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# Executive Insights on Application Landscape Management

A handbook for IT leaders to  
ensure competitiveness of their  
organizations and communities



Capgemini's next generation Application Development and Maintenance Platform is a business value-oriented, industrialized approach for managing client applications that provides always-on business transactional capability while pervasively reducing costs by creating a business aware and future proof IT application landscape.

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# Foreword

**Ashwin Yardi**

Chief Operating Officer  
Capgemini India



One of the most common questions we're asked by our customers is: 'How can IT ensure smooth operations, reduce complexity, and add value to the business?' Every customer who asks this question will have their own set of ambitions and challenges.

To help respond we conducted multiple interviews with CIOs from diverse sectors whose experiences span across Asia, Australia, Europe, North America and South America. The findings of the report highlight that organizations face a growing number of opportunities and challenges requiring their IT functions and services to become more business-aware in their operations while delivering future proof capabilities in order to execute effectively on their strategy and day-to-day operations.

Interestingly, however, the starting point for many large organizations is often a vastly heterogeneous application landscape, resulting in the IT management and business performance challenges. Hence, delivering more from less (along with innovation) becomes the ultimate priority.

We have helped our clients deliver substantially more commercial impact per dollar or euro of existing Application Development and Maintenance spend and blended in our insights gained from these efforts to what was gleaned from senior global practitioners. We hope that you find this report useful and look forward to supporting your ambitions for IT operations and transformation.

**Ramesh Kumar Ramamurthy**

Global Lead, next generation Application  
Development and Maintenance  
Capgemini

I commence the foreword with an example of a large organization with many accomplishments to its credit, including a league table-topping enterprise grade App Store with several revenue generating apps incorporating powerful industry insights and cutting edge IT capabilities, and supporting transactions in excess of tens of billions of Euros per year.

Owing to market dynamics, the organization entered a tough period and at a critical juncture the CEO issued an open message to all employees with multiple remarks:

“Our cost base is swollen by poor and ineffective processes, antiquated and inadequate technology, too many tasks being completed using manual labor, and, too frequently, unsuccessful investments in our infrastructure. Too much of our hard-earned revenues are used up this way. We must re-engineer our internal processes. We must standardize our systems and procedures, decommission legacy software, standardize and enhance our data, and improve our reporting. We absolutely must wean ourselves off the proliferation of committees.”

This is a slice of the reality within many organizations that gets exposed during low tides, anchoring down several pockets of good work across organizations. Given the multiple transformative forces at play across industries in today’s environment, we felt it would be valuable to capture world-class performance level principles and practices that have a demonstrated track record of success at global scale and complexity.

We believe these insights will enable IT leaders to make a strong contribution to the competitiveness and prosperity of their organizations and communities they serve on an ongoing basis.

# Introduction

This publication presents Capgemini's point of view on effective Application Landscape Management complemented by the wisdom of senior global CIOs of organizations ranging from \$5 Billion in revenue to very large organizations, across multiple industries, viz., Automotive, Consumer Goods, Financial Services, Manufacturing, Energy & Utilities and Public Sector (transcripts of a few in-depth interviews are available across this publication).

The rationale for the timing and contents of this publication is aptly captured by the remark of Filippo Passerini, who recently retired after serving as the CIO and Group President of Global Business Services of Procter & Gamble after a long and successful tenure, **"IT is currently at an inflection point...now is the time for many IT professionals to start playing a greater leadership role in the business..."** Echoing a similar sentiment Caroline Serfass, CIO of Canon Europe shared that she and her team are expected to work as a business partner with vision, **"to be a primary driver of market differentiation and business profitability."**

However, before IT leaders can aspire to play a greater leadership role in enabling business across the "Run" and "Innovate" parts of their portfolio, they need to earn the confidence of their business colleagues based on smooth day-to-day operations and by enabling business agility. CIOs need to make sure IT organizations are no longer viewed as, **"Slow and No"** as quipped Jim Noble, who served as the CIO at multiple firms.

### The report is segmented into three parts:

Insights related to the Run dimension of Application Landscape Management, Innovate dimension of Application Landscape Management and insights related to world-class performance practices applicable to both the Run and Innovate dimensions of Application Landscape Management.

#### Run (and Improve) dimension of management

- Stability of systems is essential to earn basic levels of trust from business
- Rigor in operations and ongoing cost reduction are key to avoid negative attention
- Automation needs to focus on both labour elimination and enabling business outcomes
- IT services should be easy to order, consume and need to be competitively priced
- Effective integrated business-IT teams enable world-class performance
- Application development needs to be agile akin to the App Stores of prominent brands
- Walk-the-talk on project commitments is essential to gain trust to Innovate

#### Innovate dimension of management

- Insightful IT actions aligned to P&L impact creation in each functional area are needed to take the portfolio to world-class performance levels
- Business capability driven simplification and realization of agility are essential to provide the foundation for world-class performance
- Data Management effort needs to create pull based on visible business value creation
- Future Proofing is secured based on insightful exploitation of business-IT trends and IT effectiveness actions to rapidly support the changing needs of business
- Innovation is hugely important and strong leaders personally drive the charge leveraging internal and external resources

#### Common across Run and Innovate dimension

- Culture is critical to drive effective adoption of IT systems, and build world-class performance teams
- Sourcing expectations vary based on the management focus; and its imperative for vendors to teach clients how to fish

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# Insights related to the Run dimension of Application Landscape Management



# WHAT CIOs ARE SAYING

It is critically important for an IT organization to avoid being viewed as a commodity supplier by the business, otherwise IT simply becomes all about cost and not about business contribution. It is important to differentiate between IT services characterized by: “Run”, “Innovate”, and “Improve”. For example, IT services necessary for day-to-day “Run” operations are unique from those IT services that can deliver new capabilities for the organization in the “Innovate” part of the portfolio. Also, to support world-class performance level, “Run” operations also needs to encompass ways to “Improve” the portfolio actions that span business process and IT elements.

Execution of the “Run” (and “Improve”) dimension of the portfolio is about operational rigor and ongoing cost reduction, while enabling the business processes to deliver the expected transactional business outcomes (e.g., by minimizing revenue leakages due to flawed execution of business transactions).

## 1

## Stability of systems, especially of core systems, is essential to establishing basic levels of trust with business colleagues.

### Best Practices

- Response to issues should be in line with criticality, urgency and of course SLAs. (This does not mean IT organizations abdicate their intelligence to SLA dashboards.)
- Stability needs to be secured based on proactive simulation of business changes that can cause stress, such as: spurts in load due to month-end billing cycles, holiday season sales, business promotions, and routine activities such as ensuring that pricing, promotion and inventory information are available at point of sale systems before retail stores open every morning.
- Health assessment of core systems needs to be understood through a business impact lens to galvanize buy-in for improvements.

### Example

A simple sounding yard management application in the Supply Chain could potentially result in the queuing of trucks on a key national highway and thereby become a potential topic for 9'o clock TV news. Such business impact oriented positioning of the business case will help catalyze buy-in for remedial actions to make the concerned application(s) more robust.

In the Utility industry, Customer Service and Customer Satisfaction gain importance for revenue protection and growth, and regulatory monitoring and compliance. In order to deal with these imperatives many organizations are moving away from unstable legacy CRM systems (with high call drops, delays etc.) to modern CRM systems with multi-channel and digital capabilities that can also sell value added services.

## 2

## Rigor in operations, productivity improvements and ongoing cost reductions are needed to avoid negative attention from the business. The resulting savings should be directed towards “Innovate” the portfolio actions.

### Best Practices

- Adhere to the standard way of executing business processes within the organization (across business and IT functions and this is ideally embedded in core applications) to minimize negative surprises.
- Adopt performance enhancement best practices and tools to simultaneously improve operational rigor, drive productivity improvements and realize cost reduction.
  - Lasting cost reduction is realized when the root causes related to functionality issues, information exchange issues, straight through processing issues, etc., are eliminated. Tactical use of low cost resources, traditional automation (or robotic automation), etc. are temporary fixes that do not necessarily address the underlying issues.

### Example

A large public sector organization exceeded the running cost savings target of Euro 161 million a year by merging major systems to reduce complexity and overheads, switching off 65 applications, decommissioning servers and removal of surplus desktops.

**3** While automation of repetitive tasks is well understood, IT departments do not recognize that business colleagues consider this to be a hygiene factor, and often miss the fact that automation has an important role in delivering expected business outcomes for all transactions.

## Best Practices

Automation has multiple roles to play in the “Run” and “Improve” dimensions of an application portfolio:

- It enables adherence to standard business processes and fact-based decision making, especially for large global organizations, to minimize negative surprises (for example, through standards embedded in COTS product based application functionality, workflows, forms).
- Ensures effective IT performance of key services in a SOA landscape to ensure smooth performance of business processes supported by these services.
- Elimination of labor-intensive, repetitive workloads across functional and technical dimensions linked to user service requests, operational master data management actions, build deployment across environments (part of DevOps when done in conjunction with the right culture, organization, processes. DevOps is now increasingly a part of the Agile approach to IT development), regression and performance testing, monitoring, etc.
- Based on years of technology advances, the coming of age of Artificial Intelligence (AI) is real:
  - Clients are piloting and using AI capabilities in applications that support scripted business processes by leveraging its capability to assimilate information, learn and optimize execution actions
  - Some rules based business processes with decision scenarios that are not black and white can also be supported by AI capabilities as a part of a bigger application, since such business value chains need broader understanding.
  - As the field matures, AI technology will be increasingly used for judgment oriented business processes.

- While labor-intensive workloads are high in terms of the volume of requests, eliminating them does not necessarily reduce the overall cost substantially. On the contrary, effective use of automation to monitor, intervene and minimize the impact of failing business transactions such as delayed high value payments in wholesale banking, delayed sales orders, and manufacturing shipments, tends to reduce the cost substantially for organizations, as well as improving customer experience.

## Example

A global manufacturing organization applied automation across:

- High volumes of repetitive technical and functional activities, and
- Sales Orders, Shipments, Invoices, etc. that were experiencing issues with a view to minimize the revenue leakage and negative customer experience.

The organization found that the business outcome oriented automation contributed to six times the cost reduction that was realized based on automation of repetitive technical and functional tasks

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**4**

IT services should be meaningful to the business, and easy to order and change. Relevant performance reporting on IT services is essential to gain acknowledgement from the business for “Run” contributions.

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**Best Practices**

- IT services should be easy to be order and consume, and should be priced in line with usage patterns. Price points should be comparable to what the business can procure directly from the market. Accommodating changes in consumption levels should be equally easy and should be accompanied by a corresponding change in price for the business.
- IT operational performance dashboards need to be couched in business terms rather than technology oriented IT KPIs. A very basic example could be the number of hours the Financial General Ledger system is down on month-end reports from an end user perspective rather than reporting a 99.99% availability.
- Each major service line or functional area needs to have a senior business owner who owns the responsibility for oversight of operational service management. This way IT will be viewed as being ‘kept honest’, as the senior business owner evaluates and approves IT performance metrics and reporting.

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**5**

Integrated Business-IT teams are useful to improve efficiency and effectiveness for key business processes and production IT environments.

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**Best Practices**

- Integrated teams provide a solid foundation for driving end-to-end rigor for “Run” environments and improvements across business processes, IT systems, and work practices.
- At least a few people should have a full operational understanding of who the key contributors are; the internal IT team or strategic vendor can play a coordination role to make sure that the IT Services operate with minimal friction.
- Combined Business and IT teams are potent for core platforms (Payroll, Digital Commerce, etc.)
  - A cross-functional team approach provides for rapid problem resolution and preventive actions, especially with the right enablers such as deep diagnostic and resolution tools. Understand where the problem lies in the context of a business process and get it fixed quickly, and use run time insights to drive preventive and perfective actions. This is critically important in cloud and service oriented environments.

As the Executive Vice President of a large Insurer with responsibility for Technology & Operations put it, “Even a simple business process of selling a small commercial policy involves a long and interconnected value chain. Everything from customer value to sales, to bottom-line profitability by insurance product, requires many different constituent groups to work together, but historically they have not. If you just think about it as technology and operations, then you are getting it wrong. You need to look at it from an end-to-end basis, which does not necessarily break down the silos that exist, but to understand where the dependencies are. In any business, teams need to work together, but not to the point of being unable to get anything meaningful done.”

- ▣ The cross-functional construct should embed a group of people within each value chain that constantly looks for opportunities to improve the effectiveness of business processes and IT systems. This could take the form of:
  - Looking at the interaction of business process and IT elements to make the transactional business outcomes better, cheaper, smarter and faster.
  - Automation that focuses on both labor elimination and business outcomes.
  - Enabling the organization to be reborn in a digital world based on a digital readiness assessment of the application portfolio from a functional and technology standpoint to drive improvements. These form an important input for “Innovate” actions in the portfolio.

### Example

A global Manufacturing organization took a business value chain view of IT performance across its Contract to Cash process and realized that Sales Orders were stuck at various stages of execution. At one step in the execution path of the business process while the extent of bottleneck was well under 1%, the value of the bottleneck was sized at €20Million for 1 month. This triggered improvement actions at multiple levels to de-bottleneck various issues.

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**6** Application enhancement and development releases need to be agile from a business perspective, similar to the evolution of Apps stores of prominent brands such as Apple and Google while these Apps deliver compelling business capabilities with rigor.

### Best Practices

- Focus on releasing a Minimal Viable Product (MVP) since time-to-market is critical. Also, gain continuous involvement of the business, to help colleagues outline their business needs in detail and receive feedback from end consumers.
- Build incrementally, in iterations. Decide up front on the number of iterations within each release and incorporate agile practices across the organization. (The number of releases is based on back-office or front-office capability)
- Set release schedules and stick to them; reduce scope rather than be late.
- Leverage DevOps, an Agile approach, and automation to accelerate IT delivery and improve quality of deliverables

(while recognizing that these measures of IT Agility by themselves do not translate into Business Agility. Further, it is to be noted that the business believes that moving of frequent changes and releases across environments and eventually to production was always meant to be fast).

- Dependencies and inter-relationship of configuration items needs to adequately factored in to eliminate issues associated with parallel releases. This is akin to air space management by air traffic controllers at airports.
- Versions of enterprise systems need to be managed skillfully to ensure that the power of centralization is not compromised while simultaneously reducing the expenses associated with forced migration of consumer systems just for the sake of standardization.
- Ensure adequate engineering attention is to be paid to: cycles of integration testing in the overall application landscape; data migration; non-functional requirements such as performance; and best practices from a cyber-security perspective, to ensure flawless releases.
- Develop each release in a way that it is modular and focused on one or a few business deliverables – such as shelf information, directions for a better merchandising – very much like apps in an Apps store, to improve adoption levels by the business and reduce the time to break-even.

“The business model where a new project in IT has to take dozens of millions of dollars and years to complete is going to be gone pretty soon. Today we are seeing fewer large-scale systems deployments and instead multiple releases, each one of them taking weeks months to develop, not years” Filippo Passerini, retired CIO and Group President of Global Business Services of Procter & Gamble.

### Example

A European Distribution organization applied agile and DevOps best practices in the area of Digital Commerce and experienced 67% acceleration in release cycle time while experiencing a 30% reduction in the development effort.

