

# IT Organizations in the Digital Era



# FOREWORD

There is a lot of talk in the market about digital technologies and the impact they are having on business. In reality, it is happening the other way round with the evolution of business models driving a change in technology. If you analyze business models and solve business model issues first, then technology can begin to be viewed as an enabler to transformation. In fact, at ISG we believe the greatest challenge enterprises are facing today is how they can innovate their business models and ensure those models meet their future needs. An organization's response to these two challenges will drive the technology agenda, not vice versa.

In the past, IT has been viewed as a support function within businesses. However, when you consider IT from a business model transformation perspective, the role of an IT organization is changing into that of a service provider. Businesses are demanding of their IT organizations that they be more flexible to changing business objectives, new competition and acquisitions. They are less concerned about what technologies are being used by IT organizations and more interested in how the IT organization is going to influence or facilitate a change in business model.

This presents a new set of challenges from a business-IT collaboration and an IT transformation perspective. To bring about business transformation, focus has to move away from technology. Business leaders must first think about defining the desired business model and then figure out what technology would be appropriate. The best technology in the world cannot solve business problems alone, but the right technology associated with the right business model will enable business growth and cost optimization.

At ISG we have the privilege of supporting and working with IT and business leaders globally. Through our involvement in hundreds of client engagements, we are observing a clear transformation taking place in the way enterprises view technology. The adoption of new technologies is no longer optional if businesses want to remain competitive and conversations amongst business leaders are shifting increasingly from "Is digital for us?" to "How can we make digital work for us?".

Amongst these leaders we also discern a strong desire to connect with their peers and to learn from them. It is in response to this need that we have launched a series of publications entitled "Perspectives from the Pioneers". For this issue we spoke to a number of senior leaders from diverse industries and service provider organizations to understand their perspectives on business and IT transformation as well as the influence of digital. In this edition we observe key topics around business transformation, collaboration between business and IT and IT transformation. Most business transformation initiatives are concerned with customer experience, data analytics, process transformation and flexibility. Collaboration between business and IT is focused on aligning IT value with business outcomes. Finally, the IT initiatives that the contributors describe focus on ensuring cost transparency, driving operational efficiency, bolstering the innovation project portfolio and ensuring overall enterprise security and governance.

We invite you to read each article in this publication and gain deep insights from leaders who have grappled intensely with organizational transformation and made it work for them. Whilst there may be no formulae that you can lift and apply straight to your businesses, our contributors reveal their own experiences from which every reader will be able to draw valuable lessons.

**Robert Chapman**, Partner, ISG

**Sridhar Vedala**, Partner, ISG

⌘ It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.

CHARLES DARWIN

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# Taking retail sky high: Lufthansa's digital technology journey



**DR. ROLAND SCHÜTZ,**  
EXECUTIVE VICE PRESIDENT  
AND CIO, LUFTHANSA GROUP  
AIRLINES AND DIGITAL  
INITIATIVES

The airline industry today echoes the retail industry's state of play at the dawn of the "Age of Amazon" six years ago. Taking a page from the retail playbook, we know that we must see today's connected customer as an individual — be it an economy or premium passenger.

Technology has disrupted the airlines business. The competition to capture passenger attention and loyalty is a challenge, especially with direct threats from new online competitors whose services compete with airlines' services. Similarly, technology has also affected organizational structures within the airline businesses, creating company-wide implications.

By harnessing technology to successfully improve our processes – from customer experience to crew scheduling to baggage handling – we can deliver outstanding value and service to our passengers and change the way the IT function links to the enterprise strategy process.

## **LEVERAGING TECHNOLOGY TO ACCESS CUSTOMERS**

Many online booking sites rank flights by price, often neglecting the number of stops, knee-space available, and other amenities. If airlines like Lufthansa are only ranked by price, then we will never be at the top. However, we believe technology can enable us to carve competitive advantage and get closer to our customers. The airline industry can profit from its position as a follower of the online retail industry by adapting readily available technologies to our industry in the form of solutions, especially ones that help us understand the needs of the individuals we carry.

The greatest need for us today is to understand the behaviors of every one of our passengers. Losing connection with our customers means treating them as a commodity rather than building loyalty. Our challenge is to demonstrate and convey the value we bring to our customers, such as the significant investments we have made to improve our cabins for their comfort. By using big data and predictive analytics to understand and assess our customers' needs, we can capture their attention and loyalty.

We can holistically adopt technology so that the so-called "max state" happens in parallel. Our industry is adopting technologies to enable mobility, understand customers better, and improve the in-flight experience. For example, the airline industry is a low margin business, driving it to seek new ways to expand its revenues through ancillary sales. Technology has the potential to create new in-flight retail revenue opportunities from passengers whose attention we can capture for the duration of the flight. Like the Google car, which will enable Google to access the hours in which people commute to get them connected, the significance of captive airtime is enormous.

Mobility has also become ubiquitous and we can capitalize on this fact to stay connected with our passengers. From automotive to railways to airlines, everyone in the industry aspires to become a mobile travel companion, communicating with passengers to ensure that they have a convenient and stress-free travel experience, as well as offering them ancillaries for purchase.

### USING TECHNOLOGY TO IMPROVE EFFICIENCY

In the past technology has been viewed as an enabler of business process automation. Beyond that, we can also use social media tools and digital technology to improve day-to-day processes and save considerable time and cost. For example:

**Crew scheduling:** There are legacy issues related to crew scheduling, which mean that crewmembers still have to go in person to an office to pick up their printed flight itineraries. In reality, the younger generation of 'digital native' crewmembers are bypassing this traditional way of doing things. Because we are unable to offer them the corporate tools, our crew has taken the matter into their own hands by increasingly using social media tools to exchange their shifts, flights or duty trips. We have to bridge this gap by building a social web sphere for them, because we can no longer have a globally travelling workforce that is digitally disconnected from the enterprise.

**Irregularity management:** With a global network of aircraft, Lufthansa's IT organization has the daily task of handling unforeseen events such as traffic congestion, thunderstorms, diversions and mechanical defects. We have to react to and manage these irregularities, and predictive analytics and technologies can help us address some of the basic ways in which we can analyze past and present events to derive better and more improved future solutions and decisions.

**Baggage handling:** Lufthansa deals daily with 'no-show' passengers who have checked in their baggage but not boarded the flight. These customers prove extremely costly for the airline because we waste time unloading their baggage. It could be advantageous to use Big Data and predictive tools to identify likely 'no show' customers so that we can load their baggage only when we are certain they will board the flight. We believe we can do this by analyzing a passenger's past travel characteristics, such as whether the customer is traveling with a family, a tight connection exists, or they are a lone business traveler who is always late. This data is helpful in predicting passenger behavior and providing insight into whether they will board a flight and can be found by analyzing available passenger data.

### THE GROWING STRATEGIC ROLE OF IT IN THE ORGANIZATION

We believe that leveraging technology can enable us to carve tremendous competitive advantage. Furthermore, technology's growing significance in the organization has wider strategic implications. For example, as CIO, I now report to a member of the Executive Board responsible for hub management instead of the CFO, making the IT enterprise more tightly linked to the business strategy process.

This connection has also *changed enterprise investment priorities*. The global trend of integrating technology into the product means that IT now often has the same significance as other components of the product. Likewise, at Lufthansa, IT investment is now of equal importance to the business as its investment in aircraft. This was unthinkable just a couple of years ago, but today we perceive it as critical to our success as technology is now part of the product we sell. Our role is not just about getting our planes from A to B, but about the travel experience itself. Technology dominates most of our touch points with passengers, whether they

are checking in, using on-board entertainment, checking baggage status, getting additional travel information, or navigating through a maze-like airport.

IT must now *get involved much earlier in the process*, whether it be the design of new products and platforms or planning go-to-market strategies or new pricing systems. For example, in 2015, Lufthansa announced a new branded fare pricing system to make it easier for customers to buy bundles such as basic, flexible and premium. Technology underpinned the entire innovation and the example demonstrates the need to involve IT from the inception of ideas to help drive the innovation-led business.

 **When it comes to innovation, we need strong partners who can understand our business processes and address our needs.**

The changing role of IT means that IT must also act as a 'technology scout' for the enterprise. Today disruptive technologies are dominating every business conversation – technologies that might also threaten our business in an unpredictable manner if improperly used – so it is important to have a view of relevant trends and events in the technology world in order to help us to become even more competitive. We are not the only ones in the company thinking about the future, but IT is now an important pillar in driving innovation.

It is also natural for IT to become a moderator for innovation. The business would like every new idea to launch rapidly, but in reality, not everything that is conceived can be achieved in the end. We have to prioritize – often a challenge with limited budgets – and IT has been instrumental in moderating the prioritization process of products and projects in times of financial austerity.

The influence of digital marketing is overwhelming in our business. It is a very unpredictable field that only operates by trial and error and requires a great deal of flexibility from IT, especially in bimodal IT, when we have to rapidly deliver prototypes or proof of concepts. For example, we may launch certain offers with a limited market understanding of consumer behavior, and either cease, modify or extend the activity depending on the response. IT has to support this continuous learning model, which is a paradigm shift from traditional waterfall models and long-term tenders. Today, we have to be agile, dynamic, responsive, and adaptive to the market.

#### **THE SHAPE-SHIFTING IT ORGANIZATION: FROM CREATOR TO CONSUMER**

IT has now aligned with business process domains and formed 'service factories' which are mandated to make their stakeholders or internal customers happy in a holistic manner. We have to collaborate with strategic partners from the market who are also driving innovation. Today, as the IT organization of a service company, we understand ourselves as end users of technology; we do not have deep budgets for IT and we cannot develop new IT/technology solutions in-house – that is no longer our role.

Today, we are consumers of technology and we deploy and enable it in our business. When it comes to innovation, we need strong partners who can understand our business processes and address our needs.

With the current growth of digital and technology, we strive for fruitful collaboration with technology companies by setting up innovation labs and creating an ecosystem of specialists from other industries. Innovation is not easy. It is a collaborative exercise, and the knowledge and the ideas have to come from various sources. We contribute our industry process knowledge and deep business insights, but combine that with ideas from outside.

We need the capabilities of modern technology and a deeper understanding of use cases and end-customer needs in approaches like design thinking to pave the way to new offerings for the customer. However, we cannot be successful without external help.

We divide our projects on similar lines to bimodal. We run initiatives in parallel with a combination of digital and traditional IT. We founded one centrally important team that we call Solution Design and Vendor Management. The team understands business needs and maps these to technological solutions. It sketches out the solutions, breaking it down to our legacy landscape or new applications, and then involves the appropriate vendor. The team provides the link between internal customer demand and the supplier world and helps us shape the solutions at the forefront of implementation projects.

Beyond IT, we have also founded an innovation hub in Berlin that interfaces with innovative startups and companies in the digital space and also has access to our traditional IT landscape.

For example, we run a large enterprise service bus, and we have extended this service bus to the internet. We provide these web services as an external application programming interface (API) which gives access to third parties and startups for digital solutions; for example, an app on a smartphone to provide flight information or routing information for booking solutions.

