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## IT Leaders: *Don't Fear* **THE** *Future*



## IT Leaders: Look to the Future



**T**O PARAPHRASE William Gibson, creator of cyberpunk, the future is coming, but it won't be evenly distributed. For longtime *Computerworld* columnist Thornton May, the job of IT in any enterprise is to make sure that the eventual distribution favors that enterprise.

The future that is coming is certain to bring ever more technology doing ever more things in our workplaces and homes. Inevitably, IT will be called upon to harness that technology to help the business. For May, the inevitability of technical progression means that a key skill

### Editor's NOTE

for IT leaders is to anticipate what's coming and determine what will be worth incorporating into the business and what will be little more than a fad, with no potential for adding value to the enterprise.

In the seven columns in this package, written over the past 15 months, May offers some predictions, but more important, he explains that any IT leader who gives insufficient attention to the future is serving the business poorly — and probably won't last ♦

**JAMIE ECKLE**, contributing editor, opinions

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# Changing Roles Inside the C-Suite

To figure out the future of the CIO, pay attention to the changing roles of the CEO, the CMO and the CFO. **THORNTON MAY**

**W**E SPEND a whole lot of time in the IT world wondering about the future of the CIO role. It's a question of endless fascination, but we mustn't forget that CIOs are not the only C in the C-suite. And the fact is that the success of the CIO and the IT organization is very much a function of our relationship with those other executives. That means that if we want to get clues about the future of the CIO, it is incumbent upon us to be aware of the changing roles of the CEO, the CMO and the CFO.

No one is insulated from change. Two hundred years ago, the boss was the boss. The 1815 CEO was a "my-way-

or-the-highway" bully (think Andrew Jackson and Napoleon). Fifty years ago, the CEO archetype achieved corporate objectives by architecting incentives (think Secretary of Defense Robert McNamara and his very quantitative approach to managing the Vietnam War). Today, many view the role of the modern CEO as a designer-in-chief of corporate culture whose objective is to empower risk-savvy employees who are able to independently recognize problems and fix them.

I'm not saying that all CEOs have evolved in lockstep. Even today you can probably find more than a few self-important tyrants in corporate America. And to revert to the military example, World War II saw an early

flowering of the empowering CEO. According to Paul Johnson, author of *Eisenhower: A Life*, when Dwight Eisenhower reported to Gen. George Marshall at the War Department in December 1941, Marshall explained the role of a senior executive in this way:

*"Eisenhower, this Department is filled with able men who analyze their problems well but feel compelled to always bring them to me for the final solution. I must have assistants who will solve their own problems and tell me later what they have done."*

In direct opposition to McNamara's management-by-the-numbers approach, modern CEOs create environ-

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ments where employees can solve their own problems. They focus on inputs over outputs. Outputs are metrics like sales figures and market share. Inputs are ineffable things like creating an environment where employees feel both safe and motivated enough to fail when trying something new.

Peter Thiel, co-founder of PayPal, entrepreneur and hedge fund manager, had this to say in an [interview with Tyler Cowen](#), author of *Average is Over: Powering America Beyond the Age of the Great Stagnation*, when Cowen asked him to describe his concept of the leader of the future:

*"You want people who are both really stubborn and really open-minded. That's a little bit contradictory. You want people who are idiosyncratic and really different, but then who can work well together in teams."*

And the 2015 [Wolff Olins Leadership Report](#) offers this observation:

*"Leaders . . . are learning to be less the visionary, less the sage, less the objective-setter, and more the shaper, the connector, the questioner. And yet at times, they also need to intervene, to insist, to control. It's a fluid role, its shape not yet clear."*

Gary Loveman, former CEO of Caesar's, says the modern CEO's role is to ask tough questions:

*"Do we think or do we know? It is not my job to have all the answers, but it is my job to ask lots of penetrating, disturbing and occasionally almost offensive questions as part of the analytic process that leads to insight and refinement."*