## 7

**Walk-the-talk on project delivery commitments, as this is essential to earn the right to execute on the “Innovate” agenda.**

### Best Practices

- Manage the project workload volume, or reduce it, in line with resource availability, after application of best practices related to demand and capacity management.
- Ensure that the project definition is well aligned to targeted business goals and objectives based on: good current and future state analysis (across business process and application landscape) and proposed usage patterns by end users.
- Pursue business and IT projects in a balanced manner to drive both the targeted business impact creation, as well as to improve IT effectiveness.

# CIO INTERVIEW

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**Caroline Serfass**  
CIO Canon Europe

Caroline Serfass has extensive international experience having held senior IT management positions in a number of organizations in Brazil, France and the UK, where she successfully made technology a key enabler of growth.



## Cappgemini met with Caroline to talk about her insights from leading large-scale transformation programs and how Canon Europe has used IT to help rejuvenate its business systems.

### IT STRATEGY

**Q.** Can you provide an overview of your organization, explaining where IT fits, how it supports the business and how your role as a CIO has evolved over time?

**A.** Canon EMEA is a sales, services, marketing and distribution organization with operations in 116 countries and has 18,000 employees, which in 2014 had sales of 7.4 billion Euros. In IT, we have about 400 Canon employees with a vision to be a primary driver of market differentiation and business profitability. To achieve this, we are on a journey to transform the corporate function of IT from being a back-office service provider in the past, to being a true business partner.

My role as CIO and that of IT more widely has evolved over time, so that we are now expected to work as business partners and show what is possible from IT, as for example in the area of digital. It has become a very different approach than maybe what we were used to in the past, which typically involved a linear process of the business defining its requirements and IT executing on them. Nowadays, it's much more dynamic, much more uncertain and requires us to work to much shorter cycle times.

**Q.** In your experience, what are the most important factors to realize the goals of IT effectiveness and business alignment?

**A.** We operate largely using a centralized IT model from where we can drive what we call common templates. These are not only technical templates, but they also cover our businesses

processes and transactional information, master data and obviously, the IT delivery of services that comes with it. These common templates have been designed to lead to a single solution that can be implemented everywhere. Any localization requirements cover only what is truly critical for any given market. Additionally in our country organizations, we have local IT teams that are focused mainly on end-user computing and user experience.

We also have, what I would describe as a 'double hat' senior IT leadership structure, whereby each of the IT leaders who reports to me as the CIO, has a dual strategic business relationship management role. In this way, as IT leaders they are aligned with either a business unit or a function, in order to work with that area and better understand its vision and roadmap. This approach enables IT to form a more complete picture of the business.

At a more operational level, we are developing service management and operational relationship management with all of our key business owners for each service.

**Q.** Can you expand on what you mean by key business owner for each service?

**A.** We have organized our IT operations into services; these being mainly delivered by Cappgemini and have IT Tower Leads overseeing them. In order to monitor that services are actually working according to the service definition, we don't decide on that ourselves as an IT department; rather we carry out joint operational evaluation with the relevant business owners.

"In IT, we have about 400 Canon employees with a vision to be a primary driver of market differentiation and business profitability."



“Application Development and Maintenance is an important contributor to the uninterrupted availability of IT services.”

For each major service line, we have a senior business owner who can be either a business process owner or someone who has an operational responsibility. Based on this approach, there is continuous dialogue between IT Tower Leads and business owners. A formal report is published once a quarter usually put together by IT, but with multiple inputs from the relevant business owners. If we from IT say the Oracle EBS was available for 100% of the time, then they can validate this claim themselves.

## APPLICATION DEVELOPMENT AND MAINTENANCE

**Q.** What role does Application Development and Maintenance play in the flawless end-to-end execution of business and IT operations?

**A.** For us at Canon, Application Development and Maintenance is an important contributor to the uninterrupted availability of IT services and to the cost of services which support all of our key business processes. As I mentioned earlier, we have strong and established relationships between IT operations and service managers, and also with the

relevant business owners where there are internal Service Level Agreements in place. We also use ITIL version 3 to manage our IT processes, which helps us align the IT services with the desired business outcomes and at the same time, focus on continuous service improvement.

Here I should mention the role that Capgemini plays for Canon, since you're delivering those services for us while also playing a role as a 'bus driver' for functional Application Development and Maintenance. This means, that as a strategic partner, you have a coordination role to make sure everything operates seamlessly.

**Q.** Do you think it's feasible to approach an application landscape from the perspective of selecting various off-the-shelf cloud applications and combining them together afterwards rather than using mainly inhouse developed and managed applications?

**A.** That's a key question for any enterprise. At Canon, we have an established set of principles that we have defined for what we call enterprise architecture and there is a specific group in my organization which is tasked with making recommendations on these types of decisions. Our first priority

## Executive Insights on Application Landscape Management

Insights related to the Run dimension of Application Landscape Management

would always be to re-use what we already have. After that, if something already exists in the market, we would rather buy it than build it ourselves. We also consider cloud approaches where possible and they exist, especially for customer experience and user experience areas.

We have a fairly formal internal process governing how decisions regarding technology are taken. While the Enterprise Architecture function usually drives the process, it will always involve multiple stakeholders including the business group or function that requires the solution, as well as legal and procurement assessments. Between us, we look in detail at the functional requirements, we look at cost, and we look at ease of implementation and other related criteria, and then we try to reach a consensus decision.

When selecting from different off-the-shelf packages, be they hosted in the Cloud or not, you still need to make them work well together. We have chosen to adopt an approach to match our business needs based on using an Enterprise Business Data Model, which as a model will extend beyond containing only master data also to cover data that needs to be shared. Such an approach helps to ensure that multiple large packages work together and crucially, that information flows freely between them. Additionally, from an execution standpoint, we have an integration platform that helps makes it all work together.

## AUTOMATION

**Q.** There's a lot of talk at the moment about automation, much of it based on labor elimination, resource elimination and / or computing resource elimination. In your view, how can automation help your business succeed in its market, and what has been the practical impact of automation so far?

**A.** Looking at this from an IT perspective, we are already looking at automation and using automation to some extent in the QA and testing area with Capgemini. In fact, we're using a Capgemini Testing Center of Excellence to run for us automated regression testing and performance testing. We are also looking into the automation of code deployments between the different environments—between development, test and production environments.

Reducing labor costs is of course important, but equally if not more important for us, is to reduce the lead time for new projects since that has immediate business value from making business capabilities available sooner. We also expect automation to improve the quality of what gets delivered.

On the business process side, there is an obvious dimension of labor cost elimination offered by automation, especially when you take into account the scale of a business operating across 116 countries which has implemented common templates. At the same time, you can look at how compliance across multiple business units can be increased because of automation linked to having a single universally agreed way of approaching things which can also help you reach a uniform level of maturity (in terms of deploying best practices) faster across multiple markets.

## CUSTOMER EXPERIENCE AND SERVICE EXPERIENCE

**Q.** Can you tell us how you ensure customer experience and service experience are optimized?

**A.** I have mentioned how at Canon we always work as a business partnership and touched upon other mechanisms we use to ensure service experience. In



practical terms, this means that when we take the whole life cycle approach to whatever business capability that we need to develop and support, we follow a common methodology in how we work, not just in IT but how we work for Projects enabled by IT across the company – we call that ‘The Way of Working’.

We talk about *mobilization*, *inception* and *elaboration* stages. These are based on the Essential Unified Process and occur before the *construction* phases. Since there's usually a lot of important work that has to happen right from the beginning of every new project, we have a business process owner organization that takes on the responsibility for



Insights related to the Run dimension of Application Landscape Management

will be decided by the program team themselves, always as a combination of business and IT people working together.

“We adhere to an important business principle of minimizing the number and scale of any customizations.”

For our big IT programs especially, we have a design office that involves business process architects and IT architects working jointly to define what the solution is going to look like, and then advising other senior managers on what other important factors need to be considered. We define an overall release schedule agreed between different business units or functions including IT especially for large programs where there are many components. We try not to do too much at the same time so that every release is successful.

defining the key performance indicators related to functional areas or sometimes end-to-end business processes. We often need to ask whether we want to make it more efficient or do we want to make it more customer-focused based on what the business wants to achieve. In these situations, the business process owners, the architects, delivery teams and program management will need to work together to build a formal business case to be submitted for approval at the most senior level before the investment is released.

While the solution is being built incrementally in iterations, business stakeholders are continuously involved throughout the phases to validate

the functionality with demonstrations and walk-throughs. This enables the business stakeholders to increase their understanding of the solution and steer the project to prevent surprises at the end. In the area of digital and customer facing solutions, these iterations are becoming much shorter and in addition to business stakeholder continuous input we also plan to include end customer continuous input.

The final User Acceptance Testing always needs to take place before any release or go-live occurs as part of a phase which we refer internally to as *transition*. After that, any new functional or business capability that is required before it can go into operations

In most cases, we start with a small release that covers all of the basic requirements since we always try to avoid the situation where a release is late and would rather reduce its scope. For each new release, we define upfront how many fixed iterations we plan to build before that release goes into production to secure customer experience based on whether the program components deal with either the back-office or front-office. Based on this approach, there's more opportunity to assess exact business requirements and make sure that the business unit or the functional owner receives what they needed. Very often, people are unable to describe in a lot of detail what they want, so using such an iterative approach proves to be powerful.

## DATA INTEGRATION

**Q.** Given the importance of data and data integration in any application landscape, how do you drive the agenda for seamless access to data?

**A.** In our integrated landscape that I described earlier, we adhere to an important business principle of minimizing the number and scale of any customizations. We always try to use the packages that we buy for what they are meant to do and not for transforming them into something else. We have also created an important central function which we have called Master Data Management, which spans definition and operations of our Master Data. This organization does not sit within IT, it acts as a shared service centre and works very closely with us, and of course, we provide it with whatever analytical tools they need. As a central function, it benefits from us having common templates and common solutions.

**Q.** How are you able to realize the benefits of your Enterprise Business Data model given that you use certain applications which have their own data model and definitions of what a product and a customer are?

**A.** That's exactly the purpose of an Enterprise Business Data model because otherwise if we had only one ERP that did everything or if we built everything ourselves with one data model, we wouldn't need it. If there is conflict between several different applications, we can use the Enterprise Business Data model to help us make the decision of which of the applications should be lead in that situation; to the extent possible that we don't change the data model in our main applications.

**Q.** What has been the impact of this data discipline for the business?

**A.** It's still a journey. The expectation is that data quality will steadily improve, and from this increased efficiency in running our business processes from not spending time trying to understand and validate the data, but having the confidence that the data is right. At this point, you can then spend all your effort and energy on actually using the data to make decisions. With regards to being able to make real-time decisions based on the use of data, in business areas like products and some customer areas, we are at a good level of maturity whereas in some other areas we still have a lot of work to do.

“Strategic business partners perform a role of a ‘sounding board’ for us and as an innovation vehicle bringing us new ideas.”

## SOURCING

**Q.** How has the blend of in-sourcing, co-sourcing and outsourcing changed over time? In your view, what do you think is the right balance as things stand today?

**A.** Over a period of time, we have moved from a situation where we did most of the work ourselves, much like a traditional kind of in-sourced model, to a situation today where we have key strategic partners who are focused mainly on the construction or development work and operations. At the same time, we make sure that some of the key roles, by this I mean certain roles that have to do with defining what we do and how we do it from a design standpoint, are Canon roles. Also there's an expectation that when you have

strategic partners for work that is not location sensitive, then these partners will have offshore locations that we can leverage to optimize our costs.

**Q.** Is outsourcing still largely about cost or are there other equally important factors?

**A.** Cost is certainly important, but equally our expectation is that since we partner with companies whose core business is to do this type of work, that they acquire an expertise gained from across different markets and can see the best practices, and then as a result we can also benefit from this. Outsourcing also gives us flexibility. It can also help us mobilize the resources fairly quickly for programs for example, that we wouldn't be able to mobilize ourselves internally in the same time frames.

**Q.** What are the top business contributions you expect from such partners to create a sustainable long-term relationship?

**A.** There are three main areas of impact. I would say that number one is a flawless delivery – being really good at their core business, which we have selected them to provide to us. The second one is the cost reduction agenda, helping us reduce our costs on a continuous basis. Thirdly, for them as strategic business partners to perform a role of a ‘sounding board’ for us and as an innovation vehicle bringing us new ideas.

**Q.** How do you drive a culture of performance and pro-activeness from your internal teams as well as your extended partner teams?

**A.** The culture questions are always the most complicated to answer. Firstly, in the IT organization, I am keen that individuals at all levels have personal ownership and accountability, so we work together in a way in



which people get a strong sense of ownership and accountability for what they do. This approach goes some way towards encouraging a proactive and innovative business mindset which at the same time can be focused on the user experience.

Also, when looking at our ecosystem of Canon employees, service providers and strategic partners, we spend a lot of time to clarify the exact roles and responsibilities of the Canon employees in that ecosystem. As I mentioned earlier, Canon employee roles tend to be more focused on certain areas that are not purely delivery related or running the operations, but more to do with, for example, the solution design, program management, vendor management or service management. We expect our strategic partners to have the depth of expertise for delivery and operations.

We also operate a strong governance framework based on mutually agreed KPIs with all of our key strategic partners, tracked and reviewed at regular meetings and across all levels, both operational and at an executive level. Increasingly, we are using more collaboration tools and unified communications such as Skype for Business and multi-way video conferencing.

**Q. How do you utilize and leverage proactive business and technical innovation brought to you by one of your business partners?**

**A.** For the scope of Enterprise IT, we utilize our own innovative ideas and the innovation capabilities of our selected strategic partners and focus on the scope of the key Transformation programs. In addition,

our business itself is about innovation in new solutions or service models. In many cases our strategic suppliers can deliver technologies or skills that allow us to bring innovations quicker and reliably to our business.

Canon Europe is a subsidiary of Canon Inc. of Japan, a world-leading innovator and provider of imaging solutions.

It contributes around one third of Canon's global sales revenue and employs in the region of 18,000 people across Europe, the Middle East and Africa (EMEA).

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# CIO INTERVIEW

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## **Jim Noble** CEO and retired CIO

Jim Noble is co-founder and CEO of the Advisory Council International, a non-profit organization advising senior IT executives. Previously he was Global CIO of Altria Group (Philip Morris, Kraft and Miller Brewing), Global Head of IT Strategy for BP, Chief IT Strategy Officer for General Motors, Managing Director of IT for Merrill Lynch, and Director of IT at General Electric. A regular keynote speaker, Jim is widely acknowledged to be one of the industry's foremost thought leaders. He was awarded CIO Magazine's annual award in 2012 for innovation in IT.



## Jim is a trusted advisor to Capgemini's North American Business Unit on selected strategic initiatives. In this interview, Jim expresses his insights and personal views on various aspects of Application Landscape Management.

**Q.** From your vantage point as an academic and mentor for senior IT executives, can you provide an overview of best practices that help IT organizations make a top-line center like impact?