## CONCLUSION

The basic story across the airline industry is that it is burning money. We are a very asset-fixed company – lounges, luxurious cabins and crews – and part of our problem is that we cannot earn back our outgoings with big margins. We also have to deal with economic instability, changing fuel costs, inaccurate forecasts, increased customer expectations, irregularities, and so on, combined with the constant need to drive up asset utilization in terms of process and supply chain optimization. The main challenges are decreasing profit margins and destructive competition. Adopting the retail model supported by analytics and digital transformation as a whole, especially mobility, personalization, revolutionizing customer experience, rethinking processes and understanding needs and behavior will be our core focus to win in this global market.

## ABOUT THE AUTHOR

**ROLAND SCHÜTZ** initially worked as a scientist after acquiring an education in Natural Sciences and Supercomputing. In 1996 he moved to the financial industry and held several management positions in IT service delivery organizations. Roland joined Lufthansa Group as Chief Operating Officer of Lufthansa Systems in 2005 and subsequently held positions as Chief Information Officer of Lufthansa Cargo and Chief Information Officer of Lufthansa Passage. This year he was appointed to the role of Chief Information Officer for all Lufthansa Group Airlines and is in charge of all the Group's digital activities.



# The new industrial revolution is changing our society



CP GURNANI, CEO,  
TECH MAHINDRA AND  
CHAIRMAN, NASSCOM

## DIGITAL WILL HAVE A FAR-REACHING IMPACT

Over the next five years US\$6 trillion will be invested in the Internet of Things (IoT) and planet Earth will be home to 24 billion IoT devices by 2020 (according to a recent report by Business Insider Intelligence). This new *industrial revolution* will touch almost every industry, from manufacturing to transportation, retail to healthcare, and government to agriculture. Therein lies the opportunity.

The gold rush has begun. Already on the market are wearable devices such as the Apple Watch, the Fitbit, and Thalmic Labs' Myo Gesture Control Armband, allowing consumers to track their activity, health, and control their daily computing needs with the flick of a wrist.

Washing machines can be monitored in real time via smartphone. A machine made by Whirlpool can activate itself during off-peak hours for energy use, when electricity prices are cheaper. Smart light bulbs can change color and adjust their brightness at different times of the day. The healthcare industry will be transformed by everything from remote patient monitoring to apps that assess iron levels by analyzing photos of eyes. Cities such as Songdo in South Korea and Fujisawa Sustainable Smart Town in Japan are using motion-activated LED streetlights, energy storage batteries, and smart trashcans to make themselves more efficient and eco-friendly.

Society has reached what we call the *Third Wave of Digital Disruption*. The *first wave* was just starting when Newsweek printed its Internet doomsday article in 1995, as the worldwide web became user-friendly and rich with information. The second wave took hold when tech giants such as Google and Apple opened online platforms for third-party developers to create rich applications, and social networks like Facebook and Twitter made personal identities central to the organization of information and advertising. Media, telecoms, entertainment, and retail – to name a few industries affected by the tumult – have never been the same since.

Now, the third wave is turning machines, objects, and surfaces into nodes in a vast communications network that will measure, monitor, augment, and control the stuff of our daily lives in every aspect and at every second. Even industries largely unaffected by the upheaval of the first and second waves of the digital revolution – including energy, auto, and mining – will have to adapt quickly to survive, and thrive, in this new world of big data and smart tools.

### THRIVING IN A DISRUPTIVE BUSINESS ENVIRONMENT

Business sustainability has always been a challenge that requires organizations to change with time, be agile and adapt quickly to the new dimensions of business or simply perish.

The data explosion presents opportunities to capitalize on the behavior of systems and people. Organizations in industries such as electricity supply, manufacturing, logistics, and retail that can effectively harness and exploit the data created by the IoT will enjoy a significant competitive advantage. It presents developers with a huge opportunity to help customers and organizations by offering intelligent analytics tools and providing guidance on best practice to enable them to make the most of the data.

There are a number of key areas, described below, which organizations should consider to help them sustain existing business while making the most of digital opportunities:

- **Investment in emerging technologies for new streams of revenue generation** such as mobile devices, social media, cloud computing, security, and analytics. These technologies enable businesses to interact with customers, partner, compete and succeed.
- Using the IoT to produce **totally new or enhanced existing products and services** that have a high impact on consumers in terms of convenience, cost savings, customer experience and even managing their health and wellness.
- **Creating new markets and adopting new channels:** Due to changing consumer behavior, there has been a movement from internet access through desktop to mobile. Facebook, WhatsApp, YouTube can all be accessed through mobile.
- **Innovative workforce and crowdsourcing ideas:** Employment of a flexible and innovative workforce will encourage innovation. The approach today is to build collaborative applications throughout the enterprise. Collective intelligence can be utilized through social media and collaboration where queries can be floated and the external community shares innovative ideas.
- **Reduced maintenance costs:** Organizations cannot rely on time-based preventive maintenance given the thin margins on which they operate. Predictive maintenance using analytics is the answer to reduce the maintenance costs. One such example where predictive maintenance using analytics is applied is Mahindra Reva E2O.
- **Improved Customer Satisfaction:** At the end of the day, the customer is king and a key social driver for change. Therefore creating innovative customer experiences by forging digital conversations and bringing the outside-in approach is fundamental to digitalization.
- **Rapidly evolving business models:** In the continuously evolving digital marketplace, business models also have to evolve at an accelerated pace to keep up with the times. For example, in the transportation industry, automobile manufacturers are making use of sensors, analytics and cloud for a superior customer experience. Plus, predictive maintenance and usage based insurance for paying premiums based on driving patterns.

### THE IT SERVICES INDUSTRY IN THE DIGITAL ERA

IT spending is the focus of attention more than ever. In many organizations, the mandate is to reduce the spending on IT as a percentage of revenue. For example, Microsoft needs to reduce its spending on IT from eight per cent of its total spending to five per cent in the next three years.

We are also observing that applications relevant to the business are moving from the CIO's portfolio into the business' portfolio.

Cloud and mobility are going to develop hand-in-hand as opposed to in isolation of each other. I foresee a significant reduction in capital and operating expenditure and I anticipate that current spending on IT infrastructure and operations will reduce by more than 30 per cent by 2020.

## ...only 70 per cent of today's workforce will be relevant by 2020.

I believe that three things are likely to create the most profound impact on the IT services industry. Firstly, 80 per cent of all incremental spending on IT will be in digital services. Secondly, there will be a 20 per cent decline in traditional applications management and infrastructure services annuity spend. Thirdly, only 70 per cent of today's workforce will be relevant by 2020.

Today's challenge is different. Robust attackers are scaling up with incredible speed, inserting themselves artfully between you and your customers and zeroing-in on lucrative value-chain segments.

Digitization will lower entry barriers, causing long-established boundaries between sectors to tumble. At the same time, the 'plug and play' nature of digital assets causes value chains to disaggregate, creating openings for focused, fast-moving competitors.

For traditional IT companies to be able to address the challenges posed by product companies and start-ups they need to focus on two factors. Firstly *agility* (speed of response, change and quality) is most valued as it reduces layers in development to increase agility; for example, DevOps integrates the traditional software development and testing functions. Test teams will be removed as developers undertake both functions and in some cases deliver support as well. Secondly, rapid *connection* with customers and turnaround time for fixing issues is essential.

The basics of business have not changed over the last few centuries. While enterprises have become more sensitive to people and our planet in addition to profit, the aim is always to improve margins by bringing in increased productivity, efficiency and optimization while keeping operational costs low.

### CONCLUSION

It has been 137 years since Edison prophetically lit up his lawn. Lights have gone on, servers have booted up, and reality has gone virtual. This time connection will illuminate the world, lives will be lived more brightly, business will be transformed and cities will become networks. Once again, the deciding factor between those who thrive and those who are left behind will be their ability to recognize the significance of something seemingly as simple as a light bulb switching on.



### ABOUT THE AUTHOR

'CP' GURNANI is the Managing Director and Chief Executive Officer of Tech Mahindra and serves on the boards of several other companies. An accomplished business leader with extensive international experience, CP helped lead Tech Mahindra's transformation journey, where he contributed significantly to the company's strategy and philosophy. His inimitable style of leadership combined with his sharp focus on customer experience has helped Tech Mahindra to emerge as one of the leading providers of IT Services and Telecom Solutions to the global telecom ecosystem.

Prior to joining Tech Mahindra, CP was the Chief Operating Officer and a co-founder of Perot Systems India Limited. He received a Chemical Engineering degree from the National Institute of Technology, Rourkela. CP takes keen interest in community work and was nominated by Ernst and Young for the Entrepreneur of the Year Award in 2007.

# Internet of plants: a world of opportunities



BASSIM HAJ, CIO, YARA  
INTERNATIONAL ASA

The global demand for food and food security is growing significantly, as the availability of arable land is shrinking. Moreover, the global population is on the rise, especially in countries like India, China and Brazil where the middle class is burgeoning. The growing middle class is changing its eating habits and consuming more meat, which is driving up the demand for cattle feed such as grains and grass. This is stimulating the need for fertilizers. All this growing demand in turn is prompting the need to address environmental issues such as the level of CO<sub>2</sub> emissions and cleaning up sewage, rivers and oceans.

Yara plays a key role in all these areas being the largest fertilizer and crop nutrition company in the world with 12 to 14 per cent of the global market share. Apart from fertilizers, other key areas of activity include industrial solutions, chemicals and industrial gases. Structurally there are three main operating segments within Yara; Upstream – *production of fertilizers*, Downstream – *sales, marketing and distribution* and Industrial – *development of industrial solutions*.

## TECHNOLOGY AND IT AT YARA

Technology at Yara has two essential implications – technology related to production and technology related to the downstream segment of sales, marketing and distribution. In production, it is our relentless endeavor to optimize and ensure that our assets are running efficiently. Technologies such as catalyst technology, sensor technology, CO<sub>2</sub> abatement and emission to air are quite relevant for us.

Within the Crop Nutrition business, on the other hand, most of our IT is in the area of sales. Even so, we are looking beyond just selling commodities. We're exploring technologies and solutions that could enable us to connect better with our consumers i.e. farmers, open up new innovative business models, enhance business process efficiency and gain insights into our consumers through analytics and cloud adoption. We realize that in order to achieve these goals, we must engage with our business colleagues closely, move to a new operating model and restructure our IT organization.

## CONNECTING WITH CONSUMERS


Farmers are very sophisticated when it comes to technology adoption. They all have tablets, they are connected and have everything readily available. For example in Africa, farmers are quite advanced, especially in terms of mobile usage, given the lack of general infrastructure.

We see enormous opportunity to develop mobile solutions that would be attractive to farmers, allowing them to realize value while making them more profitable. Some areas we could immediately identify to engage with farmers include:

**Fertilizer quantity:** farmers are concerned with determining the right amount of fertilizer to use for their crops, thereby ensuring that they are not over-fertilizing or under-fertilizing. A solution that enables them to access our knowledge to determine the right fertilizer quantity would be very useful.

**Plant nutrition:** farmers are continuously confronted with nutrition-related issues. A solution where a farmer can take pictures of plants/leaves that may be yellowing and send the pictures to our research center where they can be analyzed automatically and a response sent to the farmer with information about the type of nutrition required would be extremely useful.

**Chemical mix:** farmers regularly have questions when mixing pesticides and fertilizers because sometimes the combination can be lethal. A solution enabling farmers to check if X chemical from another company goes well with Y product from Yara would be immensely useful.

