CIOs EMERGE AS DISRUPTIVE INNOVATORS
AN ANNUAL BAROMETER OF GLOBAL CIOs’ PLANS, PRIORITIES, THREATS, AND OPPORTUNITIES
CSC carries out a number of surveys every year to analyze trends and perspectives from key roles in the C-suite at the global and regional level. Each of these studies, conducted with the assistance of independent survey institutions, involves the participation of hundreds of executives from large businesses and public administrations. The results of these studies are revealed during high-level events, organized in different cities (Paris, Madrid, Barcelona, Milan, Brussels, Lisbon, Washington, etc.), and are also relayed by partners from the media and academia (universities and elite business schools).
INTRODUCTION
CIOs EMERGE AS DISRUPTIVE INNOVATORS

The Global CIO Survey is a survey carried out for the sixth year by CSC, this year in collaboration with CIO Strategic Marketing Services and IDG Research Services. It is based on a quantitative analysis of the trends and outlook for CIOs based on a sample of technology leaders from private companies and public institutions around the world.

RESULTS
DISCOVER THE KEY RESULTS OF THE SURVEY

CIO INSIGHTS
INTERVIEWS WITH THE EXPERTS

32. ALBERTO ALMAJANO SERRA, CIO. INDUKERN GROUP
34. ANN BRANDS, CIO. FIDEA
36. DAVID GUZMÁN, CIO. H.D. SMITH
38. DIANE SCHWARZ, VP AND CIO. TEXTRON INC.
40. FRANK DE SAER, CIO. FPS ECONOMY (BELGIAN MINISTRY OF THE ECONOMY)
42. JEAN-PAUL MAZOYER, HEAD OF GROUP INFORMATION TECHNOLOGY. CRÉDIT AGRICOLE SA
44. LIAM MAXWELL, CTO. U.K. GOVERNMENT
46. MICHEL BERRET, CIO. APERAM
48. MICHAEL RESTUCCIA, VP & CIO. PENN MEDICINE
50. MUKUL JAIN, CIO. DHFL PRAMERICA LIFE INSURANCE COMPANY LTD.
52. PETER SANY, CITO. SWISS LIFE GROUP
54. DR. RAINER SOMMER, HEAD OF GI IT GERMANY, GESCHÄFTSFÜHRER. ZURICH INSURANCE GROUP
56. RAJESH BATRA, CIO. KOKILABEN DHIRUBHAI AMBANI HOSPITAL AND MEDICAL RESEARCH INSTITUTE
58. ROOPAK VERMA, REGIONAL CIO. FORD OF EUROPE, MIDDLE EAST & AFRICA
60. STEVE CROWLEY, CIO AND SENIOR VP OF SHARED SERVICES. WEX INC.
62. STEVE HAGOOD, VP AND CIO. INGERSOLL RAND
64. STEVE TOWNSEND, CIO. TRANSPORT FOR LONDON
66. TRACEY SCOTTER, DIRECTOR OF INFORMATICS. SHEFFIELD TEACHING HOSPITALS
68. ULRIKE HUEMER, CIO. CITY OF VIENNA

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THE GLOBAL CIO SURVEY IS A SURVEY CARRIED OUT FOR THE SIXTH YEAR BY CSC, THIS YEAR IN COLLABORATION WITH CIO STRATEGIC MARKETING SERVICES AND IDG RESEARCH SERVICES. IT IS BASED ON A QUANTITATIVE ANALYSIS OF THE TRENDS AND OUTLOOK FOR CIOs, BASED ON A SAMPLE OF TECHNOLOGY LEADERS FROM PRIVATE COMPANIES AND PUBLIC INSTITUTIONS AROUND THE WORLD.
CIO SURVEY 2014–2015

A GLOBAL STUDY

SURVEY GOALS
The purpose of this survey is to gain a clearer picture of organizations’ information technology landscape and the evolving role of CIOs—their plans, priorities, threats and opportunities. The survey considers everything from IT spending trends and tactical challenges to the enabling relationships forming between CIOs and LOB management and their technology partners.

METHOD/QUALIFIERS
The 2014 Global CIO Survey was produced in collaboration with IDG Research Services, which collected data via an online questionnaire from 590 executives with IT or technology-related titles between August 22 and September 11, 2014. Participants in the study work in 23 countries on five continents for private and public sector organizations with at least 250 employees. Respondents at companies with more than 3,000 employees accounted for 46 percent of the poll sample. On average, the typical surveyed organization has 697 IT employees.
CIO SURVEY 2014–2015

INTRODUCTION
CIOs EMERGE AS DISRUPTIVE INNOVATORS
For years, they've steadily labored to redefine themselves as disruptive agents of change and growth. Now with global economies recovering, new business models proliferating, and C-suite executives realizing the need for nonstop innovation, that evolutionary process has reached a potentially revolutionary tipping point.

In today’s digitized marketplace, success—if not survival—hinges on how well organizations strategically leverage the transformative power of information technology. And no one is better positioned to help businesses do that than the CIO.

CIOs know this, and in response are aggressively driving the investments and initiatives necessary to lead digital transformation. In fact, the sixth edition of the CSC Global CIO Survey (formerly “CIO Barometer”) reveals that after years of caution and belt-tightening, IT is back: Fully 64 percent of participants in the study report higher spending this year than in the year before, up from just 46 percent in 2013. What’s more, the survey shows that enterprises are investing their increased budgets in next-generation, innovation-enabling technologies such as cloud computing, big data, and mobility.
However, technology investments alone will get CIOs only so far. Winning companies must integrate their technology investments to deliver business outcomes that would not have been possible a few years ago. To lead that disruptive change and move past today’s tipping point, CIOs must finally overcome enduring challenges, such as high operational costs and weak line-of-business (LOB) relationships. The latest Global CIO Survey provides a guide to doing so and reveals the critical role that technology partners can play in that much-anticipated transformation.

THE CIO’s EVOLVING ROLE

Innovation used to be relatively rare and take years or even decades to unfold. Today, disruptive transformations happen continually.

Consider, for example, how quickly startups like Airbnb and Uber are disrupting the hospitality and transportation industries. Airbnb has only been in existence since 2008, yet it already operates in more than 34,000 cities and 190 countries. Uber’s ascent has been even faster: Founded in 2009, it now has an estimated market value of more than $15 billion.

Though both companies used bold, creative product strategies to grow so quickly, they also owe much of their success to their exceptionally skillful use of cloud-based, mobile-first delivery models, real-time analytics, and other powerful new technologies. Their stories serve as concrete illustrations of an indisputable truth: In today’s economy, disruptive innovation is increasingly the differentiator that separates winners from losers, and technology is the key to disruptive innovation.

“It’s hard to think of a new business model that doesn’t rely to some degree on information technology,” says Doug Tracy, CSC’s chief information officer. Indeed, today’s businesses recognize the tight bonds linking innovation, competitive advantage, and information technology, as well as the CIO’s importance to all three. That new reality is hastening the CIO’s metamorphosis from tactical enabler to strategic visionary.

Michael Restuccia, vice president and CIO of the University of Pennsylvania Health System (better known as Penn Medicine), has observed that phenomenon firsthand. “If I’m simply an administrator, that’s not enough. I really need to understand the issues—and see the opportunities,” he says. (More of Restuccia’s thoughts are available as part of a Q&A on page 49.)

Jean-Paul Mazoyer, head of group information technology for French banking giant Crédit Agricole SA, agrees. Businesses today are using IT to reimagine operational processes rather than simply streamline them, he notes, and CIOs are uniquely qualified to help decision makers understand what the latest technologies make possible. “Our primary role, therefore, is to stimulate innovation,” Mazoyer says. (Mazoyer shares additional insights on page 43.)

Roopak Verma, Regional CIO at Ford of Europe, Middle East & Africa, has embraced that role too. According to Verma, IT leaders at Ford now strive to “democratize innovation” by encouraging IT employees at all levels of the organization to propose new product ideas. They’re also spearheading disruptive new initiatives like “Connected X,” a long-term effort to embed sensors in Ford vehicles and then mine the mountains of data those sensors produce for new insights and product ideas. (For more of Verma’s perspectives on innovation, see page 59.)

The survey shows that enterprises are investing their increased budgets in next-generation, innovation-enabling technologies such as cloud computing, big data, and mobility.
Many participants in this year’s Global CIO Survey are developing similarly trailblazing solutions. Collectively, their experiences reveal the degree to which IT leaders now find themselves at a potentially decisive stage in their long journey from assisting the enterprise to leading it.

**LEVERAGING TRANSFORMATIVE NEXT-GENERATION TECHNOLOGIES**

This year’s survey results clearly demonstrate that IT leaders are prioritizing initiatives that lay the groundwork for ongoing disruptive innovation. For example, fully 70 percent of all respondents—and 79 percent of those in Europe—identify modernizing legacy applications as a critical or high priority for the next 12 months.

Dr. Rainer Sommer, head of GI IT Germany at Zurich Insurance Group, is one of many IT leaders emphasizing application modernization these days. “Economic dynamics have changed,” he says. “Insurers increasingly focus on the margins that stem from insurance operations. And that’s requiring new business processes, new applications, and new infrastructures.”

Sommer plans to host many of those new applications and infrastructures in the cloud. Traditional on-premises infrastructure, he says, can be difficult to implement and expand. “By contrast, the cloud is on demand, so it provides better scalability and flexibility, and can be more reactive to the kind of cyclicity we see in the insurance market,” Sommer says. (For more of Sommer’s views on cloud computing and other topics, see page 55.)

Other IT leaders clearly share that enthusiasm for cloud computing, as some 64 percent of this year’s survey respondents (and 70 percent of those in Asia) call “as-a-service” delivery a critical or high priority for the next 12 months, 65 percent say the same of private cloud technology, and 60 percent say the same of hybrid cloud management.

**TRANSFORMATIVE TECHNOLOGIES: INDUSTRY INSIGHTS**

Though businesses are investing in innovation-enabling technologies across industries, survey results indicate that particular verticals value particular technologies more highly than others.

For example, while 62 percent of all survey participants call the Internet of Things a critical or high priority for the next year, that figure stands at 76 percent among manufacturing respondents—a reflection of the enormous potential manufacturers see in collecting real-time usage and performance statistics from industrial equipment and consumer products.

Similarly, while 64 percent of IT leaders in all industries are investing heavily in big data, the number is 74 percent among healthcare executives, who are using sophisticated analytics to determine which treatments are most and least effective, and which risk factors pose the greatest risk to patient wellness. Those analyses are producing real results, too, because 90 percent of surveyed healthcare CIOs say that big data is positively impacting productivity and efficiency, versus 75 percent of survey participants overall.

Finally, 81 percent of survey respondents at healthcare organizations and 83 percent of those at financial services organizations are investing heavily in cybersecurity, versus 71 percent of all respondents. Both industries are subject to stringent data privacy regulations that make security an even greater concern than it is elsewhere.

The gap between private and public cloud models continues to close as automation, management, and orchestration technologies enable IT organizations to better leverage enterprise data center resources and application workloads within a hybrid environment. These technologies are helping enterprises deliver a common hybrid cloud architecture for legacy and native-cloud applications with the flexibility to choose deployment environments based on security, performance, and compliance requirements.
Enterprise mobility is another big focus area among poll respondents, 66 percent of whom label it a critical or high priority for the next year—and that focus extends across the coming three years. Organizations are using mobile apps and devices for far more than just boosting productivity, too. At Penn Medicine, for example, mobile solutions are empowering more than 2,000 physicians to deliver faster, more effective care. “Mobile technology helps us provide the right data to the right decision maker at the right time, in the right place, and on the right device,” Restuccia says.

Newer technologies like big data and the Internet of Things are attracting serious attention from this year’s survey respondents as well. In fact, 69 percent of them cite big data as a critical or high priority (only slightly down from 72 percent in 2013), and 62 percent say the same of the Internet of Things—figures that rise to 72 percent and 73 percent, respectively, among Asian IT leaders.

CIOs also have their eyes on even less established technologies. Looking forward over the next three years, survey respondents predict that Web-scale IT (34 percent), machine-to-machine integration (31 percent), and “software-defined anything” (29 percent) will be strategic assets for their business.

Not surprisingly, however, an issue with deep roots in the IT world remains the No. 1 technology priority among polled CIOs for the second straight year, with a whopping 83 percent of survey respondents naming IT security a top focus.

“While the number of digital services grows arithmetically, the potential cyber threat is growing exponentially. Because the success of our interaction with users is based on trust, effective cybersecurity is very important to us.” observes Liam Maxwell, the British government’s first-ever chief technology officer. In response, Maxwell’s team is spearheading initiatives like GOV.UK/VERIFY, a joint effort by government agencies, private businesses, and privacy and consumer groups to help British citizens validate their online identity so they can use government services safely. (For more about Maxwell’s work in security and other areas, see page 45.)

INVESTING IN THE FUTURE

Of course, to realize the strategic potential of today’s innovation-fueling technologies businesses must also invest in them. Encouragingly, participants in this year’s Global CIO Survey are getting the budgets to make those investments. As noted earlier, 64 percent report higher IT spending this year, versus just 46 percent in 2013. Even in Europe, where economic stagnation remains stubbornly persistent, technology outlays are rising at 63 percent of polled organizations, an almost 58 percent rise over the previous year.
Furthermore, CIOs are plowing substantial portions of their IT spending into potentially disruptive technologies. For example, 61 percent of respondents worldwide (and 71 percent of those from Europe) report they’re investing heavily in application modernization, and 64 percent say they’re investing heavily in big data. Even the still nascent Internet of Things is drawing significant investments from 49 percent of global survey participants and 57 percent of those in Asia.

Better yet, all of those technology investments are having a tangible impact on innovation. Indeed, 70 percent of polled CIOs say big data is driving innovation at their firm, while 67 percent and 60 percent, respectively, say the same of enterprise mobility and private cloud computing. Perhaps that’s why the percentage of survey respondents who believe innovation is perceived as an uncertain source of ROI at their company has dropped from 37 percent in 2013 to 27 percent this year, and to just 20 percent among North American respondents.

**PERSISTENT CHALLENGES TO INNOVATION**

CIOs who wish to invest even further in innovation, however, face a host of familiar obstacles. Though IT spending is up, 52 percent of this year’s survey participants (and 66 percent of those in North America) name budget constraints as one of the top impediments to innovation at their firm, and 38 percent cite difficulties finding qualified staff. That talent shortage is increasing payrolls as well: 36 percent of executives identify employee salaries as the costliest item in their budget, up from just 25 percent last year. In Europe, moreover, that figure doubled from 19 percent in 2013 to 38 percent this year.

Other top expenses include IT production costs, licensing, and network and telecommunication costs, indicating that overhead and operations continue to consume sizable amounts of funding that might otherwise support innovation. What’s more, when it comes to top focus areas for the year ahead, process optimization, capital management, and accelerating project results are all in the top half of the list, while initiatives with more innovative potential like transforming legacy IT environments and leveraging hybrid cloud solutions finish in the bottom half.

No wonder 39 percent of poll respondents say the demands of managing existing IT workloads are hindering innovation at their firm. Conventional wisdom holds that “keeping the lights on” (Core IT) consumes 70 percent of the typical CIO’s budget, notes Dan Hushon, CSC’s chief technology officer. The reality, however, is probably even worse. “I think that as a percentage of IT budget it’s higher, as so much budget seems to be moving from the CIO into the front office, leaving what’s left of the IT budget even more heavily concentrated on keeping the lights on,” Hushon says.

