2020 CIO Study Summary

Objective
The TCS 2020 Chief Information Officer (CIO) Study seeks answers to central questions facing information and technology executives across industries in North America and Europe: How are these leaders helping their enterprises navigate a complex and fast-evolving digital landscape? Where are their companies focusing their digital initiatives? What traction have they gained this decade from those efforts?

Methodology
We surveyed more than 1,000 CIOs and are conducting follow-up interviews with several to find out the current state of digital affairs for these business leaders and their companies. Our focus is in three key areas: the role and responsibilities of CIOs on digital transformation matters, now and in the years ahead; how they view opportunities and competitive threats in the context of their industry and the emerging digital ecosystem; and how their companies use data strategically and for what purposes.

Survey Population
To provide answers about global firms’ digital transformation practices, the 2020 TCS CIO Study surveyed 1,010 IT executives in May and June. The respondents work in 11 industries with headquarters in the United States, Canada, the United Kingdom, Germany and The Netherlands. About three quarters of the respondents work in enterprises with revenues that top $1 billion. Seventy-two percent have IT budgets that are $50 million a year or more, and 45% top $100 million.

Which of the following best describes the annual revenue of the business unit/division in which you work? (If you work at the parent company, indicate its revenue.)

- $500 million to less than $1 billion: 27%
- $1 billion to less than $5 billion: 35%
- $5 billion to less than $10 billion: 15%
- $10 billion to less than $20 billion: 12%
- $20 billion to less than $50 billion: 7%
- $50 billion or greater: 4%
How CIOs Are Helping Their Companies Navigate the Digital Ecosystem

CIOs are playing an instrumental role in their companies’ digitization initiatives. Overall, 75% are involved in digital strategy development. In industrial manufacturing (81%) and telecommunications (80%), the proportion of CIOs working on digital strategy development is even higher. It’s lower at high-tech hardware and software companies (69%) and travel, transportation and hospitality (68%).

While CIOs are integral to digital strategy, fewer play roles in other areas of digitization. For example, only 18% of CIOs are involved in budgeting as that role is more likely in the hands of the CEO (35%) and/or CFO (29%). The corporate strategy office is more likely to be involved in alliances and partnerships (51% are, according to CIOs in the survey), whereas only 21% of CIOs play this role.

In other aspects of digital strategy, CIOs are more prominent. Sixty-one percent of CIOs participate in governance aspects of digital transformation, 58% are involved in people aspects and 54% are part of project management.

Overall, CIOs self-report they’re more likely to be the key driver of digitization in their enterprises than other top positions. Fifty-eight percent say they’ve been driving digital transformations, compared to their colleagues and bosses, such as line-of-business and division heads (13%), chief strategy officers (9%) and CEOs (7%).

Regarding the scope of their role, CIOs have a diverse range of activities on their collective agendas. Six of 10 CIOs say that overseeing existing IT infrastructure and legacy information systems is one of their oversight responsibilities. Most (57%) also oversee the development of embedded systems in their company’s products and places of doing business (such as using Internet of Things technologies). Just over half (51%) are in charge of developing new information systems to support their firms’ existing business processes. Many

After CIOs, who’s driving digital transformation? Executives in P/L roles, those already tasked with strategy, and CEOs.
CIOs oversee other activities, too: research on emerging technologies and their potential value to their company (47%), digital data and analytics (37%), data security (34%), and end-user tech support (26%).

Asked about their time allocated to digital business model innovation and managing present IT infrastructure, CIOs in the survey say they strike a 50-50 balance between the two activities.

Results Since 2010: Some Successes
Asked to consider their results, only about a third (36%) of companies say they’ve been highly or hugely successful in increasing revenue this decade from new businesses or new products and services that have taken a purely digital approach or are largely based on digital technology. Some 13% said they’ve had no success on this front, and 25% said limited success.

More Digitization Work to Do
When we asked them about their company’s progress on digitizing their businesses, most CIOs said they are not that far along toward reaching their goals. Fifty-nine percent are in the pilot phase, with proof-of-concept projects ongoing, have projects limited to a few business units with a short-term focus, or have completed proof-of-concept pilots.