 **To reimagine processes it is vital that people change their mindsets and envision new possibilities.**

## INNOVATIVE BUSINESS MODELS

Since its first existence, Yara has always sold to farmers through distributors. We see distributors becoming bigger and more powerful in their influence over farmers. Although we have access to and know the farmers, we have not yet used the information commercially. We could use the data, information and intelligence to reach and directly engage with farmers.

These days we hear a lot about the Internet of Things. For us it is more about the 'internet of plants'. We have been acquiring quite a few smaller companies that have developed sensor technology to measure the humidity and nitrogen in plants and farm soil. We want to monetize and leverage these technologies and provide quality precision farming services. These services, when fully developed, will offer value to farmers and we will be able to monetize and enhance our revenue.

## PROCESS TRANSFORMATION AND BUSINESS INTELLIGENCE

About five years ago, we started our initiatives focused on business process and data analytics. We understood that transformation starts with reimagining processes. Technology is never a roadblock and the technology-related issues can be overcome. Changing people's mindset is a greater challenge. To reimagine processes it is vital that people change their mindsets and envision new possibilities.

We have been gradually building business process and analytics capabilities within our organization over the past few years. The new technologies are helping us accelerate the transformation.

## CLOUD ADOPTION

Cloud is important and relevant for us. I believe that cloud adoption will only get bigger as time passes. On the operational IT side, there are opportunities for cloud adoption. For example, in the end user environment we are already looking at Office 365.

However, there are limitations for complete Office 365 adoption across all our operating locations because of regulations or country specific issues. We have also been using cloud-based applications in the HR area for the past six years.

At present, you cannot have critical production processes in the cloud. There are questions around successfully integrating different applications, for example how we integrate SAP in the cloud with IBM cloud, HP Helion and BT network. These issues must be addressed before we transition our critical applications to the cloud. Therefore, while new technologies are emerging and disrupting businesses, we still have to be pragmatic and understand our limitations before embarking on a major cloud journey. Yara is a big multi-national company that was divested from a bigger entity in 2004 and inherited complex legacy IT environments that date back to the early 90s. We have to steer through our current IT landscape in order to prepare for the next level of cloud adoption.

That said, there is a clear case for a move towards standardization and away from customization. We have to look at our technology stack and dissociate commodity applications from business critical applications. ERP for example, is a commodity and does not offer anything differentiating.

On top of commodity, we have industry-specific processes and Yara-differentiating specific processes. Regrettably, we end up spending far too much time managing commodity processes.

I truly believe that instead of trying to solve all business challenges by looking at the entire ERP stack, we should instead think of a bolt-on solution, or a system outside the core ERP that can offer speed and a shorter time to market.

### **IT'S ROLE AND THE ORGANIZATION**

In order to implement these new initiatives we are changing and evolving our IT organization while fostering closer engagement with our business units. At Yara, IT is centrally managed which makes it easier to coordinate change. We need to alter the mindsets of our people to respond to the shifting business needs and technology changes.

We clearly observe that these days change takes place in smaller and more frequent increments than in the past. Therefore, our IT has to be agile, respond quickly and initiatives should have shorter time to market. Furthermore, we now have two technology management agendas to deliver – the steady state IT and business technology.

We are experimenting and building new models like ring fencing the change part of IT from steady state IT and commodity processes from the critical business. We have established a Business Technology Office (BTO) that will address Yara's core digital challenge which is to structure and systemize competence and knowledge gained, building a capability to handle 'digital projects' over time. This will allow us to improve projects to engage with our end customers (distributors and farmers) and extract value from our digital business projects to experiment, test and learn. In other words BTO will adopt an exploratory dynamic collaboration as compared to steady state IT that is more predictable and linear.

### **CONCLUSION**

New technologies are unfolding rapidly and the only limit of their application is our imagination. Technology is influencing us to take a fresh look at how we enhance our production, operate efficiently and safely, grow our revenues, engage with our core customers and be environmentally responsible. I believe this is just the beginning of a world of opportunities.



### **ABOUT THE AUTHOR**

**BASSIM HAJ** is Senior Vice President of Information Technology at Yara International ASA, the world's largest fertilizer company. He has more than 30 years' experience in information technology spanning the seismic exploration, oil & gas, paper and forest products industries. Today at Yara, Bassim has overall responsibility for Information Technology across 160 worldwide locations spanning four continents. His team of 300 support 13,000 end users globally. Bassim has won several awards including CIO of the year 2012 Norway and European CIO of the year 2013. Bassim has participated in Executive Leadership Programs at IMD Switzerland and holds degrees in Computer Science and Electrical Engineering.

# The age of composable enterprises



R. SRIKRISHNA, CEO,  
HEXAWARE TECHNOLOGIES

There is a popular tendency to gauge the rise of digital through the success stories of innovators. The reality is that the response to digital disruption takes the form of a bell curve with innovators at one end of the curve and laggards at the other end. In the middle is a broad set of adopters that are gradually transitioning to digital technologies. As they do so they face a lot of unique challenges and opportunities. Our focus is on supporting this segment of companies by investing in understanding their needs and developing differentiated solutions for them.

## **DIGITAL IS DRIVING FOCUS ON COST EFFICIENCY, ANALYTICS AND CLOUD ADOPTION**

The drive to achieve cost efficiency has recently assumed an even greater significance than in the past for two main reasons. Firstly, there is a need to fund new digital initiatives and secondly, more cost effective solutions are available. There are a number of technologies – like automation, robotics and artificial intelligence – that can enable companies to achieve substantial cost savings. Cost savings in the IT domain can be used to accelerate digital initiatives.

Leading companies across the world are appointing Chief Data Officers to extract value and drive data-driven innovation from the dynamic, large, disparate volumes of data that exist within the company. Increasingly, our customers are also enriching their enterprises with external data through the use of sensors.

Cloud adoption is becoming mainstream as companies seek new cost effective models. The initial wave of cloud adoption started a decade ago in the areas of Customer Relationship Management (CRM) and Human Resources (HR). More recently Finance and Marketing have been benefiting from cloud technologies. We believe that the next wave will impact core applications. For example, many insurance companies, as they begin their modernization journey, are considering a number of Software as a Service (SaaS) platforms for their core applications such as claims processing. Replacing core applications with SaaS platforms may not address all the functionality and companies will have to figure out a way to integrate and orchestrate SaaS, off-the-shelf and legacy systems.



### UNDERSTANDING THE START-UP ECO-SYSTEM IS VITAL

A number of niche providers are emerging with specialized solutions and end-to-end, custom-built platforms addressing a narrow use case. Customers are faced with the option of either making a transition to a new platform or to incrementally modernize their legacy systems. Making these kinds of decisions requires a profound understanding of solutions and providers. With most of the niche providers being classified as start-ups our customers trust us to produce business cases and scan the market to find the right products or solutions to meet their needs.

### BUSINESS-IT INTERACTION IS CHANGING

Companies are increasingly relying on their IT organizations to help them transform the business by identifying the relevant solution while providing stable operations. In other words, IT and business initiatives are converging. For example, a traditional IT initiative of portal development to improve responsiveness and performance is now handled as a customer experience strategy to optimize customer interactions and improve processes.

There is a growing demand for a bimodal IT approach, which is more agile. On the one hand, businesses require systems of engagement to boost performance and on the other hand, there is a need to ensure that the systems of records are stable and available. The IT organization is expected to synchronize these two environments.

### HEXAWARE'S STRATEGY

The IT services industry has undergone many phases of evolution in the past few decades. The current phase of evolution is probably the most complex and far-reaching and will involve change across many service offerings.

- **Automation:** There will be an obsessive focus on automation in the areas of applications support, testing, Business Process Outsourcing (BPO) and Infrastructure Managed Service (IMS). Customers will be able to reduce dependence on labor in the range of 30-35%.
- **Business intelligence and analytics:** The focus will shift from managing enterprise data to managing big data i.e. including data from outside the enterprise and the Internet of Things (IoT). The emphasis will shift from managing the data to accessing the data and deriving insights for solving business challenges.
- **Enterprise services and applications development:** These services are in a phase of evolution whereby solutions comprise off-the-shelf, SaaS and custom elements. Furthermore, applications development will be transitioning from waterfall model to an agile model. The connected customer is here to stay. The enterprise landscape will be optimized using agile DevOps, service oriented architecture (SOA) and integration and mobile-first strategies. Customers will embark on newer models of converged architectures and web-scale principles. These emerging technologies will help to realize faster application delivery, simplify IT infrastructure and increase resilience.
- **Verticals** will be charged with creating a few use cases where straight through processing platforms can be offered. The areas to build, acquire or partner would be identified.
- **BPO** will go through a two-step evolution as complex business processes are digitized by Robotic Process Automation (RPA) and cognitive automation. First, RPA will enable automation of the presentation layer whereby human involvement and decision making for simple horizontal processes will be replaced by robots. Eventually RPA will add value to



complex decision making. The second step will encompass building straight through capabilities for vertical processes.

- **New digital services** will focus on supporting customers in their digital engagement with three sets of stakeholders: customers, employees and suppliers.
- **Design thinking** will be the core of product engineering and will lead to innovation and efficiency.
- **Application Support:** The cornerstones of next-generation application support will be: self-healing robots; analytics with data from IT Service Management tools; correlating monitoring parameters with analytical tool log files; native application and infrastructure monitoring tools and big data analytical tools.

## There is a growing demand for a bimodal IT approach, which is more agile.

The future of service delivery will be streamlined and optimized using integrated components like extreme automation, agile process orchestration, integrated DevOps, fixed price execution framework, high risk project management and transparently interconnected global development network.

### **‘SHRINK IT’ AND ‘GROW DIGITAL’**

Hexaware’s focus is on ‘Shrink IT’ and ‘Grow Digital’, two powerful interlinked strategies. ‘Shrink IT’ eliminates the cost and the need for commodity IT. We firmly believe that applications support, infrastructure management, testing and business process services can be automated through artificial intelligence platforms, robotics, etc. This not only eliminates labor costs but also increases quality, compliance, reduces risk and ultimately frees up budget that could be used, instead, to fund digital discovery and experimentation.

Essentially, Hexaware will help customers to become digital enterprises with capabilities such as cloud, analytics, mobile, and social. The ‘Shrink IT-Grow Digital’ approach is propelled using distinctive elements like

intelligence driven automation, hyperconverged infrastructure, anti-pyramid engagement and design thinking.

Hexaware’s digital delivery philosophy is centered on automation first, then self-service, followed by experienced talent requirements and a culture of continuous automation. Our growth strategy is grounded in the firm belief that enterprises will:

1. Bring together and harness the power of data
2. Invest in process re-engineering to reduce process and cycle times
3. Realize that current systems will not be able to meet the demands of new processes and there will be radical re-engineering and re-tooling of underlying systems. Enterprises will evolve into ‘composable’ enterprises whereby each function of the enterprise will be thought of as an entity and the needs of each entity are addressed independently using SaaS, off-the-shelf and legacy solutions.
4. Build systems of engagement
5. Embrace intelligent automation to change the way business is conducted

We believe that there is a capabilities gap in the market in the above areas and we are building competencies that will support and help our customers to address these challenges.

