



Technology with Vision: An Agenda for the Telecommunications Chief Technology Officer

Being effective in the 21st century requires new skills,
new experiences and a new mindset.

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By any measure, chief technology officers of telecommunications companies have a big job: They oversee about half of industry employees and will invest approximately \$2 trillion in capital expenditures over the next five years. That figure, equal to the entire industry's current market capitalization, has grown by \$274 billion over the past four years, as the sector's enterprise value has climbed by \$544 billion.

Now, as telcos position themselves to make the most of the digital opportunity, CTOs (increasingly called chief technology and information officers, or CTIOs) have only become more vital.

So, how is this critical group doing? Frankly, many telecom CEOs say CTIOs are operating below their full potential. One CEO described CTIOs as “a hindrance to progress,” “not open-minded” and too focused on “reacting to the latest vendor pitch” instead of making a broad impact on the company.

Clearly, the CTIO role at many telecommunications companies remains narrower and more tactical than it should be. Being an effective 21st-century CTIO requires new skills, new experiences and a new mindset.

Does your technology strategy and execution fit with your company's strategic position and ambition?

Most telecom CEOs have a clear vision of what they want, need and expect from their CTIOs. They expect good execution of the traditional responsibilities of the role. That means leading superior technology performance, running reliable and lean technology infrastructure, and navigating a proliferation of complex technologies. But CEOs also want and need a partner who can execute their vision, help set strategic direction and offer insight based on a deep understanding of technology's evolution.

The CTIO agenda

CTIOs need to demonstrate the full leadership package in order to make the role all that it can be. They know it, too. In a recent survey by Bain & Company, 24% of CTIOs said they would like to invest more time in technology innovation and incubation, something to which they currently allocate just 11% of their time. Asked in the same survey what they aspire to be known for, 30% of CTIOs chose “defining and driving company strategy,” making that the No. 1 aspiration.

Do your technology investments reflect a sharp focus on winning with customers vs. saving on costs?

This significant shift will stretch executives beyond their well-demonstrated skills in the still-essential tasks of monitoring and pushing technology performance, assuring reliability and managing a lean operation. CTIOs will have to keep those skills sharp while developing strength and capacity in the following five areas. Those who are able to grow into these additional responsibilities will find a whole new level of opportunity open to them: the chance to become an architect of strategic change in their organizations.

This is what is on their agenda.

Smart capital investor

Telecommunications is a unique industry. It is capital intensive like the oil and gas, semiconductor and airline industries, but for telcos, that capital investment involves many telecom-specific technology choices: fiber rollout locations, cell site upgrades and set-top box replacement, to name a few.

Managing capital allocation in this environment is extremely complex and requires CTIOs to understand:

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- The links between every investment and the company's competitive objectives
- The distinction between mandatory and discretionary spending, and how to best measure return on those investments
- How to focus discretionary investment where it matters most and is most likely to support competitive success
- The value of rolling calendars of investment connected to clear strategic priorities (a far better alternative to annual budget fights)

Bain research suggests there is enormous potential for improvement in telcos' capital investment. Only 12% of network service providers spend capital effectively, while 43% spend less than they should to reach benchmarks and 45% waste at least some of their money.

Do you tune technology performance to deliver an exceptional and deliberate customer experience?

Business strategist

CTIOs have a keyhole to the future. Their interactions with vendors and understanding of how technology is evolving put them in a strong position to influence the direction not only of technology but also of overall strategy. CTIOs can lead the C-suite's thinking on many important issues, including creating a robust roadmap for the business and tackling key challenges—such as when to delay adoption of a new technology in order to improve returns on an existing investment, and when to go all in on disruptive new technologies that have the potential to leapfrog the current state of the art.

This is an expanded role for a group traditionally judged on execution of a defined strategy. It is a challenging evolution to undergo, but it can be done. Among digital players and media companies, this is already the role of the CTO.

Does your operating model enable your technology future and strip out unnecessary complexity?

Customer advocate

The top priority for telecom companies today is ensuring great customer experiences. CTIOs must focus on that goal when making decisions about the \$2 trillion in capital spending they oversee, necessitating a shift away from their usual way of operating. First, CTIOs need to put themselves in the customer's shoes. It is common for technical teams to blame customer experience issues on "perception." A customer-centric CTIO, however, lives by the mantra that "perception equals performance" and drills this into his or her organization.

Customer-focused CTIOs must engage across the company to identify important issues and find the right solutions. This starts with making investments to ensure that data from the network feeds into the right forums (such as marketing, distribution and support), that it is analyzed and that the results are acted on rapidly. Correctly diagnosing the root cause of an issue is critical. A problem with a customer's indoor coverage could be caused by the parameters of a cell site, for example, or by the fact that the customer's device cannot access the latest spectrum. Properly diagnosing the issue and then engaging across functions enables the company to deploy the right solution.

