

THE
**WORK
AHEAD**

Europe's Digital Imperative

By Euan Davis

The Center for the Future of Work

The Work Ahead is a research series providing insight and guidance on how businesses - and jobs - will evolve in the digital economy.

In this instalment, we compare and contrast the digital viewpoints of European businesses; identify ways in which new digital technologies will enable workplace (and work process) innovation; and analyse the magnitude of the impact that emerging digital technologies will have on the region's future economic performance.

THE WORK AHEAD IN EUROPE

Despite bold quantitative easing and record-low interest rates, anemic demand continues to hobble gross domestic product (GDP) growth throughout the European Union. In several EU countries, more than a quarter of the population has been unemployed for close to a decade, and political discontent is on the rise.¹ Europe needs a new North Star - a goal around which country, corporations and citizens can coalesce to reignite the growth that will propel Europe into the middle of the 21st century.

By harnessing the power of digital, European businesses can create a foundation for meeting that goal, that new North Star. Injecting “digital” into every aspect of work, life, culture and society can force an uptick in employment and productivity, while building greater social cohesion across the continent.

The digital technologies emerging now are not simply the latest offerings from the whiz kids over in Silicon Valley; they are the seeds of an entirely new economy - a digital economy - that will erupt into a changed landscape of innovation. This new economy - powered by platforms, data, algorithms, “bots” and connected “things” - introduces the possibility of generating massive amounts of cash from ideas that represent the future. Digital is the opportunity in front of Europe today and will

be so for decades to come. Europe’s business and political leaders must seize this once-in-a-generation opportunity to re-engineer and revitalise Europe’s role in an increasingly hyper-connected global marketplace. This is the digital imperative.

If Europe succeeds with this imperative, it will marry its historical strengths - culture, education, ingenuity - with the mores of the digital world to create a “hybrid economy,” enabling it to re-assert its rightful place in the world. If it fails, Europe will fall further adrift from the entrepreneurial power of the U.S. and be eclipsed by the rising economies of Asia Pacific.

The stakes could not - literally - be higher.

To understand the changing nature of work, the changing nature of commerce and the changing characteristics of what constitutes success in this new world, Cognizant’s Center for the Future of Work - in conjunction with the renowned economist Nouriel Roubini - surveyed top executives at leading companies around the world to gain insights into how the future of work is coming to life. This report - the latest installment in The Work Ahead series - focuses exclusively on the responses from European respondents. (See Methodology on page 23).



Five Key Themes

Major findings revealed by our research include:

01

The impact of new technologies applied to all aspects of business and society – what we’re now calling digital – is so large that there is no way to escape its gravitational pull. The executives surveyed in Europe understand this explicitly.

02

Making meaning from data and algorithms will dominate the next economic cycle. New fortunes will be built, and others will recede, based on the evolution in how we use the new “machine tools” – machine learning, artificial intelligence and smart networks – to create value.

03

Building a platform unlocks digital revenue. Platforms gather and synthesise data and prescribe a more fluid approach to product and service experimentation that can catalyse stodgy cycles of innovation.

04

Business leaders who don’t use technology to lower costs, automate aggressively or glean insights from the data generated by business processes will find the digital switch jammed in the off position.

05

Strong, confident leadership is required. Finding the money, talent and grit needed to navigate the shift to digital is the key to European companies seeking to secure their digital futures.

THE DIGITAL MESSAGE RECEIVED LOUD AND CLEAR

Unlocking the Value of Code

Europe is under pressure. Squeezed between a smart-based U.S. economy, and a fast-growing China that is rapidly expanding its research and development capabilities, Europe needs a plan. The impact of new technologies on all aspects of business and society - what we are now calling digital - is so large that the economic windfall could power the region for decades to come.

New technologies are now emerging in rapid-fire - virtual reality, drones, 3-D printing, blockchain to name a few - and are landing thick and fast. Never has our technological future seemed this close. At their root, these technologies enable the "new:" New business models, revenue streams, types of customer relationships and cost structures are coalescing to radically change the nature of work.

As Figure 1 shows, the many executives we surveyed in Europe “get” the fact that something big is going on.

Business leaders recognise that value is found in the virtual: Scanning a barcode at a cash register generates a rich stream of data for retailers about their customers and what they might like to buy next. In the U.S., Oscar, an insurance start-up that pumps health data from the fitness bands issued to its customers alongside their policies, is gaining stature, and a growing legion of customers

The Digital Force Multiplier on Work in Europe

The power behind the region’s future economic performance is data.

Respondents were asked to rate the impact of the following forces on work by 2020. (percent of respondents who answered “moderate” or “strong”)



Figure 1 Source: Cognizant Center for the Future of Work, 2016

appreciate the discount offered for physical fitness. How long before Europeans demand a similar service? Even the rapid rotations made by a jet engine as it flies through the air means Rolls-Royce can radically change its business model by selling aircraft thrust by the hour instead of requiring customers to make a huge upfront capital expenditure.² The power behind Europe’s economic performance will be data, algorithms and the science of meaning-making.³

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The Work Ahead study reveals that business analytics and the science of meaning-making are set to dominate Europe’s economic cycle for the next 30 to 50 years and beyond. Media headlines today fixate on Industry 4.0 in Germany, or the thriving fin-tech scene in Madrid, but what truly counts in this new digital world is the ability of an organisation to marshal data through its value chain to drive innovation and efficiency.

Whilst the importance of analytics may not be a great surprise - given the ongoing tsunami of press attention around big data - what is more surprising, and genuinely eye-catching, is that artificial intelligence (AI) ranks almost as important (98%) as big data analytics (99%) for our respondents. Given the massive amount of hype and buzz that has surrounded AI since its emergence in the late 1950s, it comes as no surprise that executives have placed this leading-edge technology high on their agendas.

Respondents clearly believe that AI is more than hype and is, in fact, a cornerstone of the work ahead. The message is getting through that intelligence is growing in the things that surround us all - from the cars we drive to the loans we need to buy them. Look down at your tablet or smartphone to see this very human-like AI in action. Banks and financial services firms increasingly deliver automated wealth management advice to customer devices in real time and in small doses; this type of “nudge” can change behaviours much more effectively than limited, in-person sessions and at much lower cost.