Global technology providers can help CIOs streamline operational processes and lower administrative expenses.
RELATIONSHIP ROADBLOCKS

Operational issues aren’t the only challenge CIOs face in their efforts to drive disruptive change. Many lack solid working relationships with their non-IT counterparts as well.

At innovative organizations, IT leaders work hand in hand with line-of-business executives to identify opportunities and devise strategies for capitalizing on them. Penn Medicine, for example, has a senior-level oversight group composed of six managers each from IT and the medical school. “When you’re spending $100-plus million on IS activities each year, you’d better be pointed in a direction you all agree on,” Restuccia observes.

Yet while the portion of North American survey respondents reporting that kind of collaborative partnership with business leaders rose from 37 percent in 2013 to 39 percent this year, it dropped from 41 percent to just 28 percent among respondents worldwide and plummeted from 50 percent to 23 percent among Asian IT leaders.

Worse yet, 39 percent of participants in this year’s survey say IT is still viewed as a cost center within their organization, essentially flat from 2013. And while the number of CIOs saying they have a service provider relationship with their LOB colleagues jumped from 20 percent globally last year to 33 percent in 2014 (and from 18 percent to 37 percent in Asia), that’s mixed news at best. Service providers follow strategies defined by others; partners help lead the creation of those strategies. To secure their position as agents of disruptive innovation, CIOs must spend less time serving LOB management and more time partnering with it.

62 percent of those from Asia) report their use of technology providers is rising, while just 14 percent of respondents say it’s falling. Moreover, 44 percent of survey participants say that partners are enabling innovation, 45 percent say they’re providing access to the latest technologies, and 39 percent say they’re helping IT integrate those technologies more rapidly.

Technology providers are also empowering CIOs to save money and streamline operations, as 33 percent of survey respondents report partners are helping them increase the size of their IT staff without exceeding their budget, and 29 percent say partners are helping them focus on driving the business forward rather than maintaining technology.

CIO ACTION PLAN

CIOs are rapidly turning into digital transformation leaders, yet further progress remains to be made. Insights from this year’s survey reveal the five key steps IT leaders must take in order to seize today’s tipping-point opportunity.
1. NOW MORE THAN EVER, BUDGETS AND RESOURCES MUST SHIFT FROM OPERATIONS TO INNOVATION, SO CONTINUE INVESTING IN TECHNOLOGIES THAT REDUCE OVERHEAD.

To accelerate innovation, CIOs must make the perennial effort to spend more on innovation (and less on operations) a strategic priority. Many of the technologies that survey respondents say they’re already utilizing can help with that quest, so CIOs should continue investing in them wisely.

Cloud computing is an especially pertinent example. “The more you look at infrastructure, the more you’ve got to really question why you want to keep it in-house,” notes CSC’s Tracy. Outsourcing hardware implementation and maintenance to reputable software-, platform-, and infrastructure-as-a-service providers equipped to deliver those services securely and at scale empowers CIOs to reduce administrative costs. Private cloud technology can help CIOs operate in-house solutions more efficiently too, Tracy says, by automating management and provisioning.

Modernizing legacy systems should remain a priority as well. “Back office systems lack the agility that is required to better match the demands of the business. Yet these legacy systems hold critical enterprise information and processes needed for new agile services—the services that will improve value and differentiation for customers and employees,” CSC’s Hushon says. “Back office systems have to be transformed in order to be competitive in this new market.” That usually involves improving the rate of change within these older solutions and supplementing their functionality by replacing, re-platforming, refacing or re-factoring them as necessary.

2. INVEST IN TOMORROW’S TECHNOLOGIES AS WELL AS TODAY’S.

Cloud computing, mobility, and big data are all proven contributors to top-line revenue and bottom-line profits. Emerging technologies like the Internet of Things and 3D printing offer less certain benefits at present, but businesses that embrace next-generation IT strategies now anyway are likely to enjoy competitive advantage in the future.

“It’s not an either/or,” Tracy says. IT leaders must make room in their budgets for both today’s technologies and tomorrow’s if they wish to disrupt rather than be disrupted.

3. TECHNOLOGY ALONE ISN’T ENOUGH, SO CREATE AN INNOVATIVE IT CULTURE.

Though technology provides an essential foundation for disruptive innovation, CIOs must also create a departmental culture that promotes and rewards ingenuity.

“You need a portfolio of innovation programs,” Hushon advises. At CSC, for example, those include staging contests in which employees, partners, and customers compete to propose the most compelling new product or initiative. Winners receive not only prizes and recognition but an opportunity to help bring their concept to market. “We are successfully incubating some of these ideas,” Hushon says.

Outsourcing hardware implementation and maintenance to reputable software-, platform-, and infrastructure-as-a-service providers equipped to deliver those services securely and at scale empowers CIOs to reduce administrative costs.

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ALLIES IN INNOVATION: INDUSTRY INSIGHTS

Significant numbers of respondents to this year’s Global CIO Survey are increasing their use of partners, but the degree to which they’re doing so varies substantially by industry. For instance, 61 percent of manufacturing organizations and 65 percent of retail and media organizations are using partners more extensively, as compared with 55 percent across industries.

How businesses expect to benefit from partner relationships differs significantly by industry as well. For example, financial services CIOs are more likely than others to see partners as a source of access to the latest technologies, manufacturing CIOs are more likely to credit partners with enabling innovation, and public sector CIOs are more likely to view partners as an effective means of addressing in-house skills gaps.
CSC also maintains dedicated groups of full-time IT innovators. Hushon, for example, has a team of nine Distinguished Engineers who spend 25 percent of their time investigating new technologies and creating new solutions to emerging business problems, in addition to sponsoring innovation more broadly. To date, their efforts have resulted in two new service offerings and a promising open source software project, among other accomplishments. “We’re seeing some really cool things from these experienced leaders,” Hushon says.

Crédit Agricole SA similarly promotes transformation by using its Saint-Quentin-en-Yvelines campus, near Paris, as an innovation center in which engineers are surrounded by new ideas and possibilities. “We hope to develop a pioneer spirit that will trickle down through the entire organization,” Mazoyer says.

Lines-of-business demands and pressures on CIOs continue. To maintain a competitive advantage for the business, CIOs must continually deliver increased levels of high quality, secure applications and services faster than ever before. In support of this strategy, many organizations are building this agile model into their IT service delivery through DevOps initiatives—bringing development, testing, and operations teams together. This allows IT executives and their resources to focus on delivering increased innovation through organizational and process change, resulting in greater business value to the enterprise.

To ensure it invests in such ventures at appropriate levels, CSC tracks a metric that Hushon calls the “innovation quotient,” which divides the amount of money the company spends on IT by the amount it spends nurturing new products and services. People are always asking for KPI’s on innovation; maybe improving this quotient and measuring revenue yield are a good start.

4. DON’T JUST ENABLE INNOVATION—LEAD IT, BY ESTABLISHING A TRUE IT-BUSINESS PARTNERSHIP.

Innovative businesses view IT as an engine for strategic growth, not a cost center, so CIOs must focus on creating and maintaining strong peer-to-peer relationships with LOB executives. “It’s very important, because that’s the only way you can drive change that actually gets delivered,” Tracy observes.

Helping IT professionals master the art of “business relationship management” is an essential part of that process. “We’ve got to be able to step into ... our customers’ shoes and understand from their perspective what they’re trying to achieve so that we can have a conversation in their language,” Tracy says. At CSC that entails training IT employees to listen effectively, build consensus, understand budgeting fundamentals, and present effective business cases for new solutions. Such “soft” talents are an important complement to the technical skills most IT managers already possess, Tracy notes.

This year’s Global CIO Survey shows that IT executives recognize the urgent need for digital transformation and finally have the funds they need to increase investments in next-generation technologies capable of driving disruptive change.
5. TO MAXIMIZE IT’S IMPACT, ENGAGE WITH AN INNOVATIVE TECHNOLOGY PARTNER.

Improving operational efficiency, investing in new technologies, building a culture of innovation, and forging IT-business partnerships are all significant undertakings. As respondents to this year’s Global CIO Survey clearly appreciate, however, the right technology partner can make all four of those jobs easier by providing expertise and vision few companies have in-house.

Drawing on their extensive exposure to the best—and worst—practices of IT organizations worldwide, for example, global technology providers can help CIOs streamline operational processes and lower administrative expenses. With their in-depth technical knowledge, they can also introduce CIOs to the IT world’s newest technologies and propose new means of exploiting them. Plus, companies like CSC are leaders in cultivating innovation and communicating with business executives at all levels, and can share those skills with their clients.

LEADING THE WAY TO INNOVATION

Innovation and the role of IT in enabling it have never been more central to enterprise success and growth. Indeed, this year’s Global CIO Survey shows that IT executives recognize the urgent need for digital transformation and finally have the funds they need to increase investments in next-generation technologies capable of driving disruptive change.

To sustain that momentum and cement their position as strategic leaders, however, CIOs must make further headway in their long-running efforts to decrease operational overhead and establish closer, more collaborative and strategic relationships with the C-suite and line-of-business managers. Technology partners can help with those goals, by empowering IT leaders to enhance efficiency and harness the innovative power of today’s latest technologies.

READY TO TAKE THE NEXT STEP? FIND OUT HOW YOUR ORGANIZATION’S SPENDING, GOALS, AND CHALLENGES COMPARE WITH THOSE OF YOUR PEERS BY TAKING THIS YEAR’S CSC GLOBAL CIO SURVEY YOURSELF, AT WWW.CSC.COM/CIO_SURVEY_TOOL.
TOTAL NUMBER OF FULL-TIME/PART-TIME IT EMPLOYEES*

* APAC numbers for 2014 include Australia; Australia not included in 2013 numbers

WORLDWIDE AVERAGE

COMPANY’S IT DEPARTMENT HEADQUARTERS
Elevated IT security is the top priority among all regions, although Europe places a similar impetus on application modernization; while NA places a lesser priority on all initiatives, they are significantly behind their counterparts when it comes to the importance placed in the Internet of Things and hybrid cloud.
INVESTMENT IN TOP TECHNOLOGY INITIATIVES (INVESTED HEAVILY)

Organizations from all regions are investing most heavily in security; the second area of investment for APAC and NA is in analytics, and for Europe it is in application modernization; one-third of NA has done very little in IoT (M2M).

**ELEVATED IT SECURITY/ CYBERSECURITY EXPECTATIONS**

- **TOTAL**: 71%
  - NA: 60%
  - EUROPE: 74%
  - APAC: 74%

**ANALYTICS AND BIG DATA**

- **TOTAL**: 64%
  - NA: 50%
  - EUROPE: 66%
  - APAC: 71%

**APPLICATION MODERNIZATION**

- **TOTAL**: 61%
  - NA: 44%
  - EUROPE: 71%
  - APAC: 64%

**ENTERPRISE MOBILITY**

- **TOTAL**: 56%
  - NA: 37%
  - EUROPE: 56%
  - APAC: 63%

**'AS A SERVICE DELIVERY' (e.g., IaaS, SaaS, PaaS)**

- **TOTAL**: 55%
  - NA: 46%
  - EUROPE: 57%
  - APAC: 59%

**PRIVATE CLOUD**

- **TOTAL**: 55%
  - NA: 46%
  - EUROPE: 57%
  - APAC: 59%

**HYBRID CLOUD MANAGEMENT**

- **TOTAL**: 52%
  - NA: 33%
  - EUROPE: 54%
  - APAC: 62%

**INTERNET OF THINGS MACHINE TO MACHINE (M2M)**

- **TOTAL**: 49%
  - NA: 27%
  - EUROPE: 55%
  - APAC: 57%
TECHNOLOGY INITIATIVES’ IMPACT ON BUSINESS

Aligning with priority and investment level, analytics, elevated IT security, and application modernization (buoyed by responses in Europe) are the primary initiatives impacting business; a paltry 21% of NA respondents are impacted by IoT.

- **ANALYTICS AND BIG DATA**
  - Total: 55% strategic asset, 45% tool, 5% obstacle (6% NA, 5% Europe, 7% APAC)

- **ELEVATED IT SECURITY/ CYBERSECURITY EXPECTATIONS**
  - Total: 51% strategic asset, 43% tool, 6% obstacle (5% NA, 7% Europe, 5% APAC)

- **APPLICATION MODERNIZATION**
  - Total: 46% strategic asset, 47% tool, 7% obstacle (6% NA, 7% Europe, 7% APAC)

- **PRIVATE CLOUD**
  - ‘AS A SERVICE DELIVERY’ (e.g., IaaS, SaaS, PaaS)
  - Total: 43% strategic asset, 47% tool, 11% obstacle (16% NA, 8% Europe, 10% APAC)

- **HYBRID CLOUD MANAGEMENT**
  - Total: 42% strategic asset, 48% tool, 9% obstacle (18% NA, 9% Europe, 9% APAC)

- **ENTERPRISE MOBILITY**
  - Total: 41% strategic asset, 52% tool, 7% obstacle (6% NA, 10% Europe, 6% APAC)

- **INTERNET OF THINGS MACHINE TO MACHINE (M2M)**
  - Total: 38% strategic asset, 46% tool, 16% obstacle (33% NA, 11% Europe, 11% APAC)
PERCEPTION OF TECHNOLOGY TRENDS OVER THE NEXT 3 YEARS

Mobile applications will be the most strategic technology trends over the next 3 years, particularly for NA and APAC; personal cloud ranked as a top 3 distraction for all regions.

- As a strategic asset to drive our business forward
- As a tool to help us maintain our position/keep the lights on
- As a distraction and potential obstacle to meeting our key business goals
- Not sure, not familiar with this
- Not applicable

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<th>Technology Area</th>
<th>As a strategic asset</th>
<th>As a tool to help</th>
<th>As a distraction</th>
<th>Not sure, not familiar</th>
<th>Not applicable</th>
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<td>42%</td>
<td>14%</td>
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<td>Internet of Things/connected products</td>
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<tr>
<td>Smart operations/M2M integration</td>
<td>31%</td>
<td>39%</td>
<td>14%</td>
<td>8%</td>
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<tr>
<td>Personal cloud</td>
<td>31%</td>
<td>38%</td>
<td>21%</td>
<td>5%</td>
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<tr>
<td>Software defined anything (SDx)</td>
<td>29%</td>
<td>41%</td>
<td>14%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Enterprise social collaboration</td>
<td>29%</td>
<td>45%</td>
<td>18%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Vertical clouds</td>
<td>28%</td>
<td>40%</td>
<td>17%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>3D printing/additive manufacturing</td>
<td>27%</td>
<td>30%</td>
<td>16%</td>
<td>8%</td>
<td></td>
</tr>
</tbody>
</table>

TOP 3

1. Mobile apps (40%)
2. Web-scale IT (27%)
3. Enterprise asset management (25%)

TOP 3

1. Web-scale IT (36%)
2. Mobile apps (34%)
3. IoT (32%)

TOP 3

1. Mobile apps (40%)
2. M2M integration (40%)
3. Enterprise asset management (38%)
TECHNOLOGIES’ IMPACT ON PRODUCTIVITY/PROJECT EFFICIENCY

Data analytics has the most positive impact on productivity and project efficiency, particularly in NA; surprisingly, the various cloud deployment models all ranked low across regions, particularly hybrid cloud in NA.
TECHNOLOGIES’ IMPACT ON RATE OF INNOVATION

In terms of positive impact on rate of innovation, analytics again tops the list, followed by application modernization and enterprise mobility; 17% of NA ranked elevated security expectations as having a negative impact on innovation.