**A.** Let me start by saying, it is dangerous to generalize here because the people I coach and the CIOs I interact with, all have different situations in their companies. Some of them are simply corporate overseers of their company's IT strategy, whereas others have full end-to-end responsibility worldwide for all IT divisions, all of the operations and innovation.

One of the approaches that I found to be the most successful is called the Balanced Scorecard which was originally developed in the 1990s by Kaplan and Norton at the Harvard Business School. The Balanced Scorecard is a really good framework because at the very top is shareholder value. It then decomposes into the contributing components of shareholder value which in my view are revenue growth, margin growth and perception or brand image, and from underneath that, you can imagine the pyramid builds out. It is an excellent way of linking cause and effect. I found that even a CIO who's remit from the executive team in their company was simply to look after the back-office corporate systems like HR, legal and finance can use the Balanced Scorecard to say to their executive team (to use a ludicrous example) "let me show you

how investing in a new e-mail system is going to drive shareholder value".

The exercise of trying to link cause and effect is extremely helpful because it allows you to get the business people on your side. It is also helpful because it stops you doing silly things. So if you are an advocate, for example, of collaboration or mobility and you are going to drive these initiatives, it is a big 'wake-up call' to put them on the Balanced Scorecard and be able to convince people that there is a connection to shareholder value. If there is no connection to shareholder value, why on earth are you doing it?

The example I would give you is when I was at General Motors (GM) where my natural inclination was to help them sell more vehicles. Wouldn't you say that's sensible? But the reality was, we were making a loss on every vehicle we sold. So by selling more vehicles, it was only going to increase the loss. Therefore I had to understand where the value lay in the Balance Scorecard. The value lay in the pull through of spare parts and other value-added services.

That led my team and I to OnStar. Our team developed OnStar at General Motors because we had all the ingredients. We had world-class call centers; we had great telecommunications capabilities; and we effectively ran an internal concierge service for IT support. Extending this to the vehicle wasn't an automated service like you get today, but it used the human beings in our call centers to help

the driver find a ticket to a concert or be guided to their destination.

The team also invented Covisint which became the procurement aggregator for many of the auto companies including Ford, Chrysler, Renault, Nissan and others. The Balanced Scorecard kept us honest because otherwise we would have been doing IT initiatives rather than things that made a difference to the business.

While at General Motors, I sat in meetings where we discussed whether GM should be a manufacturer of vehicles or a supplier of transportation services – these sorts of discussions were extremely IT rich. Now what's happened since then is that Uber has come in and become a supplier of transportation services. I just checked today General Motor's market cap and it is \$54 billion whereas Uber's market cap is \$43 billion. Who would have thought that technology would have enabled that to happen?

My advice to any IT leader would be to become a trusted advisor to the business. Additionally, the IT team has to be embedded within and be respected by the business as knowledgeable people, not people who live in some corporate center

I have never seen any CIO being successful in leapfrogging the intermediate state which is, you have to run the business efficiently and effectively, and that is the ticket to earn the right to then become a trusted advisor.

or worse still, in some distant shared service organization. IT must be embedded and its leadership must become trusted advisors to the executive committee.

**Q. How does one strike a balance between business alignment and IT effectiveness? How do you measure that impact and how do we keep raising the bar on both of these fronts?**

**A.** That is a great dilemma for any IT leader because you learn the hard way, that IT effectiveness is your ticket to the game. Some people believe that they can ignore that and just be disruptors, innovators or thought leaders. I have never seen any CIO being successful in leapfrogging the intermediate state which is, you have to run the business efficiently and effectively, and that is the ticket to earn the right to then become a trusted advisor.

Gartner Group calls this Bimodal IT. My own interpretation is that bimodal is about running the business and changing the business. Running the business is a chore. We IT specialists are not great at doing chores or commodity work. What you need to do is to parse this work out to people that you can trust, including third-parties. Today you can do that in a granular way with web services for example.

We took this to an extreme when I was CIO for Phillip Morris and Kraft Foods, when they were both part of the same company (Altria Group). At the time, we had set-up a separate legal entity called TecWorks to run IT operations for both the Phillip Morris and Kraft Foods business. This organization was governed separately with its own metrics based on using real-time analytics to see how well it was running operations. The business dashboard was couched in business terms and reviewed every month with

the executive committee. For example an element of the report could be that in the last month we suffered seven minutes of unplanned outage of our financial system. The business would ask if the issue impacted the General Ledger at a month end, and if the answer was negative, then the discomfort would be low.

Conventional outsourcing in my view, is a lose/lose situation and General Motors is a really interesting example of this. At GM, I helped coordinate spinning off EDS and moving to a multi-vendor outsourced model. Now the current CIO has reversed that approach and is bringing it all back in-house. In my view, the reason he is doing this is because the buy-side (in this case General Motors) progressively becomes deeply disappointed with the lack of innovation from the sell-side (the vendors). If you engage in conventional outsourcing contracts, neither side is properly motivated.

The sell-side has low margins from what is effectively a staff augmentation model, which is not great for anybody. Similarly, the buy-side middle management is not empowered to change the defined scope of work. Going forward, the sell-side winners will be the companies that are nimble and flexible. Sell-side firms have to cannibalize their cash cows, because their cash cows are the traditional sourcing projects that are getting them stuck in a rut, while new entrants (niche players) come up with fresh thinking. Workday is a good example of this. Workday really overtook PeopleSoft, because PeopleSoft had become big, clumsy and slow. Along comes Workday with similar people, but they were leaner, more agile, more responsive. Now what's happening today, is that Workday is being undermined by new entrants, who themselves are faster and more agile and more responsive than Workday.



If you are an advocate, for example, of collaboration or mobility and you are going to drive these initiatives, it is a big 'wake-up call' to put them on the Balanced Scorecard and be able to convince people that there is a connection to shareholder value.

## Executive Insights on Application Landscape Management

Insights related to the Run dimension of Application Landscape Management

So the big guys have an inherent problem. Maybe what the large systems integrators need to do is to start up a separate legal entity. Airlines like United and Continental watched the low cost airlines take their business away. United knew that it couldn't compete since it had too big an overhead, and so they created a smaller legal entity (trading as TED) to compete. Maybe the big IT companies should think about that.

Rapid time-to-market is the essential part of making anything future proof

### **Q. Where do you think organizations ought to make investments in Application Development and Maintenance and why?**

**A.** For a number of years now, enterprise architecture has been moving towards SOA, Services Oriented Architecture. I know that concept has been around for over a decade, but for most of that time it hasn't been do-able. Only in the last few years has it become a practical thing to do. Again there are two threads running within most IT teams. The first is supporting legacy systems, many of which are gradually being rationalized and modernized; and secondly they need to create new business solutions which are nowadays mostly based on SaaS.

As an example, with the recent split by Hewlett Packard into two companies, they needed to replicate

some 2,700 applications in both of the two new legal entities. When I was at BP, I oversaw a portfolio of 2,800 applications which were mostly unique instances that were customized. Because the oil and gas marketplace is currently so depressed at the moment, BP is having to focus its attention on cost reduction for IT, and that is often interpreted as reducing the number of third-party companies they work with. When I was there, we ran a project called ADAM and we chose five third-parties to work with. Today, BP has gone down to three major preferred suppliers, and their logic is that if you give a third party more work, there will be an economy of scale and you will get a bigger discount. So firms like BP are seeking to drive let's say 10% year-on-year budget reduction by giving a smaller number of companies a larger share of the pie. Personally, I think that's the wrong strategy – they are mortgaging their future, because can you guess what is going to happen to these three companies? They will have to drive down costs themselves, and so their margins will be extremely low. The first thing to be sacrificed is innovation. And that is counter-intuitive to me, because innovations around agility, greater flexibility and leveraging cloud SaaS are often the quickest ways to get business results; and in the final reckoning, that's how IT can help the business grow and prosper rather than just keeping the lights on and minimizing cost.

### **Q. Looking at the overall Application Development and Maintenance area, what are the ways and means in which it can make the organization future proof?**

**A.** The question presumes that you can either anticipate the future (which

is extremely difficult these days) or you can adapt quickly to the unexpected. I used to be very proud of our five year IT strategic plan, but I cannot imagine any organization today having a five year anything. To my mind, if you can't implement a project within 12 months, then you will become a victim of circumstance. Rapid time-to-market is the essential part of making anything future proof and has many advantages compared to the old way of doing things.

During my career, I have overseen many big SAP implementations. In some cases it has taken us at least three years to do the implementation, then there is the adoption by the business, and from there getting to a breakeven point in a major achievement even before there are any net business benefits – that could be seven years after we first started.

If I was to say that to somebody today, they would laugh at me because it's so ridiculous. Nowadays, if you can't get business benefits within 12 months, your business sponsors will have probably moved on; the macroeconomic climate will have changed; the business will have been acquired; or may have divested some of its lines of business. So many things can change within a year or two. The one term that encapsulates all of this for me is 'clock speed' – the winners will run fast, and the losers will run slow.

Nowadays, if you can't get business benefits within 12 months, your business sponsors will have probably moved on

**Q. If you are saying future proofing equates to time-to-market, what can IT do to make that time-to-market shorter?**

**A.** Often the answer is don't develop a custom application in-house. Conventional SDLC dogma requires that you have a rigorous specification of the business requirements; that you develop and test the code; and then you release it to the end-user community. Even with DevOps, often the length of time it takes to collect all of the businesses needs will mean that they have changed in the meantime. I love the concept of the Minimum Viable Product, followed by frequent new code releases.

Today's IT service needs to be a horizontal service and not a series of vertical silos.

As a CIO I have always strived to engage with the business in each of the staged releases, but even then, if I could go and find a SaaS or modular/re-use solution that had 85% of the functionality required, I would always take the quick route since the business will be able to absorb and give feedback on the value of the functionality that you're immediately able to offer. You can later add 15% satellite capability without impacting that core solution to meet the total business requirements.

**Q. How do we make sure we are not creating new legacy which in future will slow us down?**

**A.** Wherever possible using a modular solution that is componentized seems to me to represent the best answer. I am a great believer in a modular 'plug-and-play' solution. Another example from my time at General Motors was where we needed to implement our company-wide SAP system in Brazil, but the Brazilian market had a unique requirement for bills-of-lading since every new vehicle had to be shipped with a unique bill-of-lading. SAP could not handle that. We had to develop a custom instance of the core SAP application just for Brazil. If only we had an add-on app for SAP, we would have orchestrated the cluster of apps in a way which would have been a much more agile than by modifying the core SAP instance.

**Q. What role do investments in Application Development and Maintenance have in the end-to-end flawless execution of business processes?**

**A.** Well, it starts with lots of acronyms! Business Process Management (BPM) is really part of ITOM (IT Operations Management). ITOM is related to ITIL (Information Technology Infrastructure Library) and ITIL is related to ITSM (IT Service Management). In my opinion, the IT team has to be able to manage the total solution between the endpoints and the hybrid cloud, and everything else in-between. This will include a CMDB (Configuration Management Database),

Automation is only really important if it provides you with a better business result.

a service catalogue, configuration management, change management and a service desk. Where you are operating as a service broker of micro services in a SOA environment, you need to have a way of managing automated updates and security from cradle to grave. All of these things contribute towards the business processes becoming agile and optimized, while running more smoothly and efficiently.

In all of this, the IT function has to be able to create the unique solutions using a DevOps type of mentality, and has to blend these with SaaS or SOA type components and orchestrate the business outcome.

One of the mistakes in my career was implementing vertical IT services-by vertical, I mean the transport layer, the operating system layer, the hosting, the middleware, the applications and the graphical user interface. We used to have separate teams looking after each of the seven OSI layers. They were all experts in their own right however at the end of the day, it is the horizontal result that matters — none of these vertical components matter in isolation. To my mind, today's IT service needs to be a horizontal service and not a series of vertical silos.

**Q. Have you seen that implemented anywhere, where you talk about horizontally, end-to-end orchestration of the business process?**

**A.** At BP we called this Operating Model Version 2, which was horizontal. Operating Model Version 1 was its vertical equivalent. In an earlier role at Altria (Phillip Morris, Kraft Foods and Miller Brewing) we appointed subject matter experts who were our customers and we (the IT service provider) had to satisfy the needs of these

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embedded SMEs. They were the ‘voice of the customer’. It was a great model since it drove us down a horizontal rather path rather than a vertical one.

**Q. Currently, there is much public discourse on cognitive computing, autonomies, etc. Do you see the role for these advances in Application Development and Maintenance mainly around elimination of labor related to certain tasks or do you think that these have a role to play in delivering business outcomes?**

**A.** I am absolutely certain that it is the second of these two criteria. Reducing IT manual labor is not particularly interesting to the executive committee of most companies. Automation is only really important if it provides you with a better business result. For example, in security terms, this may mean automated security updates in order to close-off vulnerabilities on every endpoint device before they can be exploited. If there is a known vulnerability in an operating system or an application, the vulnerability has to be repaired and remediated and the solution has to be propagated quickly, often across many thousands of users encompassing a wide diversity endpoint devices: tablets, laptops, smart phones, Android, iOS, etc.

In an oil refinery or in auto assembly lines, they use SCADA systems which utilize general purpose PCs these days

— they are no longer proprietary closed systems like they used to be. Where you can automate quickly the propagation of bug fixes, security updates or application enhancements, you’re able to offer end-users a better service. It is a more secure service, a more up-to-date service and more reliable service. These are examples of the meaningful business results which automation can give you. Automation for the sake of it is not interesting to the executive committee, but it will be the business outcomes that it will drive IT automation.

A good illustration of business outcomes was when I was working for Merrill Lynch. If we got to hear of a trading vulnerability that had been discovered by another bank, my team had to implement that fix really quickly. Otherwise, if we were the only bank with that weakness, it could be exploited maliciously. It was really important for us to automate that process, otherwise, we would be lagging behind and we would be the weakest link in the chain.

**Q. Does automation have role to play in enterprise IT or is it linked mainly to cognitive computing, machine learning or artificial intelligence (AI)? Does it have a role to play in enterprise IT?**

**A.** In my view, AI holds out a bright future. Not because it eliminates manual labor, but because it does

In future, the skill is going to be able to orchestrate a large number of smaller components and make sure that they are all working in harmony — and when a problem does occur, to understand where the problem lies and get it fixed quickly.

things better. In data science, AI belongs to a class of solutions called self-optimizing hill-climbing systems. This can eliminate human error in so many different ways. Sometimes where a human being has produced a bug fix, they would get certain things wrong and by making these mistakes, would leave the system wide open to massive vulnerabilities. Machine learning systems make far fewer mistakes, and can detect and auto-correct them. If you can embed that capability into a closed loop system, then have got a very dynamic solution that can constantly adapt to the business climate. To me, that is what information systems need to embrace in the future.

**Q. What can be done in the area of service integration to makes it seamless and effective for the end consumer of the product or services either within the firm itself or the external consumer?**

**A.** The answer that the IT profession has generally come up with is to reduce the number of component parts so that you can integrate services in a more manageable way. Our general approach to problem solving has been to reduce the dimensionality of the problem. However, adopting such an approach can seriously limit your flexibility and limit innovation, because you are then dependent on a small number of large components.