Of course, headwinds could slow things down. Data security and privacy are red-hot panic buttons on both sides of the Atlantic, and the new EU data protection legislation being put in place allowing individuals to “be forgotten” and have sovereignty over their data, is an understandable (and needed) step in the evolution of data-based economies. However, over-regulation (a fear among many) could set the region back if the regulation is misguided or mishandled.

Another issue respondents name as an inhibitor to their digital ambitions is the looming shortage of digital talent across the region. Three-quarters of our survey respondents worry about there being enough people in the workforce with the right skill sets for 2020 as the shift to digital accelerates. This fact tallies with our previous research report [“People – Not Just Machines - Will Power Digital Innovation,”](#) in which a majority of executives cited a severe digital skills gap.



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THE ECONOMICS OF DIGITS

The 2,000 companies from across the globe that participated in our study had combined total revenue of about \$7.3 trillion in 2015. The 800 European organisations represented 50% of the worldwide total, or \$3.63 trillion (€4.24 trillion). European businesses clearly see value from the digital tide now swelling: New technologies are pouring into work, impacting revenue and cost (Figure 2).

Approximately 5% of respondent organisations' revenue was driven by digital tools and technologies in 2015 - so too was an increase in costs. The net effect - the difference between spending and return on digital - was 4.6%. While that percentage may sound small, it translates into roughly \$150 billion worth of value for European companies - a figure that represents nearly three years of total spending by the EU on its rancorous Common Agricultural Policy.⁴



Digital for Dollars, Euros and Pounds

Senior executives at over 800 companies project that the overall net impact of digital technologies will triple in three years in Europe, in terms of revenue and cost.

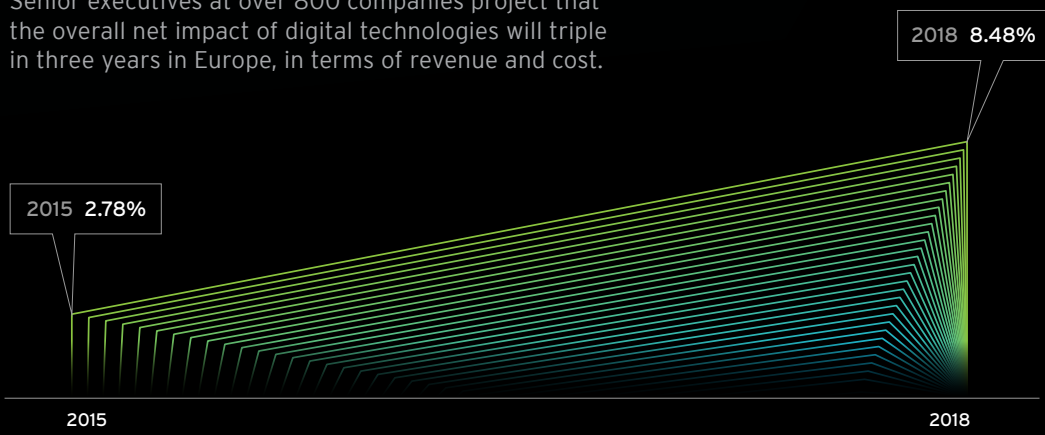


Figure 2 Source: Cognizant Center for the Future of Work, 2016



Business leaders also feel strongly that their companies are leaving money - lots of it - on the table. By 2018, leaders in the region could unlock an additional \$578 billion in revenue if they applied digital technologies uniformly across all of their processes. We'll deal with the cost impact of going digital later, but the full size of the revenue opportunity has come into focus. European executives across industries expect the total potential revenue impact of digital technologies to grow the pie an average of 8.4% over the next two years (see Figure 3).

Digital Investments Drive Up the Revenue Line

At a company level, digital will increase revenues on average 8.4% by 2018, which means digital will touch every aspect of the company's strategy and operations.

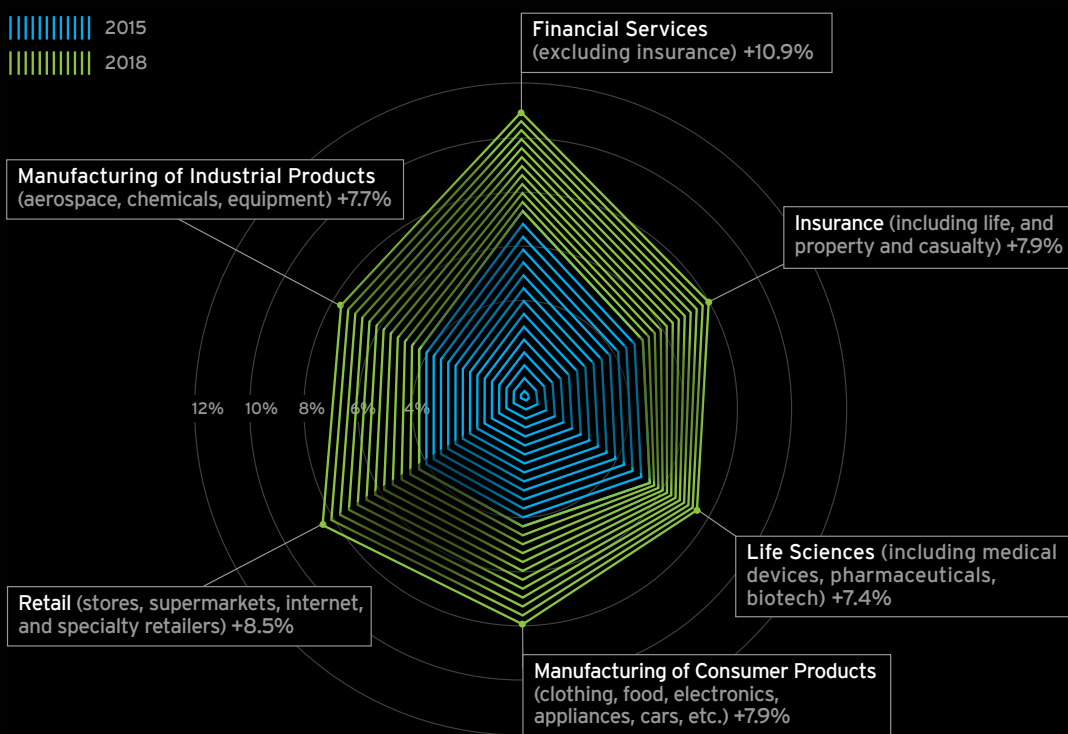


Figure 3 Source: Cognizant Center for the Future of Work, 2016

Economists from Roubini ThoughtLab (a leading independent macroeconomic research firm founded by Nouriel Roubini), extrapolated our study results from the industries surveyed - retail, banking, insurance (life, property and casualty), manufacturing and life sciences, which collectively represent 40% of the world's GDP - to the entire economy. The analysis revealed that within Europe, the impact of digital transformation not just on revenue but also on costs saved by our surveyed industries could total \$930 million in value by 2018 (see Figure 4). If extrapolated across all European organisations, the total would be \$10 trillion.

