethora of applications and use cases across the enterprise segments and consumer segments, telcos have a unique opportunity to pivot monetization strategies around these services and experiences.

Telcos' unique differentiation is the ability to ensure security and trust in a highly complex environment with 5G. If telcos do not lead the charge when it comes to services innovation to maximize 5G returns, there is a real risk that they may be relegated to the commodity end of the ROI spectrum. Consumer technology companies, such as Apple, Netflix, Facebook, and Google, are leading the charge on mainstreaming consumer services innovation such as augmented/virtual reality services. Similarly, manufacturing giants such as GE and Siemens are leading in the enterprise IoT space. The building blocks of these services—speed and security—are already embedded in 5G.

It is paramount that telcos' monetization strategy go beyond speed and security and instead blend these two critical enablers under a holistic services portfolio addressing the emergent needs of consumers and enterprises alike.

"THE SERVICE OF MOVING BITS IS AS IMPORTANT AS EVER," SAYS JOHN GUILLAUME, VICE PRESIDENT, PRODUCT MANAGEMENT AND STRATEGY, AT COMCAST BUSINESS.

"The service of moving bits is as important as ever," says John Guillaume, vice president, product management and strategy, at Comcast Business. However, rock-solid, secure connections are now an essential part of the mix, and this opens the door to a new world, and new horizontal opportunities.

A Call to Action

So what are ways for telcos to become more relevant, and what business models should they follow? Four paths for innovation and adding significant value appear to suit telcos best when it comes to meeting that strategic challenge. These approaches aren't mutually exclusive, nor sequential. Nor must every telco pursue all four. Telcos should take the paths that play to their individual strengths.

BECOMING A SMART CONNECTIVITY PROVIDER

The major customers of connectivity demand what a senior director in network infrastructure at a multinational telco terms "an absolutely brilliant level of service," so providers must meet these expectations.

A smart connectivity provider uses advanced software systems to better design, deploy, control, run, and maintain the network system infrastructure. It also seizes on advanced network materials and delivery methods to provide far faster and more reliable connectivity to all customers.

"Because it is software-driven now, more and more of the control is in our hands and increasingly at the application layer," says Comcast's Guillaume. "So we can create unique services that are different from the way it used to be."

As the technology develops, artificial intelligence and predictive analytics allow better network automation, resulting in more accurate systems operations, troubleshooting, and repair, as well as better customer service.

Indeed, as tasks have evolved, so have the structure and size of the telcos. Peter Cochrane, BT's former CTO and now a professor of digital economy and strategic innovation management at University of Suffolk, points at Jersey Telecom, the operator on the small British island. After it installed fiber to homes there, operating costs fell by 80% and maintenance crews were reduced by 90%.

DNA's von Schantz describes a call center and customer service process that his company already has in place where data analytics predict what customers might want so that the proper customer service representative answers the call and has intelligence at hand on the customer. "Intelligence is helping us to serve the customer better, based on all kinds of information, network information just being one."

A key goal for smart connectivity providers is creating self-healing networks. Here, networks can autonomously choose what to do to ensure the best in operational efficiencies and take action to prevent everything from congestion to security breaches. The system adapts to changes in the environment as it constantly learns and improves.

Automated network operations centers are also on the wish list. “The dream is to get rid of the person who has to press the button to switch the traffic or to send a man out to repair a line when it’s down,” says the senior director at the multinational telco.

Then there is converged service. “There’s a lot of talk and a lot of effort going into a converged service,” he explains. “Anywhere, anytime, moving in and out of the house, in a business, on a train, walking down the street—you’re not really sure how you’re connected, but you’re always connected on the same network.”

The task at hand is daunting. Today’s networks are complex and heterogenous. No single operator controls all the layers of network connectivity, yet the various functions must operate seamlessly to provide the service needed by increasingly demanding customers.

BECOMING A SMART SERVICE AND PRODUCTS PROVIDER

As cybersecurity becomes more integral to service, network providers have a twofold role to play. They must ensure that they provide the highest level of safety and security to their customers while offering that expertise as an additional service. “Low latency, hyper-secure networks will give you a leg up in winning smart city business, or [providing] a high level of security that enables you to win major government contracts,” says Jeff McElfresh, president, technology and operations, AT&T Communications.