A better approach is a large number of smaller components, like a mash-up of web services. If you are a bank, for example, and want to be able to automate the mortgage application process, you will not want to rely on just one or two major monolithic applications. You may already have a credit card processing service, a credit evaluation web service and an underwriting risk management

web service. By combining (orchestrating) these with a bunch of other web services, you could be able to automate the end-to-end process in a matter of days rather than months.

In future, the skill is going to be able to orchestrate a large number of smaller components and make sure that they are all working in harmony — and when a problem does occur, to understand where the problem lies and get it fixed quickly. That is not necessarily a skill that IT people have learned in the past, and instead we have become accustomed to a small number of large vendors who blamed each other. CIOs need to force their service providers to work in harmony and that's very unnatural for some large IT service providers. Each firm will have its own operating model, and it is very difficult for individual clients to dictate to them that the vendor must change their operating model to accommodate a multi-supplier arrangement. Each supplier will have hundreds of clients and so Capgemini will say my operating model is x, and IBM will say my operating model is y, and each client cannot require them to change to a common model. So when using multiple vendors, the client clearly should not outsource the management responsibility, but instead keep the oversight and coordination in-house by acting as a sort of a hypervisor. Hypervisor is commonly regarded as a technical term referring to operating systems, but it is also a human term referring to operating models (behaviors, processes, frameworks). A CIO or senior IT executive can be the human hypervisor of multiple different operating models.

As you become comfortable with complexity, the dimensionality of these problems exceeds the ability of a human brain to comprehend all

of the variables. That's why you need software tools. And that is why I would prefer a vendor that came to me and told me that they have the great tool set for managing complexity. As a customer, I have had major vendors come to me and say that they want to be the prime contractor and will only consider working with other vendors as subcontractors, and will manage the eco-system for you. Then the client is abdicating responsibility. So going forwards, I don't think it there will be many prime and sub-contractor relationships, but instead there will need to be peer-to-peer relationships, requiring the client to have both the skills and the tools.

**Q. Where an organization reduces its supplier base, how do they make sure that they retain access to innovation, access to testing the market and onboarding a worthy new supplier?**

**A.** I always try to bring science to a judgment call like that. You can draw a graph with one axis being the degree of supplier complexity and the other axis representing business agility. This is almost a contradiction in terms between having a small number of vendors that are easy to manage but providing little innovation or disruptive thinking, and having a much larger number of vendors that are very difficult to manage but each of them is an innovator in their respective field. Each vendor is bringing what I call "prior art" (proven experience) to solve your specific problem, since they are niche and they are specialists. You can draw the graph that shows a sweet spot providing maximum innovation and manageable complexity. Many of my industry colleagues have usually erred on the side of simplicity. Personally, I am not a believer in that. It drives you to a small number of big relationships, which is a mistake in my view.

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**Q. What sorts of business impact do these vendors need to be delivering in order to earn their right to be strategic partners?**

**A.** They need to bring niche expertise regardless of their geographical origins. It used to be you would go to an Indian company because their unit prices were lower. Since then, we have grown up and now understood that cost arbitrage is not the most important factor. The business benefits are by orders of magnitude much bigger than any cost savings. Instead, ignore the geographical issue. Today, you should be choosing companies that bring prior art with them, and often that takes the form of a platform solution that can be quickly adapted to your company's specific needs.

If I was an insurance company and I needed to develop a new claims system, I wouldn't be going to a generalist supplier. Instead, I would go to the company that had created the claims system for AIG or for Cigna or for Aetna. I would want to work with the company that has created the world's best claims system and will be able to make my claims system even better. That's what I mean by prior art.

**Q. How do you get the required data agility to make the organization work, especially where data does not easily flow between systems often because different suppliers have brought their own data model?**

**A.** This leads us to another dimension of selecting the best that I haven't really talked about so far, and that's having the best people. Once again, I believe that a small number of really good people is always far better than having a large number of average people. As CIO, I want to have a lean and small expert team. I also want my suppliers to give me their A team — their

IT workers increasingly need a hybrid of business and technology skills.

best people. I don't want a supplier to say we have 5,000 people who know about insurance claims systems. However, if you say, we will give you our five best people on your project and these people have worked on the AIG system, or on Hartford, Aetna or on Cigna, I will respond by saying that I really value that core of thought-leaders.

As CIO, one of the key direct reports is the Chief Data Officer, but it is hard to find knowledgeable smart people who understand the importance of data — these people are scarce.

Data science is probably the fastest growing field in IT, but most people misunderstand the concept of big data. It is not structured data. As a technologist, I don't care how big Aetna's database is of medical records because it is structured data and the problem of managing structured data has been solved. There is no real problem of size in structured data. The "bigness" comes with unstructured data. The definition of big data I refer to is commonly known as the four Vs: volume, variety, velocity and veracity. The fourth term veracity would also mean provenance. These are the four challenges that any data scientist or any chief data officer should be wrestling with.

**Q. What are the necessary skills and attributes for someone working in IT and how do we make STEM an attractive career for young people?**

**A.** That's a big issue especially here in the United States. The younger generation especially the

Millennials in North America, don't seem to appreciate the importance of science, technology, engineering and mathematics. The subjects do not feature strongly in the education system. That is the driver behind having to recruit foreign nationals because companies want the best person from anywhere in the world for key roles and skills.

IT workers increasingly need a hybrid of business and technology skills. In the past, we would train technical people and we would ask them to go understand the business issues. I think that's gradually changing. The Millennial Generations have grown up with technology and are now becoming business experts. The concept of shadow IT used to be a problem for people in IT, but now it is an opportunity. When a business person comes to IT and says, I think I want to choose the following SaaS solution because it meets all of my needs, in the past IT people would say "No, leave it to us. Just write down your requirement and we will go and find the right solution for you." But instead people in IT should love the fact that business specialists also understand the need for technology. That is the future, and we need to embrace shadow IT.

**Q. How can we use maybe mobile technology for example to drive interest in STEM that will be needed for the future success of companies in this country?**

People in IT should love the fact that business specialists also understand the need for technology.



Capgemini met with Jim Noble in Stamford, CT.

**A.** Youngsters have grown up with mobile, social networking and instant gratification. That gives the IT professional the opportunity to explain that they shouldn't just download an application from the app store and accept the default settings that usually permit the app to listen to your microphone and know your location constantly. You can use these as teachable moments to say, "That application you've got on your mobile device is terrific. Did you look at the default settings? Do you know where your data is stored? Is it stored in a safe haven country?" And they will say, "Sorry? Why does that matter?" And you can use that as a teachable moment.

I strongly believe in the concept of 'Pay It Forward'. It is based on the concept that if somebody does something good for you, and you learn from them, you do not give them back something to pay them back directly, instead you 'Pay It Forward' to somebody else. So you take your new understanding and you give that to somebody else. In IT, we can 'Pay It Forward' by educating our people as part of a 'Lunch and Learn' session. A 'Lunch and Learn' on identity theft has often proven to be a very popular subject for the employees in a company. We can say, "Let me tell you how my identity was stolen and let me help you avoid that happening to you." And then, they'll use that to raise the awareness of their family members. Our job is to propagate know-how.

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# WHAT CIOs ARE SAYING

Execution of the “Innovate” portfolio is about transforming the way business is done in-line with what business wants to achieve to deliver competitive advantage, for example, time-to-market for new products and services, consumer demand driven orchestration of business functions such as supply chain management, etc.

1

**Take the Application portfolio linked with each functional area or value chain to world-class performance levels based on high-impact IT actions and decisions that deliver business driven projects successfully while simultaneously improving the IT effectiveness of the Application portfolio.**

## Best Practices

- Tight linkage of IT actions to Shareholder value creation needs to be ensured based on the use of:
  - Balanced Scorecard: links impact from IT projects to Shareholder value generation, based on impact on financial metrics, customer metrics, internal business process effectiveness metrics, and learning and growth metrics.
  - Strategy Map: links impact of potential IT projects to key business themes and priorities. This helps to identify the projects that can create the highest impact.
  - Analysis of the current state business process and application landscape: yields IT actions aligned to removal of high pain areas, which in conjunction with creation of new capabilities to exploit high gain areas, is used to develop the future state business process and application landscape. Often the new business process should have a philosophic orientation to put the power of the enterprise at the disposal of the front-office, and try and shrink the mid-office and back-office to the extent logical; eliminate IT Operations and BPO workload to the extent feasible (leaving the rest to be automated).
- The business owner organization should take responsibility for defining KPIs for functional areas, end-to-end business value chains, and organization change management to drive IT projects. This is in addition to supporting ongoing “Improve” actions during the day-to-day “Run” activities of the portfolio.
- IT leaders embedded within business units are critical to drive effective portfolio management of business driven projects. These leaders need to have earned the trust of the business based on their track record of business impact, be knowledgeable about the business area and IT, have the mindset to take the portfolio to world-class performance levels based on effective leverage of IT, and report to the central IT leadership with a view to:
  - Ensure deep use of best practices across IT strategy, day-to-day delivery of projects, and adherence to IT standards (going beyond mere adherence to approved vendor IT software and hardware products) to make sure the whole application landscape is greater than the sum of the parts.
  - Exploit synergies and scale at the business-unit and enterprise levels in a manner that would lift both IT and business KPIs, and drive use of common solutions in a balanced manner. This effort is aided by a Business-IT Target Operating Model to define the ways of working, identify opportunities for organizational synergy, and implementation of Agile Application Development Factories that incorporate insightful structures, work practices, etc. to deliver modular business-IT components that drive meaningful business outcomes besides a substantially lower price per component.
  - Manage segments of the overall application landscape in a manner that exploits synergies associated with the logical cohesion of related business capabilities, while simultaneously minimizing the coupling of applications to accelerate time-to-market for projects. This is aided by insightful definition of application domains in the application landscape.
  - Drive projects to lift IT effectiveness in order to make enterprises more agile, consumer driven and demand driven, while reducing technical debt.

## Example

From an IT effectiveness standpoint the experience of a global Financial Services organization has been a realization of an IT re-use factor of ~4 and ~60% lift in agility (measured in terms of time-to-market and cost associated with releasing a defined size of code). This was based on development of meaningful business-IT components which enabled development of key business value chains to support new product development, international expansion, based on plug-and-play than ground-up coding every time; despite experiencing many first mover disadvantages.

## 2 Business capability driven simplification and realization of agility are needed to enable world-class performance of the organization, particularly in view of the realization that the IT demands of different countries and business units often have more similarities than differences.

### Best Practices

Multiple facets of simplification and agility need to be exploited:

- Business organization structure (since it has a ripple effect on IT): ranging from a combination of teams servicing business units that are synergistic, de-layering of the firm, etc.
- Products and Services sold (since it has a ripple effect on IT): reduction in the number of product variants, use of common parts, and simplification of customer journeys and associated interactions (e.g., forms) to improve the customer experience.
- Drive application landscape simplification and agility and to ensure the power of a well-integrated landscape based on:
  - ▣ Re-use of existing applications first, then purchase of COTS applications in a judicious manner, and finally build the few custom applications in a prudent manner. Re-use of existing applications can be based on a functional and technical health assessment, and the usage of pattern based Agile Application Renovation factories to maximize synergy and minimize time-to-market.
  - ▣ Buying suitable applications, with a close look at potential cloud applications: Purchased applications should be based on matching business needs, its ability to work well in the application landscape (using an Enterprise Business Data Model covering Master and transactional data). Execution of the integrated IT landscape is also enabled by an effective integration platform and use of standard design patterns.
    - While buying SaaS applications (for their obvious merits of time-to-market, business service based solution approach) it is essential to recognize their sweet spots: at the edge of the enterprise (for workloads that are linked to end customer or internal user experience such as CRM and customer onboarding); business scenarios that involve a network effect, e.g., global procurement; API driven digital commerce; mid-, and back-office functions that are not a source of competitive advantage; and similar use cases.
- It is wise to use COTS packages for their defined capability (since they typically incorporate industry best practice business functionality, are rules based, configurable, have paid attention to workflows and integration needs) and not transforming them into something else. Extensive customization essentially turns COTS solutions into 'product based legacy systems' with limited ability to exploit new capabilities released by product vendors owing the need to re-apply customization, extensive regression testing, etc.
  - Maximize use of common templates across the enterprise that cover business process aspects, transactional information, master data, technical aspects, and delivery of IT and business services.
  - Maximize use of common IT solutions without compromising 'really' valid business interests since business processes that appear complex and unique are often found to have more similarities than differences.
    - When real differences are supported it is prudent to undertake the necessary customization at the edge rather than at the heart of COTS products. These changes are to be retrofitted onto the standard platform to limit the sprawl of the landscape.
  - Flavors of large enterprise systems can be developed such as Platinum, Gold and Silver. In the case of an ERP, the Platinum version is likely to have the full functionality needed for a large organizational entity, with other flavors provide scaled down functionality, such as for organizational entities focused only on Sales & Service.

- Building applications should be limited to the essential or for sources of competitive advantage or to cater to a specialty business need not found elsewhere. This also depends on the IT intensity of the industry and business model. These applications need to be built in a modular manner (including a mobile first or cloud first development approach) such that changes or new variants to business process, products, or integration with third party solution, can be implemented in a plug-and-play manner with minimal coding. This goes well beyond setting up technology based Agile application development factories that often just churn out IT components at cheaper unit price. These IT components often do not create an application landscape that is greater than the sum of its parts from a business perspective.
- Certain business workloads may merit solutions that involve a combination of on-premise and off-premise cloud based application functionality, such as collaborative forecasting planning and replenishment in Life Sciences. This reiterates the importance of an effective Enterprise Data Model and integration architecture for effective end-to-end operations.

### Example

A global Consumer Goods organization has adopted one Business-IT Target Operating Model across ~100 Markets / Business in terms of standard customer experience, processes, data and systems leading to multiple business benefits besides improvement in operating rigor and cost reduction.

## 3

**Data management, Integration and Business Intelligence are needed for the success of most transformational projects but tend to be complex. Data related efforts need to excite business leaders by answering important business questions that create visible value. It should use a judicious dose of a “build it and they will come” strategy. Finally, in spite of recent numerous technology advances, high caliber human resources are still critical for success of data initiatives.**

### Best Practices

- Real-time insights are about transforming the business model. For example making the business model more rigorous and less Intuitive in investment banking; detecting what is going to happen and then running the business accordingly in the consumer goods industry, etc.
  - Established enterprises can compete with non-traditional entrants using data and analytics since the latter do not have the extent of data that large firms have, and therefor need to acquire it from third parties. Established enterprises should ensure that their data is in a useable form and have passionate data scientists that are knowledgeable about the business to create solutions that become a source of competitive advantage.
- It is critical to standardize and centralize the data, or at least harmonize it. However, this approach is unlikely to happen since it is very difficult to centrally assemble the data in a satisfactory manner. In order to create an incentive for business leaders to invest, it is necessary to create visible value by answering key business questions and execute key business value chains smoothly. With demonstrated results, business units will fund the building of data infrastructure over time. The kind of business questions needing answers will help determine the data needed.
  - There are multiple data management techniques that minimize the need to centralize data and these need to be evaluated to reduce cost and improve time-to-market.