- **Analytics and Big Data**
  - Positive: 70%
  - No impact: 28%
  - Negative: 2%
  - NA: 73%
  - Europe: 66%
  - APAC: 70%

- **Application Modernization**
  - Positive: 68%
  - No impact: 31%
  - Negative: 2%
  - NA: 67%
  - Europe: 70%
  - APAC: 66%

- **Enterprise Mobility**
  - Positive: 67%
  - No impact: 30%
  - Negative: 3%
  - NA: 68%
  - Europe: 68%
  - APAC: 65%

- **Elevated IT Security/Cybersecurity Expectations**
  - Positive: 64%
  - No impact: 29%
  - Negative: 7%
  - NA: 55%
  - Europe: 64%
  - APAC: 68%

- **‘As a Service Delivery’** (e.g., IaaS, SaaS, PaaS)
  - Positive: 61%
  - No impact: 37%
  - Negative: 2%
  - NA: 53%
  - Europe: 64%
  - APAC: 63%

- **Private Cloud**
  - Positive: 60%
  - No impact: 37%
  - Negative: 4%
  - NA: 55%
  - Europe: 63%
  - APAC: 61%

- **Hybrid Cloud Management**
  - Positive: 58%
  - No impact: 38%
  - Negative: 4%
  - NA: 44%
  - Europe: 63%
  - APAC: 63%
IMPORTANCE OF IT PRIORITIES OVER NEXT 12 MONTHS

Showing percent rating top 2 scores or highly important worldwide (5/3 in 2014 or a 1/2 in 2013)

1. Optimization of key IT processes and the use of best practices
2. Management of expanding IT Security/Cybersecurity needs
3. Identification and development of key skills within the IT organization
4. Managing IT capital expenditures
5. Accelerated project results
6. Reducing IT operating costs
7. Improvement of financial and operational planning within IT
8. Development and sustainment of mobile applications
9. Transforming legacy IT environments
10. Business process innovation in hybrid IT
11. Enabling your business with social or multi-channel solutions
12. Supply chain optimization
13. Allowing the business to use BYOD/Consumer technology in the workplace
14. Implementation of agile and DevOps practices to accelerate release rates
15. Adopting green IT/IT sustainability practices
**COMPANY’S PROGRESS TO DATE AGAINST THESE PRIORITIES**

**TOP 2 SHOWN (EXCELLENT/VERY GOOD)**

Largely, respondents’ relative progress to date across IT priorities mirrors the level of importance placed on each priority; primary exceptions include accelerated project results in NA and reducing IT OPEX in APAC.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Progress</th>
<th>Priority</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing IT capital expenditures</td>
<td>67% 53%</td>
<td>Identification and development of key skills within the IT organization</td>
<td>72% 57%</td>
</tr>
<tr>
<td>Management of expanding IT Security/Cybersecurity needs</td>
<td>64% 51%</td>
<td>Optimization of key IT processes and the use of best practices</td>
<td>71% 57%</td>
</tr>
<tr>
<td>Reducing IT operating costs</td>
<td>62% 50%</td>
<td>Development and sustainment of mobile applications</td>
<td>63% 55%</td>
</tr>
<tr>
<td>Accelerated project results</td>
<td>61% 38%</td>
<td>Accelerated project results</td>
<td>62% 63%</td>
</tr>
<tr>
<td>Optimization of key IT processes and the use of best practices</td>
<td>60% 45%</td>
<td>Management of expanding IT Security/Cybersecurity needs</td>
<td>61% 63%</td>
</tr>
<tr>
<td>Improvement of financial and operational planning within IT</td>
<td>57% 46%</td>
<td>Managing IT capital expenditures</td>
<td>59% 63%</td>
</tr>
<tr>
<td>Identification and development of key skills within the IT organization</td>
<td>55% 44%</td>
<td>Improvement of financial and operational planning within IT</td>
<td>59% 59%</td>
</tr>
<tr>
<td>Transforming legacy IT environments</td>
<td>54% 44%</td>
<td>Reducing IT operating costs</td>
<td>58% 54%</td>
</tr>
<tr>
<td>Development and sustainment of mobile applications</td>
<td>51% 38%</td>
<td>Business process innovation in hybrid IT</td>
<td>58% 55%</td>
</tr>
<tr>
<td>Business process innovation in hybrid IT</td>
<td>47% 32%</td>
<td>Transforming legacy IT environments</td>
<td>57% 55%</td>
</tr>
<tr>
<td>Allowing the business to use BYOD/Consumer technology in the workplace</td>
<td>46% 42%</td>
<td>Supply chain optimization</td>
<td>56% 55%</td>
</tr>
<tr>
<td>Enabling your business with social or multi-channel solutions</td>
<td>44% 38%</td>
<td>Enabling your business with social or multi-channel solutions</td>
<td>55% 46%</td>
</tr>
<tr>
<td>Supply chain optimization</td>
<td>38% 40%</td>
<td>Allowing the business to use BYOD/Consumer technology in the workplace</td>
<td>52% 47%</td>
</tr>
<tr>
<td>Implementation of agile and DevOps practices to accelerate release rates</td>
<td>38% 32%</td>
<td>Implementation of agile and DevOps practices to accelerate release rates</td>
<td>50% 53%</td>
</tr>
<tr>
<td>Adopting green IT/IT sustainability practices</td>
<td>29% 36%</td>
<td>Adopting green IT/IT sustainability practices</td>
<td>50% 49%</td>
</tr>
<tr>
<td>Management of expanding IT Security/Cybersecurity needs</td>
<td>75% 61%</td>
<td>Optimization of key IT processes and the use of best practices</td>
<td>72% 63%</td>
</tr>
<tr>
<td>Reducing IT operating costs</td>
<td>70% 54%</td>
<td>Accelerated project results</td>
<td>70% 60%</td>
</tr>
<tr>
<td>Managing IT capital expenditures</td>
<td>69% 59%</td>
<td>Identification and development of key skills within the IT organization</td>
<td>69% 57%</td>
</tr>
<tr>
<td>Business process innovation in hybrid IT</td>
<td>67% 61%</td>
<td>Improvement of financial and operational planning within IT</td>
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</tr>
<tr>
<td>Transforming legacy IT environments</td>
<td>67% 60%</td>
<td>Development and sustainment of mobile applications</td>
<td>66% 60%</td>
</tr>
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<td>Enabling your business with social or multi-channel solutions</td>
<td>64% 58%</td>
<td>Supply chain optimization</td>
<td>60% 63%</td>
</tr>
<tr>
<td>Adopting green IT/IT sustainability practices</td>
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<td>Implementation of agile and DevOps practices to accelerate release rates</td>
<td>58% 57%</td>
</tr>
<tr>
<td>Allowing the business to use BYOD/Consumer technology in the workplace</td>
<td>57% 58%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RELATIONSHIP BETWEEN IT AND LOB MANAGEMENT WORLDWIDE

North American respondents (39%) are significantly more likely than respondents in Europe (26%) and APAC (23%) to report that their organizations view IT and LOB as a collaborative partnership. Conversely, Europe (37%) and APAC (37%) respondents are significantly more likely than North American respondents (23%) to say that IT is viewed as a formal client/service provider for LOB.

CHALLENGES IT FACES IN DRIVING INNOVATION AT THEIR ORGANIZATIONS

Globally, respondents most often cite budget constraints (52%), resources being used to manage existing IT workloads (39%), and difficulty finding staff qualified to execute the technology to drive innovation (38%) as the top challenges IT faces in its efforts to drive innovation at their companies.
OVERALL IT BUDGET FOR CURRENT FISCAL YEAR

Global average IT budget is roughly 179 million US dollars. North American respondents have the highest average IT budget ($196M), followed by APAC ($177M) and lastly, Europe ($165M).
MOST COSTLY ELEMENTS FOR OVERALL IT BUDGET

In the previous fiscal year, the most costly elements of IT budgets globally were employee salaries (36%), cybersecurity and IT security costs (28%), and IT production costs (27%).

<table>
<thead>
<tr>
<th>Element</th>
<th>2014</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee salaries</td>
<td>36%</td>
<td>25%</td>
</tr>
<tr>
<td>Cybersecurity and IT security costs</td>
<td>28%</td>
<td>31%</td>
</tr>
<tr>
<td>IT production costs</td>
<td>27%</td>
<td>34%</td>
</tr>
<tr>
<td>Licenses</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td>Applications: development</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Network and telecom costs</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Data storage</td>
<td>21%</td>
<td>34%</td>
</tr>
<tr>
<td>Cloud</td>
<td>20%</td>
<td>28%*</td>
</tr>
<tr>
<td>Applications: ongoing maintenance</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td>Deployment and support costs</td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>Data and analytics</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Outsourced services</td>
<td>14%</td>
<td>*</td>
</tr>
<tr>
<td>Applications: corrective and regulatory</td>
<td>11%</td>
<td>17%</td>
</tr>
</tbody>
</table>

TOP 3

1. Employee salaries (47%)
2. Licenses (32%)
3. Network and telecom costs (27%)

* Please note cloud and outsourced services were combined as one choice in 2013
GLOBAL USE OF TECHNOLOGY PARTNERS

Globally, more than half (55%) of respondents report their firm’s use of partners is increasing (respondents in APAC (62%) are significantly more likely than respondents in North America (47%) and Europe (51%) to say that this is the case.

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Use of Partners Is Increasing</th>
<th>Total Use of Partners Is Not Changing Significantly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>55%</td>
<td>31%</td>
</tr>
<tr>
<td>North America (NA)</td>
<td>47%</td>
<td>46%</td>
</tr>
<tr>
<td>Europe</td>
<td>51%</td>
<td>32%</td>
</tr>
<tr>
<td>APAC</td>
<td>62%</td>
<td>23%</td>
</tr>
</tbody>
</table>
ACTIONS TECHNOLOGY PARTNERS CAN TAKE TO HELP IT DRIVE THE BUSINESS FORWARD

Provide access to the latest technologies
Enable innovation
Provide specific expertise/skill sets that we lack in-house
Enable faster integration of new technologies so we can respond faster to business needs
Bring our internal staff up to speed on new technologies
Provide industry expertise
Help to define/build strategy
Enable us to increase the size our IT organization within our operating budget
Share R&D
Allow us to focus on driving business rather than maintaining technology
Provide access to internal and external benchmarking
Provide a single point of contact for access to best-of-breed solutions partners

TOP 3

1. Provide specific expertise/skill sets that we lack (49%)
2. Provide access to the latest technologies (44%)
3. Provide industry expertise (41%)/Enable faster integration of new tech (41%)

1. Provide access to the latest technologies (43%)
2. Enable innovation (43%)
3. Bring our internal staff up to speed on new technologies (39%)

1. Provide access to the latest technologies (48%)
2. Enable innovation (47%)
3. Provide specific expertise/skill sets that we lack in-house (43%)
“OUR CHALLENGE IS USING THE PUBLIC CLOUD, WHERE WE CAN ACHIEVE SIGNIFICANT COST REDUCTIONS BY USING SERVER FARMS AND STANDARD SERVICES.”

ALBERTO ALMAJANO SERRA
CIO
INDUKERN GROUP
WWW.INDUKERN.COM
More than 50 years ago, the Indukern Group started its business as a small Spanish family company. Today, the company has more than 1,900 employees around the world and achieved consolidated turnover of 678 million euros in 2013. Constant national and international growth, with branches in 19 countries, means that in the short term, the company is focusing on the unification of the Group’s ERP systems to take advantage of synergies and unify systems, thereby simplifying data collection, control and support.

WHAT PART DO MOBILE TECHNOLOGIES PLAY WITHIN THE COMPANY, BOTH INTERNALLY AND FOR CLIENTS? HOW HAVE THESE TECHNOLOGIES EVOLVED?

It has been a few years now since mobile technology was widely incorporated into business activities. It became essential due to the way we use this technology in our private lives, and companies had to adapt to accommodate it. In the Indukern Group, we have introduced mobility-compatible technologies since, for me, there is no point in providing our employees with mobile devices when there are no business applications to take advantage of them.

It is pointless to provide our employees with a tablet or a smartphone when all they can do is surf the Web. Therefore, we have added compatible applications and systems that allow them to access information from the most suitable device on each occasion: from the computer if they are at the office or from their cell phones if they are on a trip, at home or away from their desk. These are applications such as email, business intelligence (BI), customer relationship management (CRM), network units, intranet, etc.

On the other hand, from the point of view of our clients and in the case of Kern Pharma, the group’s pharmaceutical company, we work in a tightly controlled environment and it is difficult to create applications for the general public. For the time being, we have started to carry out tests with pharmacies and physicians, who are our points of contact with the end customer, and we expect to have ready, by the end of 2014 or the beginning of 2015, the first Kern Pharma mobile applications, which are to become a new communication channel for these customers. The key to achieving this is the effort put forth by the marketing department, which is working tirelessly in this field to see which local and customer service options these applications can offer.

WHICH I.T. PROFILES ARE THE MOST DIFFICULT TO FIND THESE DAYS?

We usually look for very specific profiles to complement our current team. So far, we have had a good experience, and our hiring has been successful both from the professional and from the human points of view.

We expect to hire new employees for the logistics area soon. It is a very complicated position due to the many systems and the complex facilities we have. We also want to strengthen the systems validation position, for which we must hire someone with a managerial profile and who knows the pharmaceutical industry, good manufacturing practices (GMP) and, of course, information systems.

In general, when we consider hiring somebody new, we do not only evaluate the technical aspect, but also whether the candidate fits the values of the company: excitement, will to improve, and engagement in the project.

WHAT PROPORTION OF YOUR DATA IS CURRENTLY IN THE CLOUD? WHAT PERCENTAGE OF DATA DO YOU THINK WILL BE IN THE CLOUD IN FIVE YEARS?

First, I would differentiate between a private cloud and a public cloud. On a private level, we have CRM, and it is currently a very useful tool. Externally, our next challenge is using the public cloud, where we can achieve significant cost reductions by using server farms and standard services. Besides, there are more and more providers that offer the cloud as part of their services. In the not-too-distant future, many of the new services will no longer require the installation of servers. We will contract services directly in the cloud.

I anticipate that probably in the next five years we will have about 20 percent of our services in the cloud. I think the process will be very similar to virtualization: The first few steps will be hard, but once we try it, it will be difficult to go back. We will start with a low-added-value service such as email, and little by little, we will add others: first with development/integration environments and finally with productive environments.

WHERE DO YOU SEE OPPORTUNITIES FOR BIG DATA AND ANALYTICS TECHNOLOGIES IN YOUR COMPANY?

We still have much to do in the BI field before thinking about big data and analytics projects. However, we hope we will be able to take on these kinds of projects in the future.

WHAT ARE THE I.T. THREATS YOU HAVE TO FACE? WHAT CYBERSECURITY MEASURES WILL YOU TAKE TO PROTECT YOUR COMPANY?

The main threats are the rapid evolution of the different systems, the version changes, the updates. Therefore, one of the goals of the systems department is being flexible enough to support the group’s needs and facilitating technology so that it does not hinder the development of the business. In fact, we are working on strengthening the security plan for the next few years to close any gaps we might have. We are becoming more and more exposed precisely because we provide access to our data through tablets, smartphones, mobility, VPN, etc.

WHAT ARE THE PRIORITIES OF THE I.T. DEPARTMENT FOR THE NEXT 12-18 MONTHS?