### ABOUT THE AUTHOR

**R SRIKRISHNA’S** role is to transform Hexaware to deliver world-class services to customers, build a great place for employees and sustain long term profitable growth. Sri demonstrates a great mix of leadership skills, technology expertise, operational experience and passion for customer service. In recognition of his leadership skills, the World Economic Forum named him ‘*Young Global Leader of the Year*’ in 2010. Prior to joining Hexaware, Sri spent over 20 years at HCL Technologies where he led the Life Sciences & Healthcare and Infrastructure services. He was instrumental in growing these areas into multi-billion dollar businesses. He holds an Electrical Engineering degree from the Indian Institute of Technology and an MBA from the Indian Institute of Management, Calcutta.

# Embracing new IT operating models to create business value



RUDI PEETERS,  
CIO, KBC BANK

Technology is changing at a rapid pace, yet technology by itself only has a limited impact on business. The real effect of technology is determined by how you harness it for your enterprise. Cloud, for example, can cause complete disruption of business models as evident in the retail and media industries. On the other hand, Cloud can also play the role of a facilitator enabling enterprises to standardize IT applications and processes. Technology is no longer a barrier for enterprises. Today, businesses are inhibited by their ability and desire to adopt transformation.

Given this context and the explosion in available technologies, at KBC Bank we realized that we would not be able to channel the benefits of technology effectively unless our IT assumes the role of a broker between our business and the ever-expanding world of technology. This entails rethinking the way we operate and engage with our business while fulfilling regulatory requirements and demonstrates the emerging role of an IT organization. It is very different from the role IT previously had where the business often perceived it as a cost center.

At KBC Bank, my ambition as a CIO is to become a co-entrepreneur. Technology is becoming pervasive in business and it is too important not to involve IT in business strategy. Consequently, IT is too important to leave to the IT organization alone and business is too important not to involve IT. As a co-entrepreneur we can influence group-wide cost immensely, generate new business ideas and play a key role in implementing these ideas.

## **TECHNOLOGY ADOPTION AND INDUSTRY REGULATIONS**

The financial services industry operates in a regulatory environment. Therefore, an assessment of the regulatory framework must be carried out ahead of adopting any technology. For example, implementation of cloud has to be undertaken step-by-step: it took us two years to get regulatory approval to put our mail and collaboration software in the cloud and a further two months to migrate Lotus notes to MS 365. Indeed these applications work well, create value and bring costs down. We would like to do more in the cloud, but need to be mindful of the regulatory framework. For example, we would not be able to move testing or IT development out of our own environment because the regulatory framework does not allow us to put customer data in the cloud.

## **BUSINESS VOLATILITY DEMANDS IT CHANGE**

In the past the financial industry had witnessed unlimited growth in demand, resources and projects. Since the financial crisis, however, it has been experiencing shrinking budgets, head count reduction and, more recently, volatile demand. The cyclical nature and volatility of business have now become common characteristics of our industry.

⬡ **...we have to build great credibility and trust with our business stakeholders to position ourselves as a partner and not just as a supplier or a cost center.**

With such sweeping changes in the business and technology environments, IT has a critical role to play and must transform its traditional operating models.

#### **IT HAS AN HOLISTIC VIEW**

In the past, IT budgets were prepared at year-end with a view of the projects portfolio for the year ahead. These days our business environment is changing every three to six months so planning for a full year no longer makes sense. Instead, we must adapt our budgeting and planning cycles to a shorter period to respond to the business needs. At KBC Bank, we are transforming to become a networked organization with shorter cycles and zero based budgeting.

During the budgeting process, the business prioritizes their projects and budgets first. We then support them with a portfolio review to share our insights and inform portfolio strategy for the next budget cycle. For example, our review could reveal that, in the past six months, we mainly devoted budget to cost reduction related projects whilst we launched few initiatives to boost revenues. This would highlight, therefore, that business should focus on a revenue growth portfolio for the next budget cycle.

The prioritization of projects has become critical for business success. A few years ago, our industry could afford to launch many programs simultaneously. In contrast, there is now more pressure on budgets so our businesses are compelled to prioritize projects. However, there are only a few areas within the company, for example IT and Finance, that are able to view the KBC group holistically across all its divisions, including banking, insurance and asset management. This positions them to make pivotal, enterprise-wide prioritization decisions.

#### **CUSTOMER CENTRIC TRANSFORMATION**

In order to assume the new role, IT should move from being IT centric to customer centric. This is not easy to do and we have to build great credibility and trust with our business stakeholders to position ourselves as a partner and not just as a supplier or a cost center. The transformation requires both a shift in the way IT is perceived as well as an organizational change.

My previous job was that of a marketer, so when I took over as CIO I brought core marketing concepts to IT. In particular, I channeled IT's efforts towards perception management because I am a firm believer in the notion that perception is reality.

Another important focus area for us was improving communication with the business. In the first year, we reduced the number of technical training sessions for our IT teams to focus more on soft skills development. Both these initiatives have paid off well and helped IT build rapport with our business.

The third important aspect of transformation is change management. I believe that people are not against change; rather they put up resistance if they are not involved in the change process itself. Therefore, I focused on changing the environment by making every position a vacancy and inviting our employees to re-apply for the positions. This enabled them to choose positions that aligned with their skills and aspirations. We succeeded in creating an environment where people could organize and regulate themselves.

Changing the environment and promoting the right behavior creates healthy competition within teams, which ultimately drives organizational change.

### **SHIFT FROM TRADITIONAL OUTSOURCING**

As the IT organization assumes a new role, we also have to evaluate our existing sourcing models and adopt new approaches that enable us to be agile and respond to volatility.

At KBC Bank, during a period of high growth, my predecessor started up a captive service provider in India, with the idea of eventually making it a separate company and offering services akin to IT service providers. Given the context, at that time, it was probably a good strategy. Subsequently during the financial crisis, we had to reduce our workforce in the captive company from 500 to 150. Running your own captive of 150 people in a country like India does not make sense.

I did not want to shut down the captive as we had great talent there. Therefore, we asked our strategic partner to acquire our captive. Over the years, this partner has continued to provide us with strategic support enabling us to move towards our new operating models.

### **CONCLUSION**

Technology can be a disruptor or a facilitator. The power of technology can be harnessed not only by implementing new technologies, but also by innovating, changing the way you do things and adapting to the new business environment.



### **ABOUT THE AUTHOR**

**RUDI PEETERS** is Group CIO for KBC. He was responsible for the sale and divestment of CENTEA and FIDEA after the company received state support and for redefining the strategy and finance planning for KBC Belgium within the KBC Group. He played a key role in the company's transition to the Euro and led the implementation of an internet banking solution. He has transformed his organization into an agile, successful player in the volatile and sometimes even disruptive market of Financial Services. Rudi is a popular keynote speaker and CIONET Belgium awarded him '*Speaker of the Year*' in January 2014. He was nominated '*IT Manager of the Year*' in 1997 for his first internet banking solution in Europe.

# Reimagining banking through automation



MOHIT JOSHI, PRESIDENT  
AND GLOBAL HEAD OF  
FINANCIAL SERVICES,  
INFOSYS

There is no doubt that technology is now more essential to the banking industry than ever before. Since the last global financial crisis, banks have experienced a downward turn in revenues, although they have been able to maintain stability for the most part. In order to maximize value in these circumstances, banks have been driving operational efficiency by investing heavily in technologies that help them optimize and automate branch infrastructure, contact centers and other operations activities. Investments in technology in the financial services sector will continue to grow as banks realize that, for their users, banking is about having the right technology platform that requires little physical infrastructure or operations staff.

## TRENDS DISRUPTING THE BANKING INDUSTRY

The following technology-led trends are likely to have a major impact on the future of the banking industry:

### Digital Disruption

Digital disruption is already pushing the banking industry to change in significant ways. Banks are increasingly aware that they need to innovate by implementing new processes, methods and ideas to survive in the market. They also need to find ways to remove the restrictions imposed by legacy systems and implement a number of new technologies that will need to comply with regulatory requirements. Banks will also need to collaborate with experts and with the broader ecosystem to build functionality. All this must happen with today's digital consumer at the heart of the transformation journey – surfacing the vital need for banks to integrate mobile with social, build security, agility, and responsiveness into digital infrastructure and incorporate simplicity and convenience into complex design.

### Fintechs

Another natural area for banks to make large technology investments is in fintechs, or financial technology companies. In my conversations with several senior bank executives, most believe that their next challenger is not likely to be the bank next door, but a fintech startup. This perspective is shared not only by CIOs, but also by CEOs. They are now keen to engage with startup communities and pick specific use cases or intellectual property (IP) that banks can adapt to their own context.

### Operational Efficiency

Banking CIOs are also facing mounting pressure to reduce their business-as-usual operations costs; artificial intelligence and automation technologies will help banks significantly drive these down. For instance, for a bank looking at level 2 support across countries, applications, and lines of business, automation can offer more than 40 per cent cost savings over three to five years. These cost savings will not be driven by offshoring

or labor arbitrage, but by automation alone. Whilst there has been a significant amount of automation in infrastructure operations for a long time, we are now witnessing the automation of a number of business processes and it will further increase, supported by cloud. In the applications space, there are also automation opportunities for level 1, level 2 and level 3 support. Banks are willing to spend money on automation in the technology domain – budget that can be allocated to new initiatives the majority of which will be in the area of digital.

#### **Vendor Consolidation**

Since the last global financial crisis, several outsourcing trends within the banking industry have emerged, the most important of which is vendor consolidation. Enterprises that once worked with a number of different providers now prefer to work with a few premium partners – giving those partners a greater share of wallet and the opportunity to develop a close partnership with their clients. As the role of technology in banks increases banks also accept that they must collaborate with providers to develop ideas and implement broader initiatives, in outsourcing as well as in business transformation and automation.

#### **DEVELOPING A CULTURE FOR SUCCESS**

At Infosys, we have developed a services strategy that takes into account the changing business environment and focuses on customer concerns and needs. The key tenets of our strategy are automating for productivity and better cost savings within the core service lines; introducing new service lines and platforms, design thinking, and digital engagements with the startup ecosystem; and building a more purposeful, collaborative, innovation- and performance-oriented culture.

It is important to note that automation is an opportunity to reimagine business processes. Enterprises that fail to understand this will end

up with an automated process that replicates many inefficiencies and they will encounter the same breakages that occurred with manual processes. To be able to reimagine processes in the new world is vitally important, especially for banks. The reason a lot of legacy banking applications are inefficient is that, historically, there were many manual banking processes. These were automated without consideration of the fact that new technology platforms facilitated a completely different way of doing things. Banks must now ensure that they do not repeat the errors of the 1970s when they automated processes, such as loan disbursal and underwriting, without taking into account what the new systems made possible.

Infosys must also act in the role of innovator and aggregator, helping banks create the right ecosystem with fintech startups. In the startup ecosystem, we see investments being made in multiple technology platforms and business areas. Fintechs are innovating everywhere, whether in payments, or corporate lending. However, banks have not successfully engaged with them direct because of the large size and scale of their constantly evolving ecosystem. It is also unclear what degree of security fintechs can deliver as well as how banks can work with smaller players given their own regulatory requirements.

Banks have also tried their own versions of innovation accelerators and boot camps with little success. Infosys has an ideal opportunity to act as an intermediary, because we have customer-specific contextual knowledge thanks to our engagements with customers for over a decade.

We have technical resources, consulting and design capabilities and physical infrastructure across the world that we can leverage to engage with startups. We also have our own intellectual property that not only complements the startups in our ecosystem, but which they can also use.