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- In order to make the problem manageable, it is important to focus on key business value chains and target the associated high-value data entities (master and transactional data) for high data quality – this makes sure that the whole ecosystem of applications and databases progressively communicate to each other and work together effectively.
  - ▣ For an insurer using structured data, it might mean a focus on account, premium and losses for data quality. Under unstructured data, it may mean that data gathered on web sites through telephone calls with service reps can be analyzed, such as data on driving habits of certain groups of policyholders. This will help the business to understand focus areas for customers and how it might be integrated with third party data, to increase its value.
- An effective enterprise business data model helps decide which applications should be primary when there is conflict between applications. Typically the data model in main applications is not to be changed.
- Master Data Management needs to span the broad definition of data and operations, and is better run under a business driven organization.
- When building new capabilities – whether new digital assets or replacing legacy systems – management should insist that the data environment will be simpler and more robust as a result. These need to be the success criteria for both the “Innovate” and “Run” parts of the portfolio, and not just simply delivering new functions or new mobile apps.

## Example

A global Consumer Goods organization focused on business agility in terms of usage of real-time business performance insights to aid management decision making in uncertain and volatile market conditions. To this end, from amongst its thousands of business processes it prioritized eighty eight key business processes for deployment of a state-of-art business insights solution. The priority business processes were identified from top-down analysis (vision, strategies) and bottom-up analysis of critical business capabilities (across customer insights, produce, manufacture, distribute, merchant, commercialize). The solution incorporated large interactive displays that depicted business performance with trends and alerts, capabilities for on-the-fly analyses to follow-up questions with models on:

- What is happening? KPIs on product shipments, sales, market share (inclusive of six to twelve month predictions), etc.
- Why is it happening? Drill down by country, territory, product line, store, etc. Attribution to drivers such as, consumer consumption, region specific economic data, stock levels, advertising, actions by competitors, etc.
- Potential impact of management actions such as, pricing, advertising, product mix, etc. on KPIs

## 4

It is hard to imagine in today's world that there can be future proof applications since these are tied to the changing needs of the business and the market (this does not default always to undertaking a digital transformation effort). Despite this, IT can contribute to the essential elements of making an enterprise more resilient and ready for future opportunities.

The following are ways to make an enterprise more resilient and ready for future opportunities:

- Support business agility in terms of, time-to-market for new products and services, speed and ease of attaining regulatory compliance etc.
- Transform the enterprise's business model with data driven approaches such as:
  - Deep consumer psychographic insights gained across multiple channels, products and service related transactions, purchasing behavior, etc., to determine risk adjusted lifetime returns of future offers, while delivering them in a context rich manner
  - Real-time decision making based on detecting signals from retail end points
- Transform the enterprise's business model by use of digital interventions to create disintermediation, etc.

### Best Practices

Several ways to make an enterprise future proof:

- Prepare for the unanticipated through market analysis and exploit known trends:
  - Adjust your strategy based on tracking trends, new entrants in related markets, and actions of traditional peers across the world. Take care not to pursue the 'coolest technology' just because it happens to be the 'flavor of the month'. Applying insights gained to generate business value needs to be a foremost priority.
    - The focus should be on trends that have potential to make the greatest, long-term impact on the organization's business, mindful of organizational realities. Subsequently a suitable IT strategy, including supporting technology elements and pilots, can be selected to harness these trends and to develop solutions that lead to visible value creation. This galvanizes the organization to further exploit these trends aligned with priority business themes, leading to an improved level of competitiveness.

The Executive Vice President of a large Insurer with responsibility for Technology and Operations remarked, "There are many potential new entrants in our markets, some of which do not look like a traditional Insurer. One of my executive responsibilities is to pay close attention to what potential new entrants into our markets are doing and ensure the rest of the organization also pays attention. Some of them will win and some will lose in this market. We need to pay attention because it might not be that our own insurance model is the only business model that can win."

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- Improve IT effectiveness to shorten time-to-market
  - Business capability driven simplification and realization of agility covering the re-use first, buy, and finally build approach to developing new solution has already been covered. IT organizations need to work backwards from business driven and competitiveness driven timelines.
  - In addition to simplifying the environment and the IT development and testing methodology, the ways of working with IT sourcing partners needs to be simplified, made agile and focused on IT output and business outcome creation.
  - Excessive number of applications and databases compromise the organization's interest severely and it is incumbent on IT leaders to clearly present their case for change.

As a CIO remarked, “sprawls do not come about because enterprise architects do not know what to do. It is often caused because architects are ignored or do not have enough influence.”

- The negative impact of excessive numbers of applications and databases needs to be addressed in terms of: time-to-market for new product and services, customer experience, straight through processing, risk management and regulatory compliance, data quality and granularity, plus sustainability cost. Benchmarking with peers can be a useful way of communicating the magnitude of the issue.
- The business context permitting, new initiatives should incorporate an element of ‘cleaning the clutter’.
- Application rationalization and renovation efforts should not be just about destruction but rather involve a strong element of new business capability creation which will enable the business to win in the marketplace.
- Effective IT platforms that combine relevant infrastructure elements for their reference architecture tend to be a key source of IT agility. This supported by such elements as a Software Defined Data Center tend to accelerate digital transformation.

As a Financial Services CIO remarked, “the number of applications and databases quickly becomes the long pole on the tent around so many things that you might otherwise want to do. The ability to move with pace, the ability to get at data, the ability to introduce new products are all encumbered by the context of a very complex legacy environment... When you are building new capabilities, whether digital capabilities or replacing legacy, you have to insist on a few things. Most importantly is that your data environment will be simpler and more robust as a result of the investments being made and that you take some things away – retire and what not. These need to be types of success factor criteria for both innovate and run, and not just simply delivering new functions or new mobile apps.”

## 5

Innovation is hugely important and CIOs rely on their organization and contribution from strategic vendor partners. There is an opportunity for improvement by developing a structured innovation mechanism to recognize and reward proactive innovative work from the broader vendor base. Some business savvy CIOs take it on themselves to lead the charge personally.

## Best Practices

- Track trends, new entrants in related markets, and actions of business peers across the world. These insights are used to quickly deliver some simple business capabilities as an extension of ongoing projects (especially in the area of digital), which can make an immediate P&L impact.
- The business focus should be on trends that have potential to make the greatest, long-term impact on the organization's business, mindful of organizational realities. Subsequently a suitable IT strategy, including supporting technology elements and pilots, can be selected to harness these trends and to develop solutions that lead to visible value creation. This galvanizes the organization to further exploit these trends aligned with priority business themes, leading to an improved level of competitiveness.
  - Actively investigate new technology advances based on agile prototypes (with inclusion of product suppliers and vendors) to gain a deeper appreciation of the technology's relevance and potential. This enthusiasm must be balanced by a 'healthy skepticism' until all the dots, up to the last mile of business value creation, are connected.
  - It is essential to emphasize that an innovative solution is what makes a difference to organization's competitiveness and not the innovative technology itself.
- Some organizations use formal internal innovation processes that typically occur only every six months in which business leaders meet face-to-face to decide on innovative ideas. However, some high performing organizations believe this to be an abdication of IT responsibility and instead rely on the IT leaders embedded within the business areas to develop compelling innovation solutions. These individuals typically have the knowledge and mindset to take the portfolio to world-class performance levels.
- In order to promote innovation from the vendor ecosystem it is imperative for organizations to adopt mechanisms that reward and foster innovation and proactive behavior. Without a robust process for integrating contribution by vendors, they may believe that their efforts are futile and therefore degenerate to focus on basic expectations.
- Forward looking, proactive CIOs who have a strong track record can earn the right to be a trusted partner of the CEO by bringing forward powerful insights and new approaches that help transform the business, or by becoming an effective organizational change agent, for example, by undertaking a global implementation of a key IT system.

# CIO INTERVIEW

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## **Catherine Doran** CIO Royal Mail Group

Catherine Doran joined Royal Mail in September 2011 as Chief Information Officer from Network Rail, where she led the company-wide transformation programme. Before that she had been CIO for BT Retail and Capital One (Europe) as well as holding senior IT management positions at NatWest Bank and British Telecom. Catherine is a member of the CIO Board for the Tech Partnership, a growing network of employers creating the skills for the digital economy and working to inspire young people about technology.



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### Q. Could you provide an overview of Royal Mail Group and how the various postal services are organised within it?

A. Royal Mail is one of the oldest companies in the world and we will be celebrating our 500th anniversary next year. Under our Universal Service Obligation we are required to deliver letters to twenty nine million addresses in the UK, six days a week, with the cost of a stamp being the same regardless of the distance that the letter has to travel.

The Group is split into three brands: Royal Mail, its core letters and packets delivery network, Parcelforce and GLS, Global Logistic Services which has operations in 37 countries. In terms of scale, we employ 143,000 people in the UK and hire additionally about 19,000 temporary staff for about six weeks to deliver the Christmas peak. We deliver in excess of 13 billion letters in the UK and 1.1 billion parcels every year.

### Q. Where does technology fit into Royal Mail's operations?

A. For at least 15 years now, we have used letter sorting and address interpretation machines in the mail centres to process the huge volumes of mail handled every day. If any one of these machines goes down, we are able immediately to re-route the mail. The system was designed as a kind of node system which meant that business continuity was built-in from the start. Since the core operations systems were inherently resilient, it had given the business an inaccurate belief in the resilience and the robustness of information technology systems.

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It is really only in the last decade or so that IT has come to the fore with for example, the success of systems like the OBA, Online Business Account ordering platform used by our largest corporate customers. The OBA platform processes a huge volume of transactions in just a few hours every day and accounts for a large proportion of company revenues.

### Q. How was IT organised when you joined the business?

A. Over an extended period of time, IT had been under invested in, like many other parts of the business. I joined Royal Mail from Network Rail in 2011, but some years before in 2003, nearly all of Royal Mail's IT had been outsourced including most of its people, the buildings, the machines and all the applications. There was a view, which was pretty common at the time, that having outsourced the IT you could outsource the risk.

### Q. How were the IT outsourcing arrangements being managed?

A. Often when companies go through a major outsource programme, they will put a great deal of care into the retained organisation as being the 'conscience of the business', as its 'corporate memory' and owning the future. Royal Mail had retained an internal IT organisation in 2003, but by the time I joined in 2011, of the 400 people retained in 2003 numbers were down to just 119 staff. We had a small set of individuals with huge amounts of knowledge in their heads which is both very powerful and risky in equal measure.

We did not even have capabilities such as a fully resourced and functioning architecture team or security team. Everything was cut back to the core of what was needed to be done 'to keep the lights on'. Looking back, when I consider how the 119 people managed to keep the whole ship afloat, I am stunned and full of admiration for them.

### Q. You embarked upon a multi-year transformation programme soon after joining. What were its main priorities and their impact on the application landscape and other aspects of IT operations?

A. We had four things to balance and any of the four by themselves were big asks.

The first priority was to rebuild the IT function itself. At that time, the application landscape was 388 systems, but it took us about four months to find that figure out since nobody had a complete picture. Therefore, one of the immediate business needs was to get a clearer idea of the landscape itself. The annual budget for IT was about £200 million with headroom to be as high as £350 million, but the ability to invest was severely constrained by the fact that the IT department was sub-scale. We needed a rapid infusion of talented people to work alongside our existing teams who could maintain and extract the best out of a legacy environment and build for the future needs of the business, which would need to operate in an increasingly competitive and deregulated market environment.

The second task was a programme that we called Get Safe, named as such to emphasise to non-technical people its importance in managing day-to-day operations. For many years under public ownership, Royal Mail had under-invested in its annual care and maintenance of its physical estate. Due to this successive under-investment, four years ago many of the servers



Insights related to the Innovate dimension of Application Landscape Management

And fourthly, the UK coalition government had already stated its intention to privatise the RMG business. We knew that by early 2012, the Royal Mail would need to have built a long-term strategy to make the business more attractive to institutional and private investors. This meant IT needed to work more closely with the business and become more customer-centric, offering more products and services, and start to move the dial rapidly in terms of what Royal Mail was capable of doing.

**Q. What problems did you face in bringing about these transformational changes in an organisation like Royal Mail?**

**A.** We had to keep the business transformation relevant and interesting for our own people while at the same time, organising a rapid programme to hire additional people. For both groups, we had the same story: that together with them we were going to rebuild and transform an IT function. That is pretty exciting for IT people.

At the end of my sixth month here, I got sign-off from the board to grow the internal IT function from 119 to 350 people. In fact, we ended up hiring more than that number because as we went on, we realised we needed more people. Incredibly, we received more than 33,000 applications for the 240 positions, which is by any odds just amazing.

**Q. How did you do it from a crawl, walk and run perspective?**

**A.** We could not wait for the recruitment process to be fully up and running because it would slow us down. As a business, we also could not afford to get external consultants to come in and do all this work for us. So instead, we worked out that there were 67 critical roles which needed to

were over 5 years old, and a few were even older. While these servers continued to function perfectly well, it meant that in some instances there were databases, applications and even operating systems which were out of support. Any ageing IT estate poses a potential risk to business operations and so we deliberately used the term Get Safe to help the rest of the business understand the need to invest in our physical IT assets, like they had to do with engineering systems for mail sorting operations in the mail centres.

The third task in 2011 was that the major service contract with our incumbent supplier at the time was scheduled to finish two years later in 2013. The business had not even started to think about what would be the desired shape

of any replacement contract or set of contracts. At the time, as a publicly-owned body we also needed to go through the government procurement process, OJEU (Official Journal of the European Community) which itself can be a time consuming process. For these reasons, we decided to extend the existing contract by two years to give us time to decide on what we wanted to do in the longer term.

We deliberately used the term Get Safe to help the rest of the business understand the need to invest in our physical IT assets.

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be filled almost immediately. These 67 roles would give us sufficient head room to be able to launch a full recruitment drive. We met with several consultancies and told them that if they were interested in providing any of these roles, we would need to keep their people anywhere between six and twelve months, but while their consultants were here, they had to work for us and have our badge.

The second part was equally as important. There were 119 people internally who had each been through difficult circumstances over a long period of time. We needed to make sure everyone understood what we were doing, why we were doing it, and what we needed to do between us to make it a success. We knew that because they had stuck with the business through all the hard times, they must want things

to get better and were willing to make it happen. And they did it, more than any of us could ever have dreamt.

**Q. How were you able to integrate such a large number of new staff so quickly into a complex organisation like Royal Mail?**

**A.** There is a Royal Mail vision and we are part of it. One of our tasks in IT is to tell the rest of the business how we can contribute to delivering that vision. Any organisational culture is something that sits underneath this. My view was that if we started with 119 people and we

finished up with 400 plus another 100 contractors and 2,000 people who we were working with from third-parties, then we would end up with some form of organisational culture. However, if we did not think about the culture beforehand, we may not like what we end up with.

To institutionalise what we previously carried out in the early days, over the last 18 months or so within IT, we have run what we call our Culture Crew. These are people who get together to think about our culture and think about ways to make all of our working

We needed to make sure everyone understood what we were doing, why we were doing it, and what we needed to do between us to make it a success.



lives better. This group has developed our three core values which are: be positive, be brilliant, be part of it. We have done exactly the same thing with our business partners since if you are sitting in one of our offices anywhere in the country, we all need to work together as a team.