We are currently focusing on the unification of the group’s ERP systems to take advantage of synergies and to unify our systems, thereby simplifying data collection, control and support. In addition, we are creating tools and resources so our commercial network can work more efficiently and smoothly. We are also working on adding different business areas to our BI: first, using data from the group’s companies in Spain and in the near future using data from our subsidiaries around the world.
“IF YOU DON’T HAVE A MOBILITY STRATEGY, THERE’S A GREATER CHANCE THAT CUSTOMERS JUST WON’T CONSIDER YOU.”
Fidea is a national company offering a wide range of insurance products for individuals, professionals and businesses. The company was divested from KBC Group in 2009 and is now owned by J.C. Flowers, an American private equity investor. As a result of the divestiture, Fidea is a business with an established customer base, yet is building its I.T. infrastructure from the ground up.

Fidea CIO Ann Brands began her career at KBC, where she spent most of her time working on major projects. With the sale of Fidea, Ann was offered the opportunity to become the company’s CIO.

**YOU TOOK ON A LARGE TASK, CREATING AN ENTIRE I.T. DEPARTMENT FROM NOTHING TO SERVE A SIGNIFICANT CUSTOMER BASE. WHAT WERE SOME OF THE CHALLENGES YOU FACED?**

We did in fact start from a greenfield because we were not sold to another insurance company. There was no existing system to merge into. It feels a bit like shaping the Earth, because in the beginning there really was nothing.

We faced a number of challenges because we relied on the previous parent company, KBC, for everything. We needed to identify a suitable platform, and we had to stand it up very quickly.

**THAT’S A LOT TO ACCOMPLISH IN A SHORT PERIOD OF TIME. WHAT ARE SOME OF THE BENEFITS TO THIS?**

Everyone in this market is struggling with several packages at the same time. They have two or three separate applications for life insurances and more applications on top of that for nonlife [policies]. That consumes the majority of your IT budget just to run all that and to maintain all these applications in accordance with adapted laws and regulations.

Even though it’s a lot of work, the main benefit I see is that we are not carrying forward the burden of any legacy systems. When all of our new systems are fully established, that will make a big difference in how we match our competitors in this market.

We’re working with a very light structure. We have no servers here; everything is operating in the cloud. We carry no development staff either.

From a strategic perspective, the time pressures we face have forced us to take decisions in a very pragmatic way. We have been very focused on eliminating older products and focusing on a core set.

**YOU MENTIONED THAT EVERYTHING YOU DO IS IN THE CLOUD. HAVE YOU ENCOUNTERED ANY MATURITY GAPS THAT YOU’VE HAD TO OVERCOME, OR THAT YOU SEE AS A POTENTIAL ISSUE?**

Everything we do at present is operating on a private cloud infrastructure. That’s because insurance is in the financial sector, which is bound by a number of regulations. There are issues related to data privacy that we are working through and that affect how we operate at present.

We have a number of restrictions on data, especially considerations about where that data is stored. You have to be able to clearly identify where it is. I can imagine that the Belgian government would not be happy about having data on servers in the United States.

The regulations in this area aren’t that much explored, and no one can be sure what rules or limitations the Belgian government will enact or how it will enforce what is already on the books. As a company in a finance-related industry, this leaves us in an-in-between state. But for now, as long as we operate in a private cloud, we’re okay.

**WHAT ROLE DOES MOBILITY PLAY IN YOUR BUSINESS?**

It will play a significant role. There is pressure from the market because customers want to engage our business from their mobile devices. We hear about this from our brokers, from the marketing department and from our R&D department as well. If you don’t have a mobility strategy, there’s a greater chance that customers just won’t consider you.

We’re still in the process of establishing our platform, so it’s a balancing act. We’re thinking about how we need to address this capability and what apps we need to do that, but we can’t get behind on our schedule to deliver the fundamental platform.

**YOU HAVE ENJOYED A LONG CAREER IN THE INSURANCE INDUSTRY. WHERE HAS TECHNOLOGY HAD THE GREATEST IMPACT?**

Electronic workflow. In an insurance company, a lot of paper moves from one person to another. When you have a claim — a car accident, for example — it creates a blizzard of papers: [from and to] garages, lawyers, claims experts and more. They can deliver a stack of paper 10 centimeters high for a single claim.

At some point, before electronic workflow, we had full-time employees to copy documents because they needed to be sent to our claims experts, to the counterparty’s company, to experts, the government, etc.

Part of the difficulty is consolidating all of the different processes and all of the paper. It’s difficult to collect and organize all the information that’s required. And it’s still something we are trying to fully implement because at some point, we still need to print the contract for the broker to send to the client for approval and signature.

**WHAT ARE YOUR PRIORITIES OVER THE NEXT YEAR?**

That’s an easy one for me. We hope to be fully disentangled from KBC by the end of 2015. There are no projects that match the scope or importance of that. The full company is working on this one goal. I realize that from an IT perspective, we need to look beyond that, and we are. But our timeline for new projects goes beyond this coming year.

Two or three years down the road, our focus will be on the mobile technologies and environment, and new ways to reach brokers or to interact with the company. It will be interesting to see how that technology evolves over the next few years and in what new ways customers use it.

And of course, new mergers do interest me as well.
“IN THE FUTURE, INFORMATION WILL BECOME THE NEW CURRENCY. IN PARTICULAR, THE ACTIONABLE INSIGHTS THAT CAN BE PACKAGED AS A SERVICE WILL BECOME INVALUABLE TO REDUCING HEALTHCARE COSTS AND IMPROVING PATIENT OUTCOMES.”
If you’ve bought anything from a U.S. community pharmacy recently, chances are good it had passed through the hands of H. D. Smith. This 60-year-old company, based in Springfield, Ill., is among the country’s largest full-line, full-service wholesale distributors of pharmaceuticals. H. D. Smith distributes prescription, over-the-counter and home-healthcare products, plus health and beauty aids, medical equipment and seasonal merchandise. The privately held company also offers a wide array of business solutions to retail pharmacies, regional chains and health systems.

David Guzmán became its CIO in 2011 after holding similar positions with Acxiom, a data analytics firm; Owens & Minor, a distributor of medical and surgical suppliers; and retailer Office Depot.

THE CLOUD’S A BIG COMPONENT OF YOUR I.T. STRATEGY, ISN’T IT?

We’ve moved our data center to the cloud, with CSC’s help, and we’ve moved our network to AT&T’s cloud. We’ve done a variety of Software as a Service projects, including EDI with SEEBURGER controlled-substances management with Legisym, and product track-and-trace with TraceLink. We’ve forged an as-a-service business reporting solution with FusionOps. We’ve also done a lot of work with data management, business intelligence, mobility and e-commerce, implemented ITIL, and established a PMO [project management office]. We also had to complete an SAP project; it required great attention to detail. We’ve been busy for the last three-plus years!

WHAT’S NEXT?

Until now, we’ve had an internal focus. Now we’re shifting our focus externally to technology-enabled business solutions and services. Today, roughly 20 percent of our revenue comes from technology-enabled business solutions and services. So that’s where we’re moving: from being consumers of the as-a-service model to becoming providers of services and solutions to our customers and supplier partners.

ARE YOU USING DATA TO IMPROVE YOUR BUSINESS PROCESSES?

One good example is our onboarding process. We have 90 documents that have to be completed; after all, we’re in a highly regulated industry. It would take six to eight hours of work to complete all the forms, get them signed, and then get them notarized. In real time, that took two to three weeks. This was having a real impact on our business. The customer was ready to do business with us, and at our best, it would take us two to three weeks before any revenue hit our books. Worst case, the customer would get frustrated and decide to stay with its current supplier.

Now we’ve put this all on an iPad app. We capture both the signature and notarization just once, then cascade them through all the forms. Now the process takes just 15 to 20 minutes. It’s had a significant impact on our business. In fact, the numbers are staggering.

PRIVACY AND SECURITY ARE MAJOR CONCERNS IN HEALTHCARE. HOW ARE YOU PROTECTING CONSUMERS?

Privacy is a big deal for me. When I was CIO of Acxiom, we had the largest consumer database in the world. We protected the information to the point that even I, the CIO, could not see the private data of individuals.

At H. D. Smith, we have to be on the forefront of privacy protection. We will take strong steps to ensure that private information isn’t even in our system — only the information that’s aggregated. There’s no need for us to know, or for the supplier to know. So why even capture it? We are not just to follow the law, but to go way beyond.

YOU MENTIONED MOBILITY. TELL US MORE.

Within the context of our vision for building business solutions, mobility plays a crucial role. In the world of personalized medicine, mobility is the delivery engine for the information surrounding the specific treatment a patient may need. So information flows down the chain, but the flow back up is probably even more important. Mobility enables that in a big way.

“PERSONALIZED MEDICINE” — WHAT’S THAT?

We actually had personalized medicine in the past. Pharmacies compounded medications for each patient, and doctors made house calls. But today, when you pick up your prescription at the pharmacy, you get the same medication regardless of your age, your weight, your ethnicity, your gender, your family history even your DNA. But soon, it will all be coming back. We’re going to have doctor visits again — except that they’re going to be virtual.

For example, the FDA has approved a technology that creates a nanoparticle which flows through your bloodstream to detect plaque in your veins and arteries. Similar applications are being tested to detect cancer cells. This is an incredible innovation in technology. And all these devices need to communicate wirelessly, sharing the information they gather.

I believe this is going to change everything in healthcare: how medicines are manufactured, prescribed, distributed, reimbursed — everything.

IN THIS CHANGED LANDSCAPE, WHAT IS H. D. SMITH’S NEW ROLE?

The good news is, as a traditional middleman in the healthcare supply chain, we can play an important role. Because in that middle, a lot of information is gathered from both ends. And in the future, information will become the new currency.
“FORCES SUCH AS SOCIAL, MOBILE, DATA AND THE CLOUD NOW HAVE AN IMPACT ON EVERY ASPECT OF BUSINESS, AND WE AS IT BUSINESS PROFESSIONALS CAN HELP HARNESS THOSE FORCES TO BENEFIT OUR OPERATIONS AND OUR PRODUCTS.”
Textron Inc. is a $12.1 billion* multi-industry company with approximately 32,000 employees. The company leverages its global network of aircraft, defense and intelligence, industrial and finance businesses to provide customers with innovative solutions and services. Textron is known around the world for its powerful brands, such as Bell Helicopter, Cessna Aircraft Company, E-Z-GO, Greenlee, Jacobsen, Kautex, Lycoming, Textron Systems and Textron Financial Corporation.

Diane Schwarz is vice president and CIO for Textron Inc., which she joined in 2007 as director of IT services and support for Bell Helicopter. Before that, Schwarz was VP of information services at Sonitrol and held technology leadership positions at Honeywell, Ultrak and Steelcase.

**THE CIO’S ROLE HAS EVOLVED. WHAT QUALITIES DOES A CIO NEED TO BE SUCCESSFUL, AND HOW DO YOU THINK THESE HAVE CHANGED?**

The qualities for a CIO are the same that I expect for all of my IT staff — that we are business professionals first. We need to understand our business operations and the drivers for success. When my peers and stakeholders reach out to me, it’s not to solve an IT issue or answer an IT question, but to resolve a business challenge. As IT professionals, it is our role to then deliver the technology solutions that best meet business needs.

How has this changed for IT professionals? Our stakeholders now expect us to partner with them as business professionals. If you look back a decade or so, we were in the data center or in the back office and weren’t considered part of the executive leadership team.

Most companies now see the CIO as an integral component of the executive leadership team and recognize the criticality of IT to the success of any business. Forces such as social, mobile, data and the cloud now have an impact on every aspect of business, and we as IT business professionals can help harness those forces to benefit our operations and our products.

**AS A WIDELY DIVERSIFIED COMPANY, HOW DOES THAT INFLUENCE YOUR THINKING AS YOU PLAN THE COMPANY’S OVERALL IT STRATEGY AND DIRECTION?**

Our organization and IT operations model our CEO’s perspective of business diversification. I reinforce with our team the principle that “one size fits all doesn’t fit anyone well at all.” A service we deliver for a business unit of a few hundred million dollars in revenue likely isn’t going to meet the needs of a business unit with a few billion dollars of revenue or vice versa.

This contrast means we need to be creative and flexible in the solutions we offer, and we need to be smart about leveraging the breadth of solutions across our businesses. We needn’t have a unique solution for each business unit, but we have to understand where and how we can find synergies across our different operations. This approach has made our enterprise architecture more complicated and challenging than if we had more consolidated operations, but a centralized model wouldn’t best serve the business needs.

**IN WHAT WAYS ARE YOU DRIVING DECISIONS TODAY WITH DATA YOU WEREN’T USING OR DIDN’T HAVE AVAILABLE A FEW YEARS AGO?**

Our business intelligence (BI) strategy is completely different today from what it was five years ago. One reason is the availability of visualization tools that are easy for users to learn and adapt. We couldn’t even envision equipping the end users directly when we initially developed our BI strategy, as many of these new tools either didn’t exist or were in their infancy.

We have since adjusted our strategy to have IT do the heavy lifting of making data available and empowering the business functions to develop their own reports and dashboards.

This concept really has gone viral in the company. As CFOs from different business units network with one another, they hear how their peers are solving problems and want that same capability.

**HOW HAS CYBERSECURITY AFFECTED YOUR BUSINESSES, AND HOW ARE YOU RESPONDING?**

Most industries now recognize that cyberthreats are not just a risk, but a reality. Hackers find a way to penetrate the network of any company. The challenge becomes how to detect them when they get in and prevent the exfiltration of information from the network.

We don’t keep the topic of cybersecurity in the back closet. It’s an important aspect of how we do business. Just as we have physical security departments, it is recognized that we also need a “virtual” security department to protect all of our information.

**WHAT’S THE MOST CHALLENGING ASPECT OF YOUR BUSINESS?**

It’s all about the talent. We are all looking for great talent: either those who have specific skills or those who have potential. It is our corporate philosophy to grow and develop talent from within, and you need skilled leaders to do that. It’s really been a defined shift in our company to transition from recruiting skilled labor to growing and developing from within.

I also believe in the value of — call it reverse mentoring — the fresh ideas that the entry-level workforce brings to the table. These new workers were raised on technology. They don’t know a world without mobile devices and computers. They have very different expectations of how business applications should function.

I find it refreshing to collaborate with the next generation of leaders and stage innovation contests for our entry-level workforce. It’s just amazing what ideas they contribute. For me, it reinforces the value of diversity of thought.

*$12.1 billion revenue for fiscal year 2013, excluding Beechcraft.*
“WE HAVE TO DEVELOP ALTERNATIVE STRATEGIES TO DO MORE WITH LESS.”
The Federal Public Service (FPS) Economy is facing challenges associated with large public institutions: budget pressure, aging teams and a large variety of job roles. For Frank De Saer, CIO, there’s one simple solution: Be creative and start pooling.

**AS CIO, WHAT ARE YOUR CURRENT PRIORITIES?**

FPS Economy employs 2,200 people, most of whom within seven functional DGs: the Directorate-General for Statistics, which produces the country’s economic and demographic indicators; the Directorate-General for Economic Inspection, which deploys investigators into the field; the Directorate-General for Quality and Security, which maintains the quality and safety of products; the Directorate-General for Energy, etc. With this variety of jobs come very different computing needs.

Our role is not only to give everyone the means to fulfill their mission in the best conditions, but also to use technological innovation to create value for citizens and businesses. For example, in late September 2014, we launched a new Web application that completely dematerialized the filing, management and payment processes for patents, which until then was a very cumbersome procedure.

