

Chapter 1

Technology Leadership Is Indispensable and Essential

Now is undoubtedly the best time to be a transformational technology leader. We face challenges, but we also have unprecedented opportunities for leading and facilitating innovation, disruption, and growth in core, parallel, and new markets.

That's why it's absolutely essential for technology executives to choose the right technologies and make the wisest investments. The future of their organizations depends largely on the choices they make today.

I predict the technology industry will continue to prosper and grow. Today everyone is a technology consumer, and that trend shows no signs of slowing down. In fact, every reliable indication points upward. IDC anticipates \$7 trillion in IT-related spending in the 2019 to 2022 time frame.¹

In their anxiety over future earnings, investors often make poor choices. Sometimes fear of the unknown overcomes rational instincts. As technology leaders, we simply cannot afford to make decisions based on momentary events and temporary setbacks. We must think in *strategic* terms. That is both our role and our responsibility.

The economy itself is strong, and tech remains a driving force for growth in markets all over the world. Though there are signs on the horizon of an economic slowdown, a major recession appears unlikely.

Long-range forecasts are notoriously inaccurate, and it seems like a waste of energy to fret about events that might or might not happen 12 months down the road.

Here are some predictions for the shorter term:

- The need for cloud storage will accelerate and continue growing.
- Cybersecurity will remain a major challenge for companies of all sizes.
- The war for talent will make it harder to hire and retain the best employees.

- The shift from traditional IT to infrastructure as a service will continue as more companies seek to reduce capital expenditures.
- Achieving excellence in IT executive leadership will remain a top priority at forward-thinking organizations.

For those of us operating within the tech industry, it's hard to be a pessimist. From our perspective, the future seems bright and full of promise. That doesn't mean there won't be disappointments and bumps in the road. That said, it is no longer possible to imagine a world without digital technology.

Technology has become an economic necessity at every level. You simply cannot run an organization of any kind without technology. Soon the majority of the world's citizens will be digital natives. For them, technology is a basic right, like breathable air and clean drinking water.

I am a realist, not a starry-eyed optimist. I firmly believe we are in the opening innings of a global transformation. We have a long way ahead of us, and technology will continue playing the dominant role in defining our future as a global society.

Role of the CIO in Guiding the Enterprise to the Future State

One of the greatest challenges that corporate executives face these days is positioning their companies to survive and thrive in the next three to five years and beyond. According to the *Harvard Business Review*, 52 percent of the companies

that were in the Fortune 500 in the year 2000 have gone bankrupt, been acquired, or ceased to exist due to digital disruption.

Because of their unique view across the enterprise and outside of the organization, CIOs are well positioned to help the CEO, line-of-business leaders, and fellow members of the C-suite to identify and act on new business opportunities that can deliver new customer experiences and help differentiate the brand.

A good starting point for CIOs and technology executives involves fostering innovation among their teams and with key stakeholders in the enterprise. “It’s critical for CIOs to encourage innovation and out-of-the-box thinking,” says Vishwa Hassan, director of Data and Analytics at USAA.

Because innovation often stems from failures, it’s also important to reassure team members that failure can be accepted—so long as the organization learns from its flops. “It’s important to reward failure—not for a big project failure but for failures that occur early on in the life cycle so that learnings from those failures can be incorporated into key attributes of what doesn’t work,” Vishwa adds.

Vishwa also recommends offering process- and standards-based solutions for ensuring enterprise stability while being nimble enough to demonstrate quick turnarounds for revenue-generating projects in sales, marketing, logistics, and other areas in the company.

Meanwhile, when it comes to assessing advanced technologies that can help provide the organization with a competitive edge, Vishwa points to the use of operational analytics as a potential differentiator. “I’d recommend focusing on analytics that in near-real-time impact operations compared to a dashboard or model output that a group has to review and implement actions based on those results.”

Tailoring the Message for Board and C-Suite

As CIOs and technology executives spend an increasing amount of time presenting to their boards of directors, they’re discovering how the messaging needs to be tailored to meet the needs and interests of board members. Indeed, 78 percent of CIOs say they are communicating with the board more than ever before, up from 67 percent in 2018, according to IDG’s 2019 State of the CIO survey.²

Most board members are interested in the business impact of technology investments, the costs associated with those investments, and the inherent risks associated with implementing and applying technologies. Since most board members aren’t technologically savvy, they’re not interested in highly technical discussions.

I caught up recently with Dale Danilewitz, EVP and CIO at AmerisourceBergen, to capture his approach to connecting effectively with the board and for moving the business forward. Here’s a lightly edited transcript of our conversation.

Hunter Muller: How do you lead into the C-suite and help the board understand how to digitally connect with the customer to reimagine and reinvent the customer experience?

Dale Danilewitz: I think the short answer is that my CEO is productively paranoid. He is constantly concerned about what's next on the horizon and the various forces that may impact us or create obstacles for us to deliver on our goals. For me, it is therefore not about a decision or strategy to open ourselves up to the prospect of disruption. It should be inherent in one's culture. I'm a big believer that technology is not the catalyst to raising the prospect of disruption, it should be one of the many industry forces that can influence a company's path to deliver on its strategy, both as an enabler and as a competitive inhibitor.

One should regularly be using scenario planning while engaged developing and revising one's strategic direction. This includes both evolutionary and revolutionary planning. If there's a trigger point that indicates the strategy is not delivering, you must be courageous to change or pivot. We now call this disruption, but I believe that disruption has been occurring since the inception of business, and technology is more of an accelerator, introducing disruptive forces more rapidly than in the past.

One can't allow oneself to plan within the confined parameters that one applied in the past. One needs to elevate oneself to ensure one understands the industry

and societal forces that are shaping the business landscape. Peter Schwartz introduces the concept of scenario planning in a 1996 book called *The Art of the Long View*, where he uses the rise of the oil giant Dutch Shell Oil to illustrate the benefits of this approach.

HM: The Fortune 500 will turn over even faster now because of technological disruption.