## CMOs Confront The Customer

Because of the obvious importance of customers and the widespread embrace of top-of-the-house-initiated campaigns to become customer-centric, the CMO role is thought by many to be expanding. And in certain cases, it is. Andy Childs, CMO at Paychex, owns not only traditional marketing, but strategic planning and M&A activity as well. But the customer is now so important that other corporate officers are getting involved in the quest to nurture them — including the CIO. Meanwhile, there are indications that the status — the *executiveness* — of the CMO is declining. According to *The Wall Street Journal*, in a recent Korn Ferry survey, 34% of the respondents said they think their CMO could be a CEO candidate. But two years ago, 54% of the respondents said they thought their CMO was poised for the top job.

CMOs have always been in danger of self-limiting by focusing too narrowly on marketing and promotion. The danger of that is more acute than ever. Some career watchers say that today's CMOs must own the entire customer experience and represent the customer's perspective in corporate strategy. But in fact, [only 22% of CMOs focus on customer retention as a top priority](#), according to Forrester Research analyst Cliff Condon. If CMOs continue to underperform in this area, CIOs should be prepared to step into the breach.

## CFOs and the Power of No

Believe it not, the CFO role is relatively new. Fewer than 10% of the major companies in the U.S. had CFOs before 1978 — compared to 80% or more each year after 2000. At its inception,



the CFO job was straightforward: to ensure the integrity and control of financial information, to interface with capital markets, and to measure and report business results.

Today, the CFO has to be a catalyst for change, helping companies focus on the capabilities that drive value. "It's more of a leadership role," says Philip Rewcastle, CFO of the Consumer Lending Group at Wells Fargo, ["versus the support role it was 10 years ago."](#)

Some things don't change. Many think the CFO's most powerful weapon is the word "no." Here's an old joke told around Mahogany Row: How do you know the CFO is growing more tolerant? He lets Marketing present its entire budget before saying no.

That's not totally fair. Someone has to be in a position to say no to the many proposals of marginal benefit so that the few of real promise get the resources they need. But CFOs are evolving: They are empowering and educating others about the power of no, so that many people are able to ask the questions and provide the insights that lead to an understanding of when to say no and when to say yes.

As roles continue to change, so will the way CEOs, CMOs and CFOs interact and coexist with CIOs. You need to be paying attention. ♦

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Futurist **Thornton A. May** is a speaker, educator and adviser and the author of [The New Know: Innovation Powered by Analytics](#). You can visit his website at [thorntonamay.com](http://thorntonamay.com) and contact him at [thornton@thorntonamay.com](mailto:thornton@thorntonamay.com).

## Evolution of the CIO: The Real Story

CIOs were always meant to be strategists, but the position is changing in interesting ways. Here are three new roles that CIOs are beginning to take on. **THORNTON MAY**

**T**HE CONVERSATIONS swirling today about the evolving role of the CIO typically start from a flawed historical premise. Many contemporary writers and analysts simply don't understand what a CIO was meant to be when the role was first created in the early 1980s.

Prior to that time, the practice of IT in large enterprises was a hodgepodge of tactical projects primarily aimed at automating back-room processes. The term "chief information officer" was

coined in 1981 by William Synnott, vice president of data processing at the Bank of Boston, who argued that IT was strategic, not just a vehicle for reducing costs, and should be examined and deployed from an enterprise perspective. Before then, there were no executives anywhere responsible for refocusing IT on strategic enterprise initiatives. The CIO role was created to fill that void.

Thus, when you hear people argue today that the CIO has evolved

from a micro-focused, cost-obsessed machine-tender to industry-disrupting strategist, understand that they are flat-out wrong. CIOs were always meant to be strategists. Yes, there are executives bearing the title CIO who are tactical, departmental, shortsighted and ineffective. They are not real CIOs.