The Expanding Value of Digital in Europe

The industries surveyed could capture \$930 million of value through digital by 2018 in Europe. That represents on average 26% of current revenue.

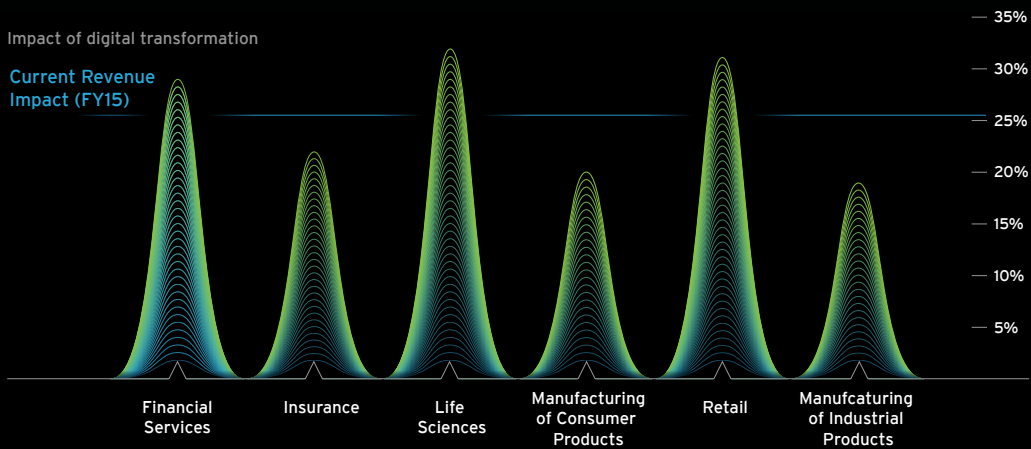


Figure 4 Source: Cognizant Center for the Future of Work, 2016

Some businesses in Europe are doing better than others in their digital transition. Being worse than your peer group, however, comes with a high economic price. Companies behind the curve are paying a large annual “laggard penalty” – the difference in both cost and revenue performance due to technology.⁵ And over time, it’s enough to change the company. (See page 23 for information on how we defined and identified leaders and laggards.) Significant differences in laggard penalties exist across industries (see Figure 5). In financial services, for instance, digital laggards, on average today, have a total economic impact of about 1.6% of all costs and revenue, while leaders have an impact of about 7%.

Europe’s Laggard Penalty by 2018

The penalty will vary widely by industry, but between 2015 and 2018, digital transformation laggards in each industry will forfeit a massive amount of value

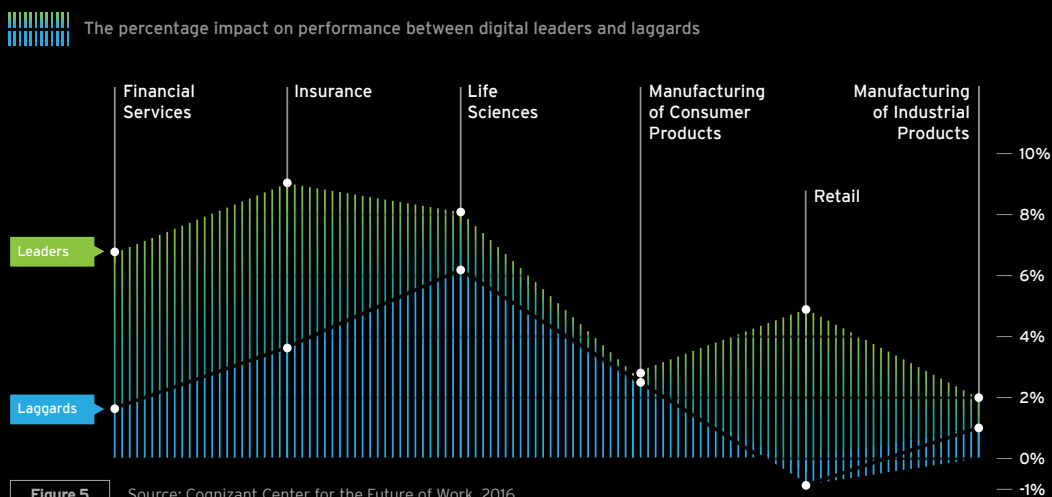


Figure 5 Source: Cognizant Center for the Future of Work, 2016

In the last financial year, the laggard penalty reached roughly \$165 billion across the 800 companies we studied. That’s bad enough, but it grows like a weed over time. Over the next two years, that laggard penalty for the studied companies will add up to a massive \$808 billion.

START FINDING THE CASH TO FUEL YOUR DIGITAL JOURNEY

Clearly, digital means business - certainly, on the revenue side. On the cost side of the ledger, European executives across industries say digital is costing their companies around 2.4% of revenue. Decision-makers are investing in digital in hopes of growing revenue and, in just a few cases, cutting costs down the road. Between now and 2018, the cost picture flattens.

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There's a wide degree of variability across industries in Europe, but in aggregate, costs are expected to remain flat through 2018 and increase by only 1.3%, globally. This apparent rounding error on the cost impact of digital is one of the most important findings of the study because it points to a widely overlooked opportunity: The productivity drivers from software-as-a-service, process automation toolsets or blockchain have the potential to create significant savings (see Figure 6). These savings will act as additional fuel that powers digital investments.

The Cost Impact of Digital Across the Front, Middle and Back Office

Life sciences and retail will achieve the largest cost reductions by 2018.