One way of measuring the extent to which all employees are committed to the organisation's goals and values, and feel motivated to contribute to its success, is to run an employee engagement survey which Royal Mail has conducted for all of its workforce for a number of years. Back in the 2011, IT was ranked lowest in the company on the employee engagement score by a country mile. A year later in 2012, we caught the pack up a little, but we were still at the back. In 2013 and 2014 IT employee engagement had risen to

Most women regard working in technology as not creative and being very male oriented.

joint third place in the company. In the 2015 employee engagement survey we are joint third again, but we are working hard as a department on improving that!

**Q. What actions are you taking to promote IT as a career option to a more diverse employee base?**

**A.** This whole area is really important to me. Ethnic diversity I am pleased to say, is not so much of an issue in IT compared with some other professions, whereas gender diversity remains a major issue to be solved. The proportion of women working in IT in the UK is hovering between 15 and 16 percent of the workforce. I think the maximum

figure it got to was about 22 percent about 15 years ago, but the proportion of women working in IT is now going backwards. Part of the problem is a widespread perception issue about working in IT especially prevalent among women.

I am on the board for eSkills UK and when we have carried out research that involves talking with female undergraduates, we have found that most women regard working in technology as not creative and being very male oriented. When they think of IT, often they think of desktop support and even people walking about with screwdrivers. What they do not see is the interaction that IT has with the rest of the business – working with the sales and marketing teams, working with finance, working with commercial operations, and understanding how to solve complex problems.

There is also a practical issue about the language and the visual imagery that is often used in IT job ads. Several years ago when Royal Mail was running its main IT recruitment campaign online, we made sure that the job postings linked to videos that featured people who could be identified with different ethnicities and equally represented the genders. Since workforce diversity is important for any business, we set ourselves a goal, but crucially not a target since it is more important that people are able to do the job and not whether they wear a skirt, to ensure 30 percent of our new hires were women. We thought that 30 percent of our new hires were women, it would be equivalent to double the national average and it would help make the working environment feel more balanced. We ended up with 31 percent women.



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We have been able to reduce the length of time it takes for a new large-scale corporate customer to integrate with us from months to weeks

We are also working with Capgemini on several initiatives at an industry level to increase the number of women working in IT. As an employer, for the second year running, Royal Mail has also been included in The Times Top 50 Employers for Women.

### Q. What were some of first IT initiatives delivered that the business benefited from?

A. I have already mentioned that it took several months after I started as CIO, to find out how many applications and systems we had. It also took a similar period of time to find out how many projects were running. One of the first things we had to do was to build a comprehensive reporting function. The number of projects delivered to the business also soon increased. By the end of 2012, we had delivered about 20 projects during that year and by the following year in 2013-14 we were able to deliver 40 business projects. Last year in 2014-15 we delivered 61. And all of this has been achieved with a flat headcount.

In addition to the four key tasks which I referred to earlier, there has also been a need to build the credibility of IT by making sure that the people from IT who engaged with the business would work with them as equals, and who would willingly challenge business colleagues and bring new ideas to the table. All this coincided with Royal Mail Group undergoing significant organisational changes in the run-up to the part-privatisation that took place in 2013, after which it became a publicly-listed company.

### Q. Can you provide examples of where you have removed complexity from the application landscape?

A. In most large established organisations, irrespective of ownership or industry sector, there will be certain systems that have been developed over a period of time that few people know much about apart from their core users. As an example, within Royal Mail there was a Yard Management System that was used by one of the major distribution hubs which assigned a loading bay to the lorries or trucks as they arrived. Managers knew that if the system went down, apart from the disruption to our own operations, within a few hours lorries could be backed-up on nearby major roads. In situations like this, where IT needed to work closely with the business

owners to update a system to ensure it met current operational demands, it was encouraging that at board level, other senior executives were always supportive and wanted to become part of the journey with IT to find a solution.

As another example, in the past Royal Mail had a habit of creating a point interface for each of its largest corporate customers which led to it needing to support more than 300 APIs. For each new API, it could take several months to build the integration and to carry out all the testing before the API could go-live. Last year, we implemented a shipping API and it has now become our standard interface. As a consequence, we have been able to reduce the length of time it takes for a new large-scale corporate customer to integrate with us from months to weeks. There is also programme running to look at how API management can be further improved based on a direction of travel requiring that integration should be completed in a couple of days for complicated instances and a couple of hours for simple cases.

## Core Platform Model

Royal Mail has identified the need for approximately 18 core, flexible and customisable platforms plus around 50 specialist systems

## Past



More generally, Royal Mail has always customised every application it uses which means that anytime either IT or the business wants to try to do anything with those platforms IT usually has a large-scale and complex job to do. To upgrade to any new release, we have to re-apply all of the existing customisations and conduct extensive regression testing. So nowadays, we have a new philosophy to any customisation. First of all, the answer is “no”, but if there is something we really have to do because of an overriding business requirement, we will do it on the edge of the product rather than in the heart of it.

I mentioned earlier that in 2011, Royal Mail had 388 applications. As we sit here now four years later, we have 220 and our direction of travel is that we do not need all of these applications. We reached this number because like many similar organisations, over a period of time people had built silos. Our medium term goal is to have around 18 core enterprise platforms and between 50-60 specialist applications for niche business requirements.

**Q. How were you able to measure the contribution IT was making to the business?**

**A.** Let me provide a couple of examples across Sales and Marketing and Commercial Operations

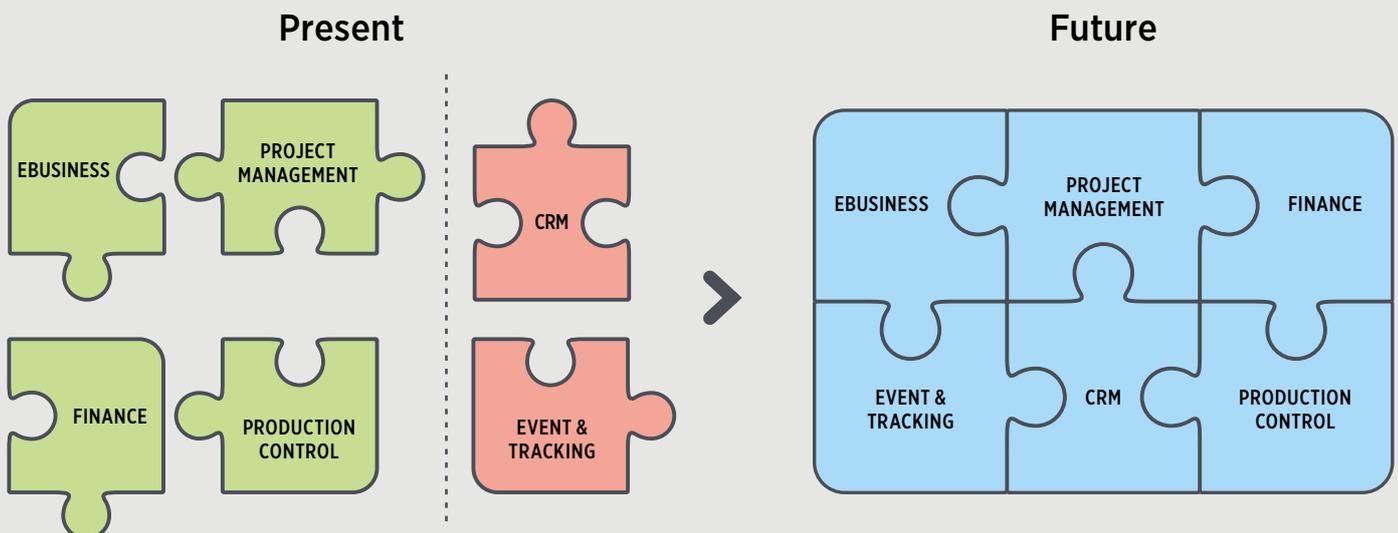
Royal Mail has appointed a Chief Customer Officer, Mike Newnham who came to us in 2012 from a mobile telecoms operator. Mike has helped us focus better on how we think about our customers and our customer’s customer, and how we are going to simplify our products. A customer in the Royal Mail’s view had in the past always been the person who bought the stamp and not necessarily the recipients of letters and parcels.

Against that backdrop, the Business Digital Team was formed and at the same time in IT we set-up an e-Business team. Between us, we decided to co-locate the business and IT people together and run these programmes and their teams like a platform. This requires us to have a standing team which includes some

Capgemini people, so that the size of the teams can adjust quickly to match the peak and troughs in demand. The same model is being implemented for our HR platform where we have one of the most complicated payroll systems in Europe, running a weekly payroll for the vast majority of our staff. The platform model is also used for other business-critical areas managing complex, large-scale business processes, some of which due to the nature of our business, are subject to physical and operational factors beyond our control.

Our platform model has been running for the last three and a half years and these efforts have played a part in the Royal Mail Group being ranked 15th out of the Top 20 Business Superbrands in the UK. Four years ago, Royal Mail did not even get into the Top 100.

With regards to commercial operations, we know what ‘goes in at the top’ and we know ‘what comes out of the bottom’. We also know that we deliver 93% of 1st Class mail within one working day of it having been posted anywhere in the British Isles, but we do



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not know how it is done because we do not measure it. Consequently, there is a major project underway looking at the Group's entire commercial operations based on five pillars: data capture, production planning and control, supply chain feasibility, network scheduling, and final mile optimisation. The goal is to use information better to understand and streamline operations.

The platform model is also used for other business-critical areas managing complex, large scale business processes

**Q. How are you planning for the future?**

**A.** We have set-up a Strategic Change Forum to look at the most critical things for our business through a lens of business change. Much of its attention has been focused on our peak period running up to Christmas each year. Christmas at Royal Mail is five and a half weeks long and we start planning for it in the spring. Last year we were the only national delivery company that got through this entire period

without any major problems. This was really important for me at a personal level, because it was the first Christmas that IT went through without touching the sides.

This year we expect again to handle higher parcel volumes compared to previous years and so I have been running a project all year to check that we would not face IT operational issues if the parcel volumes were to be doubled. Throughout my career, I have been used to working at scale, but what happens in Royal Mail for that five and a half weeks is just eye watering.

**Q. How is Royal Mail's business changing?**

**A.** A phrase I like to use to describe Royal Mail is that "we are a 500-year-old start-up". While it has a long history of operating a successful postal business, nowadays Royal Mail operates in a highly competitive national market as well as internationally. Like other businesses we face the power of digital and the challenge of needing to be 'always-on' and taking account of people's changing working patterns and lifestyles.

In recent years, we have also seen a number of new entrants into our domestic market not all of which have been traditional postal or logistics businesses. None of them

have to meet our Universal Service Obligation which makes our business more geographically-dispersed, larger scale and usually more complex. For many years when the Royal Mail was publicly-owned, there had been under-investment in many parts of the business under successive governments. Fortunately, the historical under-investment in IT systems is now being addressed.

We also need to meet the expectations of more and more of our customers (myself included) who want to receive letters and parcels more quickly, and at a time and way that better suits them and their lifestyle. This provides us with a tremendous opportunity to develop new and better services for our customers and for the benefit of mail recipients, built on an increased customer-centricity that runs across the entire business.

Like other businesses we face the power of digital and the challenge of needing to be 'always-on'

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# CIO INTERVIEW

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## **Filippo Passerini**

**Recently retired CIO of Procter  
& Gamble Co.**

Filippo Passerini served for more than ten years as Chief Information Officer (CIO) and Group President of Global Business Services (GBS) at Procter & Gamble Co. (P&G) until he retired from the company in July 2015. At P&G, he had responsibility for delivering over 170 different business services across 70 countries. Filippo originally joined P&G Italy as a systems analyst in 1981 and went on to hold senior management positions in Italy, Turkey, UK, Greece and Latin America before moving to the firm's corporate headquarters in Cincinnati, Ohio. In 2010, Filippo was inducted by CIO.com into its CIO Hall of Fame and has been the recipient of several high-profile industry awards.



## Fillipo expresses his professional insights and personal views on various aspects of Application Landscape Management.

**Q.** From a vantage point of being a global CIO and shared services leader, how have you seen different IT organizations derive optimum value from their portfolio of applications?

**A.** In my opinion, it's critically important for any IT organization to avoid being regarded as a commodity supplier by the business, otherwise IT simply becomes all about cost and not about business contribution. My philosophy has always been to differentiate between those IT services and applications which are necessary to run day-to-day operations, but do not provide any competitive advantage, from those that can build new and profitable capabilities for the business. In the case of the former group, we need to manage these IT services like a production line since they are all about reliability, efficiency and lower costs year in, year out. For the latter group, it is about driving value through transforming the way business is done. Indeed, certain IT applications can be a catalyst or an enabler for changing the business in multiple areas, such as product design or digitization. As an example, at P&G, we created an immersive visual analytics environment, named Business Sphere, which helped to transform the firm's decision-making by harnessing real-time business information supplied by its operations from around the globe.

Additionally, given the constant pressure on controlling costs in any large organization, the former group of activities will more likely be targeted for cost savings, since they are usually regarded as a commodity service by the business. I believe it's important to separate out these two groups of activities in a very complementary manner, otherwise we run the risk of resorting to blind cost-cutting measures that will in turn inhibit the creation of distinctive business value needed to grow the business. This has always been the danger in IT: if we place everything we do into a single basket and don't differentiate between different activities, in a few years' time, we will not have the necessary resources to re-invest in the business.

**Q.** Can you provide examples of what you refer to here as 'commoditized' IT services for a typical business?

**A.** If you take datacenter operations for example, which will typically involve running servers, network management and application operations support, none of these activities alone provide any differentiating competitive advantage. Some people might say that if you can run your servers better than before, you can reduce costs. That's fair, but it does not make it a source of competitive advantage.

It's critically important for any IT organization to avoid being regarded as a commodity supplier by the business, otherwise IT simply becomes all about cost and not about business contribution.

P&G greatly benefited from standardizing its ERP systems.

Of course, cost reduction is always important. At P&G, over a 10 year period we were able to reduce cost by over 1 billion dollars, and at the same time increase the service impact, but this is different from supporting the business with breakthrough capabilities.

**Q. Can you give an example of how IT can help a business to become more differentiated?**

**A.** This question links to the future needs of the business. In two or three years the business might need to be significantly more agile and responsive than it is at the moment, simply in order to remain competitive. Consequently, we need to start working now on ways to reduce the cycle time of some of the key processes or look at how to introduce more automation. Supply Chain processes would be an example of that. Looking at another area, if the business need is to understand what is happening in the marketplace, we might also want to apply data analytics to current point-of-sale information from retail customers.

**Q. How have you managed to balance internal leadership priorities with external competitive pressures when deciding the IT strategy?**

**A.** I have often been asked as a CIO how do I go about choosing the right technology?. My answer has always been “technology comes last”. First, we must look at the trends in the

market which are having the greatest impact on our business. Second, from this analysis, we need to concentrate on those market trends which are here to stay—that are significant and most likely will be with us for a long period of time. Third, we should focus on those trends that afford a strong role for IT, or offer the opportunity for IT to influence the business. Fourth, of those trends which can be impacted by IT, the question is then which IT strategies should be pursued? Fifth and last is the question of selecting the technologies that can best support and enable those IT strategies.