None of which is to say that the role of real CIOs isn't evolving. It is, and I recently completed a multi-continent research study to find out the ways in which it is evolving. Here are three new roles CIOs are undertaking.





## Conversation Architect

Real CIOs have always *participated* in enterprise strategic conversations. That's what CIO [Max Hopper](#) was doing when the SABRE reservation system was created at American Airlines.

What's new is the CIO *shaping* the strategic conversation. This now seems inevitable in a world gone digital, where every enterprise is in the Internet-connected device business. Someone needs to create a framework for information to be shared and decisions to be made. Someone needs to establish some guardrails to ensure that civil and constructive discourse happens. That someone could, and probably should, be the CIO.

The shaper of the strategic conversation needs to keep the discussion from resembling any of the debates held among the presidential candidates this year, where there has been a lot of arm-waving and little real discourse. The CIO can do this by focusing on three basic elements: priorities (we will focus resources on these things), sequencing (we will do this first, then that) and the theory of victory (we will succeed for the following reasons).

## Digital Scorekeeper

Every organization, whether aware of it or not, is on a digital journey. But journeys are fraught with danger when you have no map and no navigator. Once again, enter the CIO.

What is unusual about the road to the digital enterprise is that it leads to the customer, and historically CIOs' contact with customers has been tangential at best. To achieve the digital enterprise, the CIO, working with marketing, has to put in place sensors that give voice to the customer point

Every organization, whether aware of it or not, is on a digital journey.

of view. Success has always hinged on what customers need versus what you have to sell. What has changed is that digital input can now flood in to tell you what it is that customers need. It is only natural for the CIO to play a major role capturing, filtering and funneling this data representing the voice of the customer.

## Microcredential Archivist

One piece of the workplace transformation now under way has been little remarked upon but is critically important. It is how people communicate what they can do. This has long been done with résumés that list professional or educational credentials in the form of diplomas and certifications.

This is being supplanted by micro-credentials. A microcredential, also known as a "badge," is any kind of credential that focuses on a specific skill or capability. The knowledge represented by a microcredential is much narrower than that represented by a degree or a full-blown certification.

Currently, most organizations are not set up to manage microcredentials. But in the future, the CIO, working with HR, will play a major role in conceptualizing and deploying microcredentialing systems.

These are just a few of the new roles real CIOs will be playing in the next few years. I will talk about some others in the future. ♦



IT Leaders:

# Don't Fear the Future

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## Tech's Holy Grail: IT Can't Afford to Choose Poorly

When we're surrounded by  
'next big things,' how does  
IT decide what to choose and  
what to do with that choice?

**THORNTON MAY**

**T**HERE'S A memorable line in the penultimate scene of the 1989 film *Indiana Jones and the Last Crusade*. The evil antagonist has just met his comeuppance after drinking from what he hoped was the immortality-granting Holy Grail. Says the Grail's ancient guardian: "He chose poorly." It is up to the hero, Indiana Jones, to choose wisely.

IT executives today need to choose wisely from a rapidly expanding array of investment opportunities that have the potential to be game-changers or merely to distract, or even to destroy,

value. But research I have been involved in at the Value Studio program, at the College of Engineering at Ohio State University and at the Executive Leadership Council of AIIM indicates that the mechanisms whereby most organizations create and evaluate their opportunity set are broken. When it comes to making technology bets moving forward, another famous line from

another Steven Spielberg blockbuster comes to mind: “You’re gonna need a bigger boat.”

## Change Has Changed

Do any of you believe that the next 10 years of technical innovation are going to be less interesting than the last 10 years were? They will be *at least* as interesting. You are an IT professional in an extraordinary time. At a recent Value Studio session, one of the attending “Value Artists” commented that for the first time in at least 10 years, CIOs are being asked to do unstructured problem-solving. IT is no longer just about “fixing something,” “deploying something” or “optimizing something.” IT is being asked to envision and create the future.

The question, then, is, “What tools will IT use to do that?”