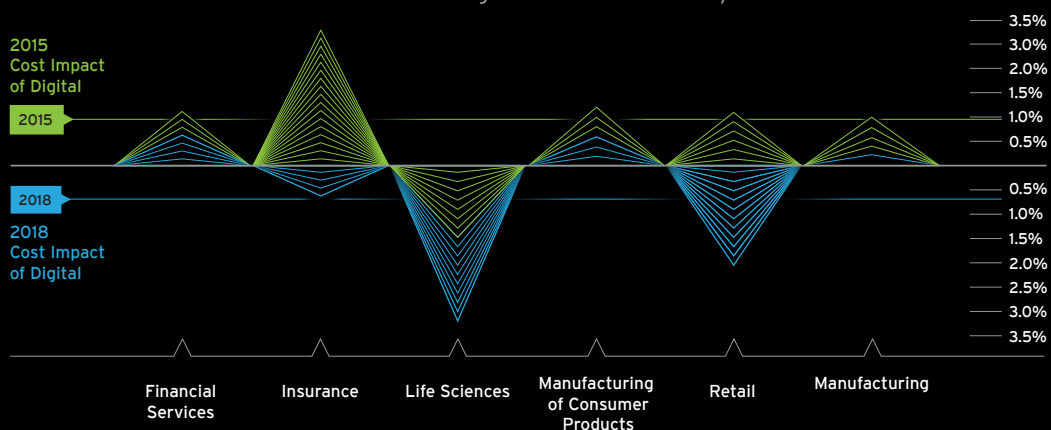


Figure 6 Source: Cognizant Center for the Future of Work, 2016

X Marks the Spot:

Your Back Office Is a Hidden Treasure Chest (of Money)

Convincing a sceptical CFO and board to move forward with digital is difficult to do without hard numbers to support it. The figures we present here are those hard numbers; if being digital isn't your number one priority, then you're swimming against the tide. With that in mind, consider the following:

Digital is not just for sales and marketing.

The shiny new app, the slick website, the sensor-enabled shoe, toothbrush or tennis racket are all fine, and great things are happening. However, leaders are missing the massive opportunity to apply process automation – software robots taking over certain jobs and job tasks – to reduce costs in the middle and back offices. Missing out on these savings is essentially a self-imposed tax on your business future. Automation reduces costs, and smart leaders are using that newly freed digital dividend as investment fuel for innovation.⁶

Look to software to eat your back office.

There may be “gold on the screen” from a revenue perspective, but there's also wasted cash on the floor of your call centre or shared services centre. Our report [“The Robot and I: How New Digital Technologies Are Making Smart People and Business Smarter”](#) unequivocally shows that “smart bots” automate processes to save money but that they also improve accuracy and reliability. Leaders in most companies have simply not snapped the right new machines in place to reduce costs. Bots – software tools – and AI can help turn the economics of the back office on its head.

Cut all the fat.

We are well past the automation “theory” phase. Companies such as Cognizant TriZetto (our healthcare software subsidiary) are using software bots to decrease healthcare payer costs in the U.S. by as much as 90% for some middle-office business processes. UK-based Virgin Trains uses machine learning (AI) in conjunction with customer service to rededicate time to its customers rather than spending it on time-consuming administrative tasks, such as routine customer correspondence. Other companies, such as software developer Blue Prism, are applying bots to risk, fraud, claims processing and loan management across a selection of banking and finance clients to save millions of pounds. It's happening now, and it is happening in Europe.⁷

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WHAT COULD POSSIBLY GO WRONG?

Of course, it's not all plain sailing to our digital destiny. Strategies to deal with the hazards ahead are essential. Figure 7 reveals the obstacles on the path to digital transformation that must be overcome. Fears about data security always top the list of concerns in Europe. However, a nuanced read of the survey results leads us to believe that a stronger approach to leading people and organisations in these uncertain (and thrilling) times is required. Waiting for the whole "digital thing" to blow over isn't going to happen; in fact, it's only going to intensify.

Obstacles to The Work Ahead

Respondents were asked to rate the following obstacles to digital transformation (percent of respondents answering "moderate" or "strong" impact)

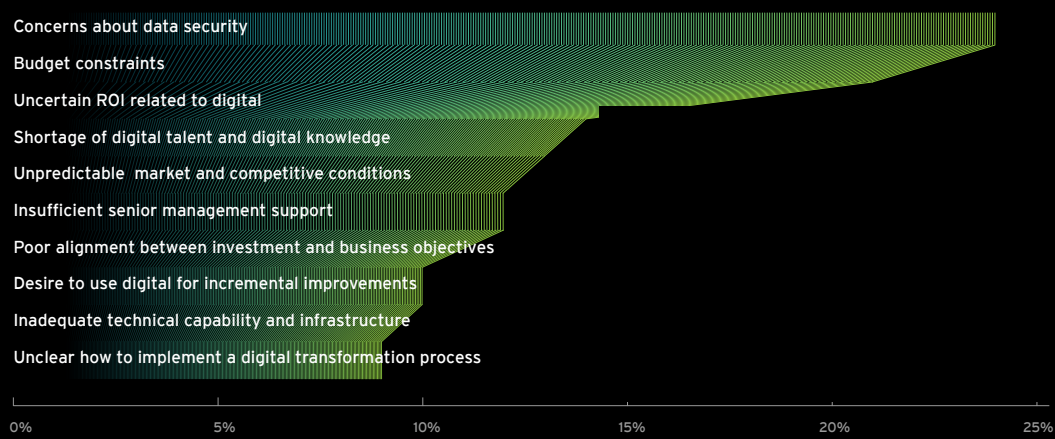


Figure 7 Source: Cognizant Center for the Future of Work, 2016

Hiding Under (Data) Security Blankets

With each hack, leak or act of sabotage, everyone who is paying attention gets more nervous about the "dark side" of digitization. No one wants to be like TalkTalk, the UK telecom operator that saw personal details breached of over 150,000 customers, resulting in a huge slide in its share price and a loss of 100,000 customers - customers the company is now working hard to win back.⁸ Data security breaches have catastrophic impacts and cause sleepless nights for many executives in Europe and the U.S.

While businesses in Europe are clearly moving toward greater personalisation, protecting customer data must be seen as crucial, as revealed in our report [“The Business Value of Trust.”](#) Hacked customer data can erase millions in profits in a keystroke; stolen IP can destroy competitive advantage; and unnecessary privacy abuses can bring unwanted scrutiny and fines from regulators, not to mention the scary “TalkTalk” effect. Consumer trust is the new battleground for digital success: Know the strategies and tactics to win it.⁹

The region needs a European “reference architecture,” with common standards for handling cross-border data traffic, as well as for the interoperability of machine data.