That ability to monitor security can extend to allied services, as well. Comcast, for example, sells businesses “Smart Office,” which does physical surveillance of office premises, a service linked to Comcast’s broadband.

Cochrane, the former BT CTO, cites the example of behavioral monitoring. “The telcos have wonderful windows into the behaviors of networks, the behaviors of companies and organizations, and the behavior of individual machines.”

TCS INSIGHT

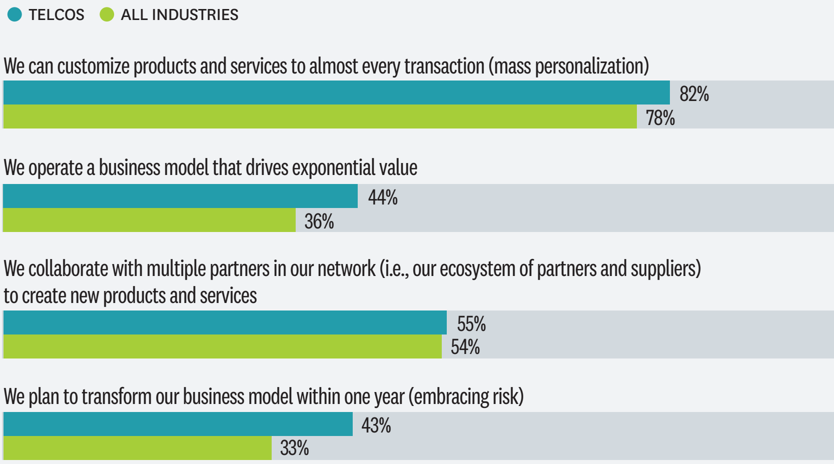
BEHAVIORS FOR DIGITAL TELCOS

The telco sector’s established players, including network operators and equipment providers, have an impressive technological pedigree but are rarely seen as the front-runners of digital transformation. This is because many incumbent firms, even mobile operators, came of age before the full flowering of the digital era, which was when the cloud and software-driven virtualization gained traction.

In turn, telcos are responding by embracing several transformational strategies, such as mass personalization of products and services, the rapid transformation of business model delivering exponential value to their customers, and leveraging partner ecosystems to create new products and services. The adoption of this innovative behavior is clearly observed in a recent TCS survey titled “Business 4.0™: Winning at Transformation.”

Embracing Change

Amount of innovative behavior adoption is higher than others for telcos



SOURCE: “BUSINESS 4.0™: WINNING AT TRANSFORMATION” SURVEY, TCS

SMART NETWORKS BENEFIT FROM SOFTWARE ADVANCES

In the past, telcos were at the mercy of equipment providers, who sold, at great cost, discrete pieces of equipment that performed a specific function using proprietary software. Software engineers have now rewritten that kind of software to an open standard, giving telcos the ability to use any kind of hardware they want and to be smarter about connectivity.

"It has led our engineers to think differently. It has forced our procurement operation to function differently. It's forced our ecosystem partners to partner with us differently," says AT&T's Jeff McElfresh. "It is a retooling of how you build, deploy, design, and operate networks."

Two advances through this process have revolutionized telcos' networks.

One improvement is a software-defined network, which uses open-source software to build a network architecture that "decouples the network control and forwarding functions," according to the Open Networking Foundation. This enables "the network control to become directly programmable."

Meanwhile, a second breakthrough, known as network functions virtualization, decouples and abstracts network functions from proprietary hardware appliances so they can be installed, controlled, run, and manipulated in software.

Both leaps push technology functions that were once hardware-centric to software. "They have these nodal points rather than having a dedicated Cisco switch or Juniper switch," explains a senior director working in network infrastructure at a multinational telco. "A computer mimics what would have been hardware switching traffic in different directions. And what this allows you to do is to set really clever rules that start to bring in things like artificial intelligence to understand and inspect more deeply why the traffic is moving in the way it's moving. Software-defined networks and network virtualization now give you that flexibility."