Infosys has developed a model for innovation by building innovation capsules for customers based on customer ideas and market and consumer research. We can select a set of ideas upon which we can work with banks to develop a value proposition by building a startup and partner ecosystem. As a result, fintech product startups become our partners rather than our competitors, leveraging us as a services company to help them develop and deliver their products. Infosys has traditionally been a services company – we are now becoming more of a software and services company as we use our platforms and products to amplify the work of our consultants.

## ...automation is an opportunity to reimagine business processes.

Even if the banking ecosystem changes from being purely a large suite of bespoke applications to a number of embedded fintech solutions, the role of Infosys as a partner or system integrator, helping banks shape their long-term perspective, will not change. If anything, this is a very exciting opportunity to bring a new set of solutions and new participants to our customers. It would be counterproductive for Infosys to resist this trend.

### CONCLUSION

The banking and financial services industry will continue to make greatest use of new technologies because this is where the greatest degree of transformation will happen. In this industry, the opportunities have no end – there is no finish line or goal post for banks to achieve cost savings or to digitize to improve customer experience. For Infosys, this presents us with endless possibilities to leverage our automation platforms and partner ecosystems to bring our customers in this sector constant innovation.

### ABOUT THE AUTHOR

**MOHIT JOSHI** is President and Head of Insurance, Financial Services, Healthcare and Life Sciences - key business segments for Infosys. In this role, he has P&L responsibility for the business globally. In previous roles at Infosys Mohit has been responsible for leading the Financial Services practice in Europe and the Americas. In 2007, he set up and was CEO for the company's first subsidiary in Latin America - Infosys Mexico. Mohit holds an MBA from Delhi University and a Bachelor's degree in History from St. Stephen's College, Delhi. In 2014, Mohit was selected as a Young Global Leader by the World Economic Forum. He also serves on the Board of Business Disability International.



# The curative power of big data



**SAM MANTLE,**  
GLOBAL HEAD, RESEARCH &  
DEVELOPMENT IT, NOVARTIS

Technology is changing at a speed we could never have imagined even ten years ago. In the pharmaceutical world, technology has been integral to business-as-usual for some time now and science and innovation is at the heart of Novartis' R&D function. IT, on the other hand, functioned as a means to support business operations until recently. Today, however, IT plays a central role in the R&D function, dictating everything from the way we use information to how we make decisions based on that information.

IT has become a key strategic enabler for Novartis, helping us transform and innovate in several important areas, including:

- gene sequencing, drug discovery and pre-clinical phases;
- core clinical development to run large-scale trials in a validated and compliant way;
- managing our pharmacovigilance requirements by capturing adverse events and doing proactive signal detection as we seek to obtain compound and product approvals from regulatory bodies;
- the entire submission process, which consists of collecting information from clinical trials, validating that against the protocols and presenting it in a transparent way to the regulatory authorities who make drug approval decisions.

All these are key areas where Novartis procures the most sophisticated applications and tools available in the market to help us reduce throughput times, make processes more efficient and enable access to a myriad of data and information.

## **THE ROLE OF IT IN PHARMACEUTICAL RESEARCH AND DEVELOPMENT**

At Novartis, we focus keenly on shortening the time it takes to get our products to market. Historically, this process has been very time-consuming because of the lengthy processes involved from discovery to approval. Now, however, the IT market offers us new technology solutions that not only incorporate all the standard processes of the pharmaceutical product life cycle, but also have capabilities to access upstream and downstream information to help simplify and speed up decision-making.

One such solution is in clinical trial enrolment. For example, when we think about starting a trial, a key factor is deciding where to run it – in which country, which site, and with which investigators. These are fact-based decisions that we can make more quickly when we have better information about the past performance of trial countries, sites, and investigators. IT can help us rapidly design a trial protocol and select the right site and investigators to access to the most appropriate patients and reduce research time.



⌘ **CIOs today have a deep responsibility to ensure that we are making the right technology decisions for our organizations to set us on a future-ready path.**

Another area for technology to transform the R&D function is in monitoring and risk-based analysis. We run highly complex and regulated clinical trials that take place at clinics and hospitals all over the world. When we have access to real-time information about the progress and performance of these trials, we can be more agile and proactive in our decision-making, either because the trial is not progressing as it should, because of delays, or because there are general indicators that the trial is unlikely to go well at a particular site. New IT technologies enable us to drill down into the data to a great degree of detail, which helps inform the decisions we make about resource allocation and improves our agility and accuracy in this area.

#### **PHARMACEUTICALS AND THE BIG DATA OPPORTUNITY**

At Novartis, we have a number of large-scale platforms that we host in-house, but we are now in the process of exploring every new technology opportunity be it agile, cloud-based solutions or the big data and analytics suite. We have the chance to bring massive, aggregated external data sets into our environment so that we can undertake more sophisticated reporting, based not only on internally generated trial data, but also on externally captured, real-world evidence. We could also include commercial information about product performance in the market – the simple combination of these data sets could provide powerful assurance of the safety and long-term efficacy of our products.

Many technology device companies in the healthcare market today have excellent insights, be it from high-end devices used to capture patient data, or individual wearables for people who are interested in their health and fitness. Several IT providers also have very innovative ideas about transforming back-end infrastructure to capture data from these devices and filtering and integrating it into our cloud or real-world evidence-based solutions. I think it is now more important than ever to collaborate closely with our technology partners and integrate our different skill sets. In the future this will ultimately benefit Novartis as we connect more with the population at large and, in particular, with patients who are either taking our products in a commercial setting, or working with us in clinical trials.

## THE CHANGING ROLE OF THE CIO

As technology pervades many different areas of business, CIOs today have a deep responsibility to ensure that we are making the right technology decisions for our organizations to set us on a future-ready path.

For this reason, the IT organization must be clear about the business value that any new technology solution can bring to its business. The emphasis is very much on the fact that we are the technology experts, we understand how our business works and we understand the pain points and challenges – giving us the responsibility to bring new technologies to our business partners with informed recommendations about when and how to adopt them.

It is vital, therefore, for us to recognize a tangible link between technology investments and the business value that we will derive from them, as well as being able to demonstrate this to the organization. Increasingly, we also have to involve senior stakeholders from the business to get their support in approving these investments. This is important because the purpose of implementing new technologies is ultimately to support business goals. Business and IT must develop a true partnership to achieve this.

Success is ultimately defined by the ability of senior leadership from both the business and IT to ensure that the thought process, governance model and rationale surrounding technology investments is fully communicated and embedded across the organization. Our users must ultimately understand why we made our decisions and what we hope to achieve as an organization. We are now in the process of evaluating and, in some cases, implementing new technologies – something that we will continue to do for the foreseeable future.

An additional area that I am interested to explore further is how to externalize our environment – whether it is cloud-based Software-as-a-Service (SaaS) or Platform-as-a-Service (PaaS) solutions. In making these decisions, we must confront the sensitive question of whether or not to put our data in infrastructure that we do not own or control. If we decide to do so then we must understand the risks and know how to mitigate them.

## CONCLUSION

A landscape of changing technologies and IT will naturally help our organization evolve and transform. I prefer the idea of developing our IT organization as a whole rather than creating an innovation group alongside a steady state group. It is important that our teams stay focused on technologies that we need to support today, but with a view to new technologies and new roles that they are going to respectively adopt and perform tomorrow. Some people will naturally be more innovation focused and others will be steady state focused. However, all of them have a critical role to play in the stability, the operational integrity, and the future of Novartis. The more connected we are as a group across those different priority areas, the stronger we are as an IT organization, and the stronger we will be as collaborators within the business at large.



## ABOUT THE AUTHOR

**SAM MANTLE** is currently the Global Head of Research & Development (R&D) IT for the Novartis Group. This includes the General Medicines, Oncology, Generics, Biosimilars, Eyecare and Medical Device business units. During ten years with the company, he has held multiple functional, technical and leadership IT responsibilities across the group, including CIO of the Vaccines & Diagnostics Division.

Adoption of digital processes and enabling technologies is Sam's passion. At Novartis he is driving multiple initiatives to revolutionize the R&D space - driving productivity and enabling innovation to flourish.

# Converging digital and physical worlds



SANJAY JALONA,  
CEO, L&T INFOTECH

At Larsen & Toubro (L&T) Infotech, we help our clients adopt new technologies through a platform called MOSAIC that brings new capabilities together. These are the so-called exponential technologies that include mobile, social, analytics, Internet of Things (IoT), cloud, automation, 3D printing, machine learning, and others. The exponential technologies have a far-reaching impact on manufacturing companies. They are increasingly becoming aware of the associated, potential long-term benefits and embarking on transformational initiatives. With a shared vision of the future, we are transforming L&T Infotech to collaborate closely with our clients on a journey into the world of exponential technologies.

## THE MANUFACTURING INDUSTRY IS POISED FOR TRANSFORMATION

Manufacturing companies typically spend little on IT compared to other industries and are viewed as technology laggards. However, this is now changing and we are witnessing enormous investments by our clients in exponential technologies-led business transformation.

**IoT adoption will drive technology innovation:** Due to convergence of the digital and physical worlds, the adoption of industrial IoT is highest in manufacturing companies. Through it they are discovering long-term opportunities for operational efficiency, cost reduction and, potentially, market disruption. For instance, one of our clients – an equipment mover – has installed sensors across machines to capture data and information. A big data platform analyzes the data to identify patterns and takes informed actions to improve machine efficiency, for example in terms of availability, oil and gas usage. Furthermore, the data can facilitate improved worker productivity.

We anticipate tremendous progress in IoT and big data and the trend will proliferate across the manufacturing industry.

Exponential technologies will enable core process transformation: Process re-engineering is a core fact of exponential technologies, despite the conventional tendency to associate exponential technologies merely with the front-end aspects such as mobile apps. For example, for a power generation company, the core processes related to electricity generation, distribution, billing etc. have not changed radically over the last few decades.

However, by applying exponential technologies there are now ways to eliminate a number of steps and transform core processes.

Exponential technologies can benefit many traditional industries immensely, such as oil exploration and refining. For example, to improve oil field efficiency, petroleum companies are installing sensors onshore and offshore to analyze the likelihood of equipment failure. This allows them to stock spare parts closer to where they are likely to be required.

**Cloud adoption will increase:** Typically, manufacturing companies have large-scale ERP implementations. Gradually, clients are moving away from these ERP implementations and beginning to implement cloud based applications both from traditional ERP companies like SAP and Oracle and new leaders such as Salesforce.com, Success Factors, and Workday.

### **A SHARED JOURNEY WITH CLIENTS ENTAILS OUR OWN TRANSFORMATION**

To help our clients realize the benefits of exponential technologies, we must fundamentally transform ourselves to engage with business stakeholders. Central to such transformation is a deep understanding of the business domain followed by a transformation in our sales model, services portfolio, and acquisition of capabilities and skills.

**Domain expertise:** We believe that we will only realize the real benefit of exponential technologies through process and operations transformation; technology is just an enabler. Through our parent, which is a large conglomerate with business interests in engineering, construction and manufacturing, we are able to acquire unmatched business knowledge and expertise.

**Sales model and capabilities:** Business stakeholders now make roughly 40 to 50 per cent of technology decisions. Therefore, for us, the client is not just the CIO but also the COO, CMO, CEO and business unit heads. To engage effectively with these new clients, we are transforming our sales style and becoming more consultative.