DD: Technology is a contributor to shifting your industry. If you have a culture of strategic planning where you are constantly accounting for all variables that could influence your future, then you're in a much better position to factor in the advances of technology and the opportunities that they offer.

Yesterday I was talking to someone about board positions for IT professionals. It's interesting because when you look around, the number-one priority considered by boards when it comes to information technology is cybersecurity, and that's always something I'll address with my board. Many boards and board members are nontechnical, which requires us to explain technology in the context of business opportunity and risk. They are also very well read and expect us to discuss familiar technical terms and their application in our business.

We have chosen to host a tech fair at our next board meeting where we will bring in many of our innovative applications of technology that we are either applying commercially or piloting for future possible use. Our goal is to give them an appreciation of the investments we are making in exploring emerging capabilities

delivered by the latest technologies. Board members want to know from a governance perspective that we are looking ahead while continuing to operate our business.

HM: How do you go to achieve that broad reach? Partnering with VCs and tech startups in Tel Aviv or Silicon Valley?

DD: It's all about business enablement and driving our strategy to meet our vision. I intentionally stay away from talking about technology in our board meetings. The board is aware of what we're doing—we are using the tech fair to inform them of what we are doing to ensure we aren't lagging when it comes to using innovative and emerging technologies (e.g., piloting blockchain projects, augmented reality, AI, and drones) while sharing the work we've done in design thinking and how we have leveraged these concepts to get closer to our customers. As for obtaining exposure to innovation and opportunity, we partner with accelerators and innovation centers to ensure we have a front seat to early entrants in developing technologies and capabilities.

HM: How do you go about inspiring your team to think differently?

DD: My advice to our colleagues is when we talk about capabilities, we try to focus on the problems we are trying to solve and not fall into the trap of a “solution looking for a problem.” We also ensure we are considering both the business unit and the enterprise across our business units to leverage solutions while not suppressing local innovation. My job is to look across the

enterprise to identify these opportunities and allow my business partners to focus on their specific areas. We run hack-a-thons both within our business units and across the enterprise and ensure we have cross-pollination of ideas as well as brainstorming vertically and horizontally. We have also accelerated our migration into fully agile product teams across the enterprise.

HM: How do you view the current market for technology talent?

DD: There's not as much of an incentive for foreign students to stay behind to work in the United States after they graduate. We need to find a way to encourage them to be added to the local talent pool by helping them ease into permanent residence. Home countries like India and China are making it more attractive for them to return and thus competing with us for the same talent. This is contributing to the dearth of available talent in the United States.

I remind my team, "When interviewing a potential candidate and you feel strongly about them, be ready to provide them with an offer letter before they walk out the door so that they feel wanted and we don't lose them to the market."

My concluding thoughts relate to a panel question at a national conference where we were asked about the pressure and anxiety we face during these times of "shadow IT" being more pervasive and tech startups waiting to eat our lunch. Some of the panelists

bemoaned our current state of affairs; however, the most profound and appropriate comment came from the CIO sitting next to me when he raised his eyebrows and blurted out that it was the greatest time to be in our position as corporations are turning to us for opportunities to drive competitive advantage. I agree; we should feel pretty good at a time when digital solutions are dominating the airwaves.

Pressure Testing Candidates for Executive Leadership Roles

How do you define the characteristics of great leadership in the modern corporate organization? That's a question that invariably arises during my discussions with top executives at major competitive firms and companies all over the world.

Today a large part of leadership is strategic. The best leaders do more than deal with current-state problems. They see around corners, look over the horizon, and develop a clear vision of the future. Then they act boldly and courageously to bring that vision into reality.

At a December 2018 HMG Strategy Financial Services CIO Summit in New York City, I had the honor of moderating a truly brilliant panel of experts in the field of executive search. The panelists included Renee Arrington, president and COO, Pearson Partners International, Inc.; Chuck Gray, consultant, Egon Zehnder; and Stephen Spagnuolo, managing director, Digital Security & Risk, Quantum Search Partners.

I asked them to describe the qualities of great executive leaders. Here's a very brief topline summary of useful insights they shared with our audience:

- Great leaders focus on identifying and solving strategic challenges.
- Great leaders always look for new ways to create revenue and drive business growth.
- Great leaders pay attention to current events and know what's happening outside their organization.
- Great leaders leave behind a legacy of great teams.
- Great leaders understand how their companies make and spend money; they know how money flows in and out of the organization.
- Great leaders have genuine intellectual curiosity.
- Great leaders understand the value of reverse mentoring as a technique for staying in touch with latest trends and shifting markets.
- Great leaders understand why innovation is absolutely essential in modern ultra-competitive markets; they learn how to “fail fast, fail cheap” when developing new products and services.

Additionally, great leaders understand that technology has become a strategic weapon. That concept of “technology as a weapon” is radically different from the traditional notion of IT as a back-office function. Today technology is front and

center—you simply cannot compete without superior technological capabilities.

World-class leaders convey their ideas and describe their goals in terms that are crystal clear and easily understood by everyone in the enterprise. In other words, they are totally honest and forthright. They work hard to avoid confusion and misunderstandings. Great leaders strive for clarity, effective collaboration, and a shared sense of purpose.

Building Your Personal Brand

Now is truly the optimal time to be a technology leader. Analysts and experts agree that technology is driving strong economic growth and fueling prosperity. This is our moment, and we are truly fortunate.

That said, none of us can afford to rest on our laurels. We all need to build our personal brands and enhance our reputations as leaders. The process of brand building is continual. It requires our attention and our energy.

In advance of the 2019 Silicon Valley CIO Executive Leadership Summit in Menlo Park, California, I spoke with four experienced technology executives and longtime members of the HMG Strategy global community. Here's a selection of their expert advice for building and nurturing your personal brand:

“Think of a brand you love, such as Pepsi or Nike,” says Ralph Loura, SVP and CIO at Lumentum. “What do

those brands stand for? Think about yourself and talk to business unit peers or former colleagues and ask them what they would say about you. If they say they see you as transformational, that's great. If you're described as the guy who keeps the projector going, take steps to change that."

