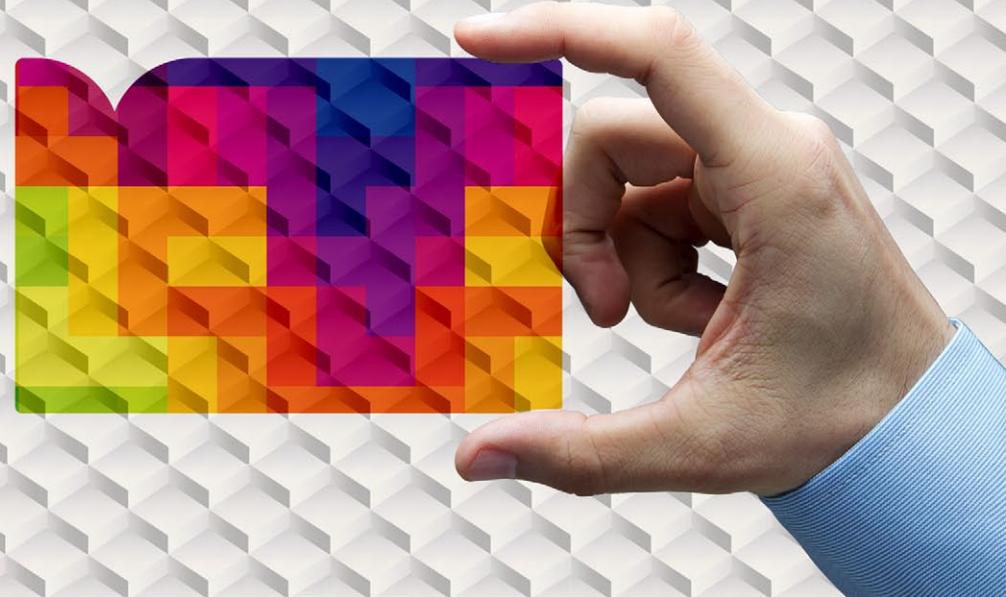


# TechnoVision 2014

Technology Building Blocks for  
Digital Transformation



People matter, results count.



# Foreword



This contribution by  
**Lanny S. Cohen**

Global Chief Technology Officer,  
Capgemini

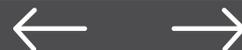
Without exception, the markets in which we do business today and the stakeholders with whom we engage are experiencing the most extensive and intensive wave of business disruptions, challenges and opportunities in recent memory.

For the most part, these dynamics are fueled by technology innovations that have two unique characteristics:

- There is an inseparable connection, if not integration, between the new and enhanced technologies and the business processes and impacts they create and enable. In fact, the operating paradigm moves from business *and* technology to business technology.
- The synergistic impact of these multiple, game-changing, concurrent technology breakthroughs is more significant than prior large-scale, technology-driven disruptions that involved one discrete innovation.

Exacerbating this scenario are a number of additional factors: the deluge of demands placed on the enterprise from both external and internal constituencies; the absence of tried-and-true roadmaps and best practices to leverage; and the knowledge that a failure to act quickly may not only result in a lost opportunity, but potentially put the enterprise at risk in terms of customer relevance and competitive efficacy.

With this context in hand, we welcome you to Capgemini's TechnoVision 2014, created by business technology leaders and practitioners for today's business technology executives. TechnoVision 2014 is a strategic asset that can help drive Digital Transformation across your entire enterprise: for Board



# Foreword



reference, C-suite strategies, line-of-business and functional leadership leverage, and operating unit personnel work planning and execution.

TechnoVision 2014 introduces a fresh, provocative and innovative approach to today's business technology landscape. It provides a platform to engage business and technology leaders in a new and different dialogue on how these disruptions will affect the near- and long-term business environment, and how they can be leveraged to exploit market opportunities for sustainable competitive advantage.

This platform challenges the status quo by introducing new and exciting perspectives for debate – within the enterprise and across its external boundaries. In so doing, it expands the range of possibilities for consideration in pursuing elevated business performance. The platform

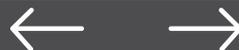
also provides a foundation to create, discover and innovate by applying a context, framework and model for the business technology disruptions we face and the vast array of business opportunities they enable.

On behalf of the over 130,000 outstanding colleagues across the Capgemini Group and the thousands of clients, partners, analysts, advisers and media whose interactions have helped inform the content, we invite you to engage, experience and enjoy TechnoVision 2014. Applied as intended, it can be game changing for your enterprise and for your success as you confront these business technology disruptions and substantial opportunities they will create in the weeks, months and years ahead.

Good luck and we look forward to your reactions.



TechnoVision 2014 is a strategic asset that can help drive Digital Transformation across your entire enterprise.”





# Introduction



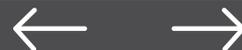


## Watch Capgemini's Ron Tolido:

"TechnoVision can equip you with inspiration to drive your Digital Transformation journey."

# TechnoVision 2014

Technology Building Blocks for Digital Transformation





# Introduction

One of the most important findings of Capgemini's [joint, multi-year research](#) with the MIT Center For Digital Business shows that successful Digital Transformation depends on the right level of intensity in both embracing technologies that can change the organization *as well as* in creating the leadership and governance to make change actually happen.

As considerable insights have been published already around the [governance dimension](#), let's shift our focus for this occasion a bit more towards *technology*. We are introducing TechnoVision 2014, the next installment of a series we started quite some time ago to describe and organize trends in technologies that have transformative potential.

For 2014, we have created a rigorous update that returns to the core technology foundation of TechnoVision in order to make it a [natural companion](#) to our Digital Transformation framework. TechnoVision 2014 consists of 37 building blocks, but don't be intimidated or overwhelmed:

There is a simple structure of seven containers that hold these blocks and that provides the necessary overview.

Each building block was introduced on our [CTO Blog](#) and is described on the pages that follow, with contributions from Capgemini's leading technology experts. This equips the reader with at least 37 interesting perspectives on the way technology will shape business change in 2014.

As you can imagine, there are many different ways to apply these perspectives, for example when crafting an IT strategy plan or a solution architecture, but just as much when running an innovation workshop or





having an in-depth dialogue with the business about technology drivers. In addition to the building blocks, we include sections that offer crucial, contextual insights:

- The role of [TechnoVision 2014 within our Digital Transformation framework](#)
- The [design rationale](#) behind the TechnoVision 2014 clusters
- [How to weave together the TechnoVision 2014 building blocks](#) into compelling story lines that address very specific business technology questions
- [Five different next steps](#) to take after you have internalized TechnoVision 2014

As you may recall from [earlier TechnoVision versions](#), we categorize technologies with business change potential [in six clusters](#), two of them

covering the foundational building blocks of any IT landscape (“[Invisible Infostructure](#)” for infrastructure and “[Sector as a Service](#)” for core applications); two of them covering crucial IT capabilities to deal with continual change (“[Thriving on Data](#)” for leveraging information and “[Process on the Fly](#)” to manage processes); and the final two providing organizational access to the outside, connected world (“[You Experience](#)” for creating compelling, individualized user experiences and “[We Collaborate](#)” to tap into the power of social). Also, there is a cluster of overarching design principles that should be applied throughout (for this new version renamed “[Design for Digital](#)”).

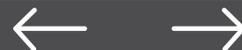
On the following pages we provide an overview of these seven clusters and 37 building blocks that constitute TechnoVision 2014. By all means share your builds with us, we intend to update regularly.

**Ron Tolido**

CTO, Application Services, Continental Europe

**Pierre Hessler**

Capgemini Fellow





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# Digital Transformation and TechnoVision 2014





## Watch Capgemini's Pierre Hessler:

"With Digital Transformation, technology is the reason to transform and the main driver of the transformation."

# TechnoVision 2014

## Driving Digital Transformation



# Digital Transformation and TechnoVision 2014

Introduction | Digital Transformation | Clustering | How to Use | Building Blocks | Now What?



## Digital Transformation and **TechnoVision** 2014



This contribution by  
**Pierre Hessler**

To understand the relationships between business and information technologies, TechnoVision, from its inception in 2007 to recently, always looked first at business drivers and second at the technology building blocks needed to implement them.

Starting with this 2014 edition of TechnoVision, we look at technology first, and business second.

Why this kind of Copernican revolution? In the last couple of years, many of the drastic changes that TechnoVision helped understand and anticipate, have indeed happened. The most important of these changes is that people are now technology fit – in their private lives, in their public lives, in their professional lives. As a result, businesses must from the start factor technology into their thinking, strategies and drivers; without this integration of technology from the outset, businesses would craft useless designs

and plans – dead on arrival, unfit for their technology-fit customers, clients, partners and employees.

This is also why Chief Information Officers – offering technology services to implement business plans – are becoming Chief Digital Officers (or getting one as a peer). They bring technology thinking – and then services – to help craft and then implement digital business change.

This revolution is making classical business transformation, where technology is at best one of the implementation streams, obsolete.



# Digital Transformation and TechnoVision 2014



## A New Type of Transformation

Ahead of anybody else, Capgemini Consulting anticipated this consequence and created, three years back, the concept of [Digital Transformation](#). It differs from classical transformation in three essential ways:

- Information and communication technologies are the compelling *reason* to transform the enterprise.
- These same technologies are the dominant *driver* of transformation.
- The “to be” of transformation is the *Digital Enterprise*.

As the studies undertaken by Capgemini Consulting in collaboration with MIT demonstrate, many enterprises are racing to become digital, and the ones doing it well – coupling transformation mastery and digital mastery – are gaining substantial competitive advantage.

Much of the focus is now on customer experience, where the objective is to offer customers, independent of the channel used, a consistently engaging acquisition and service story. The employee experience has to follow to match customers’ raised expectations. Demand-driven supply chains are developed to precisely deliver the precisely understood wishes of customers and clients. And new business models take advantage of our new ways of working, relating and living.

## Moving at the Speed of Technology Change

In the past, the “to be” of transformation, the transformed enterprise, had a life expectancy of a few years. Today, the Digital Enterprise is a moving target – moving at the speed of technology change. Today, the customer is the starting point of many aspects of Digital Transformation. But already, the Internet of Things is becoming reality, and it will trigger a new swell of transformation. Products and services of the enterprise will be its sensors into the world – constantly feeding back information on their working, their condition, the mood of their users, their movements. The enterprise will have to gear itself to respond and react in real time, orders of magnitude faster than today.

Modern technology is so pervasive that everybody nowadays experiences mobility, reaches into the clouds, behaves socially and can even spell analytics. But familiarity does not mean understanding. TechnoVision 2014’s ambition is to promote the understanding of current technologies, and to make it easier to grasp their business potential. It is therefore conceived as a tool for Digital Transformation – providing:

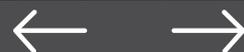
- **Clarity** with the technology clusters as a stable taxonomy of key technologies
- **Understanding** through design principles and trends
- **Directions** thanks to building-block descriptions that make business sense

With such an ambition, TechnoVision 2014 cannot be carved in stone; it will remain a *Work In Constant Progress*. Just like Digital Transformation.