In a way, the answer is obvious. It’s the same thing that Steve Jobs cited way back in 1997, when he had just returned as CEO of Apple. In an interview with Richard Rumelt, author of *Good Strategy/Bad Strategy: The Difference and Why It Matters*, Jobs responded to the question “What is your long-term strategy?” by saying, “I am going to wait for the next big thing.”

It wasn’t a flippant answer. Back then, technology market leaders were companies that, upon identifying an inflection point, were able to jump in full force and with full focus. Two decades ago, “next big things” came along at a leisurely pace. Today, they surround us.

Need proof? Check out the #NextBigThing hashtag on Twitter. Or type “next big thing” into your favorite search engine. Every facet of personal and commercial existence has a “next big thing” — actually, multiple “next

The point is that everyone needs to be recognized as a potential source of the next big thing for the enterprise.

big things,” eroding the stability of the status quo. I have [previously lamented](#) the sad state of technology adoption in large, complex enterprises today.

## Collecting Ideas

If we’re surrounded by next big things, it’s important to be open to every possible source of innovation. Much of the literature describing innovation celebrates ideation, the process of gathering new ideas from as broad a population as possible. Innovation used to be handled in hidden nooks and crannies of the company. This type of “in a bubble” innovation is no longer practical, scalable or effective. Today, most agree that everyone in the enterprise is a potential source of new ideas. Progressive companies allow any employee to come forward with an idea.

Toyota introduced its Creative Ideas Suggestive System in 1951. Since then, it has collected more than 40 million ideas from employees at all levels of the organization. [Shell](#), has invested more than \$250 million in over 3,000 ideas since it launched an initiative called the Game Changer Program.

Collaborative technologies make collecting and submitting ideas easy. Front-line employees are perfectly situated to notice ways to improve customer experience; operators at call centers can spot patterns of defects,

and janitors are rich with ideas about how to cut costs on wasted supplies.

The point is that everyone needs to be recognized as a potential source of the next big thing for the enterprise, and the organization has to ensure that all of its employees perceive themselves that way. And I do mean *everyone*. The enterprise that overlooks the opinions of women, minorities and its most mature employees is in danger of missing the next big thing. If you think the only worthwhile ideas come from 24-year-olds with blue eyes and a Y chromosome, you’re going to miss out.

But wherever the ideas come from, the most important thing of all in innovation may be how you think about those ideas. Yes, you need them to move forward, but coming up with a lot of good ideas is not the key to good innovation. This bit of blasphemy is being espoused by an emerging band of innovation scholars, foremost among them Michael Schrage, author of *The Innovator’s Hypothesis: How Cheap Experiments Are Worth More Than Good Ideas*. Those who would create value need to move beyond the shackles of traditional engineering and marketing groupthink — believing that innovation means creating more choices — and recognize that innovation is not what you offer customers, “it is what your customers adopt.” ♦





# Future Fetish

Long-term planning involves much more than compiling a list of cool new things. **THORNTON MAY**

**I**F WE'RE ASKED to think about the future, most of us turn our minds toward technology. This isn't wrong. Technology — and information technology in particular — will be a big part of the future. As Maria Klawe, president of Harvey Mudd College, [has said](#), "Every single problem that faces society today, whether we're talking about healthcare, poverty or education, is going to involve computing tech as part of the solution."

But technology isn't the whole story

about the future. The *things* that will populate the future are fetish objects devoid of real meaning unless we consider the *people* whose behaviors, opportunities and beliefs will be affected by that coming technology. Without that human element, there is no future worth thinking about. After all, what sets humans apart from every other creature on the planet is our ability to envision laboring, living, loving, learning and leisuring in a different temporal space — the future.