Several years ago at P&G, we realized that it was becoming more important for us to accelerate our product development and go-to-market to ensure we continued to win. The backdrop to this was that innovation, especially in new product development, was accelerating across all industries. We analyzed all of our key business processes and found for example, that collecting consumer feedback on new packaging design usually took several weeks. This was often due of the need to construct many different physical prototypes through multiple cycles. As a result, P&G decided to introduce virtual reality models for much of its consumer research. Consumers today don't provide feedback on a physical mock-up, but on a virtual reality experience. The business nowadays is able to do in a matter of days what in the past would have taken many weeks. This is a good example of a trend: the acceleration of product time-to-market, that is definitely here to stay and which had an impact on P&G, and also where IT was able to influence the process.

Additionally, as a CIO looking at how to develop an IT strategy and what technologies would be needed, my team and I never started from what was considered the ‘latest or coolest technologies’ at that particular moment in time. Instead, we always started from what the expected value creation needed to be, and ensured it linked to our planned IT actions.

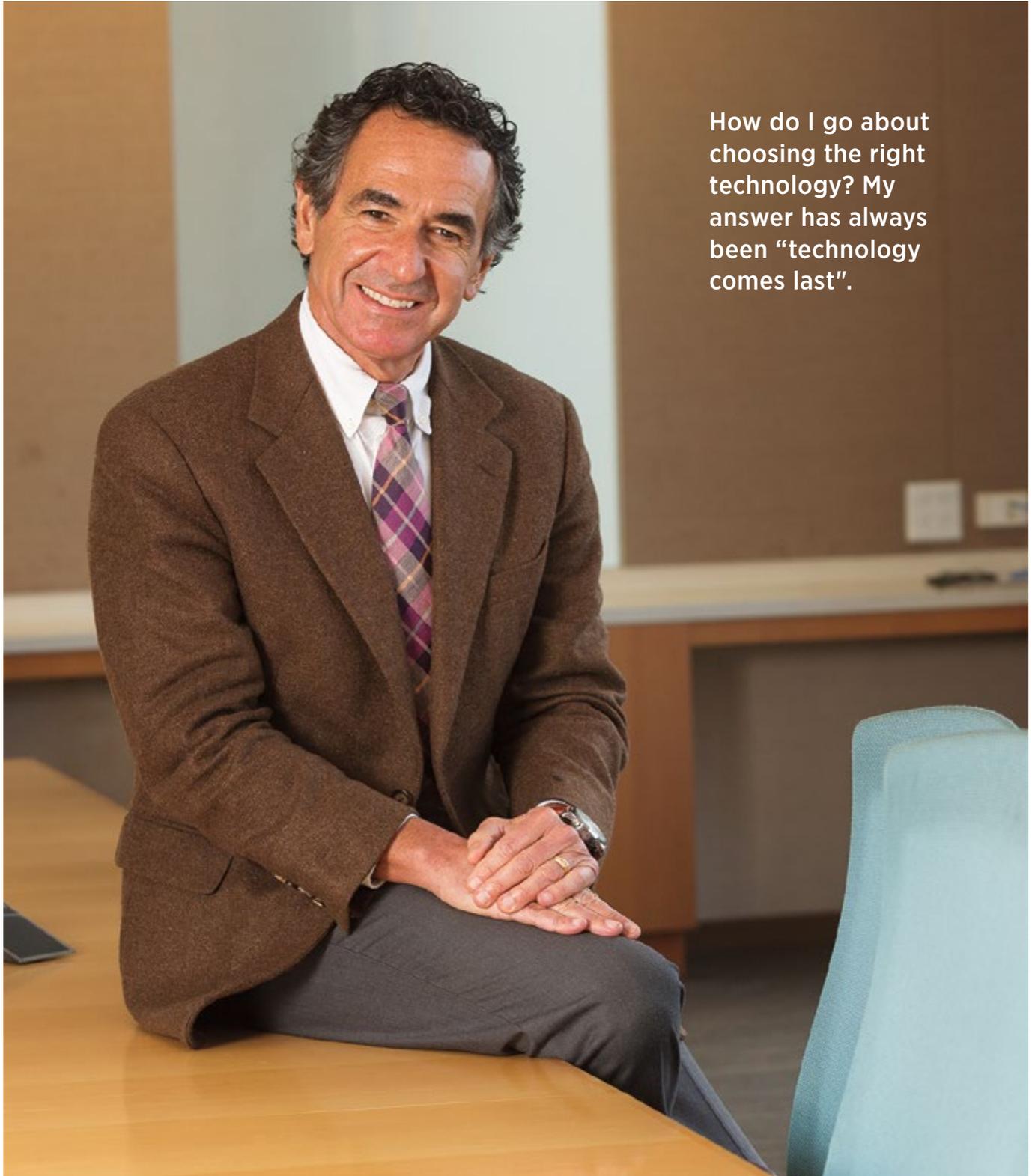
**Q. After applying this framework, there would have been many candidate projects that you could have chosen to pursue such as the virtual reality example you provided. How did you prioritize which projects to pursue?**

**A.** Firstly, it's critical to have a constant and open dialogue with each of the business units. At P&G, we had people who were part of the central IT / shared services organization, but at the same time embedded into the various business units. In effect, they were the ‘ears and eyes’ of the Shared Services Group. An embedded team is better able to understand what is needed by each of the business units from being able constantly to gather business needs and user feedback. This greatly helped us get a better informed and more comprehensive view of business priorities.

Secondly, we need to look at the intersection of ‘what is needed’ and ‘what is possible’. We might for example, have a number of good processes that could be improved. In this situation, prioritization is based on the greatest chance to make an impact, because sometimes there can be organizational readiness issues that need to be taken into consideration.

**Executive Insights on Application  
Landscape Management**

Insights related to the Innovate dimension  
of Application Landscape Management



How do I go about choosing the right technology? My answer has always been “technology comes last”.

**Q. For a large global organization, what is the reality around the adoption of a simplified ERP landscape, use of real-time business intelligence, cloud computing or mobile capabilities?**

**A.** Naturally, at P&G we were always open and interested in new technologies and business opportunities, but we deliberately didn't follow the 'latest technology' for the sake of it. Our starting point was always that every new technology was considered to be 'a commodity' unless we could prove the value it could create for the business. You could call it a 'healthy skeptical approach'. We always pushed ourselves to connect all the dots, up to the last mile of value creation.

P&G greatly benefited from standardizing its ERP systems. In particular, standardization helped P&G to integrate acquisitions or execute divestitures, quicker and with higher quality. Also, standardizing the ERP systems has been critical in running a more integrated supply chain, as well as consolidating financial data, business reporting, etc. This was particularly evident when P&G acquired and integrated the Gillette business ten years ago.

Regarding cloud computing, we need to be really precise on what we mean here. As we know, cloud computing can range from pretty simple data storage, up to running a full stack of applications more seamlessly. As always, it's very important to be clear first on the business value.

Turning to mobile technology and platforms, there is definitely an opportunity to move enterprise applications further towards mobility,

and away from only being accessible on corporate intranet-like environments. Looking at how most employees access and work with corporate intranet systems, I believe there's an opportunity now to leapfrog running most application services directly to a mobile platform. This would possibly eliminate the cost of maintaining legacy systems which need continuous modernization, while being more in sync with the way people use technology in their personal lives.

With regards to how real-time business information can be leveraged, again we need to start first with what is needed by the business. We can see all around us, that businesses today operate in a world which is becoming increasingly volatile, uncertain, complex, and ambiguous,—sometimes referred to by its VUCA abbreviation. Real-time information is all about a different way to run the business and not just about driving more efficiency. It's more about anticipating and detecting what is going to happen, and then running the business accordingly.

This whole idea of real time information, digitization and analytics is very powerful and at P&G it had been an important area for management over the last five or so years.

**Q. As you developed capabilities to support real-time decision-making, did you find that you needed to support the business to adapt to this new way of working?**

**A.** When looking into the capability for using real-time information in business decision-making, it can be very different from a traditional ERP scenario. In any organization, many of the foundation

Real-time information is all about a different way to run the business and not just about driving more efficiency.

level transactional systems that exist are based on the way people carry out their day-to-day work—where often there is only one way to do a given task. For example, if a supplier is to be paid, there is usually only one way in accounts payable to do it—you cannot pick up the telephone or send a spreadsheet over email, etc. Likewise for customer orders, there is typically a single system that enables you to access orders, and then follow a process to handle the shipment of the goods, delivery, invoicing, etc.

However, in many commercial areas such as marketing or sales, the information systems are historically less structured. In these situations, user adoption is critically important because often people, especially those working in local country units, will have a choice whether or not to use centralized systems.

Similarly with business analytics: it's important to drive user adoption, since in most cases analytics are open-ended or predictive, and can't be embedded in specific business processes. In order to drive adoption, at P&G we always started with the value proposition – we worked with a business unit to prove the value. From this approach, we could then create the 'pull', where people themselves wanted to adapt and embrace the change.

## Executive Insights on Application Landscape Management

Insights related to the Innovate dimension of Application Landscape Management

Automation will inevitably continue to eliminate certain types of manual, repetitive tasks.

**Q. What are your views on cognitive computing and robotic process automation in the context of Application Development and Maintenance and whether automation can deliver real business outcomes rather than simply eliminating labor?**

**A.** It will be both. Automation will inevitably continue to eliminate certain types of manual, repetitive tasks. I believe we are now going through a second industrial revolution. There are several administrative processes that could be fully or mostly automated, by a combination of Artificial Intelligence, and Augmented Reality. This is a fascinating field and the opportunities to transform the business are significant.

Integrating IT operations with business process services is very powerful.

**Q. Can you share your insights on how best to synergize service delivery across the entire IT stack (business processes, applications and infrastructure) to ensure flawless execution of business transactions and a superior service integration experience?**

**A.** I believe integrating IT operations with business process services is very powerful as it improves both the efficiency and effectiveness of running the business. An additional benefit on the organizational side is the creation of single delivery units. As a result at P&G, not only did we see significantly reduced costs and better service levels with faster speed of execution, but also more rewarding jobs for our people. Indeed, for the first time people carrying out functional roles (Finance, HR, IT, Procurement, Consumer Relations, etc.) did not necessarily report to someone else from the same job function. They often reported to a person from another function, which most people found to be very engaging and a great learning experience.

**Q. What role does Application Development and Maintenance have in making organizations future proof?**

**A.** I don't know whether there is such a thing as being 'future proof'. Instead, I'd prefer to answer the question in a different way since what I am seeing for myself is a series of dramatic changes that have taken place over the last six or seven years. I'm not talking here about the emergence of the touch screen on consumer devices or launch of different apps or social media websites, but a definite change in mindset. The world we live in nowadays has created in all of us, an expectation of being served very rapidly. Today, you can get an app launched in just a few weeks and as a consumer have continuous and free access to huge amounts of the latest information available. I believe the traditional business model where a new project in IT has to take dozens of millions of dollars and years to complete

is going to be gone pretty soon. In future, I believe we will be seeing fewer large-scale systems deployments and instead multiple releases, each one taking just weeks or months, not years. It's all about managing the project scope to execute fast and iteratively.

The traditional business model where a new project in IT has to take dozens of millions of dollars and years to complete is going to be gone pretty soon.

**Q. What measures have you used to manage applications with overlapping functional capabilities? How does your approach enable both local and global flexibility?**

**A.** We always tried at P&G to be "as standard as we can and as local as is needed". My philosophy has never been to standardize at any cost because we must always do what is right for the business. However, I would say that in my experience, when looking across different markets and business units, there are often more similarities than there are differences. Therefore we need to really understand what the true differences are. Quite often in my career, I have seen what appeared at first to be complex and unique processes to a specific group or business function to have more similarities than differences after it was analysed.

We always tried at P&G to be "as standard as we can and as local as needed".

**Q. Where you take a decision to support these real differences, how do you make sure that the application landscape doesn't become too complex and unmanageable?**

In these circumstances, we try to retrofit the differences onto the standard platform. Typically, you might find a country or an individual business unit that could have a few valid differences due to the nature of their market. Of course, in the end it's about striking the right balance between doing some re-work later as needed, with serving the business sooner and faster.

**Q. How can a CIO drive an agenda of seamless access to data, data integration and effective data driven decision-making in a complex application landscape that is composed of legacy and COTS applications (including ERPs)?**

**A.** When we talk about data and data aggregation, it's like 'putting your arms around an elephant'. My comment here also applies to business intelligence for which there are two schools of thought. The first school of thought says that

before you do anything with business intelligence you need to centralize the data, standardize the data (or at least harmonize the data); otherwise there is no point in producing any new level of data reporting for the business in the first place.

The second school of thought says that, while such an approach is logical, it will never happen, because you will never get to the point where you will be satisfied that you have centrally aggregated all the data you need. It goes on to say that you need to create an incentive for the business to invest, otherwise everything you do with data will be viewed as an overhead cost. This second school of thought also says it's necessary to create visible value and an incentive for business units to fund building data infrastructure.

At P&G, when we started to build Business Sphere, we only had about 60 percent of the data feeds necessary available to us. However, this new, immersive and visual analytics-based environment itself became the catalyst for continuing to invest in the data platforms.

I belong to this latter school of thought based on building a value proposition for the business that will encourage it to invest in data management. Of course you need the data, you need for it to be standardized and centralized, but the sequencing has to start first with the business to create the value and then

create the 'pull'. Always start with the business questions. The kind of business question you want an answer to; will help determine what data you need.

**Q. What about the technology angle in the analytics-oriented innovation you cited?**

**A.** At P&G, we always used commercially available technology. P&G's Business Sphere for example, uses several different commercial technologies. We were able successfully to patent Business Sphere because the business solution was innovative not the technology components. It was the integrated model that was new.

**Q. In your experience, what are the best practices in structuring an IT organization to harness the benefits from centralization and localization?**

**A.** The dilemma in technology is always the same: how do you derive scale and at the same time, remain relevant for the individual business unit needs? In my experience, an effective organizational model to accomplish this is to have IT people embedded in the business units, accountable to the business and for business results, while simultaneously managing the organization in a centralized way. Crucially, this is not about co-location, but priority setting, resource allocation, etc. It's about striking a good balance. Indeed, it's all about balance.

Additionally, I've never seen any IT organization able to deliver on standardization if they hadn't centralized first. Only after you have established a centralized organization, can you then start to look at how to optimize IT delivery. This could involve

The dilemma in technology is always the same: how do you derive scale and at the same time, remain relevant for the individual business unit needs?

**Executive Insights on Application  
Landscape Management**

Insights related to the Innovate dimension  
of Application Landscape Management

When we talk about data  
and data aggregation, it's  
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around an elephant'.



Nowadays it's less about 'talking the language of the business', and more about having business knowledge, passion and the mindset.

some tactical sourcing like offshoring. From here, you can move to strategic sourcing which may involve the outsourcing of selected workstreams or activities. The organizational design and the model used can be critically important.