# Clustering with a Purpose Within TechnoVision 2014



# Clustering with a Purpose Within TechnoVision 2014

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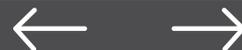


## Clustering with a Purpose Within **TechnoVision** 2014



This contribution by  
**Pierre Hessler**

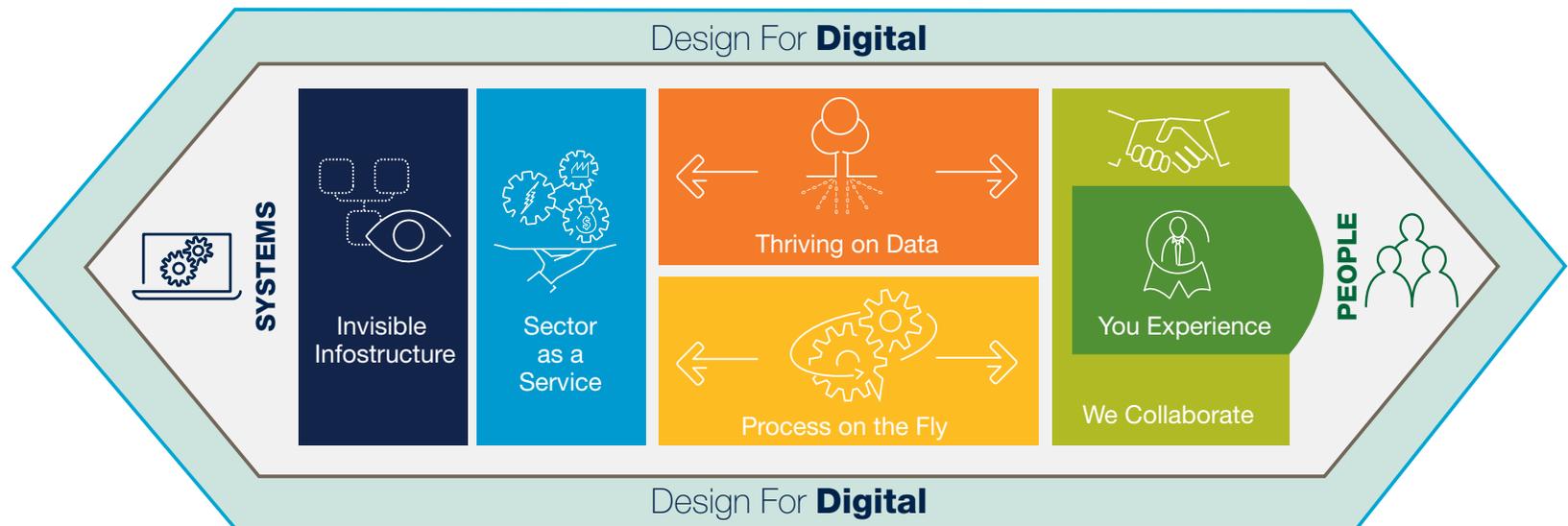
TechnoVision structures technologies into seven clusters. Luckily, surprisingly, these clusters – defined in 2007 – have retained their taxonomic and pedagogic value, maybe even gained some. Within the clusters, however, the building blocks that make them up have been revised several times and now, with TechnoVision 2014, are radically renewed.



# Clustering with a Purpose Within TechnoVision 2014

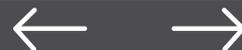


## The Seven Clusters of TechnoVision



The first cluster surrounds all others as it describes the evolving environment – open, service-oriented, in the cloud, social – in which modern systems and applications are designed, developed and operate. For the 2014 edition, we propose a new name, **Design for Digital**, and the corresponding content in the form of seven design principles. The design principles are not descriptive; they are prescriptive – no enterprise could claim to be digital if it designed its technology side without respecting these principles.

The six “operational” clusters, the ones that help go from design to execution, are grouped in three tandems. One can look at them from a people perspective – how do we live technology? – or from a systems perspective – how do systems work? We’ll start from the systems; when discussing TechnoVision with business users, one would of course start from the people and social experience.



# Clustering with a Purpose Within TechnoVision 2014

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## First Tandem: The Foundations of the Enterprise

The first tandem couples [Invisible Infostructure](#) and [Sector as a Service](#).

In our personal use of technology, we are happy to ignore infrastructure; the Invisible Infostructure cluster groups the technologies that will allow enterprises to achieve the same objective: six or seven years ago a vision, today getting tantalizingly close.

For more than 20 years, ERP systems have dominated and shaped the applications landscape, giving it the structure that these monoliths proposed and imposed. Their evolution for the last few years is marked by two major trends: their availability as a set of services, which makes it possible to mix and match them with other services; and their “verticalization” – not only do they support general enterprise models, they also fit the specific needs of many industry segments. Hence our desired end-state for the enterprise applications landscape: being a Sector as a Service.

## Second Tandem: Bridging Systems and People

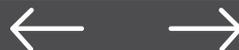
Where the first tandem addresses the technologies that are the foundations of the enterprise, the second tandem has an entirely different character. It groups those technologies that are needed to bridge between systems and software foundations on one hand, and people experience on the other hand. It does this through into two clusters, [Thriving on Data](#) and [Process on the Fly](#).

Without these, the enterprise could not leverage state-of-the-art technologies, and therefore could not be digital. When Thriving on Data was born as a cluster, it could have been called “Thriving on Big Data” – however, the notion of Big Data had not yet been crafted. And the cluster deals with more than Big Data – data management, analytics and the real advent of real time. Data is no longer the purview of IT and their systems, it is now used and generated by customers, networks and social media, and increasingly things. The Digital Enterprise is as much outside-in as it is inside-out.

The internal workings of a company obey to well-defined processes; it used to be a major event, called nothing less than a transformation, when these processes were substantially modified. For the company to entertain a different, permanent, close relationship with its customers, and more generally with the world, such fixed ways of working will not suffice anymore. The Digital Enterprise needs to react appropriately to customer situations and wishes. The Process-on-the-Fly technologies serve this purpose, and help achieve the long-held ambition to make the Digital Enterprise truly adaptive.

## Third Tandem: The Visible Side of Technologies

With the third tandem of clusters, we come to the visible side of technologies, the ones we use every day. And it is by now clear that they can bloom only thanks to the first tandem, the base of all information systems, and thanks to the second tandem, which provides the bridge between the enterprise foundations and the new world of technology as we live it.



# Clustering with a Purpose Within TechnoVision 2014

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**You Experience** groups the technologies that give us a different way of working, living and interacting. The best of the smartphone apps embody them, with unprecedented levels of function, power and ease of use – not to mention fun. Not only do we enjoy them as users, we turn into producers of information and intelligence.

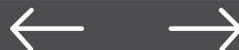
And technologies make it easy for us not to remain alone. Thanks to them, **We Collaborate** and achieve levels of awareness and affiliation, but also of social power – crowd thinking, crowd creating, crowd producing – that are equally unprecedented.

Technology developments come so fast and furious, mushrooming, confusing, that even professional watchers have a hard time keeping pace. To IT professionals they can be distracting, even paralyzing. To business users, they all too often look individually promising but collectively dizzying.

This is where TechnoVision 2014 helps. The clusters provide order and a form of stability. They are easily understood and positioned. And using the method described in the “how two” (see following section) one can assemble, following the clusters’ logic, the building blocks that are relevant to the opportunity, or the problem, at hand.



The TechnoVision clusters provide order and a form of stability. They are easily understood and positioned.”





# TechnoVision 2014 – The Surgeon's Scalpel



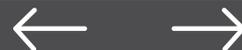


## Watch Capgemini's Pierre Hessler:

"Look at TechnoVision as a whole; pick the question you want to address; and we'll work together on the answer."

# TechnoVision 2014

## Taking TechnoVision Into Your Business





## The **Surgeon's Scalpel** TechnoVision 2014



This contribution by **Pierre Hessler**

37 building blocks – design principles and trends – look pretty overwhelming. Are you supposed to ingest and digest them all? And then what?

Not to worry. TechnoVision 2014 is not an encyclopedia; it is not a hammer in search of the right size nail; it is not a scimitar to attack throngs of technophobes. It is a scalpel – your scalpel – to help understand how the new technology design principles and trends can be applied to achieve a specific objective in Digital Transformation.

Here's how.

To take full advantage of TechnoVision 2014 we suggest an approach in three steps.

### **First, have a look at TV2014's whole picture.**

The best entrance to TechnoVision are the Design for Digital principles – evolutions or revolutions that change the way we think about technology for business. Read the seven descriptions several times, pondering each word – until you feel you could have written them yourself. Then look at the corresponding text – ask yourself if you would have come up with the same comments; even better, write your own!

Then pick the cluster you are most interested in, go through its building blocks and, with the help of the accompanying text, reflect on what is different compared with your knowledge and experience; think through the consequences.

# TechnoVision 2014 – The Surgeon's Scalpel

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Finally, go through the other clusters, at the level of depth you choose, remembering that they come in logical groups of two: Invisible Infrastructure and Sector as a Service building the foundation; Thriving on Data and Process on the Fly linking the foundation and the visible innovations, We Collaborate and You Experience.

## Second, define what you want to achieve – specifically.

Do you want to understand how new technologies can renew your thinking on a longstanding issue? Are you in search of new opportunities, new business models? Do you want to use TechnoVision 2014 to assess which capabilities your company needs to acquire or develop? Do you want to provide a different context to one of your projects? Or make it future proof? As a CIO, do you want to engage with a business executive and what her appetite for technology? As a business executive, do you want to go beyond the journalistic view of new technologies' impact on your business? Do you want to give fresh impulses to your strategic approach? Do you want to provide food for new organizational thought?

## Third, have a clear objective in mind.

Select the relevant clusters and building blocks and order them in the logical sequence fitting what you want to achieve: Now you have a to-the-point, custom discussion base.

To illustrate the approach, here are three examples (obviously of a more general character than would serve your specific objective):

### 1. How can we open up a new era in the relationship between business and technology?

9 building blocks

**Design Principles:** Business Mon Amour, No Requirements, Build Social

**Trends:** Object of Desire, Elastic Business, Real Real Time, Shades of Process, String of Silos, Friend Your Vending Machine

### 2. How can we make our company more agile?

2 clusters, 2 building blocks

**Design Principles:** Build Social, No Requirements

**Trends:** Sector as a Service cluster, Process on the Fly cluster

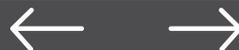
### 3. How should we think about new business models?

1 cluster, 4 building blocks

**Design Principles:** Build Social, Business Mon Amour

**Trends:** We Collaborate cluster; End User, End Producer; My Data is Bigger Than Yours

To sum it up, look at TV2014 as your **technology storytelling store**: It gives you the building blocks and material to construct – with the surgical precision of a scalpel – the stories that will help you achieve your objectives, whatever they are in your Digital Transformation journey.





# TechnoVision 2014 – Clusters and Building Blocks

- » Design for Digital
- » Invisible Infostructure
- » Sector as a Service
- » Thriving on Data
- » Process on the Fly
- » You Experience
- » We Collaborate





# TechnoVision 2014

## Design for Digital

Of the seven clusters of TechnoVision, six are “operational”: Their combined 30 building blocks describe the trends and impacts of actual, evolving technology. The first cluster – **Design for Digital** – serves a different purpose. Surrounding the six operational clusters, it deals with the context – cloud, social, agile, experience – in which solutions are built in the era of the Digital Enterprise. Its seven building blocks are design principles that should be considered as guidelines and applied no matter what cluster is involved.