The issue of data security is complicated by the patchwork approach to regulation across the continent. A post-Brexit Europe - in fact - could weaken the push to tighter European-wide standardisation. The region needs a European “reference architecture,” with common standards for handling cross-border data traffic, as well as for the interoperability of machine data. This is an issue that demands leadership at both the geopolitical and corporate levels.

Leadership Misses the Digital Shift

Do today’s leaders understand what needs to be done to compete in the work ahead? Are they able to persuade, cajole and drive the CFO and the board to find the money and make the investment needed before a tech innovation or start-up rips their business model to shreds? When we look at the responses that managers (not executives) gave to our survey, it isn’t good news (see Figure 8).

Leadership Misses the Shift

The scorecard for leading and accelerating the digital shift falls short

What do you see as the biggest mistakes that companies are making in regards digital transformation?

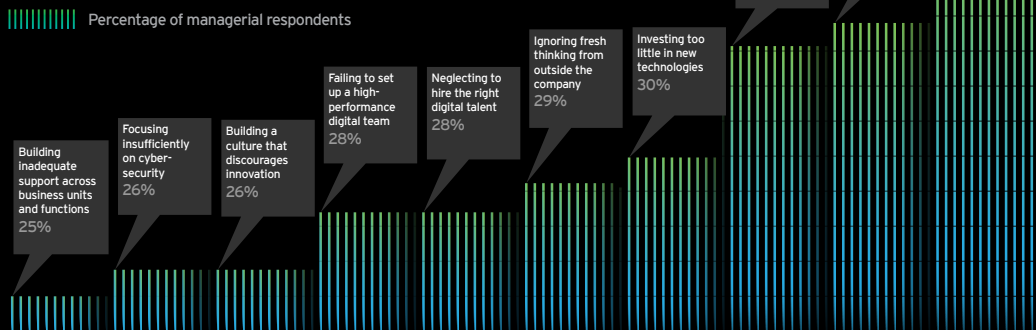


Figure 8 Source: Cognizant Center for the Future of Work, 2016

The scorecard for leading and accelerating digital into organizations falls short, with a worrying lack of clarity at the top of respondents’ businesses (37%) and a lack of urgency (35%), exacerbated by weak leadership. In fact, a whopping one-third of our European managerial respondents don’t believe they have the right executive leadership in place that can do what needs to be done - or worse, knows what needs to be done. Investing too little in new technologies (30%), a reluctance to explore new ways of working (29%) and failing to install the right digital talent (28%) are reflective of stiff leadership shortcomings.

Leading with a legacy business model, legacy cost base and a workforce unable to deal with the stunning pace of change are the ingredients for a recipe for disaster between now and 2018. Leadership behaviors forged in the 20th century need updating for the 21st century, including the need to share, collaborate, iterate and experiment across a value chain. Strong, compelling messages need reinforcement throughout the organisation, and projects and work streams need to be set out so employees can follow them and marshal support across their teams.

Innovation Dawdles (and Needs a Boost)

For companies in Europe to thrive in an era full of promise and uncertainty, they must increase the speed at which they innovate - inside, outside and across their organizations. Stodgy innovation cycles and an unwillingness to experiment will kill a business's ability to take advantage of the digital opportunities ahead. Alternatively, learning how to quickly plug into an emerging technology and uncork an experimental business process demands agility and open-mindedness.

There are plenty of start-ups operating across Europe that could help businesses right now. We are tracking clusters of digital talent coalescing in Berlin, Amsterdam and London, among others, that offer "hot" digital-related technologies and capabilities that can speed innovation or deliver game-changing impacts.¹⁰

Being open to the possibilities and risks can protect a company and position it well for the future: For example, U.S. banking giant J. P. Morgan, "spooked" by the rise of Bitcoin and other cryptocurrencies, has been busy partnering with numerous tech start-ups to explore the upsides and downsides of these powerful new ideas that are reshaping traditional methods of financial exchange with new, digital currencies.¹¹ Having the right mindset and people to boost innovation in this digital age are now critical competencies. To do this, consider the following:

Think through how decisions are made.

Command-and-control structures, long decision cycles and silo-based mentalities simply won't work in a digital age that needs innovation, agility and collaboration. Accessing, teaming and co-creating with a European talent pool (start-ups, universities and business schools) at the edge of an organization won't work in complex, hierarchical organizations in which decisions move slowly up and down the command chain. Rigid approaches to organizational management typified as the 1980s value chain mania need replacing with something much more fluid and connected.¹²

Business units need to imagine what they could be.

The "vision thing" really matters. Seek out new skills that add an edge to your business: Are you set up to make meaning from the volume, variety and velocity of process data, and change the way products are made, customers are served and risk is managed? Do you have financial and marketing muscle to model a digital transformation on your revenues and customers? In short, does your organisation have a vision of what it could be?¹²

Build your own platform for digital innovation and open it up.

The "deluge of data" that all companies are experiencing - if properly captured, visualised and analysed - creates an entirely new "platform" of competition. The sheer growth in volume, variety and velocity of process data means (with some work), that companies can instrument an entire value chain and drive an entrepreneurial ecosystem around it. Data about products, services or even specific processes can be made available. Think about the platform as your company's digital exchange, where suppliers, employees and even customers could experiment and collaborate with process data to improve products and services through their experiences.

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SETTING THE CONTEXT FOR EUROPE'S DIGITAL SUCCESS

We've shown you the money (lots of it) and guided you through the major pitfalls that could spoil the party. Now we want to give you the guiding principles for the work ahead in Europe to appreciate the bigger picture and the opportunities available to your organisation and your career. These principles start with the "platform" as a construct for digital innovation and the need to capture a startling wave of innovation that is washing across many industries today. We finish with a step-by-step plan for leaders to begin building their digital future.

Ideas and (Digital) Money Flow around Platforms

Winning digital business models pivot around a platform. A platform, quite simply, is made up of layers of software that gather and synthesise data. These can take many forms, like a car, a home or even a jet engine, and prescribe a much more fluid approach to innovation. Platforms are the building blocks of digital success, linking digital assets, products, partners and customer demand to make new services available.

Google Play, Spotify or Uber are the easiest platforms to understand and the most visible. Spotify's platform captures data (music tastes) and drives the "next best action" by using algorithms to mine the data for meaning ("based on your preferences, you should listen to this").