Planning ahead is a defining char-

acteristic of the human condition. My former boss, futurist Alvin Toffler, in his introduction to *the Encyclopedia of the Future*, hypothesized that "every human carries inside her or his skull a set of assumptions about what does not yet exist." Eco-futurists David Rejeski and Robert L. Olson [argue](#) that "What's next?" is "the great implicit assumption of human conversation." This may be part of our hard wiring. Neurophysiologist William Calvin (*A Brief History of the Mind: From Apes to Intellect and Beyond*)

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**The real future, the one that will actually happen,** will be more impacted by what we believe and how we behave (the two are linked) than by the devices we purchase.

argues persuasively that modern human cognition, including the capacity to plan ahead, had its origins in our ability to target a moving animal with a thrown rock. This basic survival skill — seeing where things are going — has evolved into a capability for foresight and long-term planning.

## The Path Forward

Long-term planning involves much more than compiling a list of cool new things. What's needed is not a catalog of things we will buy in the future but a description of who we will be and how we will live. This is why what tends to emerge from the allegedly future-focused [Consumer Electronics Show](#) is not a cogent articulation of next-ness but a tragically trivial list of gadgets. The real future, the one that will actually happen, will be more impacted by what we believe and how we behave (the two are linked) than by the devices we purchase.

Futuring requires crafting a narrative that depicts the intersection of technology with humans. It's not enough just to imagine a car; one must also envision the traffic jam —

the implications of a technology being adopted at scale.

This means that, when you think about where personal transportation is headed, it isn't enough to imagine the inevitable arrival of [autonomous vehicles](#). You have to wrap your mind around what the massive adoption of self-driving automobiles would really mean. If future reality includes millions of self-driving cars, how will that change us? Will fewer of us own cars? Will homes cease to have garages? Will the massive auto aftermarket disappear? Will the “abandoner” cohort — the opposite of early adopters — be especially large, with hundreds of millions of people refusing to let their cars do the driving for them? Or will people who are devoted to driving have to pursue that as a hobby they can engage in only in theme parks?

## Where to Begin

Before painting a picture of things to come, some futurists believe, the best first step is to complete a brutally honest assessment of the situation as it stands today. For a corporation, this

involves mapping the industry and the markets currently served. What do your customers think about you, your products and services, and your competitors? What do you think about those things? What do your customers *know* about you, your products and services, and your competitors? And finally, what do your customers think about the future — where are they headed?

Those sorts of questions can also be helpful for executives trying to revitalize an internal function, be it IT, marketing, product development or the project management office.

In a recent “futures” session, [we asked a group of project managers](#) how much senior executives knew about project management. The rather scary assessment was that senior executives “knew” only 5% to 15% of what they needed to know. That enormous gap between what is actually known and what ought to be known should tell the project managers quite a bit about what's going on right now and what needs to happen in the future — and technology has nothing to do with it. ♦



# A Few Technology Predictions

**I** AM TOLD that Midwesterners have what they call “patio season.” This is a lovely though brief period that arrives pre-football, pre-fall and pre-school.

I think we are in technology’s patio season; we are definitely pre-something. From the perspective of 30 years out, we are pre-singularity — that moment when machine intelligence will exceed human intelligence and control. Tightening our predictive lens and looking just three years out, most organizations now find themselves in what I call the “Pre-DD Interregnum.” “DD” stands for “digital delivered,” and it refers to that moment in time when *all* the technology around us actually works and/or is recognized as not

working. In other words, IT — all IT, both enterprise and consumer — has three years to get its act together.

IT has its work cut out for it. Listen carefully and you will pick up a general grumble of dissatisfaction with the overall experience of using technology. Don’t let hyperbolic CES press releases, a constant stream of CIO awards programs and impressive technology IPOs and startup valuations lull you into thinking otherwise.

**We’re three years away from big changes in the world of technology and IT. Here are some thoughts on what will happen before then.**

**THORNTON MAY**

Consumers and boards of directors expect their technology to work, to interoperate securely, and to make their lives and/or bottom lines better. They are inevitably disappointed as they run smack-dab into the paradox of the computer (as pointed out by futurist Alvin Toffler and others): A machine designed for dealing with complexity has in fact added a whole new layer of complexity.

