THE CHALLENGES FOR TOMORROW’S CIO
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INTRODUCTION

This is the second article in a series of two research analyses conducted by Forbes Insights in collaboration with Intel and VMware. To view the companion article, “The Ascent of the CIO,” click here.

“There couldn’t be a more exciting time, and a more daunting time, to be a CIO,” says Paula Tolliver, CIO at Intel. “The CIO’s role in driving enterprise strategy has exponentially increased, the role has more visibility, and yet you have to meet the day-to-day challenge of running operations. This balance is something all CIOs are struggling with.”

This raises the question: Is any executive role being more radically transformed than that of the CIO? Only a few short years ago, the CIO—then often known as the VP of IT—was a service provider to the rest of the company. CIOs’ most valuable skill was technical know-how, and they were seen as enablers of strategy but not as strategists themselves.

Yet as technology becomes integrated into every part of the business—marketing, warehouses, products, customer relationships and the factory floor—the role of the CIO is broadening, elevating and becoming even more critical to a company’s success. In fact, more than four out of five CIOs recently surveyed by Forbes Insights, Intel and VMware believe the CIO role has increased in importance over the last five years (Figure 1).

To better understand how the role of the CIO is evolving, and to identify the responsibilities and challenges that come with this evolution, we teamed up with Intel and VMware to survey more than 400 CIOs around the globe. This report highlights the key findings from this research, and proposes steps an innovative CIO can take to meet these challenges.
KEY FINDINGS

- Over four out of five CIOs believe their role has increased in importance over the last five years.

- 40% of CIOs say their function will be essential to successfully formulating customer-facing solutions, creating global capabilities, developing new revenue-earning opportunities and fostering innovation within their companies.

- CIOs’ jobs are now more structurally complex, and CIOs face many challenges, from the diffusion of IT responsibility to technology sprawl to organizational silos.

- CIOs believe this complexity is demanding a new approach, with large majorities believing that partnering with stakeholders (74%), setting a common vision (70%), and communicating and influencing (65%) are now very important to their jobs.

CIOS ARE NOW MORE IMPORTANT TO MORE PARTS OF THE BUSINESS

These are heady days for CIOs. Many are being asked to take on much more senior roles in the strategic direction of their companies. In fact, when asked how important the CIO will be to the success of company initiatives over the next five years, more than 40% of CIOs say their function will be essential to successfully formulating customer-facing solutions, creating global capabilities, developing new revenue-earning opportunities and fostering innovation within their companies (Figure 2).

Yet CIOs aren’t just becoming more important to the success of strategic initiatives; they’re also assuming a more important role in day-to-day operations. While the CIO/IT function is expected to increase in importance across a broad range of functions, CIOs will be increasingly important in regulatory compliance...
and R&D/innovation—two disciplines where
the use of data analytics is fast accelerating
and playing a critical role (Figure 3).

These trends—supporting regulatory com-
pliance, sales, customer relationships and
others—demand a more complex partnership
approach by the CIO. For instance, regulatory
compliance can require real-time monitoring
of sensitive shipments, which in turn needs a
network of sensors, two-way communications
and data analytics. The modern customer
experience, from marketing to warranty sup-
port, is grounded in data profiles and analytics.
These increasingly digitized functions drive a
mutually supporting relationship between the
CIO and the business users, and now abso-
lutely rely on the support of the IT function.

For CIOs, these partnerships require a deep
understanding of highly complex parts of the
business—functions CIOs may have had little
exposure to in the past. These multiple func-
tions ultimately demand complex integration
and expand the number of partners that need
to be managed, listened to and satisfied.

While this broadening of responsibilities is
a welcome change to some CIOs, the chal-
genes this evolving role brings cannot
be overstated. “Many CIOs welcome new
responsibilities, but they do bring a new com-
plexity and higher level of risk to their jobs,”
says Bask Iyer, CIO of VMware. “CIOs are in
the middle of the customer relationship, in the supply chain and in front of the board. These are whole
new areas for IT. They make the job more interesting, but also a lot tougher.”