The good news is, the world of platforms doesn't just belong to a digitally native company like Spotify with no real legacy to speak of. Established companies are now working their big-company advantages and starting to build and organise knowledge work around platforms and driving value, as well.

To see a legacy company use a platform, one of the best places to look is GE, a huge industrial economy pioneer that is radically reinventing

itself to become a software powerhouse. The company is pivoting its research and development, production, marketing and sales around the data generated by its engines, turbines or smart assembly lines. GE has built an instrumented platform around its equipment to drive new levels of insight around its business. GE's work in progress, transitioning into a software powerhouse, means the company is re-tooling itself for the future rather than resting on the laurels of past success.

Spain's digital banking supremo BBVA is another legacy company using the power of its platform to "co-create" with fresh, energetic, small start-ups, in the thriving fin-tech scene to drive social media functionality into its retail banking experience.¹³ Both GE and BBVA use "open architectures" in their platforms, meaning that third parties are able to plug in simple lines of code to more complex apps via APIs. The continuous exchange of data and information to create value empowers both BBVA and its partners to iterate and experiment with product innovation or upgraded customer experience much more quickly and impactfully than either would be able to do on their own.



Grow an 'Alloyed Economy'

Expect to see new "alloyed" (or "hybrid") economies emerge as industry sectors across the Western world reform in new and creative ways, blending talent, disciplines and technologies across industries, with compelling outcomes for customers. Perhaps you drive a connected car, live in a smart home or wear a fitness band that instruments your lifestyle. Who knows where this could go.

Essential to this vision is openness and collaboration and the cross-pollination of ideas. Large "incumbent" businesses must look to develop the next generation of talent and make the most of their big-company advantages while simultaneously keeping pace with quick-moving disruptors hell-bent on a "disrupt or be disrupted" competitive mindset.

A great example of this approach is the way that 150-year-old UK retailer John Lewis is using an incubator strategy to "find the Uber of British Retail."¹⁴ Another example is the way the connected car is beginning to trigger an almighty industry "mashup." Cars now collect data on road status, share it with other drivers

via third-party platforms and send real-time contextual travel intelligence with local authorities. The upshot: Better traffic flow and critical incident response times while monetising road-status data (monetising the platform).

An event in Berlin in 2016 hammered home the concept of the "alloyed economy" and why openness and collaboration are essential. The CEOs of Uber and Daimler shared the stage, articulating a vision of driverless cars, cities free of gridlock and "hybrid" businesses and economies that marry the "virtual" and "physical" worlds. Customers request their ride via Uber, get in one of Daimler's driverless cars, and the combined set of algorithms from Uber and Daimler makes our cities safer and more efficient.

This vision of the road (and work) ahead vision is coming at us much faster than many think. By 2020 - a mere four years away - our world will look quite different from today.¹⁵ The young CEO of a "disruptor" and slightly less young CEO of an incumbent "get it;" the question is, do you? Does your organisation?

Start Building a Digital Future

Everywhere you look, digital tools and technologies are redrawing industry structures. Look around your own business sector, and one of your competitors (or a start-up) will likely be building a platform to attract your company's customers and suppliers. A healthy dose of paranoia is needed because the old rules at the heart of work in the last century won't work today, let alone the future.

To make the digital "shift" manageable, leaders need to step forward and prime their organisations for the work ahead. Here are good places to start:

Generate your own digital dividend.

As noted, trying to convince your CFO that "something needs to happen" without a solid set of financials is a tough way to start. Know how your organisation is performing against others in your industry, and get a rough idea of whether you are leaving money on the table to fuel your own digital journey. We see smart leaders realising a digital dividend and using it to fuel their journey forward.

Prioritise, prioritise and then prioritise some more.

If deepening, broadening, strengthening, extending or improving your digital presence isn't the number one thing on your "to-do" list when you get out of bed first thing every morning, you might want to go back into bed, roll over and wait for your (depleted) pension. The world is quickly becoming "digital first." Whether it's upgrading a simple sales interface in the supply chain, or digitizing the customer journey from end to end, it's vital for your current game plan to bring the physical and the virtual together.

Command-and-control structures, elongated decision cycles and silo-based mentalities will kill digital; accessing, teaming and co-creating with disparate talents across a value chain or industry will not work in complex, hierarchical environments.

Match words with deeds.

Map investment priorities with digital opportunities. If your company's investment profile is not in line with analytics, artificial intelligence and platforms that drive innovation, then you're playing by yesterday's business rules. If your budget's investment profile is not in line with them, then you're at risk of being the dinosaur. You will win points for asking for more budget for digital initiatives - rather than less - in the next budget review cycle. This is no time for shrinking violets to pull back from the fight. Go big. Go digital.

Reset the dynamics of power and decision-making.

Command-and-control structures, elongated decision cycles and silo-based mentalities will kill digital; accessing, teaming and co-creating with disparate talents across a value chain or industry will not work in complex, hierarchical environments (take a leaf from the CEOs of Uber and Daimler and act/be more humble).

Challenge, challenge and then challenge some more.

The most important role-modelling that any leader can do is to ensure the right kinds of conversations are taking place across the organisation. Ensure the right people are in the room and empowered, and then continue with direct intervention and questioning to ensure the transition from experience-based decision-making to data-based decision-making occurs. Was a conclusion A/B tested? What have we done to build our capability to conduct rapid prototyping, to test and learn and experiment, as well as to continuously engage across disciplines and our emerging business ecosystem?



SEE VALUE IN THE VIRTUAL

We meet with hundreds of business and technology leaders every year across Europe. At this point, virtually everyone has heard about digital and is investing in channelling the forces outlined above - many perhaps, have even become numb to the term. But our latest study and analysis illuminate digital's future for your company and for the European region.

We can see the beginnings of what works. If you are not using technology to reduce costs, automate aggressively in the back office or sift for gold in the data streams running through your business processes, then the digital switch will be very hard. Software should be turning the economics of the back office on its head. Channelling the savings back into the the business to boost digital innovation is a short-term goal.

FINAL THOUGHT: A MESSAGE TO EUROPE

The U.S. is the world leader in software, and Asia Pacific leads in hardware. In a global context, Europe lacks an Apple, Google or Samsung. Yet the watchwords for a Europe forged on the back of two world wars - open, collaborative, pluralist - are the watchwords for mastering the digital economy.