Patience is running thin, though. During the next three years, boards of directors are going to demand significantly more transparency in the area of IT performance. They are going to want to know what they are spending on technology and what they are getting back from those investments.



Those demands will have effects. I forecast that by 2018:

■ **A next-generation** measurement company will develop a metric that assesses the health and value-creating capability of an organization's IT organization. Heads will roll, with unprecedented numbers of CIOs being sacked.

■ **The stock price multiple** of publicly traded companies will be directly linked to the capabilities of their IT organizations.

One of the most significant effects of greater IT transparency will be changes in IT investments. Business school professors talk about the "[Three Horizons](#)" model of investment. Horizon 1 investments, looking out as much as 18 months, are concerned with the now, and seek to extend and defend existing businesses. Horizon 2 investments, which look out to that time period that is 19 to 36 months away, are centered on what's next and seek to build emerging businesses. Horizon 3 investments, covering the period running 27 to 72 months from the present, are interested in what comes later and are used to fund experiments and pilot programs designed to create viable options.

Historically, the vast majority of IT funding has been allocated to Horizon 1 initiatives. What ever remains tends to be invested in Horizon 3 proof-of-concept pilots. Totally starved of attention is the critical Horizon 2 activity of "building new revenue streams." I forecast that by 2018, creating new digital businesses will be IT's new high ground.

For that to happen, some-

I forecast that in the next three years companies will begin considering how to augment knowledge workers rather than automating them — moving from AI (artificial intelligence) to IA (intelligent augmentation).

thing will have to give. I envision a boom time for IT service firms in the "modernization" business. They will be increasingly called upon to aggressively and professionally manage Horizon 1 IT operations. That in turn should free up IT executive "head space" to focus on the important but forgotten task of building new digital businesses.

## Tech Feudalism

Consumers' demands will also result in seismic shifts. I foresee a move toward technological feudalism, inculcated by the frustration of trying to get various technology piece-parts to interoperate. Consumers will conceptually, emotionally and socially align themselves with one tech feudal lord and begin the process of going all-in on one of the major platforms. It won't be features and functions that determine who wins the hearts, minds and wallets of mainstream consumers; it will be the post-purchase customer experience. Apple has a big lead here. Everyone else — Microsoft, Google, Samsung, Amazon, Facebook — has to play catch-up. Some people may give up on technology entirely — only a few, but I do expect a surge in the number of Luddites among us, if you give the term a stricter definition than "technophobia." Ned Ludd was, over 200 years ago, the symbolic champion of human work vs. machine work, concerned that machines were stealing textile jobs. The roots of his violence against

labor-saving machinery are captured in this poem:

*They said Ned Ludd was an idiot boy /  
That all he could do was wreck and  
destroy, and / He turned to his work-  
mates and said: "Death to Machines /  
They tread on our future and they stamp  
on our dreams."*

Automation — substituting machines for human labor — was a driving force during the Industrial Age. In the 20th century, as computers became more powerful and more affordable, more and more tasks became automatable. That process has not stopped. Carl Benedikt Frey and Michael A. Osborne of Oxford University [opine](#) that up to 66% of the U.S. workforce has a medium to high risk of being displaced by technology in the next 10 to 20 years. Computers aren't just eliminating low-skill manual labor these days; they're also moving up-market into knowledge work.

A factor mitigating humanity's understandable antagonism toward livelihood-threatening automation is the emerging phenomenon of augmentation. In this mode of operation, machines do not diminish and/or eliminate us — they *augment* us. They make us better.

I forecast that in the next three years companies will begin considering how to augment knowledge workers rather than automating them — moving from AI (artificial intelligence) to IA (intelligent augmentation). ♦

IT Leaders:

# Don't Fear the Future

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An enterprise in today's world can't know where it's going without a technology map. IT needs to do that mapping and stop being invisible.