This decade, only 11% have launched new digital businesses, digital products and services, business models operating models as a result of digitization. Some 30% have enterprise-wide digitization initiatives and strong leadership in place.

CIOs’ Outlook Depends on Industry
Looking to the future, many CIOs see big opportunities: nearly two-thirds (64%) say their digital initiatives have covered a lot of ground with much more ground to go, or they have not even started their journey. But a surprisingly high proportion—36%—see limited future opportunities to digitize their businesses, though this sentiment varies greatly by industry.

Almost as many CIOs say they’re in charge of developing Internet-of-Things applications and embedded systems as say they’re overseeing the existing corporate IT infrastructure.
Key Digital Growth Drivers

Asked to identify the drivers of their company’s future growth over the next decade, CIOs identified two prime areas: 75% see focusing on current customers and continually gaining more knowledge on them to improve products and services as the most important driver; improving the customer experience is the second area, 72% of CIOs say.

Most highly rated future growth drivers over the next decade, by industry (% of respondents rating this factor “high” or “highest”).

<table>
<thead>
<tr>
<th>Focus on current customers, and efforts to continually gain more knowledge about them to keep improving products and services</th>
<th>Automotive</th>
<th>81%</th>
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</thead>
<tbody>
<tr>
<td>Banking and financial services</td>
<td>76%</td>
<td></td>
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<tr>
<td>High-tech</td>
<td>76%</td>
<td></td>
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<tr>
<td>Industrial manufacturing</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>Travel, transportation and hospitality</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Consumer packaged goods</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>Changing our revenue model from products and services for customers to own to subscription-based revenue models in which customers “rent” our products and services</td>
<td>Telecommunications</td>
<td>82%</td>
</tr>
<tr>
<td>Developing whole new digital products and services for new customers</td>
<td>Media, entertainment, information services</td>
<td>80%</td>
</tr>
<tr>
<td>Retail</td>
<td>78%</td>
<td></td>
</tr>
<tr>
<td>Improving the customer experience to help customers purchase, use and buy more of our products and services</td>
<td>Healthcare and life sciences</td>
<td>82%</td>
</tr>
</tbody>
</table>
The Data That Powers Digitally Successful Organizations

To CIOs, nearly all data is, or could be, important. Because data is central to digital business, we asked CIOs to consider what data is most important to their business and its future growth.

On data important to future growth, customer experience and purchase history data are viewed as critical. Seventy-one percent of CIOs rate data on what customers are saying about their firm in online channels, including social media sites, and product and service review sites, as highly or extremely important. Data on what products and services customers buy from their company (or show interest in buying) also is vital, with 63% rating it as highly or extremely important.

How important are the following types of data to your business’s future growth?

- Data on what customers are saying about our firm in online channels: 71% extreme or high importance, 29% moderate, minor, or no importance
- Data on what products and services our customers buy from our company: 63% extreme or high importance, 37% moderate, minor, or no importance
- Data on how customers find out about our company and our products/services: 61% extreme or high importance, 39% moderate, minor, or no importance
- Distribution data: 60% extreme or high importance, 40% moderate, minor, or no importance
- Product/service performance data: 55% extreme or high importance, 45% moderate, minor, or no importance
- Production data: 53% extreme or high importance, 47% moderate, minor, or no importance
- Data from business partners that help us identify and target potential new customers: 59% extreme or high importance, 41% moderate, minor, or no importance
- Data on how customers use the products/services they buy from our company after the purchase: 61% extreme or high importance, 39% moderate, minor, or no importance

The questions CIOs must be getting the most: “What are customers saying about us on social media? What are they saying in their online reviews?”
Strategic Data-Sharing

Companies are looking for productive ways to share customer data with strategic partners.

More than half of CIOs (54%) say their firms have strategic partnerships with external parties to use customer data to identify potential customers who may be interested in their companies’ offerings, and to help them convert prospects into customers. Meanwhile, 52% have such strategic partnerships to support current customers with the products and services they have purchased from their companies. Just 2% don’t have strategic partnerships with external parties to use their customer data.

The vast majority of companies also share their own customer data with strategic partners. Only 8% of CIOs say their firms don’t participate in this practice.