Mastering the digital economy will raise employment, improve productivity and build social cohesion in a region that has been battered of late. The continent needs leadership at the political level. We have been here before, and we can do it again. The four freedoms that underpinned the 1990s single market - goods, services, capital and people - needs a fifth pillar: digital. Europe needs to build a single digital market to unlock the value from the profound change in how our economies and societies increasingly work.

Methodology and Demographics

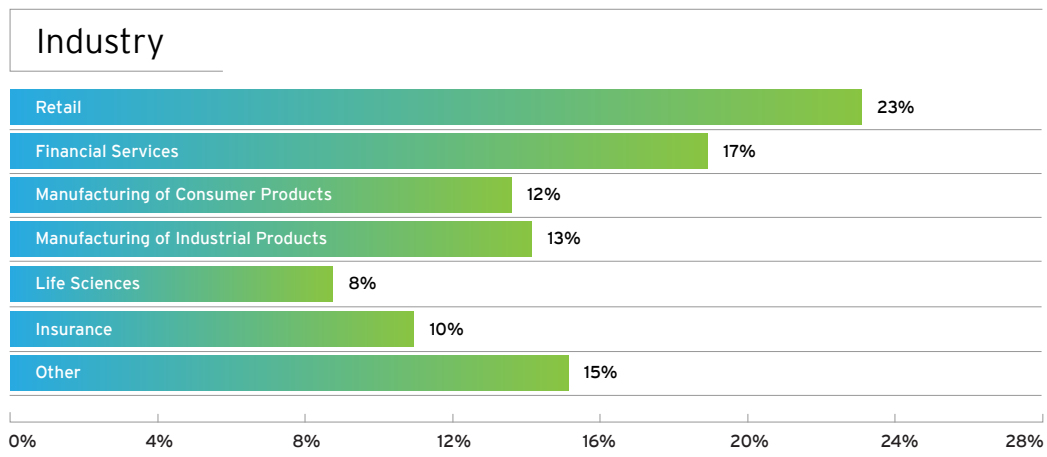
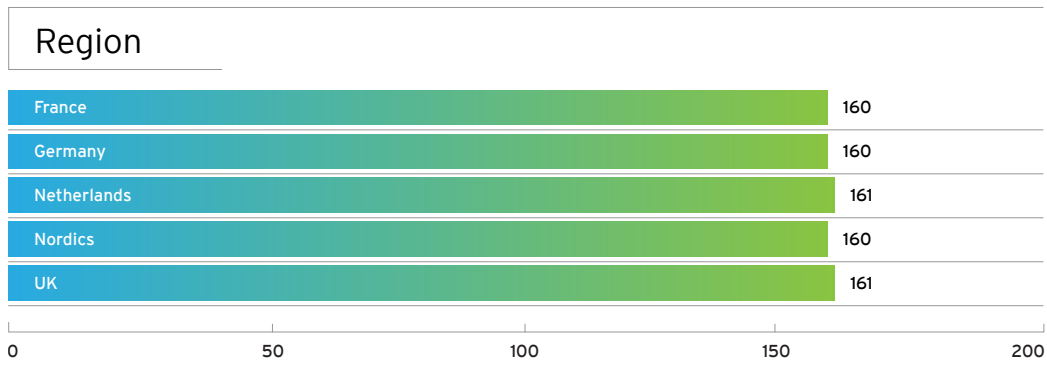
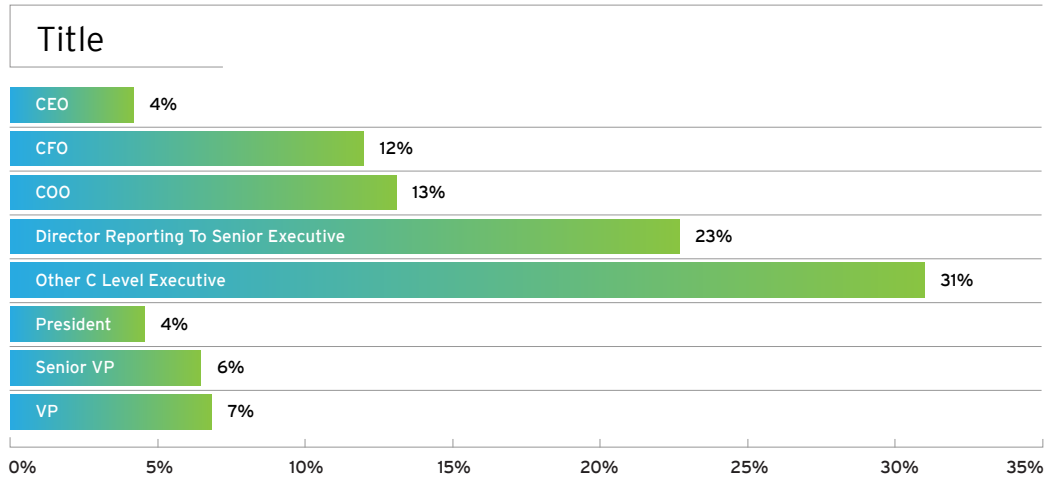
We conducted a worldwide survey between December 15, 2015, and January 28, 2016, with 2,000 executives across industries (800 in Europe) and 150 MBA students at leading universities around the globe. The European executive survey was run in seven countries (France, Denmark, Germany, Finland, The Netherlands, Sweden and the UK). We used telephone interviews for both the executives and the MBAs, and the interviews were done in English language. The study was conducted with research and economic support from Roubini ThoughtLab, an independent thought leadership consultancy. This latest installment of The Work Ahead series features the 800 responses from the European executive and manager survey. See [“The Work Ahead: Insights to Master the Digital Economy”](#) for more detail.

Leader vs. Laggard Calculation

Digital leaders were identified based on the responses to three questions:

- What percentage of your company's revenues today is invested in all technologies - including your central IT budget as well as spend by business units throughout your firm?
- Please estimate the percentage impact of using digital technologies on revenue and costs over the last financial year for your organization.
- How does your company compare with other firms in your industry in applying digital technologies to transform business strategies, processes, and services?

Leaders account for 21% of the sample and achieved scores of 35 or more; Laggards account for 28% of the sample and achieved scores up to 15. The Average group accounted for 51% of the sample.



Footnotes

¹ To get a handle on the ramifications of the financial crisis in Europe, consider the youth unemployment rates for 2016: 50% in Greece, 43% in Spain and 40% in Italy. See the *Statistics Portal*, <https://www.statista.com/statistics/266228/youth-unemployment-rate-in-eu-countries/>.