THORNTON MAY

## IT Must Map Its Way To Visibility

**WE TECHNOLOGISTS NEED TO LEAD.** Within the enterprise, we need to be perceived as leaders. We need to articulate the value we bring to the table. This is necessary because we in IT can be hard to see, to the point of being invisible. It has long been thus, and our invisibility has even been valued as a feature, not a bug.

In the classic Otisline Harvard Business School case study, way back in 1986, it was stated that "the purpose of IT (like an elevator) is to go unnoticed." This assessment was proffered even though the innovative and differentiated application of technology was acknowledged as *the* source of competitive differentiation.

Since then, the existential attacks have continued. Who can forget the frenzy Nicholas Carr precipitated when he proclaimed that IT doesn't matter? And quite recently, Bill Janeway, a venture capitalist, economist and author of *Doing Capitalism in the Innovation Economy: Markets, Speculation and the State*, [stated](#) that

“from the point of view of the user, IT is probably in the process of disappearing.” Maybe we should take comfort that his word “disappearing” suggests that we were at least somewhat visible until now.

Janeway has a Ph.D. in economics from the University of Cambridge. He does not make his living saying highly provocative things that generate speaking fees. When someone who thinks as deeply as he does questions why IT exists, the IT community needs to take action.

One action that I advocate for IT leaders is to create the technology maps that their enterprises will need to negotiate today's marketplace. Modern executives should never be surprised by technology. They might be disappointed by technology. Frequently they should be ashamed at their ham-handed, small-minded attitudes toward the adoption and deployment of technology. Some should be flogged publicly for their bordering-on-malefeasance inability to make money with the technology cornucopia that defines modern existence. But they should never be surprised by technology. Technology futures are knowable. Technology futures and possible technology opportunities need to be mapped.

Executives who are surprised by technology will lose their way, if not the entire company. Martha Stewart was recently [taken to task on National Public Radio](#) for essentially losing her way in a digital world. The empirical evidence is unambiguous. As NPR put it: “At its height, Martha Stewart Living Omnimedia was worth \$2 billion. Her company is being sold to Sequential Brands Group for \$353 million.” I believe that such a steep decline in market value for the woman

who essentially invented lifestyle branding is at root the result of having a bad technology road map (or perhaps no technology road map at all).

Making a technology map involves articulating in a compelling manner what technology can do for the enterprise, what the enterprise can do with technology, and how IT can deliver measurable impact. The strategic questions become, Where is your technology map, who and via what process was it constructed, and how good is it?

In *A History of the World in Twelve Maps*, Jerry Brotton reminds us that “the urge to map is a basic, engaging human instinct.” We map to make sense of the world and define our place in it. But maps were once rare. “In the ancient world even short distance travel was a rare and difficult activity generally undertaken with great reluctance and fear,” writes Brotton. Maps were not terribly important because most people really weren't going anywhere. I needn't say that you don't want that said about your enterprise.

Nonetheless, efficacious technology map-making is a surprisingly rare competence in modern organizations. Only 40% of the Global 2000 organizations I surveyed were able to produce compelling one-to-two-page visual representations of where they were going, what they were doing and the benefits they anticipated harvesting via technology investments.

It's important to realize that when

you undertake mapping your enterprise's technology world, a single map won't do. Besides mapping where your company is going, you have to map your competitors. A technology map that might have helped Stewart preserve and create value would also show what competitors like Etsy, Gilt Group and Gwyneth Paltrow's website Goop were doing with technology.

So map, and be seen. Because IT and the technology it wields cannot remain invisible in a world where a mouse click and a credit card transaction can initiate high-performance computing and advanced analytics performed on exabyte-scale data sets. ♦







IT Leaders:

# Don't Fear the Future

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## 5 Questions You Should Be Asking About the Future

Things IT leaders need to be thinking about to prepare for what's coming.