Our clients have typically procured IT services through a rigorous Request for Proposal (RFP) process and to respond effectively we have created a highly experienced pre-sales team. We realize that this model of procurement is shifting towards co-creating and co-imagining with clients. We are accordingly restructuring our pre-sales and demand generation teams to be a lot more client and solution centric.

Our clients are increasingly demanding engagements based on outcomes. They are expecting us to take on more responsibilities, ownership and be accountable for results. This will entail upfront investments and new pricing models that will all have a severe impact on short-term margins. We are proactively building capabilities to offer models that align with client demands.

**Service portfolio:** We are experiencing a shift in client spending patterns. The traditional services such as ERP implementation and infrastructure outsourcing are under tremendous stress. Clients are increasingly investing in areas such as analytics, online presence, and digitization of back office.

There is a preference for utility-based cloud solutions whilst bespoke development has moved to more leading-edge areas such as Business Process Management (BPM) or Robotics Process Automation (RPA). Therefore, we are redesigning our service portfolio not only to offer new services but also to revamp our existing portfolio.

## ...clients are increasingly demanding engagements based on outcomes.

**Solutions and time-to-market:** Our clients are demanding platform based solutions and time to market is of utmost importance. The platform solutions are different from those in the past because the ticket size and project size is shrinking. Clients are expecting us to co-create platforms in an agile manner. Moreover, these platforms may only be relevant to a limited set of clients. Creation of these solutions will require a product management approach; therefore, we are investing in building product management capabilities to engage directly with businesses to support process transformation.

**People and change management:** We are conscious that delivering IT services is no longer just about scale, consequently, we are changing the way we hire our staff. These days we are increasingly hiring senior consultants near clients' locations to improve client engagement.

To achieve our vision, we are embarking on a broad change management initiative and it is critical for our organization that employees proactively learn and reinvent themselves.

## CONCLUSION

In the new world of exponential technologies, some companies will survive and some will not. Companies that are nimble, establish a culture of change and engage across a broad spectrum of customers, employees, markets and technologies, will thrive. Having a sole focus on growth is not a silver bullet anymore, rather quality of relationships and the ability to engage at business level will matter. This is the reality of a converging world.



### ABOUT THE AUTHOR

**SANJAY JALONA** is the CEO and Managing Director of Larsen & Toubro (L&T) Infotech. He has been solving the complex business and technology challenges of global enterprises for more than 25 years. Sanjay has successfully led change strategies to accelerate growth and transform large businesses. Before joining L&T Infotech, he was Executive Vice President and Global Head of High-Tech, Manufacturing and Engineering Services at Infosys and a member of the Executive Council.

Sanjay speaks frequently with leading industry publications, analysts and advisors about technology trends, industry trends and how businesses can derive competitive advantage from next generation technologies. He holds a degree in Engineering from BITS Pilani, India.

# The art of the possible



TONY KING, CIO,  
URENCO GROUP

Urenco plays an important part in the nuclear fuel cycle, enriching uranium for civil nuclear power generation. For the past 10 to 12 years, we have been in high growth mode, investing heavily across the globe in growth initiatives such as incorporating a new entity and a new operating plant in the United States. We have now decided to take a step back to reflect on our achievements thus far and to think to the future about how we can use technology to leverage our existing business model and make our business more efficient.

There are two aspects to technology at Urenco – technology related to our core area of uranium enrichment and operations, and Information Technology. As CIO, I find that operating the traditional IT model has been very time-consuming, and has left little room for me to focus on supporting Urenco's business objectives. We have innovative people with creative ideas in our IT organization; however, an old operating model has stifled them and hindered their ability to execute projects and manage IT.

As a result, Urenco is exploring cloud services, and understanding the implications for migrating some of our key services to a cloud environment. Moving to the cloud will give our IT business the freedom to engage with the business stakeholders and support their goals to achieve operational efficiency. Consequently, an important part of our IT strategy is to look at doing business differently by exploring new, cloud-based technology solutions. We are keen to understand how these solutions integrate and interact with the workflows we have with our supplier base and customers. It means internally reviewing how we generate, record, share, and use information across the company – and particularly, how we integrate and use the information created in our operating technologies section and our IT section.

We have now set out a five-year strategy with the goal to modernize our IT models to meet current IT benchmarks, and to play a critical role in driving efficiency across the organization.

## **MODERNIZING THE IT OPERATING MODEL**

IT and technology are now ubiquitous in our personal lives – and in many instances, the technology we have in our homes is far more progressive than the technology we have at work. As an IT organization, we see this as a positive challenge, and we ask ourselves what prevents us from moving along the technology curve and how we can get up to speed. The business is also increasing its demands as they experience, read and learn about the latest technological developments, such as sensor technology, in the media and from their peers at other companies. Another key factor for influencing change is the younger employee demographic now taking leadership positions with the organization.

This age group is more technologically aware, and interested in leveraging new sensor and digital technologies to drive efficiencies.

We now have a case for change with our new IT operating model. In the new operating model, we will look at how we work with the CTO and their team on design and technology, and how we work with our IT partners to move to a more agile world. The second key component of this move is to set up an ideas incubation unit with the business to develop solutions more quickly and find the right resources. For example, the commercial team and the IT team are now discussing how to accomplish data interactions and sharing with our customers through new technologies. The IT and commercial teams are creatively collaborating on our strategy and delivery times to customers – with benefits seen in weeks rather than months.

## Integrating IT into our conversations is beginning to draw dividends...

From an IT perspective, I have spent the past three years formulating our strategy and reorganizing our team structure to leverage opportunities from a technology perspective. The reason we spent a lot of time formulating the strategy was that we needed to move from a near-term horizon to a more holistic five-year view of the organization's growth path. A clear roadmap for our project pipeline was essential to creating our strategy, and enabling a suite of actions to start building the operational support that our business needed from the perspective of business and applications support.

The IT and CTO teams collaborated to find a way to quickly turn the focus from infrastructure support to business support, which led us to explore cloud technologies. This also made us realize that since we began outsourcing in 2006, we had not changed our model at all, even though the escalation and the pace of IT/technological change has been enormous.

### KEY SERVICE AREAS

#### Enterprise Resource Planning (ERP)

Taking a five-year view while formulating the strategy gave us perspective on how to prioritize and build the various components of our plan. As CIO, my biggest priority has been to migrate my central applications – particularly group-wide services – to a cloud environment. As a first step, we spoke to a number of providers about moving our ERP to the cloud and at what stage of our five-year plan that would occur – whether at the beginning of the plan, or at the end when there is a lot more data and information. For us, ERP is one of our biggest applications, interfacing with a lot of our business, so to move that component and look at the digital implications, in terms of getting real time information, is key.

Although we have not traditionally been a big data-gathering company, there is a growing amount of data in the operational side of our business. We are also exploring a number of considerations for data with the aim of potentially harnessing it to drive more cost effective decision-making.

We are working to move legacy knowledge systems – most of which reside in the heads of our operators and staff – to a systematic information provision system that we can link to SAP and sensor technologies.

#### Unified Communications

Another key area to drive efficiencies is from unified communications. As an organization, we are not looking at adopting cutting-edge practices here, but more at stepping away from our infrastructure refresh business model to a cloud-based solution for desktop video conferencing, messaging systems, etc. For us this is a significant move up the maturity curve from where we are today. Whilst we could do this in-house, adopting an agile cloud ecosystem allows us to evolve much faster.

#### Mobility

The business and the IT organization are also looking at how to leverage new digital technologies to maximize mobility potential across each of our plants. Imagine the challenges of driving operational efficiencies in a plant that is one square mile in size – and doing it immediately! It presents a huge potential for digital transformation. Together with the



business, we have been working to make our operator and plant services teams more efficient by leveraging IT systems for better messaging and communications, and for efficient planning and work scheduling. For us, this is a move from the old world of a mechanized plant to a new world, which is in effect, an IT plant.

## **BUSINESS-IT COLLABORATION**

### **Process Reviews**

The IT organization is now creating a methodology to work with the business for their end-to-end process reviews and understanding where the challenges are by reviewing process, people and systems. Historically, we waited until the end of the process to understand the results, but the IT organization is now fully integrated into process reviews, and often drives many aspects. The business, of late, has approached us with a demand for new systems. A dialog between business and IT to understand the challenges of people processes and systems has revealed that in 30 per cent of cases, IT is the challenge, and in 20 to 25 per cent of the cases, it is people. The rest are process issues. Integrating IT into our conversations is beginning to draw dividends from our engagements and interactions with business.

### **Business Relationship Management**

When I restructured the IT team in 2012-13, we put in business relationship management roles in each of our sites, with a central reporting team. One of the biggest requests from the business of late has been for mobile solutions. Our Business Relationship Managers (BRMs) have had detailed conversations about this on each of their sites, acting as a close-knit group to look for solutions for three of our four companies. By creating local initiatives with centralized problem-solving and localized action, BRMs have been instrumental in making decisions quickly, rather than creating disparate pilot projects that never converge as one. By putting IT on the front lines in each local area, we are benefiting from cross-fertilized thinking that can be scaled across all our companies.

## **CONCLUSION**

The pace of technological change has accelerated exponentially from the perspective of both the business and IT organizations. This rising tide will not lift all boats equally if their ballasts are unsteady. We see the IT organization as the ballast that provides stability and balance for the business, moving technology in a way that helps the business realize new potential. We motivate the business by creating a canvas of possibilities and helping surface a few key opportunities, opening the door for new value creation.



## **ABOUT THE AUTHOR**

**TONY KING** first joined URENCO in 1997 as the Group's Project Accountant before leaving after 3 years to work for Regent Associates, a boutique IT investment bank, as Group Financial Controller. Tony rejoined URENCO in 2003 and has since undertaken a variety of roles including Head of Financial Planning & Treasury, CFO for a \$2.5 billion construction project in the United States and Group Finance & Tax Director. For the last 5 years, Tony has been Group CIO for URENCO and the executive responsible for Group Procurement, leading the transformation of both functions.

Tony graduated from Leeds Metropolitan University with a BA (Hons) in Accounting and Finance. He began his career with Barlow World Handling where he qualified as an accountant (FCCA).



# IT's shifting landscape: how digital is changing the rules of the game



MARK PICKETT,  
CFO AND HEAD OF UK,  
NETHERLANDS AND  
IRELAND, CSC

Digital disruption has transformed the IT services and outsourcing industry. As a leading provider working around the globe, we are now witnessing fundamental shifts taking place across the entire value chain and across geographies.

Three major shifts characterize this transformation, and each of them has far-reaching implications both for the IT industry and for the clients it serves. The impact of these shifts has already begun to widen the gap between providers who have embraced digital and those who are still reliant upon the traditional model. Even more interesting is the way in which the digital landscape has created opportunities for new challengers. These players are broadening options for clients in the market, and threatening established providers.

## **Shift 1: Business stakeholders are now technology decision makers**

New, digitally enabled solutions have created an opportunity for business stakeholders to make technology decisions for their enterprises. What was once the sole remit of the CIO is now broadened to also include the business. For example, CFOs or Finance Directors now have the possibility to explore cloud options that will drive the outcomes they want within their business. In this scenario, the outcome is the critical deciding factor in procuring a particular solution rather than adoption of specific IT models or solutions. As a result, there has been a very marked power shift into Finance, Marketing and other business areas, and it is unlikely that power will return to IT.