Ralph is one of our network's most articulate and thoughtful executives. In a recent conversation with our research team, he agreed that building your personal brand is more important than ever before.

"From a role perspective, we all get typecast. You're either a transformational leader or good at containing costs or deploying ERP systems. So, if you want to change your brand, you need to change how you're being perceived," he says.

Mark Egan, partner at StrataFusion, recommends focusing on your core strengths and using them to enhance your reputation as a thought leader. "I encourage people find relevant topics and then to write blogs and speak at events as much as possible," he says. "There are so many opportunities for professionals like us to demystify technology and simplify complicated topics like cybersecurity."

Successful leaders work on their personal brands habitually. "Don't wait until you're looking for a job," says Mark. "You should be building your personal brand and extending your network continually. The HMG Strategy events are great opportunities for brand building and learning."

Brand building involves getting out of your comfort zone and listening to what other people are saying. Seasoned thought leaders spend most of their time listening and learning. “Find out what people are interested in and learn more about their points of view,” Mark advises.

Social media creates an atmosphere of transparency that some find uncomfortable. Smart leaders, however, leverage social media to expand their influence and build up their credibility.

“The number-one rule is to do your job first. The more you excel at what you do, the more your brand will shine. For internal branding I recommend getting out of your comfort zone and getting involved in your business with your business peers. Being seen as someone who goes above and beyond the duty of their day-to-day job and gets actively involved with the business always bodes well internally,” says Patrick Steele, chair of the CIO Advisory Board at Blumberg Capital.

From an external perspective, Pat recommends getting active in community service and serving on boards. “The exposure to others and outside issues helps you grow and broadens your experience. I also recommend being active in industry association events. If there is an HMG Summit taking place near where you are, getting involved in planning and presenting is excellent for your career growth.”

Jon Roller, CIO at Horsley Bridge Partners, also highlights the value of industry events and conferences. “Industry

conferences are great places to meet people who may be on similar career paths. Treat those conferences not only as learning experiences but as branding exercises. Get to know panelists and volunteer to be on panels. Find professional organizations that you are interested in. Those organizations allow you to get to know like professionals and build real relationships. Your brand and network is going to help drive your opportunities,” says Jon.

In addition to attending conferences and summits, it’s important to expand your knowledge of the business. “Understanding the business side of the company is absolutely essential. You can’t just be a technology person. You have to understand sales and marketing and how they drive the business. Same with finance and product,” Jon explains.

In many respects, brand building is a discipline requiring constant practice. Jon says, “Always work on yourself. Don’t expect the world overnight. It takes time and work ethic to build your brand. But it’s an essential element to career ascent.”

Learning Valuable Lessons from Customer Centricity

One of the best things about the current technology era is how companies and their teams are creating user-centric experiences that make it easier for executives, managers, and employees to do their jobs. Technology vendors are embracing the “consumerization of IT” by which they are striving to

more deeply understand the needs and preferences of their clients and design more user-friendly interfaces and experiences when compared to legacy applications and systems.

The ramifications for CIOs to deliver on these rising user expectations are significant. In a 2016–17 Deloitte survey of executives on the topic of IT leadership transitions, 74 percent of respondents said that CIO transitions typically occur when there is a general dissatisfaction among business stakeholders with the support that CIOs and their IT teams provide.³

Chief among these are communications technologies that enable today's highly distributed workforce to communicate and collaborate more closely with one another. Unquestionably, advanced communication technologies are critical for connecting dispersed project teams and for strengthening employee engagement and performance; research has shown that up to 90 percent of communications is nonverbal. Even in today's digital workplace, face-to-face communications have become more important than ever.

One technology vendor that's squarely addressing the demand for face-to-face communications is Zoom, the leader in modern enterprise video communications.

I spoke recently with Eric S. Yuan, Zoom founder and CEO, and asked him about the importance of communicating the vision for delivering state-of-the-art employee collaboration

and video experiences to the enterprise. Here is a lightly edited transcript of our conversation:

Hunter Muller: How is Zoom striving to reimagine the employee collaboration and video experience?

Eric Yuan: Look at the trends in the market. More and more teams are virtual (63 percent of companies today have remote workers, according to Upwork).

Second, traditional offices are going away. Third, more than one-third of workers in the United States are Millennials. Collaboration is becoming more and more important in project-focused organizations. We need to empower those employees to collaborate and to get things right.

The work we're putting into the Zoom platform is key to addressing these trends. Plus, we realize now that we not only leverage Zoom to collaborate but that employees are more engaged during video discussions instead of multitasking during conference calls. On Zoom, you're able to see each other and make that visual connection.

HM: How do you communicate your vision for achieving the art of the possible with employees at Zoom?

EY: We have ten offices worldwide. At most, I only travel once or twice a year but I'm using Zoom every day to communicate with employees around the world.

By regularly using Zoom, I'm able to demonstrate to employees what's possible with the platform. If I'm in

California and you're in New York, we're able to shake hands using the platform. It's reliable and easy to use and employees have counted on that.

For companies to succeed, trust is everything. It's absolutely essential to provide employees with a trusting environment. Trust is the foundation for speed and for moving forward.

It's very important because your employees may not all be in the same offices—they could be in remote offices, there are home workers, etc. Email is not an intimate experience, and by human nature we often multitask. Video communication is very different—it's more engaging and a more personal form of communication and it helps to strengthen productivity.

HM: How would you characterize your leadership style in galvanizing the team around your vision?

EY: I feel my style is pretty straightforward. I truly care about our employees, our team, our company, and our customers. "What more can I do?" is a question I constantly ask myself. Open communications is a given in business today.

HM: What are the top challenges Zoom has faced in its go-to-market strategy over the past few years?

EY: The number-one challenge is around the brand. Even if you have a great product, if a prospective client has never heard of Zoom, why would they take the risk of adopting our platform? The only time we've ever lost a deal is when a prospect tells us they have no interest in changing.