BECOMING AN AGGREGATOR OR MARKETPLACE FOR DIGITAL SERVICES

CSPs must open up their networks to others to become what Markus Golder, Saudi Telecom's vice president of marketing, calls a value aggregator. Rob van den Dam, the global industry leader, telecommunications, media, and entertainment at the IBM Institute for Business Value, uses another term—digital services enabler. But the idea is the same; on the one side, consumers and companies, and on the other, enterprises that provide them with content and services. They both go through the telco, which serves as middleman.

Vodafone and IBM, for example, announced in January 2019 that they would partner in a venture that would provide businesses with the means to integrate various cloud computing systems in ways that will underpin artificial intelligence and machine learning. Under the agreement, Vodafone business customers get immediate access to IBM cloud computing offerings. In addition, IBM will provide managed services to Vodafone Business's cloud and hosting unit for eight years.

Or take health care and the notion of at-home or remote medical treatments, which AT&T has led, with others following. "Whether it be in the future to have operations digitally or to simply have a video conversation with your doctor or to have services at home that measure your various health care activities to give you early warnings on your health—those are the sort of things that I think our network will enable," says Stephen Rue, the CEO of NBN, Australia's broadband access network, which is tasked with providing broadband across the country.

BECOMING THE CREATOR OF PLATFORMS UPON WHICH DIGITAL SERVICES RESIDE

Telcos can go beyond aggregating services and enabling the platforms of others to creating and providing the digital platforms and services. "Given our market position and level of resources, we are driving the market by not only becoming a value aggregator, but also by being a value creator ourselves," says Saudi Telecom's Golder.

In fact, Saudi Telecom has identified three initial areas of platform creation: digital financial services, media, and information technology services for enterprises. "They're distinct and they're complementary," says Golder. "They can add incremental value by bundling the traditional connectivity activity services with these new services."

Financial services carry enormous potential for telcos in developing countries. Look at China, which has completely bypassed credit cards in favor of mobile payments. According to research firm China Briefing, 85% of all payments last year in that nation were done via mobile; in 2012, 96% of all payments in the country were made in cash.

The same possibilities exist elsewhere. In 2018, Saudi Telecom created a secured digital wallet called STC Pay under a new, separate company that employs bankers and other experts in financial services. A customer can open a digital wallet account from his or her mobile phone by downloading an app. Coffee shops and other small businesses are jumping on STC Pay, as is the country's sizable expat population, many of whom remit payments back to the home country more conveniently and easily than before.

Now Saudi Telecom has also launched its own OTT media service, through Integral, its wholly owned media subsidiary. The goal, says Golder, is to serve not only its own customer base, but also other countries in regions where it does not operate. Jawwy TV, which premiered last year, is a video streaming mobile app presenting thousands of movies and linear programming in Arabic and English.

In addition, Saudi Telecom is taking advantage of resources that most telcos have on hand—massive quantities of data, sophisticated security systems, and the telco's own customer base—to create a new information technology platform to help planners of Riyadh's new $22 billion metro transportation system.

Other, less obvious examples of such platforms exist. AT&T, for example, recently launched a company called Xandr, which hopes to revolutionize television advertising through more precise targeting, using data mining. "You have a trove of insight and information about all the devices that are connected to a telecom network, and flowing through that network are entertainment, email—however the consumer is using the system," says McElfresh.

TCS INSIGHT

LEVERAGING ECOSYSTEMS

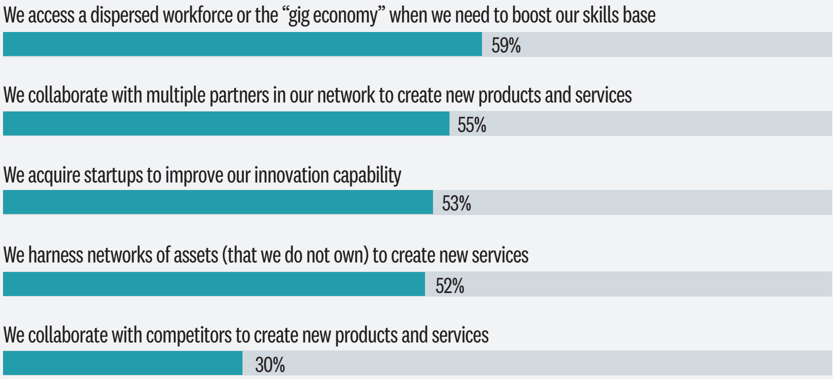
Telcos should aspire to become the single channel of engagement for consumers, with the goal to create compelling and differentiated value in the marketplace.