What’s important to note is that these new responsibilities do not replace the traditional tasks of
a CIO. Rather, these tasks are additive to the old ones, ultimately increasing the total number of
responsibilities and expectations placed on the CIO.

“CIOs still need to be grounded in technology so they can manage their technology people,” says
Martha Heller, the CEO of Heller Search Associates, an executive search firm that focuses on CIOs.
“But companies are now looking for people who can also bring new capabilities around customer-
centricity and digital to the entire organization.”

As the CIO continues to evolve, CIOs and their teams are also expected to become proactive partners.
As Heller explains, “The way CIOs used to work is they’d sit down with, say, the head of sales and say, ‘Okay. What do you want?’ Today the CIOs are more proactive. They are saying, ‘Here is what we could build together. What do you think?’ This means that a CIO is no longer just a service provider to these domains; they also are, and need to be, an integral part of the larger business.”

There is clear consensus that CIOs are becoming more important to virtually every facet of the business. While this brings remarkable opportunity, it also expands the complexity of solutions, the knowledge base needed to implement solutions and the need to partner with stakeholders. Yet these aren’t the only new challenges facing today’s CIO.

**IT RESPONSIBILITY IS DIFFUSING, COMPLICATING THE CIO’S JOB**

CIOs are also challenged by the diffusion of IT. In the traditional world of IT, the IT department bought the hardware, selected the software and set the standards. This top-down model had its benefits, putting everyone on a few devices, reducing costs and simplifying integration across the company.

Nowadays, though, a majority of CIOs—54%—believe their company’s business units and corporate functions are taking more control over their own technology (Figure 4).

“There are three reasons for this,” says Pete Dockery, SVP of sales at VMware. “The first is that some technologies—data analytics, for example—are becoming more self-service and easier for the end-user to work with. The second is that business users are becoming more comfortable with digital tools. The final reason, let’s be honest, is that many are frustrated with waiting for delivery from an overstretched IT department.”

This presents certain risks. When CIOs and business users don’t collaborate or partner with one another, shadow IT—where individual employees and business units go their own way to develop networks and solutions independently of IT—emerges. Shadow IT can lead to higher costs and compartmentalization of networks into silos, and can make it virtually impossible to integrate programs across the company. In the worst-case scenario, the disconnect caused by shadow IT can make a company much more vulnerable to cyberattacks.

Sangy Vatsa, the CIO and EVP of Comerica Bank, sees this shift of non-IT players becoming active partners with IT as mostly positive for the business. “This is creating a healthy dialogue amongst
By embracing that paradigm of inviting tech-savvy business partners to co-create products with tech-savvy IT partners, a company actually improves capacity, shared goals and builds a higher success rate in delivering customer-centric products. This is breaking down the walls between IT and the business.”

SANGY VATSA  
CIO AND EVP, COMERICA BANK
 TECHNOLOGY SPRAWL—THE CHALLENGE OF MULTIPLE TECHNOLOGIES

The diffusion of technology decision making within companies today has its physical implications. The proliferation of disparate devices, solutions and operating systems across the organization present technical challenges to CIOs and their teams.

Just when CEOs and boards are demanding more agility, CIOs face a much more complex integration environment. Given the proliferation of IT systems across the enterprise, rolling out a single business app can require integration across an average of nine operating systems, eight cloud services, nine data management systems and nine devices (Figure 6). Theoretically, this could require over 25,000 separate integrations—although most IT teams will triage this number down. Still, there can be hundreds of sub-integrations required by a single corporate IT initiative.

“When you are delivering large transformational programs, there are a lot of variables that need to be navigated—processes, policies, people, platforms, systems, to name a few,” says Kevin Hart, chief product and technology officer and EVP of Cox Communications (in which he functions as CIO, CISO and CTO). “You have to set a strategic vision from the start and then be able to execute at a faster rate than ever before because of the pace of technology evolution.”