The number-two challenge is maintaining that culture of a small company as you're growing into a larger company.

HM: How do you help foster a culture of innovation at Zoom?

EY: It comes down to our values of caring for our customers. We listen closely to customer feedback and incorporate that customer feedback into new features and new use cases. Having open communication and being receptive to customer feedback is key. As long as we do that, we'll be fine.

HM: What are you most passionate about?

EY: What I'm most passionate about is making our customers happy, improving their communications, productivity, and culture.

Diving Deeper in the New CIO Mandate

The spectacular meteoric rise of customer-centric business strategies has transformed the role of tech leaders and elevated technology from the back office to center stage. The incredible success of companies such as Amazon, Netflix, Apple, Google, and Microsoft has proven conclusively that technology has the power to drive global markets and create value that would have been unimaginable in previous eras.

I spoke recently with Wendy Pfeiffer, the CIO at Nutanix, the global leader in hyperconverged infrastructure for cloud computing, and asked her for her perspective on the new

CIO mandate. Wendy had written an excellent guest column and delivered a fabulous presentation at the HMG Strategy Silicon Valley Global Innovation Summit in Menlo Park in February 2019, and I wanted to get her latest thinking on the transformational role of the CIO in rapidly changing times.⁴

“We’re looking for the intersection of great technology and operational excellence. That’s what IT is all about,” Wendy says. “The CIO’s job is marrying those two disciplines.”

The best CIOs find the right balance, using superior technology to achieve and sustain operational excellence. “The modern enterprise needs transformational technology that is contained, framed and enabled by a robust operating model,” she explains. That’s why we need hybrid technologies and why we need to operate in a hybrid mode.”

The 21st-century IT department is a “team of superheroes” combining the skills and talents of multiple individuals to reach a strategic objective. “We have visionary architects. We have operational experts. We have portfolio managers and support people. It’s totally a team effort,” Wendy explains.

For many organizations, however, operating in hybrid mode is genuinely challenging. Leading cross-functional teams in a modern global enterprise requires astounding levels of focus, discipline, and understanding. “The greatest challenge in IT is optimizing hybrid operations and managing diverse environments,” she says.

The good news is that technology leaders are well equipped and perfectly positioned to guide the enterprise through the transformations that will be necessary for optimizing hybrid strategies. According to Wendy, “We have the skills and we have the experience.”

I admire Wendy’s confidence and her sense of purpose. She is a true technology leader and a role model for all of us. From my point of view, senior technology leaders have become absolutely indispensable to the modern enterprise. As Wendy notes, business now moves “at the speed of the machine.” When you’re moving ahead at full speed, there’s really no margin for error—you need the perfect blend of technology and operational excellence to stay in the game.

Legendary Lessons from Andreessen

My good friend Jedidiah Yueh is the CEO and founder of Delphix, the amazing software company that provides a DataOps platform to connect, secure, virtualize, and manage data for many of the world’s biggest companies. Jed participated in the HMG Strategy CIO and CISO Executive Leadership Alliance meeting in Menlo Park recently, and during our discussion on startup management, he spoke about legendary venture capitalist and serial innovator Marc Andreessen.

Jed cited Andreessen’s genuinely groundbreaking 2007 post about what really matters most to startups, and I want to share portions of that epic post with you today.⁵

And so you start to wonder—what correlates the most to success—*team*, *product*, or *market*? Or, more bluntly, what causes success? And, for those of us who are students of startup failure—what’s most dangerous: a bad team, a weak product, or a poor market?

Andreessen then offers his own definitions of *team*, *product*, and *market*. His thoughtful perspectives on these terms are incredibly useful. But he doesn’t stop there!

If you ask entrepreneurs or VCs which of *team*, *product*, or *market* is most important, many will say *team*. . . . On the other hand, if you ask engineers, many will say *product*.

Then he offers his own opinion:

I’ll assert that *market* is the most important factor in a startup’s success or failure. . . . In a great market—a market with lots of real potential customers—the market *pulls* product out of the startup.

Moreover, Andreessen states:

The market needs to be fulfilled and the market *will* be fulfilled, by the first viable product that comes along. The product doesn’t need to be great; it just has to basically work. And, the market doesn’t care how good the team is, as long as the team can produce that viable product.

I find the clarity of Andreessen’s vision and the precision of his language absolutely astonishing. Andreessen wrote

the post in 2007, but it remains supremely relevant and useful today.

I'm glad that my friend reminded us of the value of Andreessen's words and insight. Marc Andreessen's unique status as a key figure in the success of Silicon Valley and the global tech culture is undisputed. A dozen years after he wrote the post, it still inspires us and provides essential lessons. Bravo, Marc Andreessen, and thank you, Jedidiah Yueh.

Critical Steps for Achieving Strategic Goals in the Modern Enterprise

I had an excellent conversation recently with Sheila Jordan, SVP and CIO at Symantec, the global leader in cybersecurity. Sheila is responsible for driving Symantec's IT strategy and operations ensuring that the company has the right talent, stays ahead of technology trends, while maximizing technology investments.

Sheila has a remarkably clear vision of the CIO's roadmap for 2025, and she genuinely understands the shifting landscape. In our conversation, I asked her to describe her top focus areas and key action steps for achieving the company's strategic goals.

"For CIOs, one of the first steps in digital transformation is getting rid of redundancy, duplication, and legacy applications that are breeding grounds for security issues," Sheila explains. "You need to eliminate the impediments preventing a smooth customer journey across your organization."

From Sheila's perspective, simplicity is essential to success in the modern enterprise. "You want to remove barriers and create frictionless journeys. That's how you extract value from your technology."

I love how Sheila places the primary focus on generating value for the business. "Operations are important, but extracting value and enabling key business processes are what make the organization great," she says. "As CIOs, we have a unique vantage point allowing us to see horizontally across the entire organization. We know where the gaps are, and we know how to stitch together multiple processes to create seamless customer experiences."