For example, Japanese carrier NTT Docomo has adopted a customer-centric business strategy by developing value-added offerings such as the "+d loyalty" platform, along with investing in carrier billing and payments solutions. The +d platform launches a wide range of digital lifestyle offerings backed by strong partnerships, leading to sustainable nonlinear growth.

Another increasingly promising strategy involves acquiring startups. Swedish network operator Telia has acquired FältCom to utilize its mobile-platform technology and drive new growth in transit-related solutions.

Engaging the Ecosystem

How telcos leverage their expanding ecosystems



SOURCE: "BUSINESS 4.0™: WINNING AT TRANSFORMATION" SURVEY, TCS

TELCOS CAN GO BEYOND HOSTING THE NETWORK TO CREATING AND PROVIDING THE DIGITAL PLATFORM AND SERVICES.

AGILITY, ADAPTABILITY, REWARDING INNOVATION INSTEAD OF PUNISHING FAILURE, BREAKING DOWN SILOS—ALL ARE NECESSARY ELEMENTS OF THAT SHIFT.

TCS INSIGHT

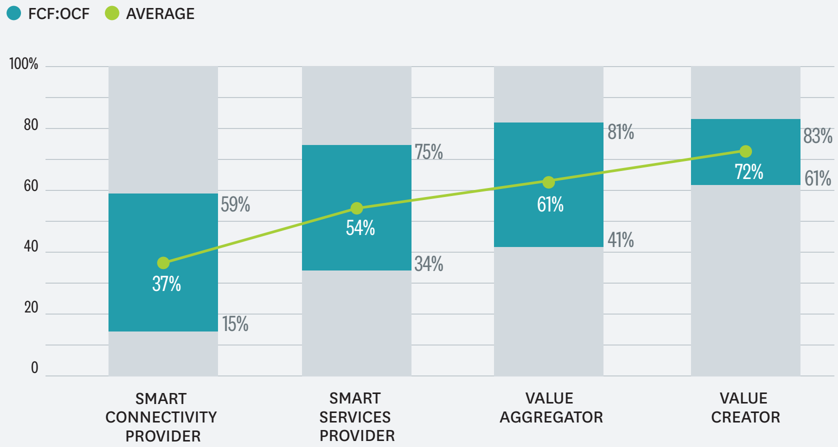
THEORY IN ACTION

The telcos that have redrawn their strategies with the four paths in mind are experiencing dramatic and successful results. The figure below depicts the ratio of free cash flow (FCF) to operating cash flow (OCF), reflecting how much free cash flow is generated for every dollar of operating cash flow. Typically, a higher ratio implies that the telco is spending less on its capital expenditure (CAPEX), while a lower ratio implies excess CAPEX spend.

From the results, it is evident that smart connectivity providers have a lower FCF:OCF ratio, as a result of the substantial CAPEX incurred by them on next-gen network rollout and operations. On the other hand, smart service providers, value aggregators, and value creators have progressively higher FCF:OCF ratios, as they are able to better monetize the CAPEX spend incurred by the smart connectivity providers.

Creators Save Cash

Ratio of “free cash flow” to “operating cash flow” for major service providers within each path



NOTE: The ratio is indexed to 100 for comparison across companies.