² Rolls-Royce engines send telemetry data to four centres around the world. The biggest is in the UK, where every engine is under surveillance. An inspection can be scheduled or spare parts can be directed to the right destination even before the pilots or the airline knows that one of their engines has a problem.

³ The reality is that today's digital age – compared with last century's industrial age – is largely distinguished by our unprecedented ability to make business meaning from massive amounts of data. See our white paper "*The Value of Signal (and the Cost of Noise)*," October 2013, <https://www.cognizant.com/InsightsWhitepapers/The-Value-of-Signal-and-the-Cost-of-Noise-The-New-Economics-of-Meaning-Making.pdf>.

⁴ Approximately 38% of the EU budget (equivalent to 0.4% of the Union's GDP) is spent on the Common Agricultural Policy (CAP). Three years' worth of spending on the CAP could be captured by applying digital tools and technologies. See "*EU Agriculture Spending Focused on Results*," European Commission, September 2015, http://ec.europa.eu/agriculture/cap-funding/pdf/cap-spending-09-2015_en.pdf.

⁵ The laggard tax was calculated as follows: 1) By estimating the size of the average firm in each industry; 2) Estimating the revenue and cost impacts if the firm had the same performance of the average leader firm in their industry; 3) Estimating the revenue and cost impacts if the firm had the same performance of the average laggard firm in their industry; and 4) Calculating the difference between the two.

⁶ Our latest research reveals that by applying digital remedies to precisely targeted process areas, organizations can relieve operational stress and generate improvements, with results across the process value chain. See our white paper "*Digital Process Acupuncture: How Small Changes Can Heal Business and Spark Big Results*," February 2016, <https://www.cognizant.com/whitepapers/Digital-Process-Acupuncture-How-Small-Changes-Can-Heal-Business-and-Spark-Big-Results-codex1438.pdf>.

⁷ European telecommunications company Telefonica O2's process automation program features Blue Prism software. Read the case study to get a detailed review of the history of the program, the benefits that have been realised and the lessons from this large scale deployment of software robots in Europe. See <http://www.blueprism.com/case-studies>

⁸ TalkTalk faces a £60 million bill for dealing with its crippling cyber-attack, significantly higher than initially thought, as it faces fierce competition from rivals. Dido Harding, the TalkTalk CEO who was forced to apologise to customers after last year's security breach, warned it is a "harsh truth that no business can say they're doing enough on adding security to their systems." See "*The Telegraph*, Feb. 2, 2016, [http://www.telegraph.co.uk/technology/2016/02/02/talktalk-loses-101000-customers-after-hack/...](http://www.telegraph.co.uk/technology/2016/02/02/talktalk-loses-101000-customers-after-hack/)

⁹ The latest research from Cognizant's Center for the Future of Work reveals that one of the biggest threats to companies today comes not from the competition but from the ability to win and keep consumer trust. There are factors that determine how consumers think about trust, the economic value associated with it and the inner-workings of the "give-to-get" ratio that every organization must understand and heed. See "*The Business Value of Trust*," May 2016, <https://www.cognizant.com/whitepapers/the-business-value-of-trust-codex1951.pdf>. [customers-after-hack/...](#)

¹⁰ Research from Cognizant's Center for the Future of Work charts the rise of talent clusters emerging in many cities around the world as a wave of entrepreneurial digital talent bubbles to the surface. These and other cities are home to hundreds of accelerators (start-up schools) and thousands of co-working spaces. See our white paper "*People – Not Just Machines – Will Power Digital Innovation*," April 2016, <https://www.cognizant.com/whitepapers/People-Not-Just-Machines-Will-Power-Digital-Innovation-codex1850.pdf>.

¹¹ J. P. Morgan is building a private blockchain in partnership with EthLab, co-founded by Jeffrey Wilcke. It will allow for hundreds of transactions per second and increased privacy, as smart contracts can be validated by only parties to the contract. The so-called Quorum project is being built from the publicly accessible Ethereum network code. See *The Wall Street Journal*, Oct. 3, 2016, <http://www.wsj.com/articles/j-p-morgan-has-a-new-twist-on-blockchain-1475537138>.

¹² Small is beautiful. Our research reveals that companies are starting to reconfigure themselves into smaller spaces as market opportunities and emerging digital niches proliferate. Silos are being broken down as the first steps to a digital reorganization. See our white paper "*People – Not Just Machines – Will Power Digital Innovation*," April 2016, <https://www.cognizant.com/whitepapers/People-Not-Just-Machines-Will-Power-Digital-Innovation-codex1850.pdf>.

¹³ BBVA's Innovation Centre in Madrid held its first Fintech University in the summer of 2016. Its goal was to analyse and teach participants about technologies like blockchain or wearables. BBVA even has a head of Open APIs. See "*Fintech University Meets Finance at BBVA Innovation Centre*," BBVA, <https://www.bbva.com/en/news/disciplines/technologies/fintech-university-biggest-event-technology-financial-experts/>.

¹⁴ John Lewis says it hopes its incubator programme can help it be seen as a tech innovator as it hopes to find a company that has the potential to become "the Uber of British retail." See *Marketing Week*, April 4, 2016, <https://www.marketingweek.com/2016/04/04/john-lewis-hopes-to-find-the-uber-of-british-retail-as-it-launches-third-ji/>

¹⁵ Uber's first self-driving cars will begin picking up passengers this month. See *Tech Crunch*, Aug. 18, 2016, [https://techcrunch.com/2016/08/18/ubers-first-self-driving-cars-will-start-picking-up-passengers-this-month/...](https://techcrunch.com/2016/08/18/ubers-first-self-driving-cars-will-start-picking-up-passengers-this-month/)

About the Author



Euan Davis leads Cognizant's Center for the Future of Work in EMEA. A respected speaker and thinker, Euan has guided many Fortune 500 companies into the future of work with his thought-provoking research and advisory skills. Within Cognizant's Center for the Future of Work, he helps ensure that the unit's original research and analysis jibes with emerging business-technology trends and dynamics in Europe, and collaborates with a wide range of leading thinkers to understand how the future of work will look. Previously, Euan held senior analyst, advisory and leadership positions at Forrester Research, IDC and the Corporate Executive Board. He lives in Cambridge, UK.

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