This “sprawl” presents multiple challenges to CIOs and their teams. Speed of implementation is sacrificed. A larger and more skilled team is required to navigate the maze. Fragmented spend drives up costs. And perhaps most important, nonstandard and poorly implemented systems can increase vulnerability in an era of increased cyber risk.

But CIOs also point to a trend that is making their jobs easier—the migration to the cloud. “What the cloud has done has allowed CIOs greater flexibility and reach to create new user and customer experiences anywhere, any time,” says Intel’s Tolliver. “A hybrid cloud approach gives us ultimate flexibility of computing power and storage, which are essential to meeting today’s new IT challenges.”

Beyond the challenges we’ve already mentioned—broadening of the CIO role, IT diffusion and technology sprawl—CIOs also face a series of challenges from organizational structures within their companies.
THE MULTIPLIER EFFECT—THE CHALLENGE OF ORGANIZATIONAL SILOS

In many companies, the complexities described above can be multiplied by the silos that large companies create. As noted above, business units are feeling more comfortable in implementing their own technologies. They feel pressure from customers and competitors to get solutions to market quickly, and they may feel that they have the business expertise to implement the apps and solutions they’ll be working with.

This proliferation of independently minded business units presents a new challenge to CIOs, many of whom are supporting an average of eight lines of business (Figure 7). They sign contracts with nonstandard vendors. They implement stand-alone solutions that complicate integration. They adopt radically different security standards. Each line of business is ultimately a new silo that needs to be managed toward a common strategic vision.

“The CIO has to partner with these departments, but the CIO also has to lead them,” says Heller Search Associates’ Heller. “He or she has to say, ‘We are all one company. The customer is at the center of everything.’ That is how we are going to have to think if we are going to thrive in this new economy.”

Managing multiple lines of business isn’t the only organizational challenge. Today, CIOs support, on average, operations in seven different countries (Figure 8). This means seven different regulatory frameworks to manage—frameworks that all have different regulations around highly sensitive issues like privacy, taxation and security.

“International and national regulatory environments drive differences in terms of what you can and can’t do with certain products and features,” says Cox Communications’ Hart. “Privacy, neutrality, regulatory compliance and security are all highly sensitive areas that are well within the domain of the CIO.”

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**Figure 7. How many lines of business do you support?**

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<thead>
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<th>Number of Lines</th>
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<tbody>
<tr>
<td>1</td>
<td>28%</td>
</tr>
<tr>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>3-5</td>
<td>21%</td>
</tr>
<tr>
<td>6-10</td>
<td>21%</td>
</tr>
<tr>
<td>11-20</td>
<td>16%</td>
</tr>
<tr>
<td>20+</td>
<td>9%</td>
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**Figure 8. How many countries does your company have significant operations in?**

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<th>Number of Countries</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>2</td>
<td>10%</td>
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<td>3-5</td>
<td>34%</td>
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<td>6-10</td>
<td>21%</td>
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<td>11-20</td>
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<td>20+</td>
<td>9%</td>
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In CIO heaven, the enterprise would be a standardized, one-size-fits-all environment for implementation, integration and security. Yet in the real world, companies are mazes of disparate stakeholders, independent silos and separate regulatory regimes—making the CIO job tougher and more complex. What are the steps innovative CIOs can take to meet these challenges?

MEETING THE CHALLENGES OF TOMORROW’S CIO

How can today’s CIOs meet the new challenges of their fast-evolving profession? Here are a few suggestions:

1. DELEGATE AUTHORITY TO MEET NEW CHALLENGES. Many companies are developing a position under the CIO (sometimes called the chief technology officer, or CTO) to assume command of the day-to-day IT operations of their firm. By taking responsibility for tasks such as maintaining the network, servicing employees and managing vendors, these senior IT executives are freeing up CIOs to focus on their strategic responsibilities. “You can’t just work harder,” says Heller. “Every CIO is going to have to rethink the IT organization.”