SOURCE: TCS WHITE PAPER, “CUSTODIANS OF DIGITAL EXPERIENCE, 2018”

The Battle to Lead in the Connected World

Riding on the high-speed networks that telcos developed at great expense, new-wave competitors now provide communications-related digital products and services that are either free or far cheaper than what CSPs provide. These so-called OTT providers bypass traditional distribution while offering these digital services and have dramatically disrupted the status quo. Google, Microsoft, Alibaba, and Facebook are quickly innovating, putting customer experience and needs at the forefront, and rapidly taking away market share from telcos in their traditional domains, such as voice and text, as well as providing richer and more engaging experiences. At the same time, these companies are beginning to lay their own fiber for faster and more dedicated connectivity. This competes with CSPs in their most basic, core endeavor, especially if firms like Google begin to offer connectivity to outside entities.

Telcos face a difficult choice. Do they drift as basic utilities, namely as providers of pipelines, and face possible deterioration of markets and revenue, or do they transform themselves into something far more sophisticated and, thus, more valuable?

The good news is that the industry has the opportunity to remake itself “even though it’s today a more efficient industry than it was a decade ago,” says McElfresh. “This is a profitable business that generates a return for shareholders.”

The traditional role for telcos probably peaked in the 1990s. Since then, “there’s been a slow, steady decline,” says the multinational telco senior director.

One telco is in the midst of an ambitious, 20-year program to provide fiber to 30 million homes across Britain; the first three million homes will be built out by 2020. This should radically reduce the need for maintenance and, the senior executive says, should ensure a system that won't degrade for a century or longer. It's part of a £40 billion infrastructure investment that also includes the rollout of 5G. When that's complete, he says, "that's the end of telecommunications as we know it. After that, it's all IT, it's all software. This is the last big gig for my generation of telco engineers."

SUCCESS FACTORS FOR TELCOS

In a successful transformation from old to new, no matter which of the four paths telcos ultimately choose, there are common factors that lead to success. Telcos must keep these guidelines in mind as they determine which path makes the most sense.

Experience is paramount. Customers have choices, and telcos must stress customer engagement on every level. Services, not products, should be paramount. Gone are the days when telcos could thrive on selling handsets, phone accessories, and minutes of voice and text. They must now provide customers with value-added services that not only attract new business but help keep it. Telcos must remember they are service providers first and foremost. "We have to focus on who we are and who our customers are," says Comcast Business's Guillaume. "Our focus should be solving problems for our customers. That's how we go about creating services that can uniquely provide value to them."

A services model must supplant a subscription model. No longer can telcos survive on basic monthly subscriptions, which are always subject to significant churn and a race to the bottom price when competitors' comparable services inevitably enter the market. The Swedish telco Tele2 calls this a "more for more" strategy. "By giving customers more of something that they value, such as product upgrades, more services, or other enhancements, we increase customers' satisfaction," wrote Tele2 CEO Anders Nilsson in the company's 2018 annual report. "We can then get a higher return from the customer, either through reduction in churn, or through price adjustments as more satisfied customers are willing to pay more for a better experience."

Telcos must collaborate with partners and treat them as valuable allies. Partnerships are key. Technology providers, content providers, and companies with particular expertise and vision all have much to offer telcos. Likewise, telcos can provide their partners with heightened opportunities for consumer reach.

Harness opportunities at the intersection of digital technologies. The arrival and advance of technologies including artificial intelligence, blockchain, and machine learning, among many others, don't always provide benefits in a vacuum. They may work best in concert with each other, meaning there is the need for a provider to create dashboards, analytics, and various other tools.

Getting to the Next Stage

A next-gen telco must cast off old thinking and habits if it wants to flourish. "I don't think that you can just keep the culture as it always was and be successful," says IBM's van den Dam. But changing a telco culture is easier said than done, he adds. Agility, adaptability, rewarding innovation instead of punishing failure, breaking down silos—all are necessary elements of that shift.

One of the first things that telcos must do is get their houses in order, especially financially, since profit margins have shrunk considerably. "We have both pressure on revenue and pressure on costs," says Golder.

In this environment, OTT providers offer services that take away from traditional revenue sources. In addition, the largest consumers of broadband play providers against each other, in attempts to get the cheapest deal. On the other side of the equation, the industry faces increased costs, primarily from 5G.

Some telcos have attempted to cut expenses to increase profits, but such a move can lead to even more operating problems and customer dissatisfaction. What to do?