This has proved to be more streamlined and has allowed a considerable efficiency gain for businesses as well as our administrative staff.

**WHAT CHALLENGES DO YOU NEED TO OVERCOME TO CONTINUE MEETING THE VARIED NEEDS OF THE BUSINESS?**

We have two major constraints: the significant decrease in our budget and an unfavorable age pyramid. Sixty percent of our 2,200 employees are over 55 years of age. In this respect, it is not enough to streamline and simplify the information system. We have to develop alternative strategies to do more with less.

A first approach is to empower users; this allows us to give up part of our work in a win-win relationship. This concerns administration users of e-government applications such as patent management, as well as our own internal users. For example, when we built the data warehouse for the DG for Statistics five years ago, users received training and have since been for the most part independent.

The second approach is pooling. We are trying to consolidate resources between ministries, to identify synergies, to share skills, etc. With about 20 national institutions, we are planning to implement a unique unified-communications cloud solution. We also expect to create a service offer by proposing that other institutions host their data in a pooled data warehouse based on the experience of FPS Economy in particular.

**IS POOLING ALSO A WAY TO MEET THE CHALLENGES YOU FACE BECAUSE OF THE AGING OF YOUR TEAMS?**

In a sense. For example, faced with ever-more sophisticated cyberespionage, we have to protect the data itself, including encrypting, compartmentalizing, preventing leaks; all of this requires a profile that is extremely difficult to come by.

Working on network security with Smals, an IT group of Belgian social and health organizations, means we’ve been able to access this skill level. More generally, we’re ensuring the employability of our resources. Alongside the decommissioning of our mainframe — the total shutdown of which is planned for 2015 — we launched a training program for our employees to learn the technology that will become our standard: SAS for data warehouse, Java for application development, and SharePoint for documents.

Everyone has chosen a technology and taken a program involving courses and coaching. By highlighting the most motivated, we have managed to get a real momentum for change.
“FROM NOW ON, THE QUESTION IS NO LONGER ABOUT OPTIMIZING CURRENT OPERATIONS BY INTRODUCING A DIGITAL ASPECT, BUT ABOUT RETHINKING OPERATIONS BASED ON THE POSSIBILITIES THAT DIGITAL CAN OFFER.”
HOW IS THE GROUP I.S. DEPARTMENT MANAGING THE EVOLUTION IN CRÉDIT AGRICOLE’S ACTIVITIES?

Besides the need to reduce costs while maintaining consistent levels of service, a challenge we share with all other companies, we need to face two issues that are specific to our activity.

The first is security. The bank’s clients see it as a safe. Even the slightest weakness can harm not only business but also our image. No other sector suffers in this way. Faced with an increasing number of attacks, we must be at the leading edge in this domain.

The second is the major transformation in our industry, in response to fewer visits to branches and the rising importance of remote channels.

Tools are becoming more diverse, new features are constantly being added, clients are using their cell phones to carry out increasingly complex transactions, such as real-time calculations and transaction confirmations. IT is managing this transformation on three levels: by developing new tools for client relations; by providing our employees with innovative, high-performance systems; and by optimizing the execution of processes.

IN YOUR OPINION, WHAT IS THE MAJOR CHALLENGE CAUSED BY THIS DIGITAL TRANSFORMATION?

For us, one of the key issues is strengthening the skills of the advisors who are in contact with our clients. How can we help them stay up to date with clients who have access to more and more information? Putting complex knowledge to use in local branches is a challenge facing not only the banking sector but all retail businesses. One of our current projects is the development of an interface to be used by both advisors and clients, to strengthen the role of the branch and to facilitate sharing information.

We are also working on augmented reality, which provides employees with information in work-related situations. To manage this trend, the IT Department itself must develop its skills: We need to promote innovation to our various lines of business, while maintaining sufficient technological expertise to avoid becoming completely dependent on our suppliers. However, we need to accept that in some strategic areas, it is becoming very difficult to have in-house specialists who require highly sophisticated technologies. Therefore, we need to strengthen our partnerships, which is a new concept for a group such as ours.

WHAT IS YOUR APPROACH FOR DISSEMINATING THESE NEW IDEAS AMONG YOUR PARTNERS AND TEAMS?

Education is a primary focus for the CIO, as it is vitally important for topics to be understood at the highest level. From now on, the fundamental message is that it is no longer about optimizing current operations by introducing a digital aspect, but about rethinking processes (internal or client processes) based on the possibilities that digital can offer.

The situation today can be compared to the arrival of the telephone in a business setting, and the changes to come are just as far reaching. The IS Department explains the possibilities, provides the platforms, but it is up to each sector to envision new uses.

Our primary role, therefore, is to stimulate innovation. To do this, we are relying on our campus in Saint-Quentin-en-Yvelines, near Paris, where IT specialists come together in an environment that surrounds them with new ideas, new uses. Here we hope to develop a pioneer spirit that will trickle down through the entire organization. Thanks to technology, we are living in exciting times, and my goal is that the entire company will share our enthusiasm and hope for the future.

The leader in local banking in France and in Europe, the Crédit Agricole Group has made excellence in customer relations a strategic objective, and is targeting a model based on complementarity between human skills and the possibilities offered by IT. Successfully managing this digital transformation is one of the major tasks facing Jean-Paul Mazoyer, who was named head of Group I.T. in February 2013.
“WE HAVE A CONCEPT WE CALL “DIGITAL BY DEFAULT,” MEANING WE WANT TO DESIGN DIGITAL SERVICES SO GOOD THAT PEOPLE WILL PREFER TO USE THEM. IF YOU CAN DO THAT, YOU KEEP YOUR CUSTOMERS, YOU KEEP PEOPLE HAPPY, AND YOU KEEP GOVERNMENT RELEVANT.”
Liam Maxwell is CTO for the British Government. His team in the Government Digital Service (GDS) is responsible for exercising technology leadership across government and for identifying the technologies required to deliver great digital public services.

Previously, Maxwell was lead member for policy at the Royal Borough of Windsor and Maidenhead, responsible for IT, sustainability and the council’s role as a “government lab.” He also served as IT director at Financial Times Stock Exchange (FTSE) and in Fortune 500 business service companies.

WE’VE HEARD ABOUT THE EVOLVING ROLE OF THE CIO IN THE ENTERPRISE. HOW IS THE CIO ROLE CHANGING IN THE PUBLIC SECTOR?

The CIO role in government has changed so much; we now have chief digital officers (CDOs) and CTOs.

The CTO handles the common infrastructure, the common desktop, and “Mission IT” — things only government departments would do. For example, only the Revenue and Customs collect taxes; only the Ministry of Justice (MoJ) runs long-term custodial services, manages the interrelationships between prisoners to avoid clashes; and only MoJ holds the system of record for litigation. Those are the things a CTO handles.

The CDO is generally concerned with the interaction between the state and the citizens, understanding the two-way exchange of information and the delivery of public services. Digital officers handle people, process and technology — how the work is written, how the service is designed, user research and feasibility. Digital is more than technology; it’s about transformation.

It’s a design-focused role. Since the design of services is crucial, we have much more of a design focus than government has had in the past.

The most important aspect of digital leadership is a clear understanding of user needs. Every decision you make will be based on user needs, and that requires strong leadership, but it is fundamental to the delivery of excellent public services.

HOW DOES THE GROWTH OF MOBILE DEVICE USAGE INFLUENCE YOUR MOBILE STRATEGY AND APPLICATION DESIGNS?

We have many more people accessing services with mobile devices, so we’ve designed for the multiple form factors that our users need. But we don’t design mobile-specific apps. We need technology that will work on any device to help people get the services they need.

HOW IS THE BROADER AVAILABILITY OF DATA SHAPING YOUR DECISIONS TODAY?

We publish performance dashboards at GOV.UK/PERFORMANCE that reveal how people use our services. These represent about 20 of the current 766 transactions we perform, with more to come. We are freeing up this data; it had previously been locked up in service contracts.

This data helps us identify how people are using our services, so we can determine whether they work and how many people use them. The size of many transactions is not as big as we thought it was. In fact, the volume of transactions beyond the top 50 that we handle is relatively small. Government really must be at the right scale and that’s not necessarily at the scale we had previously thought.

HOW DOES YOUR DEPARTMENT MANAGE CYBERSECURITY CONCERNS?

While the number of digital services grows logarithmically, the potential cyber threat is growing exponentially. Because the success of our interaction with users is based on trust, effective cybersecurity is very important to us.

Using security as a blunt instrument is not helpful. We’re working to deliver security that’s based on users rather than on a department’s organizational procedures. That’s a more effective use of security and proportionate to the threat. For example, GOV.UK/VERIFY demonstrates our new identity-verification program and would be a good illustration of how security is at the core of what we do.

This is an opportunity to use security to reduce our vulnerability and deliver the services that users need.

WHERE WILL YOU BE PRIORITIZING YOUR TIME OVER THE NEXT YEAR?

Unless we build a digital government based on user needs, at some point, people will say: “What has government ever done for me? I can’t access it; I have to go and see them or write to them, whereas everything else in my life is digital.”

That’s why, over the next 18 months, our focus will be on government as a platform. We’ll introduce a series of common technical services for others to use in building world-leading digital services that meet user needs.

We have a concept we call “digital by default,” meaning we want to design digital services so good that people will prefer to use them. If you can do that, you keep your customers, you keep people happy, and you keep government relevant.

For those who are not digitally connected, we have to make sure they have access to the services they’re entitled to. That’s where our Assisted Digital plays as well. Our strategy is to offer such good services that people will prefer to use them, and then make sure there’s an Assisted Digital channel that works for these citizens.
“EVEN THE STEEL INDUSTRY NEEDS GEEKS!”
HOW DOES I.T. CONTRIBUTE TO APERAM'S STRATEGY?
Aperam is evolving in a global, highly competitive market, where prices are subject to extreme pressure. In this context, information systems play a key role in increasing productivity, improving the flexibility and efficiency of processes, and becoming more competitive. In addition, even in a B2B environment, relationships with clients are becoming more and more important, and we strive to offer added value, via portals for example.

Our priorities are centered on productivity, flexibility and client relationships. This can be seen in projects involving infrastructure modernization, simplification of application architecture, reuse of developments, etc. We also rely heavily on the cloud, which offers significant savings and maximum flexibility.

As soon as we discover a challenge in our industry, we look for a solution in the cloud, and these days we often find just what we need. Besides our core activity, i.e., production and the supply chain, three-quarters of applications are eligible for the cloud. We are not quite there yet, but we are well on our way. Today, we use Google for our messaging system, our calendar and office technology, Salesforce for client relations, and SaaS solutions for cash flow or managing expense reports.

IN YOUR INDUSTRY, HOW IMPORTANT IS SECURITY?
When we left ArcelorMittal, we thought that, because we were smaller, we would be less visible and possibly less exposed. We were wrong. We are definitely less prone to attacks on our image, but the risk of our strategic data being stolen is real, and proven. This is not science fiction. We are seeing a resurgence in attempts at phishing, and we are making every effort to protect sensitive information. We regularly consult with users and the general management to improve their level of vigilance, and we carry out frequent intrusion tests to assess our risk level.

These days, everyone is very much aware of these issues. We also strive to classify data so we can apply different protection measures. For the cloud, the risks have been clearly identified. We are gradually introducing encryption solutions for our critical data.

WHAT ROLE DO NEW TECHNOLOGIES PLAY IN THE INNOVATION PROCESS?
The role of the IS department is going to be increasingly focused on identifying IT innovations that can offer added value to the industry, proposing these solutions to the general management, then carrying out pilot projects that will lead to operational deployments.

Several initiatives are currently under way: implementation of SAP HANA for reporting and financial optimization, desktop virtualization to expand the use of mobile tools and use of Google+, etc. We are also going to study big data, which can no longer be ignored (but so far its implementation seems to be more relevant to B2C activities). The same is true for connected objects, which could possibly be used in production activities. Innovating means having the ability to envision uses, and we are working hard to create a culture that makes this possible, both in our IT teams and our areas of activity. But to develop that state of mind, we have to attract young people, who are comfortable with rapidly evolving technology.

Even the steel industry needs geeks!
“If I’m simply an administrator, that’s not enough. I really need to understand the issues — and see the opportunities.”
First came big oil. Then big data. And now, big healthcare. How big? The University of Pennsylvania Health System, better known as Penn Medicine, provides patient care in the greater Philadelphia area and had operating revenue last year of $4.3 billion. That same year, Penn’s more than 2,000 physicians treated nearly 2.2 million outpatients and 75,600 adult in-patients, and delivered 8,885 babies. Penn Medicine also conducts research and teaching at its Perelman School of Medicine, with more than 2,000 full-time faculty, a school of nursing and residencies at several of its hospitals. Overall, Penn Medicine’s big campus of 10 interconnected buildings occupies 6.7 million square feet of floor space and houses nearly 22,000 employees.

Filling Penn Med’s big CIO job since 2008 is Michael Restuccia; he oversees an annual IT budget of some $130 million and manages a staff of 500 IT professionals.

**FOR YOUR OPERATIONS, HOW IMPORTANT IS DATA?**

The better informed our clinicians can be at the point of care, the better decisions they can make, and the better care they can provide.

But we also have a research component — in particular, around genomics. When you meld the data generated from genomics with your patient-care data, that’s the special sauce. That’s where the discoveries are coming from.

That requires scale, because the barrier to entry is difficult. You can’t be a small hospital and easily generate and manage genetic-sequencing data. If I give some blood and they run it through the gene sequencer, that produces about a half a terabyte of data.

**SO HOW DO YOU ALLOCATE IT RESOURCES?**

We’re big believers in what I call the “three C’s”: common systems, centrally managed, collaborative in nature. We used to have a lot of embedded information systems (IS) groups. Now we’ve essentially rolled them into corporate IS, so it’s all centrally managed. Our thinking is that to have and support a common vision in a world that’s very expensive, this is the best way to keep everybody in sync from an operations perspective.

We’ve also developed a strong IT and operational governance structure. IT makes virtually no decisions on its own; instead, we do everything collaboratively with operations. We have a senior-level oversight group made up of six health-system members and six members of the school of medicine. When you’re spending $100-plus million on IS activities each year, you’d better be pointed in a direction you all agree on.

**AND WHAT IS THAT DIRECTION?**

The enablement of “precision medicine.” Initially we stood up a high-performance computing center. It’s made up of more than 2,000 cores of IBM servers and more than a petabyte of storage. The cost of computing in a genetic-sequence world is really high. You can’t store and scan through petabytes of data on your Mac!

We’ve also decided to move to a common IS platform, at least on the health systems side. It’s being provided by Epic Corp., and we expect the deployment to all entities to be complete by 2017. That will cover all our hospitals and ambulatory care practices. This, in turn, will support our larger goal of having integrated data. So any caregiver, whether in an in-patient or ambulatory setting, will be able to see a patient’s data, no matter where that patient may have been treated before.

**ANY ROLE FOR MOBILE DEVICES?**

Yes. Mobile technology helps us provide the right data to the right decision maker at the right time, in the right place and on the right device. We call that the “five rights of mobility.” One difference is that we have different settings: exam rooms, hospital patient rooms, intensive care units (ICUs), etc. Each might require a different type of device.

**HOW ABOUT THE CLOUD?**

Not as much as other industries. The issue is privacy, security and confidentiality. The healthcare industry simply isn’t comfortable enough with the cloud arena right now. Also, most of what we’re investing in now is still server-based, and we anticipate keeping these systems for a dozen years or more. So this is the way it’s going to be for some time.