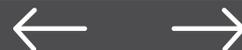
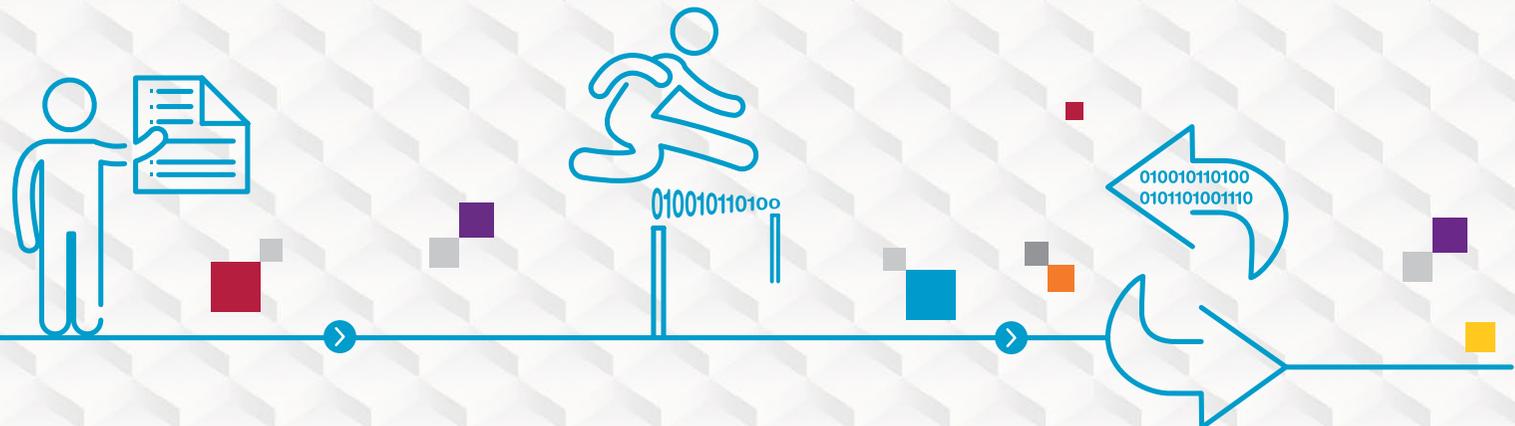
Major new technologies such as cloud and social are now starting points or default options, not afterthoughts. Also, one should avoid looking at them in isolation: The Digital Enterprise is best served by their combined power.

The relationships between business and IT have to change radically: from distance to closeness, and from requirements to platforms and catalogs. To successfully Design for Digital, we need an evolving taxonomy of applications with different dynamics and lifecycles. Train-like applications must keep running reliably on time, but car-like, and even scooter-like apps provide agility and responsiveness.

Finally, to forge new relationships with clients and customers, design thinking is the new mindset, replacing the mirage of customer centricity.

- › Born in the Cloud
- › Build Social
- › SMAC It Up
- › Business, Mon Amour
- › No Requirements
- › From Train to Scooter
- › Think Design

**DESIGN** FOR  
**DIGITAL**



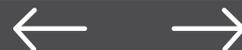


## Watch Capgemini's Ron Tolido:

"Throughout TechnoVision, we have defined a set of design principles to help create strategies, solutions and architectures that prepare you to become a Digital Enterprise."

# TechnoVision 2014

## Design for Digital



# Design for Digital

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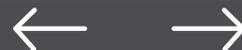
**Design for Digital** | Invisible Infostructure | Sector as a Service | Thriving on Data | Process on the Fly | You Experience | We Collaborate

**Born in the Cloud** • Build Social • SMAC It Up • Business, Mon Amour • No Requirements • From Train to Scooter • Think Design



This contribution by  
**Patrice Duboé**

The cloud has set a new benchmark for how quick, flexible, cost-effective and scalable solutions should be available. This has a transformative impact on the demand and supply sides, as expectations shift. Many organizations are not ready to get all their solutions from the cloud, but the new normal is already there and the expectations, particularly on the business side, have considerably changed. For new solutions, the cloud should be the default scenario, only then to be “softened” by pragmatic considerations around integration, security, legislation and manageability.



# Design for Digital

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**Design for Digital** | Invisible Infostructure | Sector as a Service | Thriving on Data | Process on the Fly | You Experience | We Collaborate  
**Born in the Cloud** • Build Social • SMAC It Up • Business, Mon Amour • No Requirements • From Train to Scooter • Think Design

Our [original Cloud research](#) shows that nowadays, the question for organizations is no longer “should we move to the cloud?” Instead, it has become “how do we maximize the benefits from the cloud?” The cloud is more or less a given; the road towards it is a matter of design.

We might be tricked into believing that many organizations already have internalized the cloud and would be ready to look around the corner for what’s next. Indeed, if we look closer, we can see that many already have implemented certain cloud services. However, successfully activating a virtual machine on Amazon Web Services (as exciting as it can be to some of us) is not exactly enough to make an organization enter the era of Digital Transformation powered by the cloud.

## Building a Cloud Transformation Journey

Most organizations still need to build their cloud transformation journey, although the benefits are obvious: not only cost reduction but also speed-to-market, flexibility, scalability and usage-based pricing without massive upfront investments. Still, there are many uncertainties as well, caused by topics such as performance, security and privacy, legislation, integration challenges and governance.

With that, enterprise architecture and a solid transformation strategy are the key success factors for embracing the cloud.

So, what does it mean for an architect? Which are the architectural principles that need to be followed when crafting the business technology landscape in the era of cloud? Before we answer that question, let’s have a look at the new cloud stakeholders.

The cloud is often still in its infancy in terms of the relationship between the business and IT sides of an organization. The business sees public cloud services as a very fast and attractive answer to their needs. Sales and Customer Service can find high value in innovative CRM cloud applications, and Marketing may be exploring social networks through the cloud to boost their success in the market. But probably sooner rather than later, challenges around integration, multiple clouds, deployment models, security and manageability need to be addressed. It is the role of the architect to bridge these two worlds, in which the supply and demand sides are not that clear anymore.

## Design Quality and Characteristics to Consider

In any case, presuming that new solutions will be “born in the cloud” as a default, there are certain design qualities and characteristics that should be considered right from the start. These would typically include:

- The cost/performance ratio of the public cloud
- Unlimited downward and upward scalability
- Very short time to market for new solutions and versions of solutions: “easy start/easy fail”
- Pay-per-use pricing models
- “Vanilla,” minimally customized implementations of multi-tenancy applications and infrastructure
- Any place, any time, catalog-based access to solutions without the need for on-premise setup



# Design for Digital

Introduction | Digital Transformation | Clustering | How to Use | Building Blocks | Now What?



**Design for Digital** | Invisible Infostructure | Sector as a Service | Thriving on Data | Process on the Fly | You Experience | We Collaborate  
**Born in the Cloud** • Build Social • SMAC It Up • Business, Mon Amour • No Requirements • From Train to Scooter • Think Design

Business drivers should be linked to these qualities and characteristics: After all, the journey to the cloud means nothing without the business change we want to drive through it.

Only then can the architecture team start plotting the required changes. They will probably need to cover areas that “soften” the born-in-the-cloud principle, as the reality of most enterprises will need a hybrid approach – integrating the old and new worlds – for quite some years to come. This is apparent in many elements of the architectural work, including:

**Services:** A clear description is needed of the business and IT services to be delivered from the cloud, and public/private deployment models need to be identified; a more catalog-based approach will be typical.

**Business Case:** Understanding the value of cloud-based solutions is crucial to launch and drive projects. This will also involve new (pay-per-use/low-capex) economics.

**Legal:** Moving to the cloud may mean new billing models, other contracts and different ways of storing and processing data. Regional legislation is likely to apply and may require architectural constraints per sector, country or specific organization.

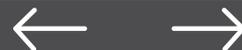
**Governance:** Service Level Agreements will be a major topic to address as multiple cloud providers may be involved with new, often unexplored ways of delivering their services and guaranteeing their quality.

**Target Architecture:** An architecture that contains cloud elements will likely mix public, private and on-premise deployment options, blending legacy solutions with entirely new ones; the need for orchestration and manageability is obvious in most enterprise-level setups.

**Data Management:** Master Data Management will be key in the cloud, with data likely to reside in different, not necessarily synchronized places and the business more sensitive than ever to proper stewardship of data.

**Security:** The cloud can be a very safe place, but a different approach is needed to deal with multiple providers and hybrid deployment options.

It's a healthy challenge for any architect to understand these different perspectives. But it is crucial, as the next generation of solutions is already today being born in the cloud.



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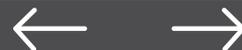
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## BUILD SOCIAL



This contribution by  
**Pierre Hessler**

Social is not something to be added on top, it is a ubiquitous design principle that should be applied from the very beginning when creating solutions. If you start designing your processes and applications as social by default you'll see that solutions are likely to become more flexible, connected and user/team-centered. You unleash the power of the crowd by thinking outside-in. In the end, mobilizing the social network around you is all a matter of creating tangible value for it, carefully balancing the perspectives of the individual and the community that individual is in.



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Social media is often seen, and therefore handled, as a phenomenon per se – foreign to the “normal” enterprise. Either because it happens outside the enterprise, à la Facebook or Twitter; or because it has nothing to do with the regular activities of the organization.

As a result of this apartheid, one might conclude that the enterprise is not social, nor deeply affected by the social phenomenon. The enterprise, untouched, just needs to find ways and means to accommodate social media and its internal implications. All too often this is reduced to one question: How do we use social media as new channels of distribution? Or more crudely: What can we sell through Facebook and its billion of “friends”?

This widespread approach is wrong in two ways. First, it condemns the enterprise to a form of splendid isolation – dangerous in a networked world. Second, it deprives the enterprise from the positive power of social, and exposes it to the negative power of social.

## Social as a Design Principle

Social changes the nature of the enterprise – because it changes its clients, its employees, its partners, its political, social and economic environment. As the enterprise becomes a different enterprise, its information technology needs to become different in equal measure. Instead of looking at social as a technology afterthought, IT has to look at social as a design principle – the best way to naturally embed it in every development.

The social design principle has major practical consequences, notably:

**There is no longer an individual user of IT services**, but a Janus-like person, with two faces, the individual one and the social one – connected to the world and his or her colleagues, inside and outside the enterprise, through a variety of social media.

**The relationship with every customer combines individual and social characteristics.** For example, the customer needs are analyzed as a combination of individual requirements and social requirements – supporting the person in his or her social roles. Even the dialogue between person and enterprise should be socially usable if the customer so wishes.

**Transactions can be strictly private.** Others are meant to serve the purpose of a community – providing a social answer to a question for example.

**Every process no longer serves just individual employees.** A process step can become social in that it is entrusted to a network, small or large.

**All creative processes are designed to mobilize the energies and intelligences of groups**, not to say crowds.

**And, of course, the IT organization itself has to become social**, and well connected, socially, with its business counterparts.



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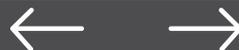


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This contribution by  
**André Cichowlas**

Although the drivers of Social, Mobile, Analytics (or Big Data) and Cloud all have powerful transformation impact themselves, the real breakthroughs are created by bringing them all together. In this powerful melting pot, the drivers amplify each other, creating something much more compelling than the sum of the parts. So whenever you consider a solution in one of these areas, systematically look at the other areas as a default for synergetic inspiration.



# Design for Digital



There is no doubt that when we consider the technology drivers that currently are an indispensable part of Digital Transformation we always encounter Social, Mobile, Analytics and Cloud, often put together in the acronym SMAC.

And, clearly, each driver creates its own benefits:

- **Social** is about carefully engaging with social media, managing the company brand and finding entirely new, more effective ways of reaching out to individuals and the communities to which they belong.
- **Mobile** is nowadays the first communication channel we think of and rightfully so, as it often provides the best way to connect to customers, business partners and employees.
- **Analytics** (or more accurately Big Data) creates usable insight – and thus business value – from large volumes of structured and unstructured data coming from many different sources and with differing dynamics.
- **Cloud** not only brings cost effectiveness but, more importantly, high levels of flexibility, scalability and speed-to-market of high-value solutions.