Finland's DNA has grown and expanded through mergers and acquisitions, a process von Schantz says will continue if his company expands services. "If we decide to go into a new vertical or a new horizontal domain, I see it being very unlikely that we would try to do it organically. We would do it through strategic acquisitions from a company that provides a customer base. There is a huge risk in going into verticals and trying to do it in the same setup that you're doing the current business. You at least start by keeping that for three, four, five years at arm's length and building them as separate businesses."

No matter what model telcos pursue, they will have to win back and expand their constituency, namely a customer base that had for so long depended on telcos' reliability but may now feel abandoned by their reluctance to expand their technological horizons. "We can't assume anymore that just because a company or a consumer used to buy telephone from us that they will continue to buy telephone from us in the future," says Guillaume. "We can't assume that just because this is a core

EMPHASIZING SOFTWARE WILL REDUCE COSTS WITHOUT SACRIFICING PERFORMANCE.

WINNING AND LOSING WILL COME DOWN TO CREATIVE THINKING, BUT PARAMOUNT, TOO, WILL BE THE CUSTOMER EXPERIENCE.

service that we had 10 years ago, it's the service that a business is going to buy from us either. So we have to continue to innovate."

Conclusion

A telco's choice of a strategic path depends on its readiness to adopt the underlying business model and embrace the organizational culture change. Telcos have to figure out where they are going to determine the right path. Are they going to provide that brilliant level of service and build self-healing, adaptable networks? Are they going to try to take advantage of their past experiences when it comes to getting insights into the behaviors of machines and networks? Will they be aggregators of services? Or will they create the platforms to enable all types of value-added services?

Telcos have an advantage in their quest—their decades-long experiences dealing with customers. That's an odd thing to say, since telcos generally suffer from a poor reputation in terms of customer service. "It may or may not be true, but they act as if they don't give a fig about the customer, and they seem to run roughshod over the customer's needs and requirements," says Cochrane.

But telcos are still a natural facilitator for customers to gravitate to; having provided years of telephone connectivity and then expanding into wireless and other services, they retain a generational pull. Now telcos must adopt the Facebook, Google, and Amazon model, Cochrane says—giving consumers control of their own destiny, to adopt a service instantly, effortlessly, and, possibly, temporarily, without laborious setup calls and bureaucratic hoops. Meanwhile, DNA's von Schantz emphasizes that any additional services must be underpinned by an already satisfied customer base. "It makes it much easier to cross into new services," he says.

Technological improvements, including self-healing networks and data-driven solutions, should go a long way toward improving that reputation, too. "Networks that heal themselves and networks that see problems and are able to resolve them before they occur ensure things like data-driven decisions are maximized," says Rue. "That will enable us all to be more customer-focused and to launch products quicker in order to evolve to customers' needs as and when they arise."

That evolution will mean that successful telcos will look and act materially different in the years ahead than they do today. Winning and losing will come down to creative thinking, but paramount, too, will be the customer experience and following a business model that best revolves around it. "In a telecommunications business you've got two things: you've got ongoing advancements of technology and you've got ongoing changes in consumer needs," says Rue. "They come together, and without innovation, you'll be left behind."

ABOUT TCS COMMUNICATIONS, MEDIA, AND INFORMATION SERVICES (CMI) BUSINESS GROUP

TCS CMI partners with communications, media, and information services companies in navigating their digital journey by creating new products and platforms, developing adaptive content, and enhancing customer experience on an agile infrastructure while assisting in monetization of existing investments.

Through a comprehensive portfolio of domain-specific solutions, digital platforms, and services, TCS CMI focuses on areas such as front office transformation, product engineering, content technology and operations, legacy simplification, network transformation and optimization, and asset monetization. Our consulting, technology services, and business process solutions—in conjunction with industry frameworks, solution accelerators, agile methodologies and flexible pricing models—enable our clients to respond quickly to evolving business ecosystems while creating an immersive customer experience across diverse delivery channels.

With our focus on research and innovation, along with continued investments in developing next-generation platforms and digital solutions, we are best positioned to understand our clients' business imperatives and partner with them in unlocking true business value.

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