Exemplary CIOs focus on data first and applications second, she notes. "You need to shift your mind-set and focus on what's valuable to the organization. That's why you want a strong data taxonomy and clean house with the fewest impediments."

Sheila Jordan is also a strong proponent of planning, something that's become a lost art these days in many organizations. "Up-front planning is always beneficial," she says. "Some people think it slows them down, but in reality, planning helps you accelerate much more quickly and move faster. Having an end-to-end architectural view of both process and systems allows both IT and business professionals to visualize both upstream and downstream dependencies when creating this horizontal customer journey."

I agree completely with Sheila's advice. Executing against a plan enables you to move more rapidly and with more confidence. That's a key lesson for all technology leaders.

Business cycles have become so tight in today's markets that we often feel the need to move quickly, and sometimes we take shortcuts in planning. But even in our fastest-changing markets, that's rarely a good practice.

We constantly need to remind ourselves that planning is a critical step in the strategic process of digital transformation. I'm grateful to Sheila for generously sharing her insight and experience, and I sincerely look forward to my next conversation with her.

Meanwhile, I highly recommend reading her new book, *You Are NOT Ruining Your Kids: A Positive Perspective on the Working Mother*.⁶ It's an excellent book, filled with timely tips and actionable advice for parents and their families coping with the realities of 21st-century living.

CIO as a Customer-Centric Leader

As enterprise companies prioritize their digital transformation initiatives, improving the customer experience has become a top mandate for CIOs.

It's hardly surprising, then, that top-performing CIOs spend more time with customers, focus on innovation, and do the

work to enable core enterprise capabilities for both internal and external use, according to research conducted by Harvey Nash/KPMG and MIT's Center for Information Systems Research.⁷

“An important aspect of the CIO's role in cultivating a culture of customer centricity is to truly prioritize IT capabilities from a business perspective,” says Steve Phillips, CIO at Alorica. “We are challenging the status quo to deliver innovative technologies that ensure world-class customer experiences at scale. As CIO, I want to assess the IT team's capabilities and performance through the eyes of our customers—I measure system availability based on whether my systems are always on. I measure project delivery based on my team delivering new capabilities in line with customer expectations. And I measure customer satisfaction by asking open-ended questions about how well, or otherwise, my team is doing.”

On a granular level, customer-centric IT organizations seek feedback from frontline teams that are locked into moments of truth with customers, says Dan Roberts, president and CEO at Ouellette & Associates.

“Think about those moments we have with both internal and external customers,” Dan says. “The best customer-centric organizations will create journey maps, focus on critical moments of truth and deliver seamless, frictionless experiences.”

Dan points to Outback Steakhouse (owned by Bloomin' Brands) as an organization that has identified 60 moments

of truth that arise with customers during their dining experiences. “If you can eliminate the friction points for any of these, such as the length of the wait time or the ability to pay your bill quickly so you don’t feel like you’re being held hostage, these are steps that can help bring customers back,” Dan says.

There are lessons that CIOs and their companies can learn from other customer-obsessed organizations, such as Amazon. For instance, former SpaceX CIO Ken Venner points to how Amazon founder, chairman, and CEO Jeff Bezos keeps one chair unoccupied during meetings to remind attendees that the seat is for the customer, who may not be in the room but about whom everyone should be thinking.

Meanwhile, the metrics that are tracked to gauge performance should be taken from the customer’s lens and focused on those things that customers would care about, adds Ken.

Another part of the CIO’s role in fostering a culture of customer centricity involves engaging both IT team members and other employees throughout the enterprise on the company’s mission. “An effective workforce strategy for customer-centric leaders must include finding ways to engage and empower people throughout the organization to play their part in delivering outstanding business results,” Steve Phillips says.

“As CIOs and technology leaders who operate in an environment where technology is often thought of as the top priority, it’s important not to lose sight of good leadership

practices that can make all the difference.” Key leadership practices that Ken cites include these:

- Provide clear line of sight for each employee on how he or she contributes to the success of the organization and its clients.
- Create an environment where individuals can be part of a team and influence operational excellence.
- Make available career development and progression opportunities.
- Ensure consistent, transparent, and fair leadership.
- Deliver timely performance feedback and fair compensation plans to all employees.

CIOs and IT teams also must ensure that they’re applying customer-centric practices not only with external customers but also with company employees who are customers of the IT team, Ken Venner notes.

“Get out and talk with people and get a feeling for how well the IT team is engaged to help and support the company,” he explains. This includes creating IT services feedback/survey methods to hear from both employees and external customers about exceptional service experiences as well as moments where the service could be improved.

“Create processes to jump on and remedy events where customer service has been below expectations,” Ken recommends.

Given the speed of change and disruption in the industry, CIOs also need to create what Dan Roberts describes as a “culture of learning agility.”

“The half-life of a skill is 18 months today,” Dan says. “This suggests that, as a CIO, I need to create a culture of learning agility, where people are constantly learning, researching, studying and staying current on trends. People who do this are future-proofing their careers.”

Another cultural aspect of fostering customer-centricity encompasses CIOs helping their teams to visualize and better anticipate where customer needs and expectations are heading. “Eighty percent of IT organizations are skating to where the puck was while roughly 20 percent are skating to where the puck is at the moment,” Dan says. “It’s just a handful of companies that have cracked the code on skating to where the puck is going to be.”

Tech Leaders and the Customer Experience

When companies push further ahead with their digital strategies, it becomes increasingly evident how CIOs play an integral role in helping their companies deliver enhanced customer experiences.

The proof is in the results. According to the Harvey Nash/KPMG CIO Survey 2018, which canvassed 3,958 IT leaders, customer-centric organizations are 38 percent more

likely to report greater profitability than those that aren't customer-centric.⁸

CIOs can step up their involvement in fashioning top-rate customer experiences in multiple ways.

"CIOs should start by ensuring that their own IT organizations are customer-centric," says Nathalie Rachline, former COO at Visual Farms. "If a CIO does not have their organization structured with their internal clients with customer centricity in mind, they won't be well positioned to help the business address the end customer."