However, as appealing as all these benefits are, the real power will come from the carefully engineered combination of these trends.

## The Power of the SMAC Effect

Let's see what the SMAC effect could look like. If you start to use the geo-localization of your customer smartphones, you may receive a big quantity of information that you have to analyze in real time. After all, you want to react based on the location of your customers, before they leave this location. You thus will have to invest in Big Data technologies to effectively manage this

information and also process the volumes through a cloud solution in order to avoid massive, up-front infrastructural investments. Also, you may want to relate the information you gather about individuals to the social networks they are part of in order to increase the impact of the customer experience.

Come to think of it, by combining the SMAC drivers as much as possible, you enable your organization to deal with the typical characteristics of digitally transformed business: more real-time, usable insight (analytics), better connected to both the outside and inside world (social), utilizing all available channels (mobile) and enabled by IT, rather than constrained by it (cloud).

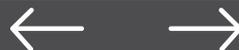
So, think and design SMAC right from the beginning of any technology-driven change. Don't build trend silos or add different technology drivers as an afterthought.

Make sure your company capabilities in each of the four areas are as much aligned as possible, maybe by bringing them together in one organizational unit or at least by creating a shared governance process.

Assess your existing portfolio of innovation projects to retrofit it with the full potential of SMAC. See it as a checklist.

Consider adding SMAC dimensions to your existing (possibly isolated) social, mobile, analytics and cloud business cases. Use it as a checklist again. You may find that your business cases will become more compelling to the business, deliver more measurable value and are easier to accept by stakeholders.

Let's SMAC It Up!



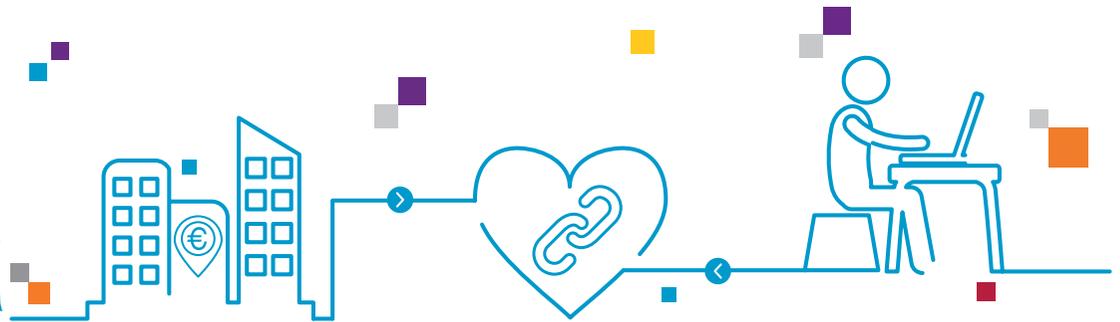
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## BUSINESS MON AMOUR



This contribution by  
**Pierre Hessler**

The consumerization of IT and the availability of cloud solutions have brought technology closer to the business. True Digital Transformation creates a fusion between digital capabilities and business change, rather than just aligning it. The IT function in an organization is successful if the business side happily takes the stage to testify about its benefits, and also takes the lead in business/IT projects and holds a significant part of the budget for innovation. An ongoing dialogue is crucial for this, together with an architected platform to enable digital change and a shared, end-to-end transformation approach.



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Historically, love has not played an essential role in the relations between business and information technology. Mutual distrust is not the right Petri dish for love. Business never liked the IT black box – too much mystery, too much jargon, too much cost, too long lead times. IT never liked the business fortress – too arrogant, too much jargon, too many changes, too much impatience.

As they needed each other, they found a way of working together: Business puts together big binders of requirements, ships them to IT, which, a few months or years later, delivers the finished product – an application that, when it works, meticulously fulfills every requirement. Good in theory, frustrating in practice – the application by definition fulfills yesterday's requirements.

## Condemned to Love Each Other

Today, business and IT are condemned to love each other. For one simple reason: Business without IT doesn't survive; IT without business impact dies. Luckily, love has become so much easier, natural almost. Business people have become fans of modern technology; they now see it through the smiling faces of their smartphones and tablets. IT people share this passion, and grasp how technology changes business.

When in love, one speaks in a way that is easily understandable for the partner – goodbye jargon! When in love, one spends lots of time together – ideas are generated together, separate strategies become one, projects are integrated as a matter of course, responses come before questions, one rhythm binds the orchestra. When in love, one experiences harmony and collaboration.

Utopian? No, a way of life for Digital Enterprises, and one of the keys to their success.

## Five Signs Love is in the Air

How do you know when business and technology are in love? Here are five indices:

- 1. They burn the requirements binders** and advantageously replace them with dialogue, mutual understanding, pictures, iterative development in short cycles and prototypes.
- 2. They work as one team.** Enterprise projects are entrusted to teams assembling all necessary competencies and capabilities.
- 3. They start before the start** – exploring and creating together; in the value chain, to ensure products and services truly fit the digital world, research and development includes information technology.
- 4. They draw one architecture only** – the enterprise architecture depicts, in a single blueprint, the flows of business and their technology embodiments.
- 5. And they regularly deliver but never end their development,** because, as a part of the world of networks, the enterprise needs to constantly adapt and connect and readapt and reconnect.



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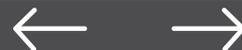
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## NO REQUIREMENTS



This contribution by  
**Ron Tolido**

Too much focus on requirements creates an artificial boundary between the business and IT sides of an organization. It's a bridge, but one that is often difficult to cross. Instead, IT should be providing a flexible, scalable catalog of secure and compliant enterprise services and solutions. The catalog should inspire the business to assemble its own, unique solutions. Such a catalog is the foundation and inspiration for Digital Transformation initiatives that can quickly be validated, turned into executable plans and deployed. Think catalog first!



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With the next generation of cloud-based IT we are getting used to powerful, cost-effective applications and services that can be deployed in the business within the shortest amount of time. There is however a consequence. It asks for a different mindset: understanding and appreciating the nature of multi-tenant, catalog-based solutions.

In this context, requirements as we know them might need to be considered harmful.

This is particularly the case if we apply requirements to specify detailed, “ideal” solutions that look remarkably like what we had in the past. These requirements will turn out to be impossible to address with solutions from an enterprise app store or catalog. The result: expensive, custom-built applications that are already outdated the moment they are released. Or even worse: standard applications that are over-customized to a degree that they cannot be recognized for what they originally were.

Imagine you have bought a new house and you want to furnish it. You don't have too much money left so you decide to go for a particular furniture retailer. You've heard good things about it: excellent design, splendid quality and sharp prices. Music to your ears. You start to envision what your ideal furniture would look like – even invite a “furniture requirements specialist” to help you write it all down.

Equipped with detailed design documents you finally enter the store. There you find that none of the furniture comes close to what you are looking for. Disappointed you leave: You'll have to build it yourself after all (or even worse, you reluctantly buy some pieces and try to modify them at home to resemble your specifications).

You missed the point entirely.

## Exploring the Art of the Possible

Building from a catalog – or platform or enterprise app store – means exploring the art of the possible and going from there. You look in the cloud catalog for capabilities that can support business value scenarios, rather than fit-gapping solutions to perfectly match detailed requirements.

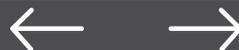
If you can still permit yourself as an organization to build perfect, bespoke applications and services, by all means do. For everyone else, adapting to a catalog-based reality is key: selecting standard components as a starting point – preferably already integrated and interoperable by design – and testing them in practice as soon as possible. Only then should you make an assessment of what is needed to make them sufficiently suitable to support the needs of the organization.

It's still a bit of a work in progress, but this seems a good opportunity to introduce the first draft of the **No Requirements Manifesto**:

*“We are uncovering better ways of creating value with cloud-based applications and services, bypassing some of the most established basics of our profession. Through this work we have come to value:*

- Capabilities over requirements and fit/gap analysis
- Value scenarios over use cases
- Working prototypes over specifications
- Catalog over custom built
- Platforms over integration”

In a catalog-based world, requirements may not be that relevant anymore. Think about it.



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**FROM** TRAIN  
**TO** SCOOTER



This contribution by  
**Pierre Hessler**

The next generation of business technology solutions has a short time to market, is created and delivered in an agile way, and is developed and owned in the nearest proximity to the business. These solutions are much like scooters and cars, where the current applications landscape typically is populated with trains and buses. Think about when to apply the right rhythm, build the platforms to support, and start to explore new, flexible ways to build solutions, applying agile approaches such as Scrum and rapid development tools.



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In many organizations there is still a lot of friction between “Central IT” – in charge of the big legacy systems, ERP and enterprise data – and business units, which cannot wait to put their hands on the latest cloud solutions.

The bulk of the budget belongs to Central IT, which uses it mostly to keep the lights on for the existing applications landscape. Their focus is on industrialization, simplification and cost control. As a result, Central IT is getting isolated from the business side, condemned to sustain existing systems with an ever-shrinking budget and too little headroom to innovate. As a result, business units are understandably tempted by “bricolage” IT for short-term solutions, at the risk of applications sprawl, redundancy, data apartheid, silo building or reinforcing, and general sub-optimization.

To avoid this valley of delivery disillusion, we propose to distinguish, and then specifically manage, [different Application Lifecycles](#), each with their own dynamics, timing, economic models, governance and design considerations, and therefore each with their own development, testing and maintenance tools and methods, and their own capabilities.

Two of these lifecycles of applications – or application services – pertain to the stable, traditionally and naturally more centralized part of the IT landscape: in our transportation analogy, **Trains**, the industrial-strength backbone enterprise systems, and **Buses**, more specialized and flexible. Two others are part of the business landscape, with the need to be fast and adaptive: **Cars**, supporting smaller, specialized groups, and **Scooters**, providing apps and tools for individuals or teams.

## The Hub of the Enterprise

Connecting and keeping them all in synch, we distinguish a fifth, crucial lifecycle that provides the platform application services – in our transportation analogy, the **Station**, the hub of the enterprise. The station takes care of synchronization, integration, integrity and security, and stores apps and services.

The station services make the continual development and running of train and bus applications cheaper and faster – by providing them with a set of reusable services, not to be developed again for each train and bus. The station services enable the business, with IT support, to build cars and scooters with speed and ease – by providing them with the services they put together to develop their own applications. And for the enterprise, the station provides the federated view of data, the security policy and the integration that enable all applications to work in harmony, with the required performance and scalability.

As capabilities, resources, methods, tools, measurements and key performance indicators vary widely from one application lifecycle to the next, it makes sense to adopt an organization to manage them on their own, but also as parts of a whole. For the IT organization, it is also the opportunity to shift its center of gravity from trains to the station – closer to the enterprise and the business.



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## Harmonizing Business and Technology

Finally, the five application lifecycles are useful to harmonize business and technology in two major ways.

**First, by shedding light on roles and responsibilities.** Building trains and buses is a task for IT professionals, integrating the business and its requirements. Building cars and scooters is a task for business professionals, supported by IT professionals. And the station as the hub of the enterprise must satisfy the highest professional IT standards while reflecting accurately the strategic needs of the business.