**Q. What sorts of business outcome and IT output-oriented commercial structures will be of greatest interest to the business?**

**A.** At P&G we always measured the outcome of our work in business terms. Inevitably, there will be certain metrics tracked which will be for internal use only, because they relate to aspects of operational excellence and productivity. In situations where we had a big new capability to deploy or were installing a new system, the speed and quality of execution might be the key performance measures, based on the business outcome that should be generated.

**Q. Looking back over your career, what would you have done differently during your tenure as a CIO?**

**A.** With the benefit of hindsight, I would have tried to integrate more IT people into the business organization by arranging for more IT people to undertake short-term assignments in the business units. For example, an IT person who was involved in supporting manufacturing, sales or financial

systems, could take a temporary assignment of 6-9 months in that area. This would help to make the IT person a more competent business partner, and would also be a great personal development opportunity. We always had this idea in mind and in fact did do some of it, but we never really got round to doing it in a systemic manner. On that note, we need IT professionals increasingly to be business people. That is, nowadays it's less about 'talking the language of the business', and more about having business knowledge, passion and the mindset.

In my opinion, IT is today at an inflection point. Now is the time for IT professionals to start playing a greater leadership role in the business. Indeed, there is no other function where three critical capabilities come together: information management, digital technology and project management. However, many IT professionals still need what I would describe as 'self-empowerment'. IT people sometimes expect to be asked or told by business leaders what to do. This is a missed opportunity for all those involved. Overall, I believe that a CIO can generate the greatest value by being a trusted partner of the CEO, bringing him or her relevant capabilities, and suggesting new approaches that help transform the way business is done. More than ever before, the time for that is now.

A CIO can generate the greatest value by being a trusted partner of the CEO, bringing him or her relevant capabilities, and suggesting new approaches that help transform the way business is done.

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**Executive Insights on Application  
Landscape Management**

Insights related to world-class performance level principles and practices applicable to both the Run and Innovate dimensions of Application Landscape Management

# WHAT CIOs ARE SAYING

World-class performance across the Run and Innovate dimension of Application Landscape Management needs to be supported by a positive culture within the IT organization and meaningful contribution by IT vendors.

1

**Culture is critical and has multiple dimensions:**

- Effective adoption of IT systems by business.
- Team management to realize World-class performance requires negative behaviors to be minimized, while a positive and performance oriented culture has to be shaped in a deliberate manner.

**Culture transformation needed for effective adoption of transformative IT capabilities**

It is well recognized that transformative projects need to be owned and led by the business, with IT playing an active role. Some transformative solutions that tend to change the organizational business model can often penetrate areas where the work is more discretionary in nature. Driving adoption in these areas is akin to 'dealing with a different beast'. In such areas, business stakeholders have a choice of whether or not to use the new IT capability (such as real-time analytics and insights). Value creation is at the intersection of the experience of individuals and the capabilities from new IT systems, since the combination is what makes the end solution potent and complete. In such situations, IT leaders need to create visible value to create the pull, whereby the business wants to adopt and embrace the change. They need to spend considerable time articulating its business value and finally draw upon business sponsorship in a balanced manner to affect the needed organizational change.

As a CIO remarked, "...sometimes I wish it was easier, but in the end, it made me, my organization and importantly the business itself, gain a much better intellectual understanding of what is needed to create value. . ."

**Cultural dimension involved in managing the IT organization**

CIOs are concerned about certain strands of negative behavior:

- Even today in different situations, IT people often expect to be told by the business what to do.
- Often 'group think' can result in compromised, unwanted outcomes at an incredibly slow pace.
- Decisions are being taken for individual advantage rather than the betterment of the company. This can mean saying "yes" to everything that the business asks for. Sometimes there will be a need to say "no" to things that might be actually good ideas, but at that particular moment are less of a priority, since focus is key for success.
- Time management is key; teams get pulled into production problems, onto other projects, and disproportionate time is spent in employee one-to-ones, meet and greets, and other non-essential tasks.
- Vulnerability based on 'five wise SMEs' situations exacerbated by the lack of documentation.

**Best Practices**

- Robust implementation of knowledge management practices commencing with high-priority areas to reduce vulnerabilities.
- Skills need to be constantly upgraded: the need today is for a hybrid of business and technology skills to deliver projects successfully, knowledge and understanding of the importance of data, the ability to look at the value chain on an end-to-end basis, and good relationship building skills to involve the right constituents to develop solutions and address problems.

## Executive Insights on Application Landscape Management

Insights related to world-class performance level principles and practices applicable to both the Run and Innovate dimensions of Application Landscape Management

- Integrated Business-IT teams for key business processes and production environments support the advantages cited earlier such as better quality, speed, reduced costs, and performance improvements. It also can be a rewarding experience for many IT people owing to the diversity of exposure across disciplines.
- Integrating more IT people into the business by arranging for IT people to undertake short-term assignments in P&L business units. For example, an IT person working in manufacturing, sales, or financial systems, could take a temporary assignment in that area. This would make the IT person more knowledgeable about the business. This, coupled with a strong track record and mindset to realize world-class performance, would make the individual an ideal business partner.
- Time needs to be managed across: operations, strategy, value measurement and articulation, and team management, to avoid a bias towards excesses such as simply keeping the lights on.
- Working on the culture of the IT organization in a deliberate manner with the business stakeholders.
- Create a mechanism to provide air cover to the team, by calling out misbehavior to the concerned P&L leader in a quiet manner.
- Ethnic and gender diversity needs to be built in a balanced manner, and needs to be incorporated from the talent attraction stage, including the way recruitment campaigns are designed and executed.

### Example

One organization's effort resulted in a cultural orientation captured by, "be positive, be brilliant and be part of it"; emphasizing that individuals at all levels need to exude a positive mindset, demonstrate a bias for action, while taking personal ownership and accountability for decisions, focus on impact creation in routine and strategic tasks.

## 2 Sourcing at a minimum provides organizations with: flexibility, ability to mobilize resources quickly, plus cost reduction.

Top expectations from strategic vendors:

- Vendors involved in the "Run" and "Improve" dimension of the portfolio tend to contribute to: stability of core systems, predictable delivery across the globe, cost reduction, and sharing best practices based on their global experience.
- Likewise, expectations in the "Innovate" dimension of the portfolio tend to be: enabling IT organization to deliver innovation quickly and reliably to the business and active thought partners based on powerful intellectual capital that clients can use, and not just conceptual talk.
- Common expectations across the "Run" and "Innovate" dimensions are: flexibility to change scope, agility, willingness to cannibalize cash cows keeping the best interest of the client in mind, and lastly but equally importantly teach clients "how to fish", to sustain themselves without continued hand holding.

### Best Practices

- Organizations tend to have numerous vendors on one extreme, or a very small number of vendors at the other extreme, with a view to use scale to drive cost reduction. Often this thesis does not play out owing to limited proactive behavior, etc. The organizations' interests are best served by optimizing the number of vendors with a view to: drive strong impact creation for its business and develop bankable partnerships while maintaining a constructive level of tension. This includes induction of new vendors that bring forward fresh approaches. Therefore organizations are well served if they review and take concerted action periodically to arrive at the optimal number of vendors rather than just focus on vendor consolidation as an end in itself.

Insights related to world-class performance level principles and practices applicable to both the Run and Innovate dimensions of Application Landscape Management

- The Sourcing Operating model has to be developed for each organizational context taking into account the following:
  - The retained organization, which serves as the ‘conscience of the business’ since per se, outsourcing does not outsource all the risk. The retained organization can only fulfill its stewardship role based on effective implementation of the Sourcing Operating model and engaged oversight of execution (which goes beyond screening vendor resources or high-level governance based on metrics), since active change management and management of the various moving parts are critical for the success of outsourcing engagements.
  - Vendor engagement model deals with: mapping of vendors categories to various categories of work, mapping the portions of IT lifecycle where vendors are involved, vendor alignment to business units and business areas, performance management, etc.
    - Organizations adopt a range of positions on the extent of vendor involvement: work considered as commodity is outsourced; involvement of vendors in construction phase of development projects; relying on vendors for end-to-end implementation of large projects.
- Organizations use outsourcing to implement Shared Services, the Managed Services model, Agile Application Development Factories, Center of Excellence, and others. All of these constructs involve change management and standardization. One key facet of change

management is centralization since it is quite hard to drive world-class performance in a completely federated organization structure where adoption of best practices is left to the vagaries of individual behavior. Likewise, standardization while essential is not sufficient to ensure the competitiveness of organization in the future marketplace since no new capabilities are per se produced by standardization. All of these constructs (Shared Services, Managed Services, Agile Application Development Factories, Center of Excellence) can be implemented in a manner to support business outcomes, and enable the future proofing of the organization while providing cost reduction.

- Care is needed to ensure that forward progress is characterized as a crawl-walk-run process (but not a prolonged crawl) commensurate with organizational context and ambition.

### Example

A media organization’s vendor contributed to a 25% increase in advertising sales. The solution worked with diverse external and internal data sources, incorporated a high fidelity multi-parameter model to predict the ratings of future TV programs, and automatically pushed its forecasts to the advertisement spot sales engine.



# Conclusion

Based on early feedback from peer CIOs, it is our belief that this body of insights has provided a compelling demonstration of the 'potential of the possible from IT' across RUN, IMPROVE and INNOVATE parts of application landscape management. Given the multiple transformative forces at play across industries and need for organizations' to make an effective transition to the new world rapidly, this body of work has laid out practical, insightful and agile approaches that IT leaders can apply to ensure the competitiveness and prosperity of their organization and communities they serve.



# CAPGEMINI'S NEXT GENERATION APPLICATION DEVELOPMENT AND MAINTENANCE (ADM) 3.0 PROPOSITION

**Focus:** Increase our clients' competitiveness and innovation in the course of ADM engagements

**In a nut-shell:** Capgemini's next generation ADM proposition is a business value-oriented industrialized approach for delivering ADM services that delivers 3 times the commercial impact (relative to traditional outsourcing) per € or \$ of existing client spend, based on *deep impact across cost reduction, quality, digital and business outcomes*

Capgemini's next generation ADM proposition equips client engagements with powerful Intellectual Capital that helps clients increase their competitiveness and innovation in a practical manner

**1** Powerful and visually rich application portfolio analysis tools to identify optimization opportunities

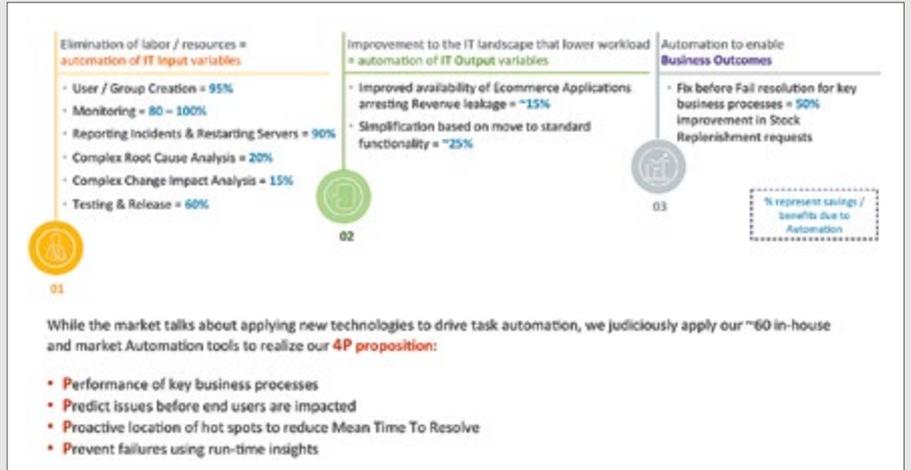


**2** Insightful apps optimized for iPad and large interactive screens that capture all Application Development and Maintenance best practices (backed by cases, methods, tools and metrics) to aid enhanced understanding of the contribution of each performance enhancement lever to the engagement's goals; and craft an engagement roadmap that can be effectively monitored

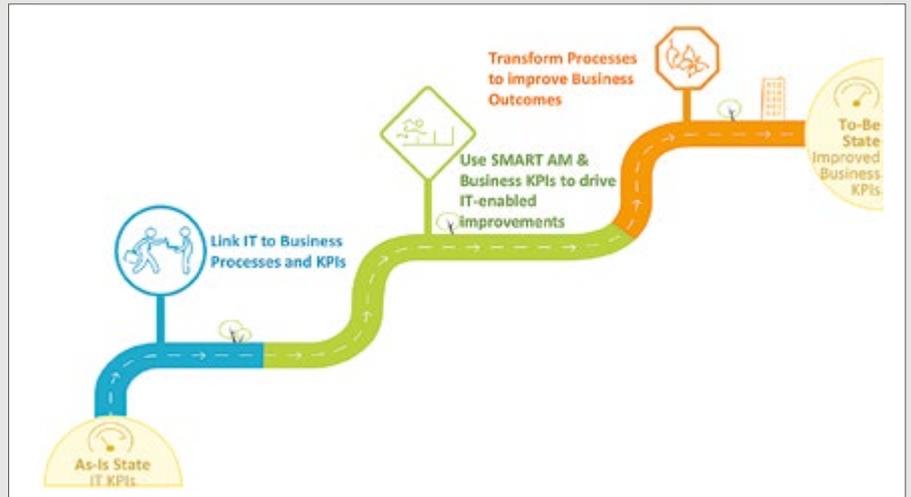


Cappgemini's next generation Application Development and Maintenance (ADM) 3.0 proposition

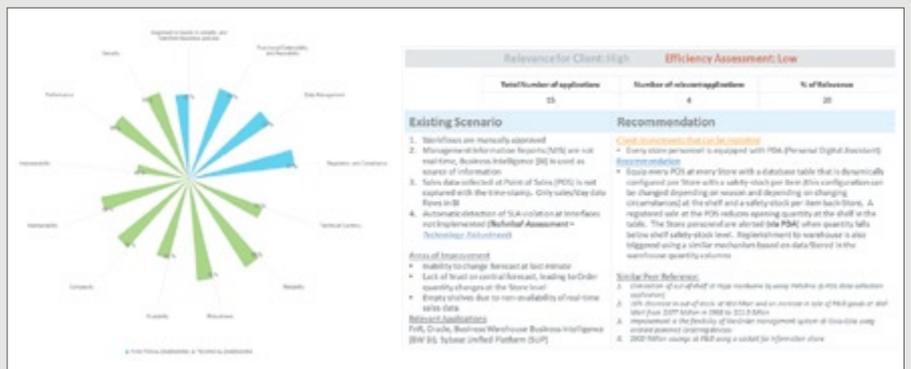
**3** Automation that delivers clients with benefits across 3 dimensions: (i) Elimination of labor and resources, (ii) Improvement in IT effectiveness, and (iii) Enabling business outcomes. These are delivered using in-house tools (including ones with Artificial Intelligence capabilities, e.g., Natural Language Processing, Neural Networks) and market tools



**4** Business Process Focus transformation method that links day-to-day ADM improvement actions to deliver superior business outcomes in key business processes



**5** Digital Readiness assessment of applications in the portfolio resulting in concrete recommendations to improve business and IT performance in the digital world, while effectively harnessing sunk investments



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