**SO HOW DO YOU PROTECT PATIENT PRIVACY?**

The challenge is maintaining a balance between privacy, security and confidentiality on the one hand, and facilitating and enabling operations on the other. If you make things too restrictive, you won’t be able to treat patients, or it will become so cumbersome that you’ll treat fewer patients than we now do. Yet we also know that we need the right level of security in a world where we’re constantly under attack. We struggle with this balance and are constantly monitoring.

**IN SUCH A DYNAMIC WORKPLACE, WHAT SKILLS DO YOU AS CIO NEED?**

Mainly, I need to be consultative. It’s no longer the dictatorial IT administrator sitting in the hospital basement. It’s much more a person who’s a good team builder, who creates strong relationships with his or her operational constituents, is a strong communicator and isn’t afraid to take positions.

I also have to be very broad on a lot of topics, yet deep enough to drive and understand the topics. If I’m simply an administrator, that’s not enough. I really need to understand the issues — and see the opportunities.
“THE WIDE AVAILABILITY OF MOBILE DEVICES AND CONNECTIVITY HAS LED TO INCREASED CUSTOMER EXPECTATIONS.”
DHFL Pramerica Life Insurance Company Ltd. is a joint venture between Dewan Housing Finance Corporation Ltd., India’s second largest private sector housing finance company, and Prudential International Insurance Holdings, Ltd., a fully owned subsidiary of Prudential Financial, Inc., a financial services leader headquartered in the United States.

As CIO, Mukul Jain has charted an aggressive path to equip a remote, mobile sales force with tablets and mobile-friendly tools.

**YOU HAVE MADE EXTENSIVE INVESTMENTS IN IT. WHAT PROJECTS ARE CURRENTLY UNDERWAY?**

Our biggest initiative currently is the whole IT transformation we’re doing with CSC and IBM, wherein we’re moving our core insurance platform to CSC’s Integral Life and implementing OpenText’s Business Process Management (BPM) and Content Management solution. We’re also implementing Integral Group along with it.

That involves setting up a new data center, a new application and all business processes on the new platforms, and migrating data from the existing insurance system to the new one. It’s a 14- to 18-month project.

We expect the transformation project to make us better able to serve customers at the point of sale by providing them relevant information, improve our back-office efficiencies and ability to introduce new capabilities, products and services quickly.

We are also working on other initiatives on the human resources side, adopting Oracle’s Human Capital Management (HCM) Cloud for streamlining and integrating our HR processes.

**HOW ARE YOU USING DATA TODAY DIFFERENTLY THAN YOU WOULD HAVE A FEW YEARS AGO?**

Our answer to that is changing quickly because we are a relatively young organization and still have a relatively small set of data. Currently most of our data analysis is for business, financial and regulatory reporting. We use data to create profit-and-loss views of business channels in the organization, which helps us decide which channels are doing well and which are not. We also use analytics to identify customer segments with lapsing policies and those that are buying certain types of products.

There’s a growing demand for doing more complex analysis. Users who had an end-of-day view of data now seek real-time views. We’re asking which customers are most likely to lapse, which products are doing well for which channel and which customer segments, and how can we upsell and cross-sell to them further.

We’ll move toward business analytics that will generate alerts for events in real time if the system detects potential fraud, if a business line isn’t meeting expectations or if something unexpected happens.

**HOW IS MOBILITY CHANGING YOUR RELATIONSHIP WITH YOUR CUSTOMERS?**

In the Indian market, mobility is a great leveler. With the Android ecosystem, many inexpensive devices are available that offer the ability to download apps and data. The wide availability of mobile devices and connectivity has led to increased customer expectations. They get the information they need by searching the Internet, expect to get things immediately, and expect more interaction with the company.

Our mobile strategy is to determine how we can use mobile devices and information to communicate with them more effectively. We’re trying to enable more on the mobile device because it’s with them all the time and that’s the mechanism by which you can always reach them. We want to know what the customers typically request, why they call an agent, and what information they need on a regular basis so we can enable these on mobile devices through apps or self-service website capabilities.

We’ll also use these to inform them about their premium payments, their agent, and whom to call when a need arises. We may also develop a mechanism by which they could request a callback or that could generate an alert on their mobile application if we launch a new product that fits into their current circumstances.

A key item is to keep our customer information current. Many of our customers have prepaid mobile numbers, so they change mobile numbers frequently. An application notifies us when a customer number has changed, so we can verify it and make sure it is kept current in our system.

**HOW DOES THE ACCELERATING PACE OF CHANGE AFFECT YOUR BUSINESS?**

The pace of technology change and its ready availability means the CIO has to walk a fine line. You want to be a business enabler and a business partner, but you need to coordinate what business is doing or explain why it should change strategies for a better result. That’s happening regularly now because so many solutions are enabled by cloud. Our people compare themselves to other businesses that have a certain feature or function and ask, “When can I have it here?”

We don’t want to stop the business from innovating, but we also need to ensure that things such privacy requirements are met or that a new service will complement what we already have and fit into the overall business architecture.

Another challenge of rapid technology evolution concerns making a long-term bet on a certain solution/technology and weaving that into your organization’s architecture. Take mobile operating systems or a mobile ecosystem, for example. You’re preparing something today and a few months later, it’s no longer relevant or doesn’t work without an upgrade. So you’re constantly upgrading an offering, not necessarily from a functionality perspective but because a new technology has become available and people are adopting it.
“WE DEFINED A CLOUD SOURCING STRATEGY WHEREBY WE PLAN TO MOVE A SIGNIFICANT PART OF OUR I.T. SERVICES INTO PUBLIC AND PRIVATE CLOUD ENVIRONMENTS OVER THE NEXT FIVE YEARS.”
Founded in 1857, the Swiss Life Group is one of Europe’s leading providers of life, pension and financial solutions with more than 7,000 employees located around the world.

The company continues to pursue an aggressive set of goals called “Swiss Life 2015,” a program designed to address challenges that companies in many industries will recognize. The organization will rely heavily on investments in technology to fully address the needs of a changing demographic, maintain compliance with new regulations and improve investment returns during a historic period of low interest rates.

CITO Peter Sany has nearly 30 years of experience in technology leadership roles including positions at IBM, Novartis and Deutsche Telekom. He joined Swiss Life in 2013.

**WHAT ROLE DOES MOBILE TECHNOLOGY PLAY IN YOUR BUSINESS?**

Everyone — Generation X, Y, Z, older customers — is increasingly using mobile technologies as the entry point into whatever they do: retrieving information on their finance accounts, changing contracts, location-based insurance products. These examples show how our customer-facing capabilities are playing an increasingly important role, and the demand for mobile access is ramping up as part of this.

Mobile technologies are also important for the delivery of products and services and for fulfillment, so they are taking on a larger role internally as well. We are using these technologies, enhance and support our valued traditional channels — the financial advisors who directly interact with our customers. Just to illustrate a few examples: showing movie clips with detailed product information, contacting remote product experts during one-to-one customer advice meetings, video-chatting while co-browsing together with our customers and prospects help them to understand even complicated products.

**HOW MUCH OF YOUR I.T. IS RUNNING IN THE CLOUD? HOW DO YOU EXPECT THAT TO EVOLVE OVER THE NEXT TWO YEARS?**

From a business and also an IT management perspective, cloud is very promising. Therefore, we defined a cloud sourcing strategy whereby we plan to move a significant part of our IT services into public and private cloud environments over the next five years.

Within the validation and implementation, we have to bear in mind Swiss regulation and legislation (data protection / data privacy etc.), while on the other hand, our customers simultaneously become more aware and careful about their data in the age of increased cybercrime ranging from data-store attacks to government or institutional intelligence, while extensively using Internet or cloud-based services.

**HOW DO TECHNOLOGIES SUCH AS CLOUD NEED TO EVOLVE TO SERVE YOU BETTER?**

From my point of view, it is not so much the development of technologies but the underlying business and operating models. For example, there is currently a widening gap between the cloud as a globally available standard utility and the increasingly local/national regulations affecting our businesses.

Swiss law requires us to have full control over the chain where the data goes. And is not sufficient to have a compliant cloud data center — even your failover and business continuity management (BCM) cloud services need to comply with these regulatory requirements. Especially when dealing with global cloud providers, it would be helpful for us if they are aware of the local regulations and offer adapted products without losing the benefits of large-scale cloud as a utility.

**SPEAKING OF SECURITY, HOW IS THE THREAT ENVIRONMENT EVOLVING, AND WHAT KIND OF STEPS ARE YOU TAKING TO MANAGE THAT?**

As a major insurance company, the trust we maintain with our customers is an incredibly valuable asset. So we go to great lengths to protect customer data.

We take all of the technology steps needed to maintain the integrity of our systems whether they’re on-premises, or in the private or public cloud. But we are also very aware that the human factor is often the weakest factor, so we thoroughly train our employees on best practices and how to avoid related risks.

We also have what we call a data ethics code so we have a clear protocol where customers can at every point declare which rights they give us in what contexts while they can easily revoke these rights as they see fit. We go well beyond what is required by law and generally applied practices, but we believe that it’s worth it to maintain trust with our customers.

**WHAT ARE YOUR PRIORITIES OVER THE NEXT YEARS?**

With our business, digital and IT strategies, we are putting our customers in the center of everything we do. This enables the business to move much faster and to serve our corporate and private clients in a comprehensive and integrated way across all channels — physical, hybrid and fully digital. For example, we want to provide our private customers with a 360-degree view of their entire relationship with us, including their data from corporate pension funds.

At the same time, we are moving to digital end-to-end processes as our lead processes, where paper serves only as a printout from the process. As you can imagine, this is really transforming many parts of our enterprise, including our customer relationships — not only the IT function and architecture. To achieve this, we are shifting the skills in our entire IT organization as well as the business departments to enable them to deal with new technologies and the digital transformation.
“MOBILITY IS NOT A SILVER BULLET. A LOT OF PEOPLE PUT THEIR FAITH INTO MOBILITY SOLVING THEIR BUSINESS PROBLEMS. BUT IF WE CAN’T GET THESE PROBLEMS RESOLVED IN THE DEPTH OF THE PROCESS, THEN MOBILITY WILL NOT SAVE US.”

DR. RAINER SOMMER
HEAD OF GI IT GERMANY, MANAGING DIRECTOR
ZURICH INSURANCE GROUP
WWW.ZURICH.COM
ZURICH IS MORE THAN 140 YEARS OLD. HOW DO YOU KEEP YOUR APPLICATIONS MODERN?
We at Zurich Germany, along with the overall insurance industry, are at a point in time where we think about revamping key elements of our applications landscape. With that, we’re having a close look at our infrastructure landscape as well. Across the industry, the average application in use is often 20 to 30 years old. So we’re on a journey to not only upgrade, but also replace core elements of our applications landscape. Of course, with that, we also have to review our infrastructure landscape with a view to performance, on-demand solutions and distributed usage of our systems.

WHY DID THE INDUSTRY LET ITS SYSTEMS GET SO OLD?
There are two main reasons. First, until fairly recently, insurance was a regulated market. Second, until even six or eight years ago, an insurer could make money in the capital markets, rather than in the genuine insurance business. As a result, the need for new business processes and IT changes was quite low.

Now, economic dynamics have changed. Insurers increasingly focus on the margins that stem from insurance operations. And that’s requiring new business processes, new applications and new infrastructures.

WILL MOBILITY BE A MAJOR ELEMENT OF YOUR NEW INFRASTRUCTURE?
Yes, but with two caveats. One, mobility is not a silver bullet. A lot of people put their faith into mobility solving their business problems. But if we can’t get these problems resolved in the depth of the process, then mobility will not save us. Two, if you think of mobility only in terms of the front end, then we’ll fall short of expectations. Because it’s the back-end systems, too, that are too old to keep up with today’s demands.

That puts us in a challenging position. On the one hand, we have to follow the market and get more mobile. But on the other, we have to bridge the gap between our own capabilities and the demands of the market.

HOW ABOUT THE CLOUD?
It’s pretty important for us. With traditional computing, scalability is often very limited; and if you can upgrade, it comes in big steps and is therefore costly. By contrast, the cloud is on demand, so it provides better scalability and flexibility and can be more reactive to the kind of cyclicality we see in the insurance market. Already, some of the technologies we apply are available only as cloud or as-a-service solutions.

However, one thing we have to keep in mind: There are strict German data- protection laws, which prohibit us from hosting data outside the EU. This sometimes challenges us, but until now we’ve always been able to find a solution.

Of course, cybersecurity in the cloud is a big topic for us. The threat is not only of data loss, but also reputational damage. The insurance industry sells promises; if our reputation is damaged, we can’t sell promises anymore. Thus, we spend extra care to protect our customers’ and partners’ data at all times.

BIG DATA, TOO?
Yes, because we are strongly data-driven. But before we implement big data solutions, we need to ensure that we have the right capabilities throughout the company to work with those. If you don’t have data analysts on the business side asking the right questions and interpreting the data, there’s no point in buying Hadoop or any similar solution. So I see this as more of a business challenge that needs to be resolved before we bring in a technical solution. Unfortunately, knowledgeable data analysts — and not only in insurance — are in short supply and therefore expensive.

DOES YOUR CURRENT STAFF HAVE THE SKILLS FOR THESE NEW APPLICATIONS AND INFRASTRUCTURES?
Today, many of our staff possesses more traditional Cobol, Unix and mainframe skills. So we need younger, more aggressive people who are skilled in cloud, mobile and other modern technologies. However, insurance is not a sexy industry. Thus we have a hard time competing for candidates with the likes of eBay, Amazon and Internet startups. On the other hand, the insurance industry does offer lots of advantages, including job stability and clear career paths. To make that clearer, we’re working with universities and job fairs.

TO LEAD THESE CHANGES, DO YOU NEED NEW SKILLS, TOO?
Yes. On top of understanding technology, I also need a broad understanding of the insurance business. Because ultimately, the CIO is the bridge in business discussions. You need to understand the business strategy and then translate that into an IT strategy. Add to that the fact that Zurich is a global group with its own politics. So as CIO, I must be able to work with my stakeholders, keeping everyone informed and up to date and managing expectations.
“CIOS HAVE TO BE AGILE TODAY. WE HAVE TO THINK ON OUR FEET. AND, WE HAVE TO MAKE OUR PRESENCE FELT IN THE BOARDROOMS.”
Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute in Mumbai, is one of India’s most advanced special-care facilities. As the flagship social initiative of the Reliance Group, the hospital is designed to raise India’s global standing as a healthcare hub—emphasizing clinical services, diagnostic facilities and solutions, and research, plus the latest in I.T. systems.

Rajesh Batra has served as CIO for three years. Before that, he was CIO of Medanta (The Medicity), a super-specialty hospital in Gurgaon, where he dealt with I.T. strategy and implementation. He also had various I.T. roles over the past 18 years.

YOU’VE WORKED IN I.T. FOR NEARLY TWO DECADES. HOW DO YOU THINK THE CIO’S JOB HAS EVOLVED SINCE YOU BEGAN?
It has undergone a complete sea change from the role I had in the world’s largest software and services company, when I was interacting with the CIOs. The traditional CIO used to be responsible for rolling out systems in-house once a year; that role is gone.