**Second, the lifecycles help adjust the business and technology clocks** – each has its own, natural rhythm. Trains will evolve over years: Their complexity and the need for industrial strength and utmost reliability and punctuality dictate a yearly rhythm of improvement, release after release. Buses live according to faster rhythms as they respond to the needs of more specialized groups, the sales force for example; it makes sense to adopt seasonal rhythms. Cars, to be useful in the market, need to be built in weeks, the scooters even in days not to say hours. And the station, which anchors and orchestrates all applications of the enterprise, is bound to evolve regularly, at a monthly rhythm, to always be up to date.



The five applications lifecycles are useful to harmonize business and technology by shedding light on roles and responsibilities and helping adjust the natural rhythms.”

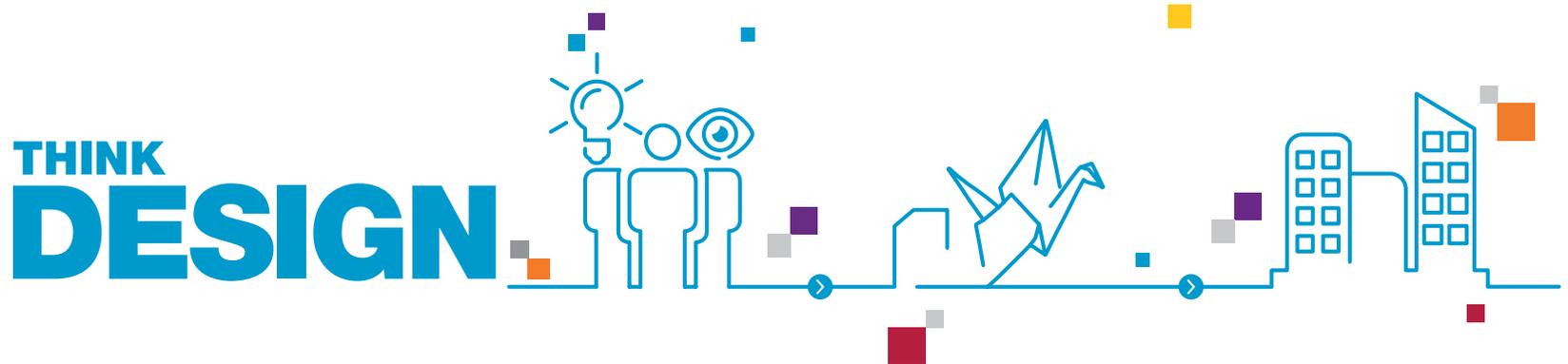


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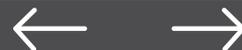


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This contribution by  
**Roeland Loggen**

Customers and employees interact, transact and work with organizations through a growing myriad of channels. Their experience during these interactions makes them loyal to an organization or causes them to leave forever; it's a key differentiating element. For consistent, positive experiences to happen, they need focused attention from you, in the form of "design thinking." Make sure you apply design thinking in your Digital Transformation efforts, including the design of your services and processes. Build the right consciousness, desire and capability to design and deliver compelling experiences, from a radical outside-in perspective. Delight!



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Let's start with a definition: "Compassion – sympathetic consciousness of others' needs and experiences, together with a desire to fulfill the needs while creating a positive experience" (courtesy of Webster, with a few twists).

How are organizations doing when it comes to compassion? Research, including from Capgemini and MIT, shows that customer experiences are far from optimal. Research also shows that many employees are disengaged. It is only logical that these two findings relate.

Most organizations truly have a desire to fulfill the needs of their customers and employees, but they encounter some key issues, including:

- Most services and processes develop stepwise, without looking at the whole and without being sufficiently conscious of the needs and experiences of customers and employees.
- It's not easy to design and create integrated and consistent customer experiences over various functional units and channels.

## Design Thinking for Differentiation

If you want to differentiate, turn to design thinking as a key, foundational element in your Digital Transformation.

A number of essential elements make up design thinking:

**Purposeful:** Customers and employees have needs and want to fulfill them. In their own way. The steps they take for this are often referred to as the customer journey (and don't forget the employee journey). During this journey, they will typically interact with many of your channels, functional

silos and IT solutions. And they will go through various emotions. You need to understand their end-to-end journeys and their emotions, and you need to understand how to respond to them with an integrated design.

**Human centric:** Forget "customer," "user," "employee." We are all humans, not pegs to fit an organization's services or internal processes. Everybody has various needs and emotions, different beliefs and values. If you want your customers and employees to have great experiences, you need to understand them (personas) and, even better, collaborate and co-design with them.

**Iterative:** Customers and employees can't tell you precisely what they want. As understanding humans and designing optimal experiences can be complex, you will need an iterative approach, in which you mix research, creativity, intuition and experimentation. Take a fresh, outside-in perspective of existing websites, mobile applications, other digital channels and the other moments of truth. Apply a mix of craft, art and science, to come to the right answers (designs) and new insights to improve them.

Building a capability for design thinking requires new skills (human research, creative design, concept testing, co-creative dialogues), new roles (user experience designer, service designer) and new, innovative approaches. Invest in design thinking and use it to reshape your services, channels and your business technology landscape. Your first step: Start by piloting design workshops for defining and designing new products, services and enabling IT capabilities.

Trust us, it will give you a new experience. And don't forget: It's all about compassion.





# TechnoVision 2014

## Invisible Infostructure

The **Invisible Infostructure** cluster (together with **Sector as a Service**) deals with the technology foundations of the enterprise.

In our personal use of technology, we are happy to ignore infrastructure. Our vision of the Invisible Infostructure a few years ago was that the enterprise IT infrastructure should and would become equally invisible and powerful. While this was an aspiration, today this vision is getting tantalizingly close.

Invisible? After virtualization and componentization already made the IT infrastructure simpler, the cloud now delivers on its metaphor of invisibility.

InfOstructure? The infrastructure of the outside world is becoming one with the corporate infrastructure and transforming into an infostructure – an information-rich foundation for business.

The Invisible Infostructure building blocks analyze the way to get there, under the mottos of simplicity and security in a hybrid world. They propose to take a leaf from the book of the new providers of large-scale, highly flexible and low-cost cloud infrastructure services à la Amazon: They have already established the new normal for both the business and IT sides of organizations. And they salute the entrance of the world of “things” into the virtual world.

- › Virtual Lego
- › What Would Amazon Do?
- › Bon Risk Appétit
- › Let's Get Physical
- › Orchestrate for Simple

## INVISIBLE INFOSTRUCTURE

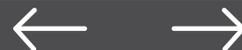




## Watch Capgemini's Adam Lewis:

"It's about benefiting from the new innovations both around hardware and software in the infrastructure space."

# TechnoVision 2014 Invisible Infostructure



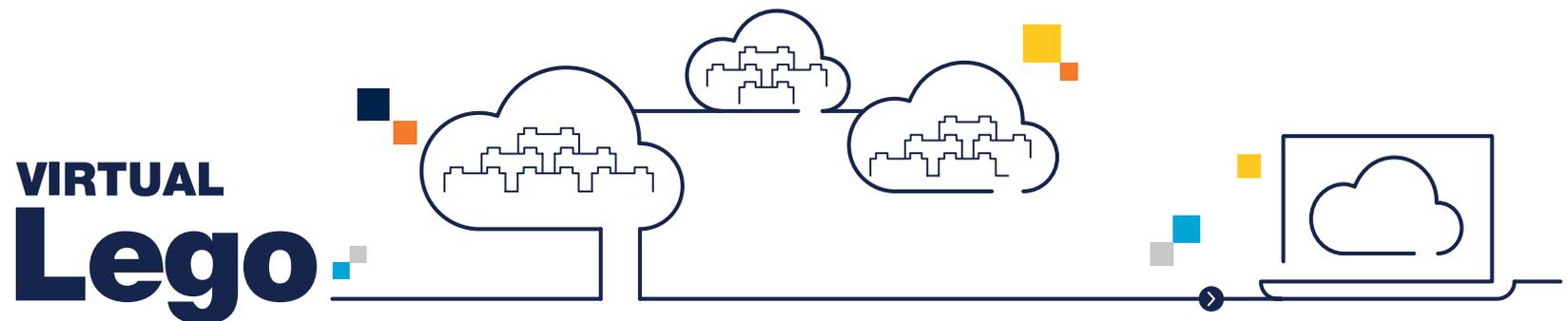
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**Virtual Lego** • What Would Amazon Do? • Bon Risk Appétit • Let's Get Physical • Orchestrate for Simple



This contribution by  
**Adam Lewis**

The more IT and infrastructure are abstracted through layers and components (driven by the cloud), the more IT infrastructure resembles “virtual Lego,” which can be automatically (re)combined, at will, to support business agility. Virtual appliances enable easy deployment and run of a complete “application as a component,” including its operating system, networking properties and supportive tooling. Even more convenient: It can be deployed ad hoc for certain unexpected tasks. This brings a complete software stack in minutes, available on a scalable, manageable platform.



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**Virtual Lego** • What Would Amazon Do? • Bon Risk Appétit • Let's Get Physical • Orchestrate for Simple

Innovation of virtualization technologies continues to advance rapidly, driven harder and faster since the advent of cloud computing. In fact, even though virtualization has existed since the 1960s (originally the logical division of mainframe computing resources), the infrastructure world has now significantly evolved past the simple creation of abstracted logical resource pools post processor, memory and storage.

The insatiable demand for global computing power remains on a path of exponential growth. The ability to maximize the benefits of hardware investments and ease of automation and management therefore becomes more acute. Also, the acceptable timescales for new infrastructure resource implementations can often be measured now in minutes, not days or weeks.

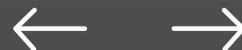
At one end of the spectrum, we have the chip manufacturers ensuring that the power and function of the silicon has advanced to include not only sensors, security and on-chip management but also hardware virtualization assistance/acceleration. On the other end of the spectrum, we have software vendors furthering the evolution of hypervisors and enabling new types of abstraction past memory, storage and compute to data to software application and even networks. Many predict that soon all of the IT estate will be able to be virtualized, aggregated and intelligently managed. At that point, IT as a Service will be the norm and the Software-Defined Data Center (SDDC) will be fully realized.

## Fit for the Future

Software-Defined Data Centers and the maturing Software-Defined Networking (SDN) market are already enabling new paradigms. In the cloud world, compliance, management and end-to-end support ideally should be policy enabled, highly automated and presented as components within updated IT landscapes and ecosystems that will be fit for the future. These elastic virtualized computing enablers can be likened to the building of an ever-evolving dynamic metropolis complete with re-routable roads (SDN) and the ability to repurpose buildings on demand (SDDC) to meet the changing needs of the tenants or landlords.

In addition, software appliances, applications designed to optimally run on a specific compute stack, will benefit from these advances by creating further building blocks that organizations can easily implement. Virtual appliances are “virtual machine images designed to run on specific virtualization platforms.” This world of enhanced componentization enables new architectures, new solutions and requires new skills and capabilities.

Simple building blocks, unlimited possibilities.



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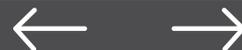
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## WHAT WOULD Amazon DO



This contribution by  
**Ron Tolido**

Global public cloud providers such as Amazon Web Services and Microsoft benefit from their economies of scale to provide ever-growing catalogs of advanced cloud IT services. Although many considerations may slow down the rapid uptake of public cloud, these catalogs already set the new benchmark to beat in terms of cost effectiveness, flexibility, scalability and speed-to-market. Businesses are expecting powerful services that they can activate themselves with minimal upfront investment and pay for per use. So ask yourself regularly in your data center: “What would Amazon do?”