2. MAKE THE MOVE FROM SERVICE PROVIDER TO PARTNER. Our experts predict that corporate end-users will take even more control over the technology in their lines of business. Instead of resisting this trend, leading CIOs should proactively partner with their stakeholders and take proactive roles in designing the solutions.

“Five years ago, when I met CIOs, they were tough, intimidating, and took the oxygen out of the room,” says VMware’s Iyer. “But now, when you see the best CIOs, they are like ducks. They are calm up top, but paddling furiously underwater. They are the collaborators who are leading from behind.” This is an approach that has come a long way from command-and-control IT; CIOs are now becoming real partners with their stakeholders.

“The cloud-based platforms are becoming more flexible; just when you have to be more agile, the technologies move faster. I say to the CIO, use your technology as a core competence. It is becoming better and better at solving the new problems of the CIO.”

PETE DOCKERY
SENIOR VICE PRESIDENT OF SALES,
VMWARE AND DELL TECHNOLOGIES
3. DON'T GIVE UP CONTROL OVER WHAT NEEDS TO BE CENTRALLY CONTROLLED. Certain functions demand a highly centralized, standardized approach. The trick is to know what's what and how control should be managed with each. Cox Communications' Hart adds: “I recommend that CIOs try to be more open-minded and forward-thinking. Put yourself in the shoes of your functional stakeholders.”

4. SET THE TECHNOLOGY VISION. Create a long-term end game that everyone—the CEO, the lines of business, the IT staff—can recognize and move toward. “The only way to bring the many new players on board is to tell them where they are going,” says Ryan Smith, CEO of Qualtrics. That vision should be built in partnership with the many stakeholders. Sangy Vatsa of Comerica Bank adds: “I often challenge my domain, CIOs and my shared services IT leaders to actively learn about the emerging needs of customers and of internal business partners to build alliances and co-shape solutions that delight our customers.”

5. BUILD A TECHNOLOGY PLATFORM THAT HAS THE BREADTH AND FLEXIBILITY TO SUPPORT THE VISION. New tools are being created that can bring order to the complexities of technology. As VMware’s Dockery observes: “The cloud-based platforms are becoming more flexible; just when you have to be more agile, the technologies move faster. I say to the CIO, use your technology as a core competence. It is becoming better and better at solving the new problems of the CIO.”

What’s key is being flexible and open to change. What may work today may not work tomorrow.

“CIOs shouldn’t be afraid to set the vision and then break the glass and try something new and different,” says Cox Communications’ Hart. “My recommendation to CIOs is to not hold back in terms of sharing your ideas because you just might be right.”

Looking to learn more about how you can thrive in today's ever-changing business environment and what skills you need to succeed? Consider reading, “The Ascent of the CIO.”
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- **Bask Iyer**, Chief Information Officer, VMware
- **Ryan Smith**, Chief Executive Officer, Qualtrics
- **Paula Tolliver**, Chief Information Officer, Intel
- **Sangy Vatsa**, Chief Information Officer and Executive Vice President, Comerica Bank

METHODOLOGY

The data in this report is derived from a survey of 410 CIOs conducted by Forbes Insights in the summer of 2017. Forty-nine percent of respondents were located in Europe, 29% were located in North America, and the remaining 22% were located in Asia-Pacific. These CIOs represent a range of industries, including technology (18%), financial services (17%), telecommunications (15%), healthcare (13%) and retail (13%). All CIOs were from companies with at least $1 billion in annual revenue; 32% were from companies with revenue between $1 billion and $2 billion; 41% were from companies with revenue between $2 billion and $5 billion; and 27% had revenue of $5 billion or more.
APPENDIX—SURVEY DEMOGRAPHICS

Figure 9. Title

Figure 10. Geographic Location

Figure 11. Industry

Figure 12. Company Size

Note: Some charts may not add to 100% due to rounding.
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