Finally, it is critical that CTIOs manage and incentivize both their teams and vendors in ways that put customer outcomes at the center. Translating the Net Promoter System® into key customer-centric measures (which can be tracked) and then into the appropriate technical measures (which can be used to allocate accountability) is essential to ensure their work is finely tuned to customer needs.

Savvy integrator

Historically, CTOs have had a very simple set of partnerships with major hardware and software vendors, and sometimes systems integrators. The mindset was “build telecom assets,” such as core networks, support systems and radio access networks. CTOs tend to deliver on this through many projects, a few of them immense in scope.

Now, the number of technology partnerships is increasing, and they are becoming both more complex and more integrated into the overall results of the

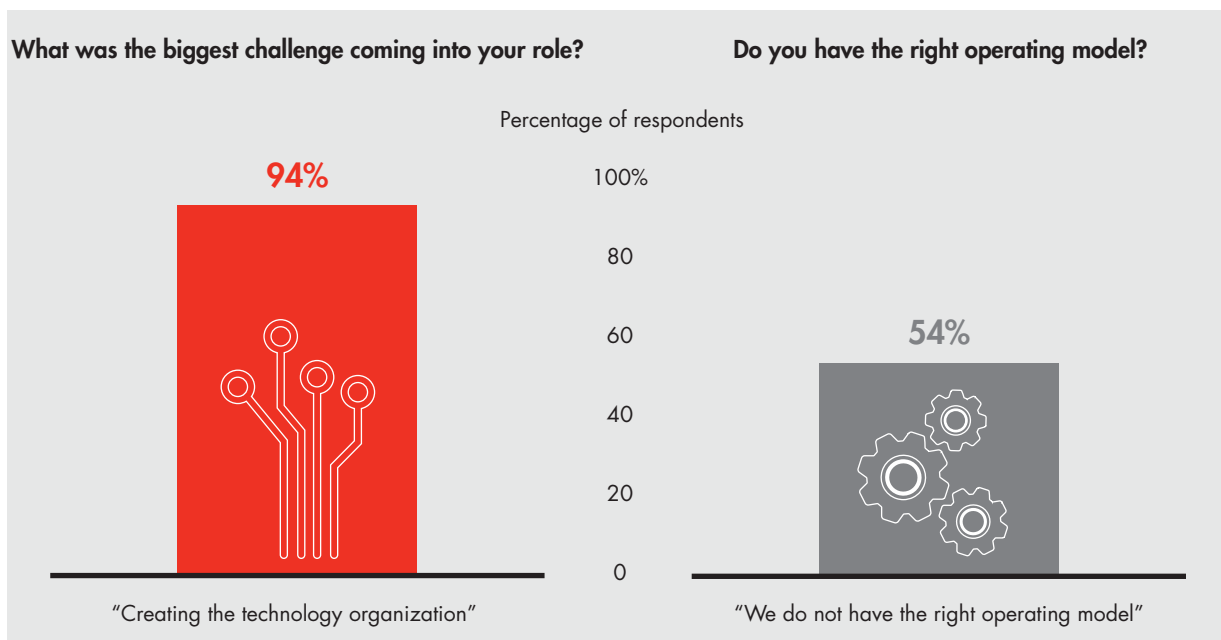
business. There are many different types of software, software agreements and models of delivery, with a proliferation of “as a service” models. We think CTIOs need to shift their focus from building assets to leveraging technology ecosystems. This requires broad strategic and commercial acumen on the part of CTIOs in order to develop partnerships and execute decisions across the enterprise while retaining a strong connection to the marketplace.

Technology team leader

Our research shows that fewer than 50% of CTIOs believe they have the right operating model in place, and more than 90% describe this as their biggest challenge upon entering the role (see Figure 1). As IT and network technology, once separated into silos, continue to fuse, CTIOs must build organizations that accelerate the transition and embrace converged technologies, Agile management practices and resources that enable virtual operations, such as the cloud.

Figure 1

Building an efficient, effective operating model is a major challenge for CTIOs




Source: Bain CTIO survey, 2016 (n=48)

Across industries, Bain research has found that companies with clear, robust operating models have five-year compound average revenue growth that is 120 basis points greater—and operating margins that are 260 basis points higher—than those of competitors with the least effective operating models.

Five questions

For telecom CTIOs, this is a period of rapid shifts in the role and required capabilities, as each CTIO is expected to be a catalyst for change. CTIOs can assess how far they have come in their own evolution by asking themselves these five questions:

- Does your technology strategy and execution fit with your company's strategic position and ambition?
- Do your technology investments reflect a sharp focus on winning with customers vs. saving on costs?
- Do you tune technology performance to deliver an exceptional and deliberate customer experience?
- Do you actively embrace technology ecosystems for access to resources and capabilities?
- Does your operating model enable your technology future and strip out unnecessary complexity? 

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