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It's still an established benchmark for any application developer building a web shop: Before starting to discuss structure, activity flow and layout, you take a look at the world's leading example and see what's hot. *What would Amazon do?*

Well, they are doing it again. And this time it's about IT infrastructure and – soon – applications.

With its ever-growing catalog of infrastructure services from the cloud and rapidly expanding AWS (Amazon Web Services) marketplace, Amazon shows any IT department what they are up against in the forthcoming years: a neatly organized, easily accessible catalog of open, highly standardized, secure IT services, ready to deploy in seconds, paid per use, all on one invoice. And, of course, at incredibly competitive prices: In its six years of existence AWS managed to lower prices almost 40 times.

## Defining the New Normal

I have often discussed with our clients how quickly – and through what steps – they could benefit from the public cloud. And the same advice would be coming back over and over again: “We’re not saying your entire IT landscape should be on Amazon Web Services next year. But they are quickly defining a new normal in terms of how fast, easily and cost effectively you should be able to deploy new solutions.”

That benchmark became even more tangible and solid with the launch of the AWS marketplace in 2012. [Go to the marketplace yourself](#) and

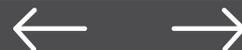
browse around a bit. Will your IT department be able to provide the same catalog, with the same self-service, usage-based pricing and deployment in minutes? And even more important: Are your prices more or less on par with what Amazon is offering?

Amazon Web Services is taking a retail perspective on IT. It simply aims to provide high volumes of excellent quality at low prices and uses its impressive growth to further sharpen its proposition. It's not a coincidence that the AWS marketplace starts to resemble the Amazon web shop more and more, and you can only imagine what will happen when even more business applications become available (did anybody say recommendation engine?) through the very same marketplace.

For now, the bar has been raised. We are not saying the internal IT marketplace of your organization should be just as good as Amazon's (or that of [Microsoft](#), [Rackspace](#) or any other sizable competitor for that matter).

Not yet, that is.

But a new normal has already been defined and we'd all better have a good look. Happy shopping.



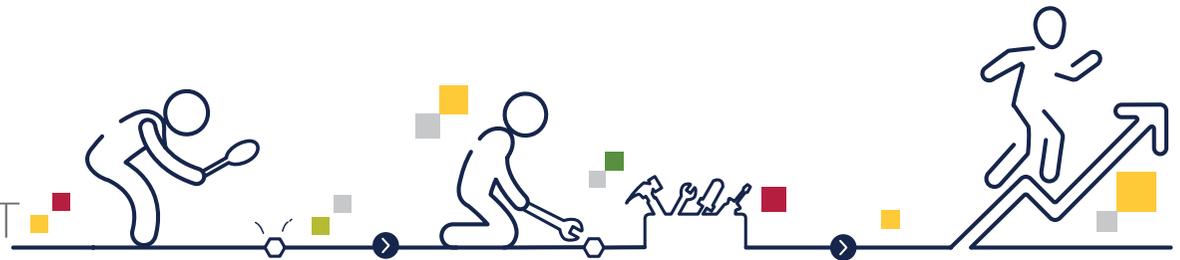
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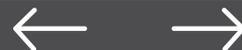
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## BON Risk APPÉTIT



This contribution by  
**Ben Elsinga**

Businesses connect to the outside world in order to be competitive, find new channels and collaborate effectively with clients and partners. This puts a strain on security and privacy, as openness and connectivity seem to stimulate the opposite of these qualities. However, hiding information behind an impenetrable corporate firewall is not a business enabler, and being prepared for any security breach in advance is an illusion. Instead, organizations must develop a healthy appetite for risk, using smart tools to quickly detect intrusions, and be ready to respond extremely fast and effectively.



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Let's start with a little story. Imagine you are the CEO of an innovative electronics company on a business trip to Australia. Unfortunately, your plane crashes in the middle of nowhere. You are lucky to survive the crash. You manage to send an SOS signal with your smartphone, together with your GPS coordinates. As a result, a plane drops water and food; but on the other side of a river full of hungry crocodiles.

What do you do? You need the supplies, but you know that if you try to swim across this river, the crocodiles will get you. It's a no-go area. This insight shapes the boundaries of your risk tolerance.

Still, you are starving. So you start to develop a certain appetite for risk, as you clearly want to stay alive. You know you have to reach your goal on time, if necessary only just within the boundaries of your risk tolerance.

Then, with your phone's battery almost drained, you find a YouTube video about survival techniques and you learn how to make a simple boat to safely cross the river. You have shown the right risk attitude to do whatever is needed – even in unexpected ways – to stay alive under difficult circumstances.

Back home you create the next-generation phone with built-in survival capabilities!

What can we learn from this simple metaphor?

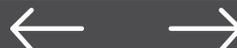
## A Fresh Perspective on Risk

What we define as “Bon Risk Appétit” is not about eliminating all risks but about doing what is needed to achieve business objectives at an acceptable level of risk that matches these objectives. Also, by taking a fresh perspective on dealing with risks, you might be pleasantly surprised by new business opportunities.

When looking at security with some proper risk appetite, we need to distinguish among three perspectives. We recommend taking a holistic view of the problem domain, considering all three perspectives when crafting solutions:

- 1. The perspective of the organization**, wanting to do business at acceptable risk levels (for example, regarding security concerns). To protect your own organization, it is wise to base your security architecture on proven security principles and security patterns. Note that the chosen solutions will depend on the business context (e.g., regional regulations that apply), the organizational culture (e.g., the current security awareness) and the amount of Bon Risk Appétit of the management of the organization (which may be an evolving value).

More information about business context sensitive security principles can be found [here](#).



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**2. The perspective of a common business infrastructure fabric**, based on social, mobile, analytics and cloud services ([SMAC](#)) (for example – [excusez le mot](#) – cybercrime and intelligence concerns). When crafting the underlying infrastructural business fabric – both for your customers and for your own organization – you should look both from outside-in as well as from inside-out.

Outside-in: You should only use SMAC services from a customer perspective, based on business scenarios, the identified amount of Bon Risk Appétit and specific business requirements ([here's](#) an excellent starting point for this approach).

Inside-out: Base the underlying infrastructure on the [Jericho Forum Commandments](#), combined with [time-based security concepts](#) to make it more resilient against cybercrime and intelligence risks.

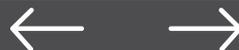
**3. The perspective of the customer** (for example, regarding privacy concerns). In the end, it's all about your customers. Nowadays, it is more important than ever to be transparent towards them about what you do with their data and to what extent their privacy concerns are addressed. Use the [Jericho Forum Identity Commandments](#) as a sound basis for your architecture decisions.

Bon Risk Appétit becomes relevant at the level of the customer if he or she is able to make conscious decisions about using your business services (or not), based on your published – and completely transparent – privacy policy. If needed, soon the customer could be assisted by something like a virtual [privacy protection agent](#), which analyzes the privacy policies of different business services and advises the customer about what business services are most appropriate.

Now does that whet your appetite at least a bit?



Bon Risk Appétit becomes relevant at the level of the customer if he or she is able to make conscious decisions about using your business services (or not), based on your published – and completely transparent – privacy policy.”



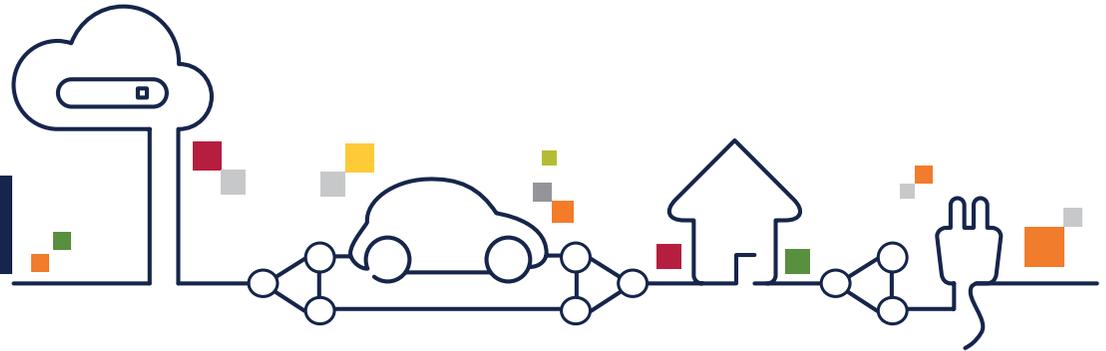
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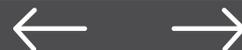
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## LET'S GET **Physical**



This contribution by  
**Michiel Boreel**

While we usually associate technology with a virtual world, now the physical, “real” world quickly becomes part of it as well. With more and more tangible objects able to sense and store data and get connected to the network, the boundaries between both worlds are blurring. The Internet of Things provides unlimited opportunities for organizations to become smarter and intimately linked to their customers and partners. And the trend comes full circle with the quick rise of 3D printing, enabling even individuals to materialize concepts and ideas in a way that was unthinkable before.



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Although we have been hearing about the so-called Internet of Things (IoT) for over 10 years, we now see this technology quickly gaining mainstream adoption. In fact, the Internet of Things, or as we prefer to call it, just Things, is the fifth technology element that makes a new form of empathic computing possible. Combined with **S**ocial software, **M**obile apps, advanced **A**nalytics and **C**loud services, the Internet of **T**hings (from **SMAC** to **SMACT**, if you like) creates a kind of ambient intelligence that is quietly serving any information need whenever required.

By constantly monitoring our behavior, the system establishes a deep understanding about our intent, the task we are trying to perform. Wearable technology, in all kinds of forms, factors on, in (intelligent tattoos) or even under our skins (swallowables), and gives new meaning to the phrase “always on.” Cognitive systems – step-by-step – build a better understanding of our context and are able to predict and anticipate our needs. We will learn to trust these intelligent assistants and award them more and more agency to take over mundane tasks on our behalf, so we can focus on more important things in life.

An interesting early example is **GlowCap**. David Rose’s start-up company Vitality realized a couple of years ago that by adding a sensor and communication to a simple jar of pills, a big problem in healthcare, poor adherence to prescribed medication schedules, could be solved. The GlowCap bottle actually registers when it is opened and compares this event to the prescribed schedule. If people forget to take their medication, they are subtly notified by a flashing light. If they still do not react, additional notifications or even a message to a healthcare provider or anyone in the social network can be sent.

## Blurring the Boundaries Between Physical and Virtual

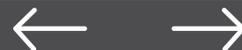
Our world is quickly becoming more instrumented and interconnected (*even in the air*, for that matter). Because of the continuance of Moore’s law, we are reaching a price point where any physical object becomes enhanced with processing and communication power (and, by the way, virtual concepts can become physical through *advances in 3D printing*). The ubiquity of these billions of “enchanted” objects will blur the boundary between our physical world and virtual cyberspace. It is only a matter of time before all these objects become interconnected and start collaborating on our behalf. This is when they truly become useful, accomplishing more complex tasks.

However, this requires solving three important issues.

### **The first issue is the way we interact with these “empathic computers.”**

Clearly, continuing on the road that we are on right now, with any app on our smartphone constantly asking for attention through alarms and notifications, will quickly drive us crazy. We need a new approach of calm technology where only the most important notifications subtly enter our consciousness, preventing what is now becoming known as partial attention disorder. “Better than apps” is the phrase where app intelligence moves from our smartphone into all kinds of physical objects.

Why do we have a weather app on our phone? Our umbrella should be enchanted with technology that notifies us of rain in the forecast by a blue flashing light built into the handle.