Identifying the Opportunities and Threats: Industry vs. Ecosystem

It’s no secret that CIOs at global companies must be concerned about the prospect of disruptive competitors, including digital natives that don’t have to navigate a transformation of legacy IT infrastructures and ways of doing business.

In probing the issue of digital business models, we asked CIOs to look at the contribution to company revenues made by their digital businesses back in 2010 and in 2018. CIOs say that in 2010, digital businesses, products and services represented 34% of total company revenues. That figure rose to 46% in 2018.

75% of CIOs identified focusing on current customers and continually gaining more knowledge on them to improve products and services as the prime driver of their company’s future growth.
What percent did digital business contribute to total company revenue in 2010 versus 2018?

<table>
<thead>
<tr>
<th>Industry</th>
<th>2010</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-tech</td>
<td>45%</td>
<td>62%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>42%</td>
<td>59%</td>
</tr>
<tr>
<td>Banking and financial services</td>
<td>40%</td>
<td>53%</td>
</tr>
<tr>
<td>Media, entertainment, information</td>
<td>36%</td>
<td>46%</td>
</tr>
<tr>
<td>Travel, transportation, hospitality</td>
<td>36%</td>
<td>48%</td>
</tr>
<tr>
<td>Insurance</td>
<td>35%</td>
<td>46%</td>
</tr>
<tr>
<td>Retail</td>
<td>34%</td>
<td>47%</td>
</tr>
<tr>
<td>Automotive</td>
<td>30%</td>
<td>43%</td>
</tr>
<tr>
<td>Healthcare and life sciences</td>
<td>29%</td>
<td>40%</td>
</tr>
<tr>
<td>Consumer packaged goods</td>
<td>27%</td>
<td>35%</td>
</tr>
<tr>
<td>Industrial manufacturing</td>
<td>24%</td>
<td>32%</td>
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Digital Experience in the Top Ranks

Asked about the experience of their board members and top management teams, about half of CIOs (49%) said their companies' board members have deep digital experience and that their top management team members have deep digital experience. The answers varied; some sectors have a deeper digital roster of top executives and board members than others, with industries like banking and financial services, telecommunications, high-tech, and automotive boasting more digitally experienced boards and top management teams.
Pinpointing Digital Business Opportunities and Starting Points

Asked to consider the potential for digitizing aspects of their business by 2030, a minority of CIOs believe that just about every aspect of their operation could be completely digital by the end of the next decade.

Among the areas scoring the lowest: only 14% of CIOs see that their firms can completely digitize customer support and after-sales service by 2030. And—perhaps understandably given the range of industries in the survey—only 18% of CIOs expect their production and manufacturing work to be fully digital by 2030.

Even if these numbers seem low, they are all higher than where CIOs say their companies stand today with fully digitized business activities. For example, only one in 10 companies has fully digitized products and services. And only 7% say they have fully digitized their marketing and sales processes today.

Impact of Key Technologies

We asked CIOs about their views on different technologies changing their industry. Cloud computing, rated by three-quarters of CIOs as having a high or extreme impact this decade on their industry, was the technology with the greatest perceived impact. Three technologies—mobile devices, artificial intelligence, and Internet of Things sensors embedded in products and locations for doing business—have had a high or extreme impact on their industries, according to 64% to 65% of CIOs.

Asked to evaluate the impact of important technologies on the digital transformation of their industry over the next decade, there was a consensus: eighty percent of CIOs say that artificial intelligence will have a high or extreme impact in their industry, followed by machine learning, the Internet of Things, and cloud computing.

Percent of CIOs who believe the following technologies will have extreme or high impact over the next decade on the digital transformation of their industry.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Percent of CIOs</th>
</tr>
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<tbody>
<tr>
<td>Artificial intelligence</td>
<td>80%</td>
</tr>
<tr>
<td>Machine learning</td>
<td>71%</td>
</tr>
<tr>
<td>IoT</td>
<td>68%</td>
</tr>
<tr>
<td>Cloud computing</td>
<td>68%</td>
</tr>
<tr>
<td>Mobile devices</td>
<td>66%</td>
</tr>
<tr>
<td>Virtual/augment reality</td>
<td>51%</td>
</tr>
<tr>
<td>3D printing</td>
<td>48%</td>
</tr>
</tbody>
</table>

75% of CIOs said cloud computing had the biggest impact on their industry this past decade. But looking ahead, 80% think AI will be a game-changer.
Most Important Competitors
With all the attention paid to digital upstarts that can rise at a moment’s notice to threaten a company or disrupt an industry, most CIOs appear to be more focused on the here and now. Asked to consider which types of companies top management believes will be its most formidable competition between now and 2025, 40% say they expect to continue to worry most about established companies they have competed with for years.