We have to be agile today. We have to think on our feet. And, we have to make our presence felt in the boardrooms. We have to look at cost and be aligned with the business. We need to understand the pain areas and determine how we can improve the process of the business and partner with it to change. The CIO’s role has become much more agile and dynamic than it was earlier.

So many new technologies, such as cloud and mobility, are now changing the pace in IT. It can be overwhelming if you can’t take a bigger view of everything. That’s an important aspect of the new CIO role.

WITH SO MUCH CHANGE GOING ON, HOW DO YOU ENSURE THAT I.T. IS EFFECTIVELY COMMUNICATING WITH HOSPITAL ADMINISTRATION?
One of the things we did was to create subject matter experts who work between IT and the business. I have both doctors and technologists who work for me. For example, someone on our team is an expert in pathology and interacts with the pathology team. He’s the single point of contact for any issues that team has with the system or with new implementations. He understands both worlds and can speak to both IT and the pathology team.

Initially there was resistance from doctors to come into IT. They wondered what they would do or what their future would be. Today it’s an accepted practice, and as these people gain skills, they’re being recruited to places such as the Middle East. There’s a ripe market for someone who has medical skills and an understanding of IT.

WHAT’S THE MOST SIGNIFICANT SECURITY THREAT YOU FACE?
Mobility has changed the whole paradigm of security and how we roll out applications. Take the Trojan horse, for example: The city elders of Troy thought that by securing the perimeter, they could secure the city. We tend to think the same thing; look at mobile devices entering through the front door. They are exactly like the Trojan horse. We don’t know what they’re carrying because employees use the devices outside and inside the hospital.

Now we have implemented perimeter security and internal security. We have to secure patient data because it’s confidential, so the moment doctors walk out of the hospital, their tablet and mobile phone have none of that data. Neither can they print that data from a tablet or a phone. Security has become much tighter now, yet the systems are more flexible.

WHAT ARE SOME THINGS YOU’VE IMPLEMENTED TO BRING I.T. UP-TO-DATE IN YOUR SYSTEM OVER THE PAST FEW YEARS?
I worked for Microsoft before I came into the healthcare industry, so I had little experience with hospitals. Because of that, my approach was probably not the same as someone with a long career in healthcare. I had more of an enterprise IT mind-set.

When I came here three years ago, we really had to update the whole of IT and start over. First, we retired the old health information system and implemented CSC’s iSOFT system. Then we brought SAP in to run the back office. There’s full integration between iSOFT and SAP, and we have very few issues with that. It’s running well.

We upgraded our PACS [picture archiving and communication system] to ensure better patient safety and follow-through from the surgeons. We’re now retiring our old Siemens system and installing a new one. We’re adding a 3D and 4D modeling Siemens system called “Via” and migrating images from the old Siemens system to the new AGFA. We hope to go live with this new system soon if everything goes well.

We’re the first hospital in India to go live with salesforce.com, rolling it out to the marketing team so we know how many calls they’ve done, how many hospitals they’ve contacted, how many doctors, etc. That’s being rolled out on tablets, and it resides in the cloud.

We’re operating our digital radiology system on a hybrid cloud, which enables doctors to view images from home and helps them make decisions on their way to the hospital.

With these enhancements, we’re keeping our overall mission in mind. If the people who come to the hospital go home smiling, that’s the biggest reward anybody can ask for. And, if I can make the life of the doctor a little easier so he or she can spend more time with the patient, that’s even better.
“OUR PRIMARY OBJECTIVE IS TO USE INFORMATION TO MAKE THE CAR SAFER. A SECONDARY CONSIDERATION IS TO HAVE SOME KIND OF A SOPHISTICATED ANALYTICS THAT CAN HELP OUR CUSTOMERS.”

ROOPAK VERMA
REGIONAL CIO
FORD OF EUROPE, MIDDLE EAST & AFRICA
WWW.FORD.COM
Described by Forbes as “the most important industrial company in the history of the United States,” Ford Motor Company has long been recognized as a pioneer in mass vehicle production. Today the company manufactures and sells a wide range of automobiles and commercial vehicles around the globe.

Roopak Verma, a 13-year Ford veteran, is regional CIO of Ford in Europe, the Middle East and Africa. In a previous role, he had global responsibility for providing IT solutions for Ford with a delivery team across the United States, India, the United Kingdom, Germany, Australia, South Africa and China. He also worked for Ford in India to set up and grow FTSI (Ford Technology Services India). Before Ford, Verma worked at companies including Border Group, IBM and Deloitte.

IT SEEMS AS OF IT IS PERMEATING EVERY ASPECT OF VEHICLE MANUFACTURING TODAY. GIVEN THAT, WHAT ARE YOUR TOP PRIORITIES AT FORD THIS YEAR?

Every skill team has a big, global process automation project of some kind under way. In one category, we have long-term projects that are truly in the category of process automation. These involve areas such as our supply chain or our warehouse management systems.

In other areas, we’re deploying a system to efficiently forecast and perform resource assignment and balance on our vehicle programs. We’re creating a global order delivery system that is a huge, multiyear project. That’s in its third year of implementation and has many to go.

We just started a big project in marketing called Customer Data Management and a related project we call the Universal B2X. That’s the culmination of all our consumer-facing websites and related applications. On the warranty side, we have the One Warranty System that is in the middle of development. It will roll out to the United States this year and Europe next year.

We’re working on the rollout of a couple of big, global systems in manufacturing. One is the next-generation AVS, which is a system that schedules parts on the assembly line in the plant. In purchasing, there’s an initiative to modernize legacy systems.

There are two other interesting projects coming up this year. One is our Digital First initiative in marketing, sales and service. That marks a big shift in marketing from traditional media to more digital media. That is huge.

And another one that’s becoming really big is what we call Connected X or connected cars. A greater percentage of cars each year will have built-in connectivity. We’re still coming to terms with what that means. It will be generating so much data. What do we do with it? How do we create a new business model based on the connectivity of the car? There’s a huge opportunity from an analytics and business integration perspective.

HOW DO YOU ENVISION USING THE DATA YOU PLAN TO START COLLECTING THROUGH VEHICLE TELEMATICS?

Connectivity from the car is going to open up huge opportunities for us. But, we have to be careful how we utilize it.

Every car is going to generate lots and lots of data every day, as detailed as the engine temperature, to wear on the brake pads, to the GPS location that could be used to determine the speed of the car. Anything you can think of. The impact of that is far reaching, especially in Europe. There are greater concerns about what we collect here and how we use it than in the United States.

Our primary objective is to use that information to make the car safer. A secondary consideration is to have some kind of a sophisticated analytics that can help our customers.

HOW DO YOU SEE CYBERSECURITY THREATS EVOLVING, AND HOW WILL YOU PREVENT CONNECTED CARS FROM BEING HACKED?

It’s a topic we discuss frequently. Security measures at Ford Motor Company have changed in last 12 months. We used to maintain the typical enterprise security — firewalls, security software on laptops, that kind of thing. And that was good enough.

Now with car connectivity, you’re talking about a security profile that could affect your consumer. Once you put a modem in a car, the risk profile is completely different. If you’re driving a car that someone can hack and begin interacting with the CAN-BUS network, they can control systems in the car.

We’re building cybersecurity centers in the United States, Europe and Asia, and much of that is operational. We’re putting a lot of work and a lot of resources into understanding the changing security profile. It’s not as easy to secure a vehicle as installing antivirus software on a laptop.

IT IS UNDER CONSTANT PRESSURE TO STEP UP ITS RATE OF INNOVATION. HOW ARE YOU NURTURING INNOVATION AT FORD?

One thing we decided to do was to democratize innovation by thinking in much broader terms. Ford Motor Company has about 10,000 IT professionals globally, and that’s not counting Ford Credit.

A few months ago, we were running a pilot with modems in many of our employee fleet vehicles in Dearborn, about 400 vehicles. After collecting data for a few months, we had terabytes of data. Then, we threw out a challenge.

We opened access to that data for our IT employees globally and gave them six weeks to come up with interesting uses. We didn’t tell them what direction to take or what we wanted. We didn’t care. We just wanted them to come up with something interesting.

We had 50 global teams working on ideas, and many of them had working prototypes. They showed us things we’d never thought of before. In fact, the head of our intellectual property [department] was present, and he filed 13 patents from what he saw that day.
“TECHNOLOGY PLAYS A PIVOTAL ROLE IN DIFFERENTIATING US FROM OUR COMPETITION.”

STEVE CROWLEY
CIO AND SENIOR VP OF SHARED SERVICES
WEX INC.
WWW.WEXINC.COM
HOW IS I.T. VIEWED AT WEX? AS A SUPPORT FUNCTION OR A BUSINESS DIFFERENTIATOR?

Technology plays a pivotal role in differentiating us from our competition. For example, in the United States, WEX’s proprietary fuel-card network provides for capabilities and information that cannot be delivered over the open-loop card networks, such as Visa and MasterCard. WEX’s role as a credit-card processor also means our systems must be secure, scalable, highly available and resilient.

SO HOW DOES I.T. SUPPORT WEX’S BUSINESS GROWTH?

We recently organized ourselves so that all IT departments across the globe report to the CIO. As part of this restructure, we have configured key functions in a manner that better enables them to operate within a global platform. This includes the technology office, project management office, strategic planning and our two product-development groups: fleet and emerging industries. We’re doing this for two reasons: to ensure that we support the growth of each line of business, and to streamline each area within IT.

Also, as a strategic initiative, we have formed a project called WEX House. We will implement a global network and collaboration suite to enable all parts of our business to operate without friction. The goal is to create a global IT standard for WEX that will allow us to streamline our costs, improve our services and be better positioned to grow. It will include all aspects of IT that support the business. WEX House is under way, and we expect it to be complete by 2016.

WHAT ARE THE TOP CHALLENGES YOU’RE FACING THIS YEAR?

One big focus is on setting up business and IT operations in Europe for the ExxonMobil portfolio we acquired earlier this year. This entails standing up several offices across Europe to support the business. In the Asia/Pacific region, we’re preparing for scale, given the upcoming growth we expect. And we’re focusing on implementing a standard collaboration suite across the company so employees can seamlessly engage and interact with one another. Finally, we believe mobile payments will be a huge disrupting influence in corporate payments, so we have a team evaluating our strategic options in this area.

WHICH TECHNOLOGIES AND PLATFORMS ARE MOST IMPORTANT TO YOU NOW?

Although we’re a heterogeneous IT environment, our primary focus is in the Java, Unix and Oracle platforms. Through recent acquisitions, we’re also seeing an increase in our Microsoft practice as well. At the infrastructure level, EMC, Cisco, Oracle and VMware all play an important role. On a go-forward basis, we have our eye on a few new technologies in the private and public cloud space as well. Currently, WEX is too reliant on “bricks and mortar,” so part of our strategy is to take advantage of the cloud and move as much as possible into this area.

YOUR BUSINESS IS INCREASINGLY GLOBAL. HOW DOES I.T. SUPPORT THAT?

WEX has ambitious goals to grow our business across the globe. This translates into two key priorities. First, we’ll expand our business into new geographies, which entails laying a shared foundation in the countries we currently don’t operate in. Second, we’ll scale and optimize our IT services across the globe by leveraging established practices such as ITIL, ITSM [IT Service Management], and continuous improvement.

WEX is one of those companies you may have never heard of, in an industry you may have never known existed. But in fact, it’s a $717.5 million business with customers that include 90 percent of all U.S. retail gas stations and more than 45,000 vehicle-repair shops. WEX runs two main lines of business: fleet cards, which are essentially credit cards for gas stations; and corporate payment solutions, which is essentially its virtual travel-card business.

Headquartered in South Portland, Maine, WEX has operations in North and South America, Europe, Australia and New Zealand, and sales grew last year by 17 percent. Steve Crowley joined the company after holding senior IT positions with Bank America, NCR and General Electric.
“WE HAVE THIS EVER-EXPANDING DATA NEED AND STORAGE REQUIREMENT. HAVING THE CLOUD HELPS US DEAL WITH THAT IN AN ECONOMICAL, EFFICIENT WAY.”
From rock hammers that started the Panama Canal to the first commercially successful diesel-electric locomotive, Ingersoll Rand has enabled its customers to build the infrastructure that sustains modern society. Today, the company’s industrial and commercial brands include Club Car, Thermo King, Trane, American Standard, and Ingersoll Rand industrial equipment. The company reported more than $12 billion in revenue for FY2013.

Steve Hagood joined Ingersoll Rand in January 2013 as vice president and CIO.

**IN YOUR VIEW, HOW HAS THE CIO’S ROLE EVOLVED OVER TIME?**

A reliance on a technical expertise at this level is less of a focus today. It’s a business leader’s role now; making sure through talent development that you’ve got the right technical skills and expertise in your organization.

You have to ask the right questions to ensure that you’re continuing to drive for innovative solutions, but with an eye toward how they would really help the business.

**WHAT QUALITIES DOES A CIO NEED TODAY TO BE SUCCESSFUL?**

We need people who can understand and develop strategies, who can create a vision of that strategy and then rally groups of people to be part of it. The other quality is execution: being able to execute on that strategy and having good people who are qualified to execute projects and to deliver.

You have to understand the needs of businesses, understand the pulse of the industry and the issues that keep our operational people awake at night. Translating those drivers into IT is how this function helps the business succeed.

**IN WHAT WAYS ARE YOU USING DATA TO DRIVE BUSINESS DECISIONS NOW?**

We’re trying to be much more of a fact-based decision-making company. We want information as a starting point and at the root of the decisions we make and let the facts guide us. We look to what the data we gather is telling us in an unbiassed, unemotional way. At the same time, we don’t dismiss what our instinct tells us either, because that’s based on institutional knowledge.

We use data now, for example, to help us segment our markets; how we go to market with different products; what customers are interested in, and why. For a product line such heating, ventilation and air conditioning (HVAC) equipment, it helps us understand what factors are part of customers’ decision making and what motivates them.

**HOW IS THE TRANSITION TO AN AS-A-SERVICE ECONOMY INFLUENCING YOUR BUSINESS AND IT STRATEGY?**

It’s a positive trend overall. The onus is on us to make sure we’re using only what we really need, but the accounting and economics of it change our strategy.

In the past, we could buy an asset, put it on the books, capitalize it and depreciate that asset out for things such as license fees or software applications. We have a little control there because we can decide how long to amortize those assets and choose how long to keep them beyond some economic useful life.

Leasing assets or doing it as a service all translates to a “this-year” expense. You have to be ready for that when you’re having a financial conversation about how IT costs are changing.

**WHAT ARE SOME OF YOUR TECHNICAL PRIORITIES OVER THE NEXT YEAR?**

The first is understanding and taking advantage of the cloud environment. Like many companies, we have an unending appetite for data. And, we don’t get rid of much legacy data, so record retention becomes an issue. We have this ever-expanding data need and storage requirement. Having the cloud helps us deal with that in an economical and efficient way.

A cloud-based approach will also effectively offer us an upgrade over our current infrastructure. Part of that solution would be a cloud-based environment, virtualizing our server environment and moving to voice over IP (VoIP) communication capabilities.

Another priority is executing on some of the key company initiatives we have around common, consistent processes and systems. In almost every application or functionality suite — whether that’s customer relationship management (CRM), business intelligence, Web, platforms — we’re really pushing to have a few harmonized common systems that will drive our operational excellence.

And perhaps our most important priority is talent management. We’re continuing to focus on building IT talent and the depth in our organization to lead initiatives and strategies today, and to create the next generation of leaders for us in the broader business.