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**The second issue is that in reality there is not yet one Internet of Things;** there are many Internets of Things. In present day practice the intelligent Things are usually not aware of each other, let alone able to communicate and coordinate with each other. Because many of the providers of the Things see competitive benefits at stake, they choose a closed system design, ignoring the opportunities for connecting products through open APIs (which makes Intel's acquisition of [Mashery](#) all the more understandable). Forrester Research, Inc. [uses the examples](#) of Nike's intelligent sport shoes, Jawbone's [UP wristband](#) and 94Fifty's [intelligent basketball](#) and underlines the fact that they are not even aware they are part of the same game, let alone able to exchange information.<sup>1</sup>

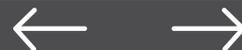
**The third issue is that we need to start designing great customer experiences** from an end-to-end perspective and then be prepared to adjust our operational processes accordingly. Putting the empowered consumer front and center was already important in creating mobile apps that are broadly used and in effectively connecting with customers through social media. Things will only further underline this necessity. It is no longer enough to enhance the digital capabilities of the enterprise. The organizational capabilities, often determined by operational processes, have to become completely aligned to the great experience the consumer expects.

Find out [much more about Things](#) at the Sogeti VINT website.



The organizational capabilities of the enterprise, often determined by operational processes, have to become completely aligned to the great experience the customer expects.”

<sup>1</sup>“There Is No Internet Of Things - Yet,” Forrester Research, Inc., October 17, 2013



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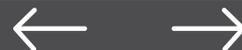


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This contribution by  
**Adam Lewis**

Cloud is really here to simplify business life, not complicate it. However, many organizations still get stuck in managing the complexity that potentially comes with the cloud. Dealing with issues around integration, security, identity, multiple vendors, deployment models, incompatible standards and differing service levels can absorb so much time that the benefits seem far away. It requires an orchestrated approach to the cloud, ensuring that cloud complexity is effectively dealt with and that cloud services are provided as easy-to-consume services. This sets organizations on a path towards leveraging the cloud on their own terms. And it frees up their management agendas, so they can focus on creating new value with the cloud. It's as simple as that.



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So what is orchestration anyway?

The term orchestration is already abused, overused and misconstrued; in other words, it has achieved the status of industry buzzword. Personally, I prefer to use Business Services Orchestration, to bring a broader context to a term typically used for infrastructure automation, intelligent auto-provisioning or even freedom of dynamic workload deployment across hybrid/public cloud infrastructures and legacy estates.

In this context, orchestration can (in technical terms) be defined as: “an advanced automation proposition to dynamically organize, provision and integrate a set of IT-based services and solutions in a hybrid environment under policy control to provide coherent, consumable services to enterprise users.”

Therefore Business Services Orchestration should consist of:

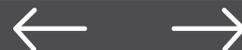
- **Service orchestration platform** – The service orchestration functionality is implemented as a platform that is persistent and distinct from, and technically independent of the orchestrated services.
- **Consumable enterprise services** – The key output of the service orchestration process is the delivery of easy-to-access-and-use services to enterprise users.

- **Hybrid environment** – Service orchestration will be able to operate across multiple cloud models (including “brokered” services) in a hybrid environment, with workloads being moved where and when appropriate.
- **Intelligent policy control** – All the key processes and operations within the orchestration platform will be governed within a platform-based framework of central and client-specific policies.
- **Orchestrated services** – Services and solutions managed by service orchestration include cloud capacity services (IaaS and PaaS) and cloud functional services (SaaS), and are integrated with the legacy IT environment of client organizations where appropriate. These services may be provided by multiple providers, internal or external.

## Put the Business First

Sounds complicated – so why should we orchestrate?

Simply because orchestration enables us to put the business first. By enabling orchestration we manage the IT service complexity centrally and simplify the control, delivery and consumption of enterprise services.



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We also need to orchestrate because maintaining agility and flexibility is harder than ever in a global business world that demands the elasticity to adapt to evolving market requirements. Technologies are changing fast. Customers expect to be able to interact with companies, and organizations with their suppliers, around the clock, from anywhere. They want choice and flexible consumption models. Employees want to access work data, delivered via an online services marketplace assured by enterprise-grade capabilities and support. They wish to do this while communicating across their globally connected workforce, collaborating in real time with teams using their preferred new Android/iOS and Windows-based smart devices.

The prize for winning in the new market will go to the businesses that can roll out innovative products and services quicker than the competition. All these demands are putting unprecedented pressures on the IT department, which must also ensure the services they deliver remain robust, secure and compliant.

## Don't Reinvent the Wheel

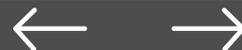
With enough time, people and investment, your company could, in theory, create its own orchestrated service from the ground up. But there's no reason to reinvent the wheel when such a robust and tested system already exists.

If you have until now avoided taking the leap into the cloud, you'll find that an orchestrated platform can also help make the transition painless, seamless and as gradual as desired. If your business is already in the cloud, you'll discover the full benefits by moving to a purpose-built, rigorously tested and fully integrated orchestrated solution, one that works just as well with public, private or hybrid platforms.

An orchestrated world will simplify the path from legacy to the cloud – for enterprises today and well into tomorrow.

““

An orchestrated platform can help make the transition to the cloud painless, seamless and as gradual as desired.”





# TechnoVision 2014

## Sector as a Service

The **Sector as a Service** cluster – which groups the technologies used to build the core applications – provides (together with **Invisible Infostructure**) the technology foundations of the enterprise.

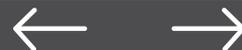
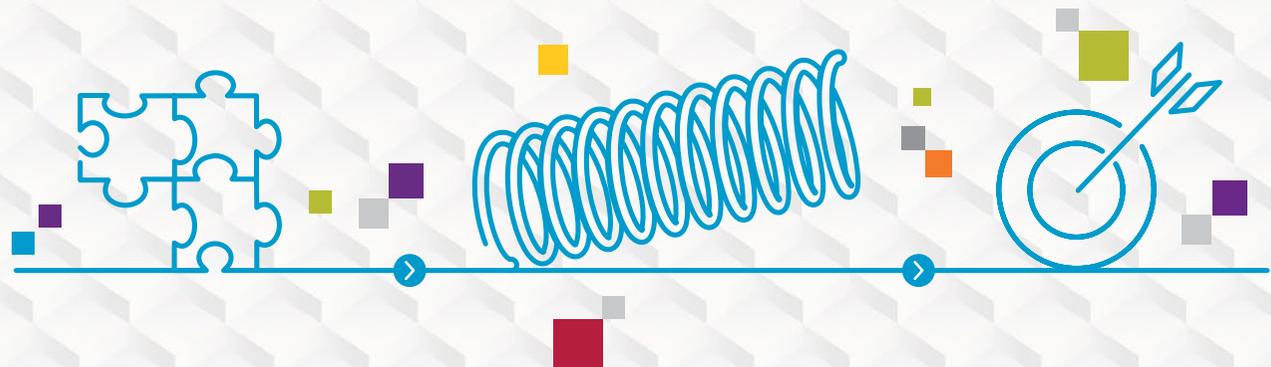
Ideally, the core applications landscape should be an accurate reflection of the needs and drivers of the business it supports. In practice, the business needs of the Digital Enterprise outpace the evolution potential of the large, highly customized ERP and bespoke systems that dominate the applications landscape. Core applications have become an obstacle to business renewal rather than an enabler.

To the rescue come the technologies of Sector as a Service, and notably the next generation of cloud- and catalog-based SaaS solutions – solutions available as sets of services. They are based on sector-specific best practices and thus expose their greatest benefits when consumed in their original, “vanilla” flavor.

The Digital Enterprise, however, also needs differentiation to compete, flexibility to respond to customers' expectations and elasticity to adapt its perimeter. In response, its applications estate has to be varied – adding new types of agile, “edge” applications to the standardized, core functionalities.

- › Vanilla Tastes Good
- › Reborn in the Cloud
- › Elastic Business
- › Close to the Edge
- › No App Apps

# SECTOR AS A SERVICE



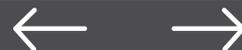


## Watch Capgemini's Ron Tolido:

"Sector as a Service is our vision of where the core applications landscape is going."

# TechnoVision 2014

## Sector as a Service



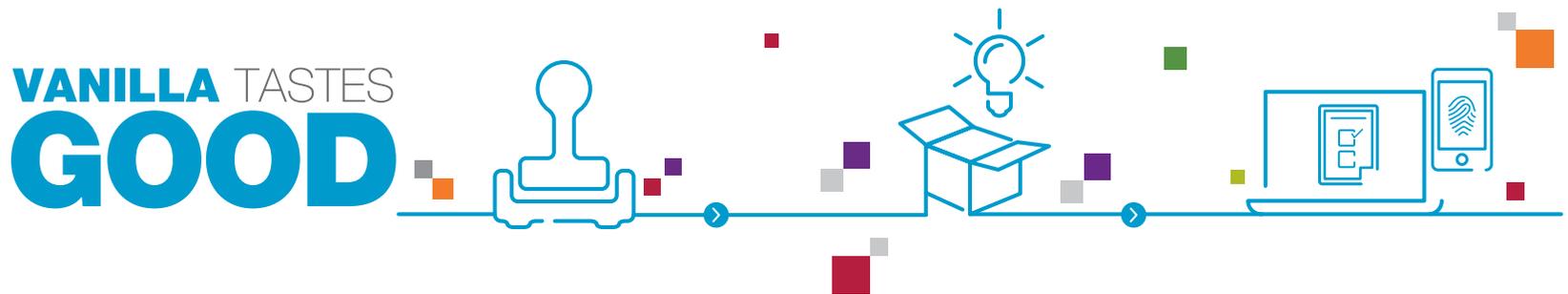
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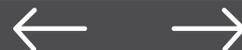
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This contribution by  
**Ron Tolido**

Many core applications – both custom built and package based – used to have a differentiating value to the business. Now they are often consuming the bulk of available IT budget due to excessive maintenance costs, while the differentiating “edge” is found elsewhere, in other solutions around mobile, social, Business Process Management (BPM) and Big Data. Time to drastically move to good old “vanilla,” using out-of-the-box, non-customized versions of standard, cloud-based software or with step-by-step rationalization of homegrown applications to leaner, simpler versions that are easier and less costly to maintain.



# Sector as a Service

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If an organization's applications landscape is a reflection of its business, then there are clearly a surprising number of unique organizations in the same sector.

Although you would expect striking similarities between their processes and the systems that support them, many organizations will cultivate multiple instances of ERP that are highly customized, not uncommonly to an extent that it's risky to upgrade to new versions of the application. In other cases, they will have custom-built software, even further suggesting that their processes and functional requirements are so special that no standard solution can support them. Being special comes with a price here, as the core part of the applications landscape – really not delivering any differentiating value – consumes the better part of the IT budget ([read more in our new 2014 Application Landscape Report](#)).

Now, in the era of Software as a Service (SaaS) we are quickly moving towards catalog-based applications that are essentially multi-tenant. They are supposed to be used by many different organizations in the same way, although of course with certain configuration options. Multi-tenancy drives the economies of scale of SaaS and through it, lower costs – particularly in the capex area – and a much shorter time to market.

## Adjusting to a New Reality

It takes some time to get used to this new reality. We need to appreciate the basic taste of vanilla as a highly cost-effective, low-maintenance foundation for both our processes and our systems. The next generation of standard,

cloud-based solutions (whether in ERP, CRM, HCM or any other functional or sector domain) contains industry best practices that have proved to be able to support many different organizations across the sector.