"CIOs need to be change agents," says JP Batra, CTO and principal at Blue River International, Inc. "Technology-based disruption has become pervasive! Being technologists themselves, CIOs are best positioned to educate their peer CXOs on emerging tech's impact on business and suggest ways for the business to take a leadership role."

Many CIOs are also becoming more involved in fostering a culture of customer centricity within their organizations. One way to do this is by taking a deeper dive into customer data and sharing these insights with the CMO and other key stakeholders.

"CIOs should look at the data they have about customers—what they buy, how they buy, and how they use their products to identify patterns. This data can be used by product

development and marketing teams to determine where their customers are going,” says Helmut Oehring, executive vice president at Asteelflash.

It’s also important to look at things from the customer’s point of view. “You have to start thinking in terms of what customers value—shifting from a focus on products to those things that are value-driven for customers,” JP says.

Until recently, CIOs have rarely been involved in a company’s product development cycle. But by doing so, CIOs and their teams can better understand how customers are using a company’s products and ascertain additional features and functionality that customers may be seeking, Helmut explains.

Of course, one of the best ways for CIOs and their teams to gain a deeper understanding of customers is by spending more time with them. “The CIO needs to be a part of those teams that meet regularly with customers,” Nathalie says. “These types of interactions can help CIOs to better understand what customers are looking for.”

One of the ways that CIOs can work with line-of-business leaders in delivering on customer goals is by utilizing technologies such as AI along with customer data and analytics to better understand and respond to customer needs. “This shifts CIOs from being order takers to a partner that’s delivering value,” says JP.

Guiding Structural Change Across the Enterprise

I spoke recently with my good friend Barbara Cooper, the former CIO of Toyota North America. Barbara is now a consultant and an executive coach in Phoenix, and she's always a wonderful source of insight.

From my perspective, Barbara is a genuine pioneer in many ways. She's had a highly successful corporate career spanning four decades and crossing five industries: retail, financial services, municipal government, logistics/distribution, and automotive. She is an innovator and risk taker known for her passion for business alignment, organizational strategy, and optimizing and developing exceptional IT talent.

Barbara became the first female vice president in the technology function at American Express and led the company globally into the personal computing and networking generation, connecting travel offices and operating centers around the world together for the first time. At Toyota, her reputation as an innovator elevated her to the top echelons of technology leadership.

I asked Barbara to describe the evolution of the CIO role, and her response was especially timely. "Today's CIO has to be comfortable with taking risks," she says. "Modern markets move with unbelievable speed. Keeping pace with them requires taking risks. In the past, CIOs didn't have to manage high levels of risk. Now they do."

I admire Barbara's succinct analysis of the difference between the traditional CIO and today's version of the role. "The modern CIO is more of a chief innovation officer and a chief digital officer," she explains. "These days CIOs are far more likely than their predecessors to be engaged in the customer experience and involved across the entire supply chain at every conceivable touchpoint."

The CIO's role has been elevated from a back-office job to a key business strategy role with major responsibilities spanning the enterprise. "For the modern CIO, everything is on the table. The digital age demands new business models that require new internal structures within the corporation," Barbara explains. "The CIO is perfectly positioned to guide the business through the structural changes that are necessary for getting the maximum value from technology investments."

Her comments are spot on. It's not enough to talk about being an "agile enterprise." Great companies empower their CIOs to make the structural changes necessary to make sure that information flows smoothly and seamlessly across silos and departments. From my vantage point, the ability to guide corporate restructuring is definitely part of the modern CIO's portfolio of executive skills.

Transforming a Major Industry

As the CIO at Perrigo Company plc, Thomas Farrington is keenly aware of the disruptive influences that are shaping the retail self-care industry. As PwC pointed out in a 2016 report,

“The Pharmacy of the Future: Hub of Personalized Health,” plummeting reimbursements and industry consolidation are forcing pharmacies to look to new sources of revenue and redefine themselves.⁹

Indeed, consumers have been quick to adopt retail pharmacies as their neighborhood sources of flu shots and strep tests along with milk, makeup, and over-the-counter medications. Moreover, research reveals that consumers would be open to more services if retail pharmacies offered them.

Perrigo is an international manufacturer of branded and private-label self-care, over-the-counter pharmaceuticals. These include store-brand versions of cough, cold, and allergy medicines, analgesics, gastrointestinal products, smoking cessation products, and infant formulas.

I had an in-depth conversation with Thomas to discuss some of the ways that he and the IT team are helping the 131-year-old company to succeed in this fast-evolving industry. Here’s a lightly edited version of our discussion:

Hunter Muller: Where is Perrigo in the current innovation cycle and where are you placing your bets over the next few years?

Thomas Farrington: When we look at the dynamics of retail and the competitive landscape, it has created a call to action to recognize that things have changed. When you think about the revolution in retail where we are reimagining and reinventing the retail digital experience, driving value from transactional data and

business intelligence are center stage for companies for understanding markets and, specifically, the end consumer experience; and where do we need to double click on augmented intelligence? What we need to think about in the business are those technologies that are going to help us to succeed as a business today and going forward.

We're at an exciting point where there's a convergence of technologies and challenges that is creating immense opportunities for us as a business.

HM: What are some of the ways that artificial intelligence plays into this?

TF: When you look at the products that we sell in Europe as an example, we draw on customer insights from marketplaces where our products are represented. Understanding the customer experience through social listening and understanding marketplace reviews is key to staying relevant to our customers.

There is an enormous amount of industry data and internal transactional data that we have just begun to tap into for its value. As we become more agile in this space, AI will become a major player in freeing up company resources to focus on data analytics and transforming our views from "rearview mirror" reports to predictive analyses that shape strategic and tactical decisions ranging from what we manufacture across the entire product lifecycle to how we market to certain demographics.

HM: How would you characterize your role in the business and how you and the IT organization are viewed?

TF: In my first eight years with the company, we were involved in a substantial amount of inorganic and organic growth. My role over that period was ensuring we had an operating model that was scalable, well controlled, and operating at a “best cost” price point.