Between now and 2025, which one of the following does your top management team believe will be its most formidable competition?

- Established companies we’ve competed with for years
- Companies established as digital companies
- New digital companies that aren’t yet here but will be by 2025
- Other

32%
40%
27%
1%

Envisioning Opportunities in a Digital World
We asked CIOs how expansively their board and top management team thinks about its opportunities in a digital world. Nineteen percent of CIOs say “very expansively” in response to this question—i.e., in digital ecosystem or similar terms. Another 33% say their boards and top management thinks expansively about this. One in five describe their companies’ thinking as narrow, and another 29% use the term “more than narrowly” to label their leaders’ approach.

The response in some industries is stronger. In high-tech, 31% of CIOs say their firms are thinking about opportunities very expansively. In banking and financial services, 28% of CIOs answer this way as do 27% of automotive CIOs.

Sectors in which boards and top management teams are not thinking much about ecosystems include consumer-packaged goods (only 6% think very expansively), insurance (15%) and healthcare and life sciences (15%).

Developing New Digital Businesses
As they look ahead to opportunities and threats, CIOs and their companies must develop new business models, products and services. We asked them whether that activity primarily takes place in its own business unit, in a function (e.g., marketing, research and development, etc.), in the IT function or elsewhere.

Where does your company conduct its activities for developing new digital businesses and/or new digital product/service offerings?

- In a separate business unit that reports to the head of our company or division
- In the IT function
- In a business function(s)—e.g., marketing, sales, R&D, etc.
- Elsewhere

46%
42%
36%
17%
Corporate Culture
The choices about where to develop new digital businesses are related to a company’s culture. As such, we asked CIOs to rate their cultures along a number of dimensions—e.g., product/service innovation-focused, operational process-focused, customer experience-focused, and so on—and on a scale from “not at all” characteristic to characteristic to the “greatest degree.”

Thirty-four percent of CIOs say their company culture’s greatest focus is on product and service innovation, while about three in ten (31%) say their company is greatly focused on brand image and marketing.

What’s Ahead
Over the next few months, the TCS Business 4.0™ Institute will provide in-depth findings and analysis of this research. We will draw on extensive analysis of how leading companies (“leaders,” of which there are 220 out of the 1010 surveys) contrast with trailing companies (“followers,” of which there are 219 surveys):

• Leaders are those who said they a) have enterprise-wide digitization initiatives with strong leadership in place, or new digitally enabled business models, products and services, and operating models, and b) said they had huge or high success in increasing revenue from those digital businesses and offerings.

• Followers are survey respondents a) whose digital initiatives are in pilot phase or a limited to a few business units, and b) who said they had no or low success in increasing revenue from their digital efforts.

Among the questions we—and, we think, CIOs in large corporations—want answered:

• What is the role of CIOs in companies and different industries in driving digital business model transformation?

• How do they think about opportunities and threats in increasingly digitized businesses across every sector?

• How deep is the digital experience of their bosses and board members—and does that make a difference?

• How are companies setting their digital strategy—by industry or by ecosystem?

• Where do they believe their biggest competitive threats originate—from inside or outside their sector?

• What data is important for companies to collect and manage to make their digital transitions, and how are they using it?

• And what are best practices in leading digital transformations for renewal and growth?

• Do they operate in a culture open to digital business and data monetization? Or something less?
About the TCS Business 4.0 Institute
The TCS Business 4.0 Thought Leadership Institute is a research-driven center with a mission to deliver practical, forward-thinking technology and business insights that inform the strategy of TCS prospects and clients. Our data-driven research provides best practices and recommendations that lead the way for transformational journeys.

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