**HOW DOES THE “INTERNET OF THINGS” AFFECT YOUR PRODUCTS?**

Our products lend themselves to being part of an Internet of Things. We see that today with HVAC equipment. We can monitor the health of our big air chillers that sit in the basements of major metropolitan skyscrapers. Monitoring performance and determining maintenance needs are part of what we’re doing today.

As we build more of these devices, security is an important consideration. When lighting, locks and thermostats, for example, are all connected to a smart device, the user must be assured that someone can’t change the lighting or turn locks by entering through the thermostat. We’ve made good strides to ensure that people understand what we’re doing to protect their devices and their data. That’ll continue to be a focused effort for us in 2015 and beyond.
“PEOPLE WOULD SAY BIG DATA IS NECESSARY FOR WHAT WE’RE DOING. I WOULD SAY IT’S MORE ABOUT SMARTER DATA.”

STEVE TOWNSEND
CIO
TRANSPORT FOR LONDON
WWW.TFL.GOV.UK
London is huge, with more than 8.4 million residents within its nearly 660 square miles. So it makes sense that the city’s transportation agency, Transport for London (TfL), would be huge, too. With an annual budget of some £10.9 billion (approximately $18 billion) and more than 27,000 full-time employees, it is. TfL is responsible for the daily operation of London’s entire public-transport network, which includes the city’s buses, the London Underground network, Docklands Light Railway, London Overground, Barclays Cycle Hire, Tramlink and five percent of the city’s road network.

Leading TfL’s I.T. team for the last two and a half years — another huge job — is Steve Townsend.

WHAT ARE SOME OF YOUR TOP CHALLENGES?
We’re looking at back-office processes around our ERP solutions. How can we get the organization to think differently about working practices to drive greater collaboration between silos or pillars of activity, such as HR, finance and customer relationships? What layers of technologies do we need to support it? For that, we have a program called Run Better, and it’s really gathering momentum.

We’re also looking at what we do with data. People would say big data is necessary for what we’re doing. I would say it’s more about smarter data. That is, what have we got? How can we deliver it to make people think differently? How can they do their jobs differently?

Analytics help us, too. What’s happening with transport generally around London? Where are the flows? Where are the bottlenecks? Also, we want to make that information available not just to those people who control it, but also to the people who have to think about it.

Productivity is important. So we’re looking at how we utilize some of the data assets we collect from people who use our services around London — whether that’s a bus, taxi, riverboat, traditional railway overground or underground, Docklands Light Railway, or even a cable car across the Thames.

A LONG LIST. HOW DO YOU MANAGE IT ALL?
It used to be that we’d do a project, and then we’d refresh it every five years. But since I’ve been in the chair, we’ve taken a different approach. Now we’re constantly refreshing and changing the way we deliver data to people. So, as opposed to completing a project and then stopping for a couple of years, this is a process of constant improvement. What’s forcing this is the realization that a “one size fits all” mentality cannot work in such a complicated organization as ours.

HOW DO YOU COMMUNICATE AND COORDINATE WITH THE BUSINESS — THAT IS, TfL’S MANY DISPARATE OPERATIONS?
In the past, we used to run good, old-fashioned governance meetings. Now we’ve actually turned that on its head: We go to our operating businesses and utilize their meeting structure and their collaboration forums to understand what it is that they’re doing. So instead of a technically led environment, it becomes a business-led environment.

The other thing we do is to actually understand our operating businesses. So instead of having a developer, infrastructure engineer or service-desk person work in almost complete isolation, as we did in the past, now we invite them to work with the operating businesses. That way, they can understand what languages the businesses utilize and what their problems are.

TECHNOLOGY AS-A-SERVICE IS TRANSFORMING THE I.T. WORLD. HOW ABOUT AT TfL?
Yes, it’s something we utilize where appropriate. But people think that you can deliver all of your services right away across a public sector organization. In some cases, that works well, because the information classification works well as a service; in other words, we’re not overly concerned with where that data is. But there are other areas where we have to hold the compliance and regulations clauses a little closer to the chest.

ARE YOU USING THE CLOUD? IF SO, HOW?
Yes, we’re already using public cloud for certain elements of our data management. We provide huge amounts of real-time information for external developers and develop applications for Apple and Android services. We use Microsoft Azure services for those.

SO HOW ABOUT SECURITY IN THE CLOUD?
Security is very important. As a public sector organization, we need to be transparent and get external demands about where our data can be. And whilst I think security solutions are arriving, I don’t think we’ve cracked them yet. Especially when you overlay the complexity of our line-of-business and operating applications. We have more than 1,000 applications that are utilized daily, some of which are years old and deal with legacy equipment. Once they’re upgraded, I’m sure we’ll have a different view.

IT’S SAID THAT THE CIO’S ROLE HAS CHANGED. DO YOU FIND THAT TO BE TRUE?
Yes, you could say that a CIO needs to be more of a digital native, and you need to understand the power of mobility and collaborative tools. I suppose that’s shaping how CIOs think.

But one key skill is being forgotten: We’re still here to devise and educate the organization on how to best use technology. That shouldn’t change. We can’t let the latest shiny toy become strategy. We still need to be advising the organization on how to get the best return on investment.
“IT’S IMPORTANT FOR OUR IT TECHNICIANS TO UNDERSTAND HOW VITAL THEIR SERVICES ARE, WHAT I.T. ACTUALLY MEANS TO A CLINICIAN WHEN A PRINTER OR PC GOES DOWN. UNLESS YOU’VE EXPERIENCED THAT, YOU REALLY DON’T KNOW.”
Sheffield Teaching Hospitals is one of the United Kingdom’s busiest National Health Service (NHS) trusts, running five hospitals in northern England, employing some 15,000 staff, and each year treating roughly 960,000 outpatients, 107,000 inpatients, 100,000 day-case patients, and 143,000 accident and emergency visits. With an annual income of £909.5 million (approximately $1.47 billion), Sheffield Teaching Hospitals offers a full range of hospital and community services, as well as specialist care for cancer, spinal-cord injuries, kidney ailments and more.

Sheffield Teaching Hospitals has been awarded the title of “Hospital Trust of the Year” in the Good Hospital Guide three times in five years, and it’s placed in the top 20 percent of NHS Trusts for patient satisfaction.

TELL US ABOUT YOUR TOP PROJECTS.
We’re implementing a digital health record, which consists of an electronic patient record (which will be the main clinical system in the hospital). It’s going to be supplemented by an electronic document management system, which will take care of all of our legacy paper—a big task; since we have more than a million paper patient records.

We’re also implementing a clinical portal. Some of our key systems are specialized clinically; we’ve got things such as renal systems, sexual-health systems and dental systems. We won’t put all of that data initially into our electronic patient records. Our portal will sit on the top and link all of our patient information.

HOW IS SHEFFIELD TEACHING HOSPITALS CONTRIBUTING TO THE NHS’ PLAN TO SAVE £20 BILLION OVER FOUR YEARS?
Every trust is involved in that. Our project will reduce real estate, reduce printing and reduce paper—all of which will make a big contribution to our hospital’s portion of that savings. It will also help staff work more efficiently.

BUT AT THE SAME TIME, ISN’T THE NUMBER OF PATIENTS INCREASING?
Yes, and that’s difficult. But that’s a challenge of the NHS in general: Despite increasing demand, we have to make savings. In fact, no matter how much was invested in the NHS, I don’t think there’d be enough money in the whole country to cover what the growing demand is likely to be.

So somewhere along the line, there have to be lifestyle changes, prevention—the whole public-health agenda. There’s also been talk from the government about individuals making a contribution to their healthcare. We could have a system that at some point in time isn’t free at the point of need.

One thing we’re doing now is reducing length of stay. That will enable us to see more patients without adding to the financial equation. But reducing length of stay is also a technology issue. How much can the patient do before he or she comes into the hospital? There might be a pre-op assessment that you could do online, or registering for certain things. Then, at the end, some things could be done by the patient from home.

That’s also why we need a single patient view. Today, it’s quite easy for a patient to go from one section to another, with nobody having a holistic view of that patient each time he or she moves into the care of a different clinician. Actually having somebody responsible for a patient throughout the pipeline would help us make sure that it’s as quick as possible.

HOW DO YOU USE DATA TO DRIVE DECISIONS?
From the micro to the macro, we use data all the way through. The biggest category of data for us is the human genome project. The idea, broadly speaking, is that we’ll be able to have much more prediction about people’s health. They’re talking about it coming down to being £10 (approximately $16) a report. I don’t know the exact timeframe, but it’s within our lifetime.

We also use data for running the organization. For example, we do predictions in terms of seasonal fluctuations. So, in the winter, what can we expect in terms of colds and the flu? Also, our clinicians use data collected from patients to monitor their condition. For example, patients’ blood, glucose levels, or adherence to their medication.

WHAT ARE YOU DOING TO ENSURE PATIENTS’ PRIVACY?
There’s a big emphasis on privacy in the NHS. We have to follow a number of specifications on that, such as information governance toolkits and standards to protect patient information. For example, we can’t store patient data outside of Europe. That limits what we can do with the cloud.

Looking forward, I think the next big challenge is on mobile devices. Right now, we only support our own devices on our networks. But we want to open that up. Our junior doctors already have devices, so it’s pretty pointless for us to buy them another. If we can accommodate their devices, that would also save us money.

HOW DO YOU ALIGN I.T. WITH THE REST OF THE TRUST?
We have about 70 technicians participating in a “back to the floor” exercise. They work on the ward for at least one day each year so they can see the challenges our other departments face. It’s important for our I.T. technicians to understand how vital their services are, what it actually means for a clinician when a printer or PC goes down. Unless you’ve experienced that, you really don’t know.
“WITH CHANGE HAPPENING SO RAPIDLY, WE NEED TO ENSURE THAT DIGITAL DIVIDES ARE BRIDGED AND THAT NO ONE IS LEFT BEHIND.”
Vienna, consistently ranked in the top three cities worldwide with the highest quality of life, is on a growth streak. Since 1987, the Austrian capital has been adding approximately 25,000 people a year from both births and immigration, making it one of Europe’s fastest-growing cities. Today Vienna has 1.75 million inhabitants; city leaders expect the population to hit 2 million by 2029. Factor in some 12 million tourists a year, plus the city’s own municipal staff of 60,000+ employees, and Vienna’s numbers get very big, very fast.

To help shape the city’s digital agenda, Ulrike Huemer was appointed CIO in March. Though new to the job, she has been a member of the city’s senior leadership team since 2003.

**DOES VIENNA VIEW I.T. AS A SUPPORT FUNCTION — OR A STRATEGIC DIFFERENTIATOR?**

There’s no simple answer to this important question. Of course, we need to support our 60,000 employees working in diverse functions, to ensure that they have secure and reliable access to IT. Government, after all, is very much about handling sensitive information.

But in IT we also see ourselves as enablers for new ways of providing public services. Next-generation technologies — such as BYOT (bring your own technology), cloud, social media, collaboration, mobility, analytics and the “Internet of Things” — allow new modes of creating public value. Our role is to enable our decision makers, employees and citizens to fully exploit the potential of digital networking technologies.

Vienna also participates in the EU’s Smart Cities initiative. As part of this effort, our mayor has outlined a vision for a sustainable, just and inclusive municipality that leverages the potential of information and communications technologies.

**HOW WILL I.T. SUPPORT VIENNA’S SMART CITY STRATEGY?**

IT will have an important role. The main areas we’re focusing on are business-IT alignment, citizen-centric processes and participation, cross-organizational collaboration, and accessibility/inclusion.

For the Smart City, ensuring alignment between business and IT is a key to success. Next-generation technologies will enable new modes of public-service delivery. However, this requires that our strategic decision makers and public servants know how to use these technologies. Therefore, we’re focusing on building capacity and an appreciation for these technologies so they can be successfully deployed within our organization.

**TODAY, CITIZENS ARE HIGHLY CONNECTED WITH MOBILE DEVICES AND SOCIAL MEDIA. HOW DOES THAT AFFECT VIENNA’S I.T. REQUIREMENTS?**

Certainly, citizen expectations have changed dramatically in the past few years. We now experience constantly growing demand for municipal IT, mobile apps and 24x7x365 availability of services. In this context, designing public services around the needs and the life situations of citizens and businesses marks a radical perspective change for our public administrators — as well as an amazing potential for greater efficiencies. For example, we could start informing citizens when their ID cards are about to expire, using whatever communications channels are most convenient for them.

We’re also using participatory approaches, such as ideation and collaboration platforms. Our goal is to include experts and citizens in our strategy processes. In this way, we can leverage the intelligence of our population and the wisdom of the crowd.

In addition, we’re consolidating our IT operations across the organization. We’re doing this not by centralizing everything, but instead by enabling collaboration across former silos. In this way, we hope to enable scaling and learning throughout the city. Today, accessibility and inclusion are both super-important. With change happening so rapidly, we need to ensure that digital divides are bridged and that no one is left behind.

**WHICH OF YOUR PROJECTS HAVE THE GREATEST POTENTIAL FOR CHANGE?**

There are several. One is municipal wireless; that is, offering Internet access for both our population and visitors.

Another is our open government data platform. This lets developers reuse the data we generate to build apps for the Smart City. For example, apps could give citizens the opportunity to report potholes, illegal rubbish dumps, damaged city lights or other problems the city needs to take care of. This would help us maintain the city’s infrastructure. It would also encourage citizens to participate in maintaining their public space.

We’re also experimenting with several ideation and collaboration platforms. I think we’re getting much better at implementing these in a wide variety of situations.

Finally, we’re working to integrate the offline world with the digital. For example, we have an all-digital parking system. It uses dynamic displays to help drivers find nearby garages with open parking spaces. That’s our first successful example, but there are many more to come.

**EVERY CIO FACES CHALLENGES. WHAT ARE YOUR BIGGEST?**

There are four things I worry about every day: Doing more with less; like nearly all municipalities, we’re feeling the constraints of decreasing budgets. Managing the transformation from legacy systems into next-generation technologies. Ensuring consensus and managing the complexity of our different stakeholders. And, as we move to digital technology, ensuring that no one is left behind.

But if it were easy, I wouldn’t want the job!

**TOP PREDICTION FOR THE FUTURE?**

We’ll see IT as a means, not an end in itself. Mobile apps, BYOT, big data, the cloud, unified communication — these are all promising technologies. But we must analyze their potential to create public value.
For more information about this study, please visit our microsite **www.csc.com/ciosurvey**

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CIOS EMERGE AS DISRUPTIVE INNOVATORS
Worldwide CSC Headquarters

**The Americas**
3170 Fairview Park Drive  
Falls Church, Virginia 22042  
United States  
+1.703.876.1000

**Asia, Middle East, Africa**
20 Anson Road #11-01  
Twenty Anson  
Singapore 079912  
Republic of Singapore  
+65.6221.9095

**Australia**
26 Talavera Road  
Macquarie Park, NSW 2113  
Australia  
+61(2)9034.3000

**Central and Eastern Europe**
Abraham-Lincoln-Park 1  
65189 Wiesbaden  
Germany  
+49.611.1420

**Nordic and Baltic Region**
Retortvej B  
DK-2500 Valby  
Denmark  
+45.36.14.4000

**South and West Europe**
Immeuble Balzac  
10 place des Vosges  
92072 Paris la Défense Cedex  
France  
+33.1.55.707070

**UK and Ireland Region**
Royal Pavilion  
Wellesley Road  
Aldershot, Hampshire  
GU11 1PZ  
United Kingdom  
+44(0)1252.534000

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