**THORNTON MAY**

**I HAVE RECENTLY** been sounding ahead-of-the-curve executives about the questions we should be asking about the future. Here are five of particular importance.

### Do you understand that it's the transition, not the trajectory?

As someone who studies the history of the future (that is, how organizations have historically tried to prepare themselves for what comes after what comes next), I have learned that it is critically important to differentiate between technology trajectory stories and technology transition realities.

# IT Leaders: Don't Fear the Future

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[Moore's Law](#) and Ray Kurzweil's [Law of Accelerating Returns](#) are trajectory stories. Nokia's essential disappearance from the commercial landscape is a transition story.

Nokia was a 60% market-share leader in a highly tech-intensive business: the consumer phone industry. That industry was characterized by high fixed costs and high returns to scale, and it was highly regulated, fully global and complex. And yet in less than five years, a competitor with no phone experience came to dominate the global market. Nokia, it is safe to assume, did not ask the right questions about the future. Its leaders understood technology trajectories but seemed to miss the point of technology transition.

### What should you learn from Google Glass?

During the frenzied dot-com era, strategists and planners were told that we had entered a "new normal," where none of the old rules applied. It turns out that some patterns persist. One such persistent pattern is the adoption cycle associated with technology products. Historically, most tech innovations first see the light of day in vertical market applications (for example, video recording devices were prototyped and refined in professional markets before VCRs became available to the public). [Google Glass](#) was targeted at consumers at a price — about \$1,500 — more appropriate for professional markets. As longtime Silicon Valley watcher Tim Bajarin points out, "While Google was playing with Glass, Apple brought out the ideal extension of your smartphone in the form of a watch." One of the questions to ask about the future is what *not* to do when creating a product for the consumer market.

We live in a world of selfies. Will we live in a future of rational self-awareness?

### What job are we hiring Products & Services to do?

The general consensus is that about 95% of new products fail. Harvard Business School professor Clayton Christensen believes this failure rate can be significantly improved upon if product and service development teams start to look at a product as a way to get a job done. "We actually hire products to do things for us," he says, and suggests migrating away from "segment-the-market" questions and toward "jobs-to-be-done" questions.

"The fact that you're 18 to 35 years old with a college degree does not cause you to buy a product," Christensen says. "It may be correlated with the decision, but it doesn't *cause* it. We developed this idea because we wanted to understand what causes us to buy a product, not what's correlated with it. We realized that the causal mechanism behind a purchase is, 'Oh, I've got a job to be done.' And it turns out that it's really effective in allowing a company to build products that people want to buy." (See an illuminating discussion of what we really hire milkshakes to do for us [here](#).)

Coming back to the Google Glass teachable moment, one wonders what

job consumers are hiring this product for — delivering hands-free information from a smartphone?

### Is your dream big enough?

We live in a world of selfies. Will we live in a future of rational self-awareness? Identity management — not the security-related establishment and maintenance of network access, but the existential psychological exercise of determining who we are — will be a real-time exercise in the future. Self-perceptions can be limiting.

Danuta Hübner, Poland's minister for European affairs, was concerned about her country's self-perception. "We keep seeing ourselves as a small country. In fact, Poland is a big country. We should have the responsibilities that come with being a big country." How do organizations perceive themselves and their futures? Is Uber merely a software-enabled replacement for the local taxi monopoly, or is it a logistics software company?

### Will we have the skills we need?

[According to the Bureau of Labor Statistics](#), by 2020, there will be 1.4 million computing jobs and only 400,000 computer science students to fill those roles. [According to McKinsey](#), in the United States alone there is a shortage of 140,000 to 190,000 people with analytical expertise and 1.5 million managers and analysts with the skills to understand and make decisions based on the analysis of big data. Should enterprises create "corporate universities" to guarantee a pipeline of appropriate skills?

These are just five of at least 20 questions that organizations need to be asking themselves about the future. ♦