## **Shift 2: Technology start-ups are challenging established IT providers**

A key shift in the industry is the emergence of challengers in the shape of innovative start-ups who are evangelizing cloud-based solutions. These firms have transformed the competitive landscape, especially for larger, established outsourcing and IT providers who struggle to compete with their more flexible and agile competitors. For example, Workday is now a credible threat to established players, such as Oracle, in the Human Resources software space. With their best-in-breed solutions, new firms such as these are now able to gain market traction in a way that was unheard of until the emergence of disruptive technologies.

These new firms offer cloud solutions that are changing the way we do things. For example, in a traditional back office approach dictated by IT infrastructure policies and requirements, an enterprise's ERP system would drive the time recording system, which in turn would drive the expense system. New firms, however, offer enterprises the ability to pick best-in-class solutions with no dependency on ERP systems. The agility software can effectively put everything on a single dashboard and the user is oblivious to whether the application resides in private or public cloud.

### Shift 3: CIOs are changing their roles and their IT mandates

With a variety of cloud based solutions available, enterprises are focused on driving down costs for its existing 'keep the lights on' IT infrastructure. From a CFO's perspective, leveraging the best plug-and-play applications is a way of doing this. Consumption-priced metrics offered by solution providers will eventually reduce and keep costs in control. The ability to have a repeatable applications platform will further significantly shrink costs, and this increased focus on cost efficiency will create a virtuous cycle of greater focus on innovation.

CIOs are aware that there has been a marked growth in cloud, and this will continue to grow. There will be even greater growth in cyber security. Similarly, the demand for big data and mobility will increase. Concurrently, more traditional infrastructure services are going into decline, prompting CIOs to move quickly to innovate and adopt the new operating model.

The ability to become a service orchestrator gives the IT organization an opportunity to adopt on-demand applications that are technology/vendor-agnostic, can be easily added or subtracted, and can reside in a public or a private cloud. The IT organization is becoming an enabler rather than a creator of solutions with individual business units now driving technology decisions.

In response, CIOs are starting to shift focus from core infrastructure operations to innovation. The CIO's role now includes stakeholder management rather than pure technology decision making. For example, amongst several of our customers in the financial sector, we now have to engage across the entire C-suite, rather than with select individuals within the IT organization.

However, the transition is not straightforward. CIOs are facing a set of challenges presented by the traditional approach that could potentially inhibit their innovation objectives. CSC's global CIO survey reveals that 52 per cent of CIOs are concerned with budget constraints, while 39 per cent cite 'keeping the lights on' as the key inhibitors in their goal to drive innovation.

These changes are also driving a new way of contracting. The \$500-600 million IT outsourcing contracts in which providers take ownership for running the operations still exist, but to a lesser extent. Enterprises are increasingly driving innovation by reducing costs through the adoption of hybrid cloud models, streamlining their applications development platforms to house repeatable applications, and adopting consumption costing. Today, the need for speed and cost efficiency drives a different way of contracting, which is more around creating framework contracts and driving individual projects within that.

This has an impact on the structure of the IT organization and it is fundamentally challenging the traditional hierarchy of the entire IT organization and infrastructure ownership. CIOs of the future are likely to have few, if any, direct teams, and own very little infrastructure. They will act as coordinators for an enterprise's IT policy and its business stakeholders who independently drive what they want, with CIOs consolidating vendors to provide a coherent offering to the enterprise. This may be some time coming, but we are moving in this direction. We already see CIOs selling best-in-class solutions to their stakeholders, and this fundamental shift in the CIO's role, which is just beginning, is likely to continue for many years to come.

### CSC'S CHANGING FOCUS

At CSC, we understand these fundamental shifts. Our business is changing even though we remain an outsourcing company. We are now moving into business services, where we see very significant growth in the digitization area. We have restructured our business to map our customer's digitization journey and support them through the entire process.

## Today, the need for speed and cost efficiency drives a different way of contracting...

CSC key priorities and investment areas are:

1. Investment in a new generation of offerings. We have moved from more than 2,000 customized, nonstandard offerings to 14 standard offering families, including Applications Modernization, BizCloud, STAAS, Next-Gen DC & Networks, ServiceNow, Big Data, Mobility, IoT and Cyber Security.
2. Developing our people and skills to provide client- and market-relevant capabilities, we will have more than 50 per cent of CSC employees with next-gen skills by FY19.
3. Continued R&D investment into the CSC agility platform. This provides blue prints and universal connectors for application modernization and cloud brokerage for clients to achieve their Digital ambitions. Our platform approach also differentiates us from competition who are predominantly framework oriented.
4. Leveraging our selected partner ecosystem to offer best in class digital solutions – including R&D and assets leveraged from partners.
5. Next-Gen focused acquisitions including: Infochimps, ServiceMesh, Fruition Partners and Fixnetix.

### CONCLUSION

What we are witnessing today is a seismic shift in global business models. The traditional models are being completely disrupted. These shifts will alter the course of every industry including the IT services industry. Visionary companies are able to see the emerging opportunities and transform themselves to exploit these opportunities. At CSC, we understand the implications of these disruptions and have prepared ourselves to enable our customers, not only to cope with change, but also to thrive in the digital world.

#### ABOUT THE AUTHOR

**MARK PICKETT** is the CFO for CSC's UK, Ireland and Netherlands region and has over 20 years' experience in the IT industry where he has held responsibility and accountability for administrative, financial, and risk management operations. Before joining CSC, Mark was the Finance Vice President for Oracle.

Mark is a leader who inspires and motivates others with a distinct vision for change and an ability to set clear financial objectives and strategies. With his strong technology experience and business knowledge, he has a unique perspective into the way technology impacts business, enabling him to formulate future strategy and tactical initiatives. Mark holds a degree in Law from University College London.

# Running IT in the digital era



KEVIN IVES, DIGITAL  
TRANSFORMATION  
DIRECTOR, ARRIVA  
UK TRAINS

At Arriva UK Trains, success is often attributed to two critical factors: the way we treat our assets, and the way we interact with our customers. In order to satisfy passenger expectations, train services must operate at the highest quality standards and digital forces have created a new set of opportunities to be leveraged. The key digital trends that have a direct impact on Arriva's business fall into three common categories that are at the top of most CIO agendas: personal mobility, Internet of Things (IoT), and the deeper use of increasing amounts of data.

## **MOBILITY IMPROVES PROCESS AND PASSAGE**

Mobility is critical within Arriva because it is at the heart of customer travel and applies to all areas of our business. The proliferation of mobile apps and social media in the market place has posed a challenge for Arriva. We have responded by implementing a series of innovations in this area to equip our employees with tools to help them support our customers. We have also provided our customers with new tools to help them get maximum utility from our services.

The use of mobile devices and apps leads to massive improvements in train crew decision making and therefore improves overall business performance. For example, mobile device deployments on trains enable crews to be informed about disruptions in real-time and allow them to take appropriate steps to support the customer journey. Mobile technology is also used for early identification of equipment faults. These can now be communicated instantly to the depot thereby avoiding costly downtime.

## **IoT AND BIG DATA IMPROVES FIRST- AND LAST-MILE ENGAGEMENT**

IoT and sensors are already playing a critically important role in improving operational efficiency by providing real time performance information on a whole range of our assets. However, it is the combination of this information with deep data analytics that is truly transformational.

The ability to engage more effectively with customers through their entire journey offers a key competitive advantage. Traditionally, we did not engage with our passengers during the journey from their homes to the station and from the station to their final destination but new technologies now allow us to look ways to understand and enhance the passenger's end-to-end journey. This also provides additional opportunities for retail beyond regular transport services. There is now a much stronger emphasis on understanding customer behavior through Customer Relationship Management (CRM) with the outcome of tailored solutions at a much more granular level.

Whilst we are influenced by retail opportunities in the travel industry, some aspects require the application of subtler and unique principles for our industry. For example, there is a trend to look at loyalty programs because of their success in the airline and retail industries. However, with our geographically diverse business we need to work harder on the underlying business case. Nevertheless, better CRM engines and extensive data sets provide an opportunity to differentiate our services and respond in a more agile way to our customers' needs.

## ...digital transformation has created more bridges between independent commercial entities.

Arriva adopts new technologies fairly methodically. For example with business intelligence, we are currently at a proof of concept stage. We are trying not to get sucked into selecting tools too quickly. This is one scenario in which we feel that fail-fast is probably not suitable for us at the moment. We are taking a traditional, business case driven approach to big data, to link it in with a reporting strategy and with a performance management strategy. From tooling, we are trying to get the right architecture to get business buy-in before we launch to end-to-end. Once in place this toolset will then drive a more agile approach to problem solving.

### **DIGITAL CHANGES ICT DECISIONS AND SKILL REQUIREMENTS**

At Arriva Trains, the ICT strategy has historically been strongly defined at local business level because each company is required to be run independently. We have made real progress in determining functional strategies and aligning our digital strategy to these objectives. Increasingly we now understand where we can consolidate components at divisional and group level and where the local business continues to lead.

There is an increasing trend towards business stakeholders approaching IT with solutions rather than problems to be solved or requirements to be addressed.

This is largely due to the proliferation of availability of new technologies with short lead times, and the wealth of innovative start-up companies that target business stakeholders directly. This is putting increasing pressure on the IT function to respond rapidly to the needs of business while upholding the integrity of the overall IT strategy. Overall, within IT we now need to equip ourselves to work through challenges collaboratively with the business.

This has certainly led us to redesign our IT organization, less around the concept of two-speed IT, and more around implementing solid best practices. Arriva is a federated organization meaning that IT resources, both internal and external, are somewhat duplicated and thinly spread. In order to increase the overall maturity level, one of the things we are trying to do is build stronger disciplines within architecture, project management, and service delivery. Once we have strongly embedded these foundational aspects in the organization, it will be easier to deliver programs around two-speed IT.

This transformation necessitates changes in the skillset that our business requires. Our strategy to address this need is to enhance sourcing skills continually rather than building in-house capacity. While we are exploring hiring in new areas such as Data Sciences, our focus is on understanding how to purchase services effectively. Our supplier landscape is changing, and we now work with a variety of vendors. We work with niche consultancies in developing business cases in certain areas and restructure legacy arrangements with historic vendors where required. While we try to do a lot to stimulate competition within the rail industry, the emphasis remains on strategic relationship management with key vendors thereby ensuring that we remain nimble. One of the key initiatives is developing a flexible sourcing model to dip into specialist skill sets on a case-by-case basis.

From an industry standpoint, digital transformation has created more bridges between independent commercial entities. For example, the industry has created a program called the 'Digital Railway' which is run by Network Rail in the UK, and to which all operators contribute.

The program recognises the fact that many common business processes exist between different commercial entities. Our relationship with Network Rail and with other train owners requires us to look beyond our own business at Arriva.

## HOW DIGITAL IMPACTS THE WAY WE SOURCE

The application landscape within the passenger train industry has been driven by standard software package implementations. This is due to the security and compliance requirements that put a significant certification burden on customized developments.

Internal development teams should be limited to proof of concepts and prototyping. Once they have completed that task, we look for vendors to industrialize them. We increasingly require our suppliers to take responsibility for the whole service model rather than components.