We were also looked to as a source for non-product-related innovation in the company. In our traditional role, we researched and implemented technologies ranging from automation of manufacturing processes on the shop floor with automated guided vehicles to decision support systems for inventory and supply-chain planning.

In a nontraditional role, we were an “innovation lab” for the business in the area of e-commerce. My team unpacked the DNA of the e-commerce business model to understand how marketplaces such as Amazon and Alibaba work and translating that into an architecture of processes, controls, organizational capabilities, and technologies needed to be relevant in manufacturing, marketing, and selling in a digital world.

HM: Tell us about the work you’re doing with PwC on cybersecurity and governance.

TF: The life sciences industry had a wakeup call a few years ago when a very reputable company was hacked. When you step back and look at what happened, they weren’t the intended target.

In the past year, more than 60 percent of my time has been spent looking at where we need to go from a cybersecurity perspective. I reached out to PwC to

help us to better understand our points of vulnerability and how to break down those walls that exist to better understand our assets and the protection of those assets and what our maturity levels were.

We made real progress in the last year in these areas, in our maturity, our organizational capabilities, processes, and tools. With the help of external advisors, we formulated our transformation based on our business model and less on headlines in the media, prioritizing investments that are relevant to our business and our level of risk appetite as it applies to cyber.

While you are only as good as your next zero-day vulnerability, we have a comprehensive approach to our risks relative to the NIST framework and are making balanced investments in identifying, protecting, detecting, and responding to risks.

HM: How do you help make the business more nimble and responsive while addressing compliance requirements such as GDPR?

TF: The IT and Compliance teams partnered to work with our business units and functional groups to use GDPR as a rallying point not only to assess compliance but to take a long view on the value that the data collection and applications were returning over time. There were a number of legacy applications that really weren't needed or that, upon looking at the risk or effort to remain compliant, didn't provide a good return to the company.

By "weeding" the portfolio with a value lens, we not only achieved compliance by the required timeframes,

we reduced the cost of compliance considerably. Going forward, we now have a strong process framework to ensure that we're not only compliant but that we are keeping better inventories within our portfolio and certifying the ROI meets company objectives for our investments. Also, if you're an external vendor that works with us, we've identified for them how they impact our GDPR compliance.

I've learned over my lifetime that you need to go slow to go fast. With GDPR, we did a great job of compliance leadership across the company and with marketing on what GDPR compliance constitutes.

HM: What are some other initiatives you're currently involved with?

TF: We've just made a commitment to go with SAP HANA. We've leaned into a platform that will enable us to actively govern and manage master data, and perform more real-time operations and predictive analytics. We believe the investment will be foundational in moving the value needle for the business.

HM: What's your relationship like with the CEO?

TF: Our current CEO is relatively new to the company, just under a month at the time of this interview. As a seasoned consumer products CEO, he brings a vision, expertise, and energy to use technology beyond the base transactional value that is essential to run daily operations. As his CIO, he looks to me to enable his vision and move our vast internal and external data to transform the way we do business—which takes trust, collaboration, capability, and execution.

We seem to be off to a great start thus far. Our CEO is a transformational leader and our biggest advocate for investment in strategy, data, and tools to drive shareholder value at the pace shareholders and end consumers demand. In short, we are set up for being able to accomplish great things for the company with great support from the corner office.

Riding the Artificial Intelligence Wave

Bhavin Shah is a talented, three-time entrepreneur, CEO, and founder of Moveworks. The company's purpose-built platform solves IT support issues instantly and automatically using AI.

We proudly partner with Moveworks, and have been astounded with the company's success and growth since we have incorporated them into HMG Ventures, a thrilling venture capital investment component expanding within our company.

In an in-depth discussion, Bhavin shared the most critical winning strategies by which his company garnered 10x value growth in just three years. Here is some of what he said:

In 2016, when we founded Moveworks, we set out to build an enterprise SaaS platform that had AI and machine learning at its core. Machine learning is so fundamental to what we do that if you took the machine learning out of Moveworks, you'd have nothing left—our product just wouldn't work.

In the five years before starting Moveworks, we witnessed many major leaps forward in the performance and application of AI in a number of different categories: from image recognition, language translation, and voice recognition to robotics, predictive analytics, and expert systems.

Most of the newsworthy advances were being made in the consumer space, by companies like Google, Facebook, and Amazon, because these companies had access to vast data sets and the seemingly limitless compute power required.

But we were interested in forging a new frontier for AI in the enterprise, where data sets are often small, messy, and siloed. We quickly homed in on our use case—autonomously resolving IT support issues submitted by employees—and this focus helped us to build an incredible solution that is transforming the IT support experience for employees around the world. Focus is a critical asset when working with bleeding-edge technology.

Today, AI is one of the hottest topics among IT leaders. Every CIO says they want it. Most vendors will tell you they are doing it. But what exactly is it? And how do you make the most out of it?

First, let's be clear on the terminology. AI is a very broad term that can describe any machine or system that exhibits intelligent behavior. "AI" is often used interchangeably with "machine learning," but they are not the same thing. There are several categories of AI that are making strong progress at the moment: image recognition, augmented

reality, virtual reality, natural language processing (NLP), speech or sound recognition, conversational AI, natural language generation, voice generation, robotics, expert systems, predictive analytics, and so on.

You can think of machine learning as the math, algorithms, and models that make these systems work effectively. Traditionally software has been programmed using deterministic logic—a mesh of “if this, then that, else” type statements. The problem with this is that you have to program every piece of decision-making logic ahead of time. Instead, machine learning uses data to make decisions and can learn continuously as the data shifts. It is far more scalable and accurate, if you have sufficient training data.

At Moveworks we refer to ourselves as an AI company because to solve our use case, we had to combine multiple categories of AI—NLP, conversational AI, predictive analytics, expert systems, and so on. I think *AI* is the correct term to use in this scenario. Conversely, you’ll see companies that have implemented a single machine learning model into their technology claiming they are now “AI.” That’s good for marketing, but it’s an incorrect use of the term.