Partnerships will be a key element of the sourcing strategy. We are collaborating with technology firms to develop solutions in special areas, such as on-board Wi-Fi solutions. There are two important emerging trends that are becoming well established as we work increasingly with service providers. The first is our expectation that they will deliver end-to-end, Software-as-a-Service (SaaS) based solutions. The second is our desire to avoid unnecessary capital expenditure up front when paying for solutions.

At Arriva, there is increasingly a strong emphasis on SaaS delivery for core applications. We have solutions for train planning and disruption management that are very bespoke, complicated and difficult to manage and we would like vendors to think about the design of those applications. It is inconceivable that in ten years, we will still be working on laborious upgrades for these sorts of solutions. The future will therefore largely be based on SaaS models where innovation is inherently built into the development cycles.

This all combines to drive improved performance, better customer experience, and better performance of our assets through digital. We specifically look for vendors who have roadmaps in their tool sets to enable us to deliver on our digital objectives. That may entail a major redesign of their solutions, which could be quite expensive for them. However, I believe mobility is something that has shaken most vendors, who realize that their solutions were not designed to integrate mobile processes into their product sets. If they choose not to innovate and respond to the nature of architecture that today's - or better, tomorrow's - world demands then other smaller more agile vendors will steal their share.

Unfortunately, many vendors are still slow to respond. Our industry traditionally suffered from an inertia that has resulted in a resistance to change and innovation. This is now changing very rapidly. The slow pace of change is also due to the high entry barriers for new vendors to enter the UK rail sector. As an industry, we have to work out how we get the balance right between embracing robust industrywide solutions and embracing innovative ideas that come from some of the smaller, newer, and more agile companies.

## CONCLUSION

It is an exciting time in our UK rail industry right now and we need to be more creative about how we get some of our initiatives up and running. Sometimes it requires our own initiative and sometimes partnering with another organization is the way forward. It is great that we have an emerging crop of digitally aware employees who demand new ways of doing things.

## ABOUT THE AUTHOR

**KEVIN IVES**, Digital Transformation Director of Arriva UK Trains, leads the delivery of the company's digital transformation strategy and has overall responsibility for IT. Prior to his current role Kevin led IT functions in the Engineering, Construction, Transportation and Utilities industries and has over 15 years' professional experience of managing IT services in both the UK and internationally. He specializes in executing IT organizational and operational improvement and is particularly accomplished at driving improvement in business performance through IT-enabled transformation. Kevin holds a Master's Degree from the London School of Economics and an MBA from Cass Business School.



# From alpha to omega: reimagining digital is creating opportunities



RAJAN KOHLI,  
HEAD OF DIGITAL,  
WIPRO

Once upon a time, providers were complacent in the belief that their large deal pipelines would keep growing as long as they met customers' objectives to save costs and improve efficiency. Digital disruption has upended that fairy tale, ending the reign of traditional outsourcing.

There is now a burgeoning demand for digital to help enterprises keep pace with rapidly changing consumer behavior. While previously, clients could be mapped on a bell curve of early adopters to laggards, with digital, we see such rapid speed and scale of adoption that the curve looks more like the curve of a shark's fin. As a result, clients who are mature digital buyers look beyond traditional IT providers to firms who bring together strategy, design and implementation capabilities in one box – creating a new opportunity for providers like Wipro.

As digital adoption proliferates, the sales process is fast becoming consulting-led in order to support enterprises tackling digital disruption challenges. Buyers increasingly place emphasis on how extensively providers will own the total cost of solutions, and how rapidly change is implemented – making price a secondary consideration. Naturally, these disruptions have a significant impact on the way providers must operate, with the best-in-class transforming rapidly to gain a competitive edge in the new market place.

## MODES OF DISRUPTION

In the course of our global advisory work with CXOs, we observe enterprises going through two major types of disruption:

### Disruption through consolidation

A few years ago, we saw clients consolidate the large number of providers they worked with to a smaller, more manageable figure. Today, additional consolidation has further decreased that figure to as little as two providers. While clients were focused on cost efficiency in the previous round, they are emphatic that this round of consolidation put a laser-sharp focus on delivering value. They seek to partner with providers who will own the value chain and business process even if it means owning the technology aspect of that process.

With this expectation, clients are no longer concerned only about price per unit, but also about a significant decrease in the total number of units. While they remain sensitive to price, their focus has moved from per unit costs to the total cost of ownership (TCO). This includes all the costs that sit on the client side. They understand that having already fully maximized cost savings from resource optimization, they now want to achieve cost optimization by changing capex ownership. Clients now expect providers to take the cost that sits within their enterprise and take ownership of assets, maintenance and upgrades. The consumption model is changing to a pay-per-use model.

### **Disruption through digitalization**

Digitalization is a term that the industry struggles to categorize because of its many connotations. At Wipro, we define digitalization as a mode that goes beyond mere process automation and looks at the application of cognitive intelligence, automation based on big and deep data analytics and, most fundamentally, re-imagination.

For example, banks spend many millions of dollars on compliance with Anti-Money Laundering (AML) and Foreign Account Tax Compliance Act (FATCA), and the majority of the issues are false positives.

However, with a better algorithm and the application of cognitive intelligence, we could reduce a significant part of those false positives, saving clients time and costs. Such digitalization is very different from robotic process automation – it is underpinned by deep and profound analytics and cognitive intelligence, and is growing in demand across industries.

Therefore, any exercise in digitalization must start with re-imagination – completely zero-based design through which we can deliver both process and analytics-based automation to our clients.

### **DEFINING DIGITAL**

In our digital practice, we have identified three key characteristics of digitalization that help us create differentiated solutions for our clients.

#### **Digital is technology agnostic**

Digitalization goes beyond adopting a singular technology. In fact, it is technology agnostic. While some providers may term their Social, Mobile, Analytics and Cloud (SMAC) offerings as digital, there are others who understand that digital cuts across technologies. It is irrelevant whether the technologies are SMAC, Internet of Things (IoT) or anything else. Digitalization requires a fundamental rethink of the entire process.

#### **Digital is value-driven**

Today, clients want solutions that require a consultative approach, combining the client's various existing assets. Customers already house a wealth of data, information, and knowledge, albeit in silos, that all needs to be interconnected in order to derive value-creating insights. Clients do not just seek big data or Hadoop capabilities. Their requirement is simple: they want suggestions on how to drive value.

In addition to this, clients are decreasingly utilizing RFP-driven procurement processes. Today, the market is use-case driven, and providers who are adept at building these will be leaders in the digital space.


#### **Digital has changed buying behaviors**

In all our interactions with business stakeholders, we see that typical siloed buying behaviors in outsourcing are rapidly becoming unified, making digital a central business priority.

Previously, the concept of shadow IT or bimodal IT was ubiquitous, with business and operational IT each managing their own side of things. A CEO, COO or CPO would purchase strategy, a CMO would purchase experience, and the CIO would buy technology enablement. However, there is a growing realization that business cannot deliver a premium digital experience without making fundamental changes at the back end. Today, it is not about having an app but about rapidly delivering a promise.

The concept of shadow IT will diminish because there is no option for business and IT but to come together to solve the problem. For providers, it is imperative to collaborate with CIOs who are innovation drivers, business partners, and business enablers in order to gain sponsorship into the client's business.



 **As providers,  
we need to  
fundamentally  
re-skill our talent  
in order to win  
in this market.**

#### **REIMAGINING DIGITAL AT WIPRO**

At Wipro, we realize that without going through a disruption of our own – to our silos and our ‘business as usual’ approach – we would lack the credibility to evangelize about digitalization to our customers. This realization is the genesis of our new unit, Wipro Digital, which cuts across each of our existing service lines. Our consulting arm now operates as an integral part of Wipro Digital, making the consultative digital transformation journey seamless. We have a separate practice team who are subject matter experts embedded in industry vertical teams. The unit does not adhere to a particular technology stack or use case. It is agnostic about every process, every technology and every vertical.

Our clients are fully embracing the digital capabilities that we are building. Naturally, we continue to have deep operations, infrastructure, and legacy capabilities, which are still in demand in the market. Our transformation and operations/maintenance business are both working at full speed. However, we expect a decline in our operations/maintenance business because clients obviously expect costs to decline year on year. Our plan is to ensure that the transformation business grows faster than the operations/maintenance business to make up for the margin reduction in the latter.

As providers, we need to fundamentally re-skill our talent in order to win in this market. Digital talent bears no resemblance to the existing talent that providers have. It calls for an innovative workplace culture with unique capabilities and aspirations unlike the past. Wipro Digital is quickly building its digital talent pool. Having recently acquired the global strategic design firm Designit, we are now able to combine strategy, design, and engineering to offer more value to our customers, be it helping them enhance their revenues or improve their consumer experience.

#### **WIPRO'S DIGITAL TRINITY: STRATEGY + DESIGN + ENGINEERING**

Before the existence of enabling technologies, strategic consulting firms would provide their clients with advice on business process reengineering, which the client would then hand over to a design firm to design the customer journey. Once satisfied, a client would engage an IT services provider to build the solution through coding and testing. However, this siloed approach would create bottlenecks for months, if not years.

Today, however, that system no longer works. Our clients say that they are keen to run the entire process in a rapid prototype model: design, build, and test with analytics. Speed is of the essence, and clients increasingly look to a single agile firm that will offer a concept-to-production approach that allows them to quickly learn and develop new, improved solutions.

With our acquisition of Designit, we now have the trinity of strategy, design and engineering capabilities at scale to provide a complete lifecycle of services – from concept to prototyping to production.

In the current digital landscape, we have an end-to-end set of capabilities to research the customer experience, design interactions and interfaces, build and test a prototype using our engineering capabilities, optimize and iterate it based on analytics, and subsequently, connect new and old systems together to deliver business value.

There are currently three types of digital transformation program that will drive revenues for Wipro in the coming years:

- **Consulting for problem-solutions:** Be it a digital fitness exercise or the prototyping of a particular type of problem, these short two to three month projects are important to clients launching their transformation programs.
- **Conceptualizing alpha to omega:** This type of agile, large turnkey transformation project usually runs for one to two years.
- **Process and stack ownership:** As we help clients transform, we also run their processes and stacks. This is usually for long-term programs with committed benefits of transformation.

## CONCLUSION

Three years from now, providers are likely to find that their consulting-led transformational business units are significantly bigger than they are today. They are also likely to see that they have replaced their traditional offshore-centric models with a greater number of investments closer to the customer. These are onsite, customer co-located, thought-based environments, with technology as the primary mode of service delivery, be it automation, analytics or cognitive intelligence. Reliance on technology will truly become a much bigger differentiator versus the traditional supply-chain or factor-led model. For Wipro Digital, bringing together strategy, design, and engineering will be the fundamental shift in our transformational business work.

## ABOUT THE AUTHOR

**RAJAN KOHLI** is Senior Vice President and Global Head of Wipro Digital. Wipro Digital is a digital transformation partner for our clients, working across the entire C-suite. This group reimagines digital experiences with clients by co-creating and engineering customer journeys with agile and iterative methods. Its unique approach and expertise brings together digital strategy, design and technology as an integrated team to collaborate with clients. Prior to this role, Rajan led the Banking and Financial Services (BFS) vertical at Wipro. Rajan graduated from the Indian Institute of Management (IIM), Bangalore, with a specialization in Marketing and Finance.



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