Having built an AI company from the ground up, my biggest observation is that AI is as much a cultural and philosophical shift as it is a technology shift. Andrew Ng famously described AI as “the new electricity,” and I like this analogy on many levels.

Prior to the introduction of the electric dynamo, which kickstarted the first Industrial Revolution, factories were powered by steam engines. The energy produced by a

single steam engine would rotate a giant axle that ran down the middle of a factory, and the individual machines would be connected to this axle by pulleys. All the machinery in the factory had to be physically located around this giant axle. And the axle was either on or off—you either powered the whole factory, or nothing. With all of these moving parts and steam engines powered by fossil fuels, factories were dangerous places to work.

When electricity entered the scene, most factories simply switched out their steam engine for an electric dynamo. Same giant axle, same pulleys, same machines, different energy source. The expected productivity gains were not realized. But over the next 20 years, factory owners started to build entirely different machines with individual power sources and mini-motors. This led to a complete redesign of factory floors, now untethered from the axle. This freedom led to the more efficient manufacturing processes pioneered by Henry Ford and then the Japanese Kaizen process. With more autonomy over their machines and work and cleaner, pollution-free work environments, the skills and salaries of factory workers increased.

Unlocking the true benefit of electricity required a huge cultural and philosophical shift in the way factories, machines, and processes were designed. This is important to remember.

We have witnessed a similar phenomenon with AI while building the Moveworks platform. Too many IT leaders are trying to wedge in some AI and machine learning to their existing processes and hoping that they will see huge

benefits. The real opportunity is to completely rethink the way you work.

Designing and running electricity-powered factories required a different set of skills to steam-powered factories. Similarly, building AI requires a very different talent pool to traditional technologies: ML modelers, ML platform engineers, data scientists, data evaluators, hardware (GPU) specialists, and others. These people are well educated, highly skilled, and in high demand. So it's best not to treat AI as a side project. You have to go all in and build the right team and culture.

For this reason, my advice to IT leaders is to be very clear on when it makes sense to work with a vendor versus building something yourself. The simplest framework I can give you for this is to think about the data for your use case. If you are the only company in the world that has access to the data, you have to build it yourself. But if your use case is common across many companies, then a vendor that can build a platform leveraging these multiple disparate data sets is going to build more accurate models than you could on your own.

For example, at Moveworks, we realized that IT teams across the world were all solving the same IT support problems for their employees. So we pioneered a technique called Collective Learning that leverages all the support issues across all our customers to train our models. For this reason, no individual IT support organization could ever build machine learning models as accurate as ours. We now have a significant data advantage over others.

So a critical skill you need to develop is understanding whether a vendor really knows what they are doing with AI. With traditional technology, you might focus more on evaluating features and functions. But with AI, you're trying to evaluate the team: how quickly they can take the latest research and productionize it; how efficient they are at retraining models when they drift; what is their approach to annotating and labeling data; how they leverage data across companies.

If you're going to build your own AI, then you need someone on your team who is an expert in machine learning-based systems: someone who can experiment with the latest models and get them into production; who can attract high performers from a scarce talent pool; who is equally adept at talking about code, math, and hardware.

As a final thought on AI, you have to remember that we are still in the very early stages of figuring out what's possible. New models, architectures, and hardware are being released all the time. For example, when we founded Moveworks in 2016, we were using word embeddings—an NLU technique that leverages deep learning to understand the semantic meaning of words. But then in 2017, Google released a paper describing a new sentence embedding technique that could determine the semantic meaning of an entire sentence. We incorporated this into our platform and saw 10 to 15 percent performance gains in some of our models. In 2018 the best practice architecture for embeddings shifted from Recurrent Neural Networks (RNNs) to a new Transformer architecture. And then in

2019, we saw the introduction of several new NLU models, such as BERT. We're now seeing performance gains of up to 25 percent with the introduction of BERT.

This is the life of an AI company. We are constantly reviewing the latest research and finding unique ways to implement it in production. It is both science and art.

Riding the AI wave is incredibly exciting, and I think collectively we are more aware of how to leverage new technology than our counterparts were during the first Industrial Revolution. We can learn from their mistakes. But the task for all of you is to push the boundaries of your own thinking. AI is going to upend many of your existing processes, for the better. Just be ready to embrace the change.

Notes

1. Louis Columbus, "IDC Top 10 Predictions for Worldwide IT, 2019," *Forbes*, November 4, 2018.
2. IDG, "2019 State of the CIO," January 17, 2019, <https://www.idg.com/tools-for-marketers/2019-state-of-the-cio/>
3. Deloitte Insights, *Tech Trends 2018: The Symphonic Enterprise*, 2017, https://www2.deloitte.com/content/dam/insights/us/articles/Tech-Trends-2018/4109_TechTrends-2018_FINAL.pdf
4. Wendy Pfeiffer, "The New CIO Mandate," *HMG Strategy*, February 19, 2019, <https://hmgstrategy.com/resource-center/articles/2019/02/19/the-new-cio-mandate>

5. Marc Andreessen, “The Pmarca Guide to Startups, Part 4: The Only Thing that Matters,” June 25, 2007, https://pmarchive.com/guide_to_startups_part4.html
6. Sheila B. Jordan, *You Are NOT Ruining Your Kids: A Positive Perspective on the Working Mother* (inCredible Messages Press, 2018).
7. Harvey Nash/KPMG CIO Survey 2018, “Special Report: MIT CISR,” <https://www.hnkpmgciosurvey.com/special-report-mit-cisr/>
8. Harvey Nash/KPMG CIO Survey 2018, “The Transformational CIO,” https://assets.kpmg/content/dam/kpmg/be/pdf/2018/07/CIO_Survey_2018_Harvey_Nash_report.pdf
9. Health Research Institute Spotlight, PwC, “The Pharmacy of the Future: Hub of Personalized Health,” May 2016, <https://www.pwc.com/us/en/industries/health-industries/library/pharmacy-of-the-future.html>