It's up to individual organizations to take a good look at their value scenarios and customer journeys (indeed, [no detailed requirements](#)) and validate how well these industry best practices would work for them, only afterwards focusing on the deltas: what needs to be adjusted and what risks need to be mitigated.

This reverses the usual process, making way for both more radical [application rationalization](#) strategies (de-customization, de-instantiation, ripping and replacing of legacy applications) and for the quick implementation of next-gen SaaS.

On top of a core vanilla platform there are, of course, many ways to build solutions that help an organization to be innovative and special in the market, win the hearts of their consumers, have superior operational excellence or even do new business in entirely different ways. But these will be lightweight, [car and scooter applications](#) that leverage mobility, social, Big Data, BPM and the cloud. They may even be "No App Apps."

By loving the taste of vanilla – achieving the state of the commodity, if you like – we create room for other flavors. It's the very essence of what we describe in TechnoVision as Sector as a Service.

Standardize to be different. Quite a tasty perspective.

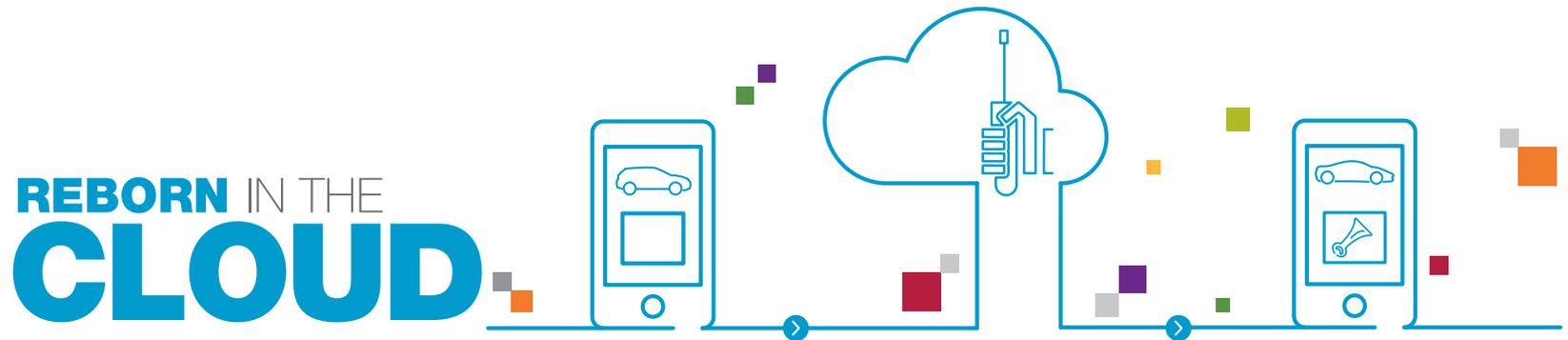


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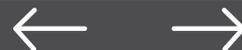


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This contribution by  
**Vikrant Karnik**

Once organizations have implemented or built their first cloud applications, they will find they have a powerful cloud platform available that comes with these applications. They can now consider leveraging more of that platform, not only to create additional solutions but also to renew the existing applications landscape. This may be a matter of simply “cloud enabling” legacy applications by providing them with a new front end and integrating them with the cloud applications. But applications can be completely reborn too, taking full advantage of living in the cloud.



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I was listening to [Andy Jassy's keynote](#) at AWS re:Invent and one key statistic that he mentioned struck me. He said that 32% of all apps that moved to the cloud had reduced downtime. Moving apps to the cloud reduces downtime? Who would have thought? It's considerations like that which make you ask yourself if you should have many more of your apps reborn in the cloud. Most of my clients are doing pilots by moving certain apps to the cloud and using those pilots to learn and plot their future.

It is truly about the "rebirth" of these apps, not just migrating them to the cloud. [Forrester VP and Principal Analyst James Staten](#) makes this point in his blog post.<sup>2</sup> "Apps in the cloud need to adapt to the cloud not the other way around."

If you are thinking about rebirthing apps in the cloud, here are a few things to consider:

First [understand your applications landscape, segment it and plan its destiny](#). Are you forecasting certain applications that are going to rapidly increase in end-user population? Maybe they are customer-facing apps or employee-facing apps? Do you spend a lot of money on tier two apps? Are you dealing with apps on an underlying infrastructure that has lagged behind in applying patches and being current on security updates? The tier two apps in the employee-facing and corporate-services domain can be a good target source to do some pilots around moving apps to the cloud. Cloud works better when you start small, experiment and learn from it.

Then you have to ask yourself whether you should leverage Platform as a Service (PaaS) or only the Infrastructure as a Service (IaaS) side. Both come with their inherent pros and cons. Adopting PaaS means a steeper learning curve for the organization in the short term but better rewards long

term. Whereas with IaaS adoption for apps, you get quicker savings but the impact is lower.

Also, you have to keep in mind not all code will work in a public IaaS cloud. So picking the right apps for the pilot will help with testing out these edge cases and will build valuable enterprise knowledge.

## Now Build the Business Case

Let's say you have identified some decent number of apps (say 40 to 50) to migrate and have made a choice around using IaaS and PaaS providers. Now comes the hard part: [building the business case](#). Keep in mind that there will be one-time migration costs, even if you are migrating to a public IaaS cloud. And the costs go up if you are adopting public cloud PaaS platforms like Force.com or Google App Engine or Engine Yard.

Another factor to keep in mind is the training effort and change management needed for your teams to learn from this pilot and apply broadly in your company. Furthermore, you should consider if you can generate more value with the same apps if you had more features in them. Maybe a great mobile interface?

Finally, don't forget the governance aspect of it. Having apps reborn in the cloud doesn't solve the governance problem; it only makes it more critical to address.

To quote James Staten again: "Don't think migrate, think transform..."<sup>3</sup>

In fact, I would add: Think "Reborn in the Cloud."

<sup>2</sup>"Q: Which Apps Should I Move to the Cloud? A: Wrong Question," James Staten, Forrester Research, Inc., November 6, 2012, [http://blogs.forrester.com/james\\_staten/12-11-06-q\\_which\\_apps\\_should\\_i\\_move\\_to\\_the\\_cloud\\_a\\_wrong\\_question](http://blogs.forrester.com/james_staten/12-11-06-q_which_apps_should_i_move_to_the_cloud_a_wrong_question)

<sup>3</sup>Ibid



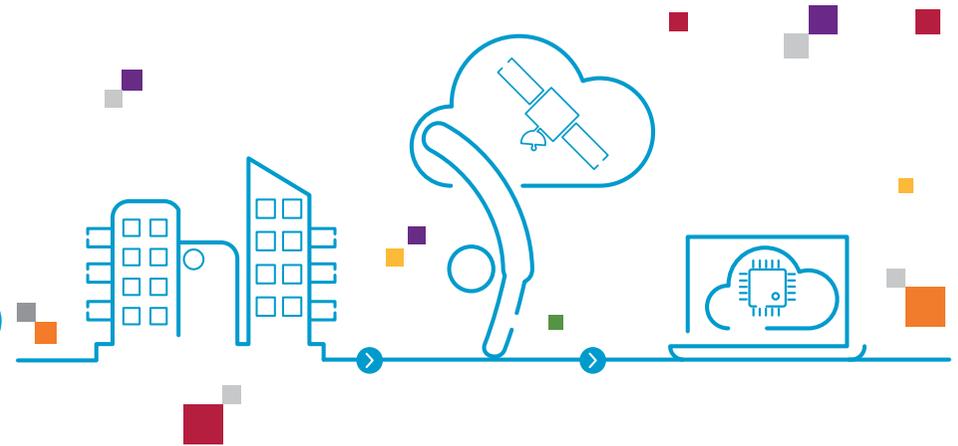
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## ELASTIC BUSINESS



This contribution by  
**Mary Niemann**

The cloud enables a new generation of powerful Software as a Service solutions that are simple to use and implement and don't require massive upfront capital investments. Consider these solutions to quickly start up new subsidiaries or seamlessly integrate newly acquired business units. Use cloud integration services to connect these solutions to your central ERP or homegrown applications. This way, you can provide flexibility, elasticity and an excellent degree of customization to your subsidiaries and satellite business units, without a painful modification of your central systems.



# Sector as a Service



The most common scenarios where we see a need for business elasticity with SaaS ERP solutions such as [NetSuite](#) result from mergers, acquisitions, divestitures, joint ventures, expansion into new geographies or markets, launch of new products or service offerings, a shift in business model for a part of the business, a rapidly growing business or a rapidly declining business.

Most of our clients struggle with the high cost of ownership in their established ERP landscape. Since the late '90s the mantra was “single-instance” ERP, which seemed like the right idea. With the support and endorsement of large software vendors and analysts it became the gold standard.

So while in theory it makes sense for every subsidiary, division and geographic region to run on the same ERP system, there have been many more failures than successes. Most organizations end up with large sections of their enterprise (overseas subsidiaries, acquired business units, new divisions) that have never deployed the “standard” system and continue to run on something else. And clearly, each “something else” drives its own need for attention to maintenance and upgrade.

Even companies that achieved true global standardization at one point in time have often watched their applications landscape devolve into multiple systems as the pace of deployment and maintenance of a heavy, on-premise system couldn't keep up with the pace of expansion, acquisition or innovation in the enterprise. While there are many reasons for the failure of traditional, single-instance ERP, they typically fall into the main categories of too much cost, too much time, too much risk and an inability to keep up with the rest of the organization.

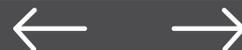
## Balancing Act: Two-Tier Cloud ERP

To address these challenges, our recommendation to many of our customers is to design and develop a strategy of two-tier cloud ERP that balances the cost of ownership, the need for agility and the requirement of the overall enterprise architecture. When done right, this helps organizations to gain the global visibility, standardization and efficiency originally sought with large-scale ERP, but without the complexity, excessive cost and slow deployment.

Two-tier cloud ERP is about designing a platform that can be deployed quickly and cost effectively outside headquarters. This platform will provide the visibility and standardization hoped for in single-instance ERP but will also be agile and cost effective enough to be deployed even in the furthest reaches of the organization.

The idea is to achieve most of the major benefits of the single-instance ERP – standard processes, consistent definitions, streamlined financial consolidation and better business visibility across the organization – but without the outsized cost and risk, and while still ensuring the business can adapt to change going forward. It's about closing the gap between what finance needs and what IT can deliver effectively with the resources they have at their disposal.

In short, two-tier cloud ERP means running one ERP system for corporate, such as SAP or Oracle, and adopting another (cloud-based) ERP solution for everywhere else that's lighter weight and easier to deploy and customize to local needs. The two-tier strategy should provide a standard, template-based deployment for subsidiaries while reducing the overall number and variety of distinct systems throughout the organization.



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## Simpler Financial Consolidation

By using a two-tier approach, an enterprise ideally should be able to whittle down its distinct ERP solutions to two or three instances. For CFOs and controllers, this means a dramatically simpler financial consolidation process: fewer individual feeds, fewer systems to track, and more effective financial and management reporting overall.

Competitive pressures, globalization, a changing regulatory environment and market volatility mean that organizations need to be more agile and to step up the level of transparency and visibility across and into the business. Of course, the laser focus on spending also means that companies need to achieve these goals while dedicating a flat or declining portion of their resources to the IT core landscape.

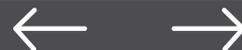
The impact of adopting a two-tier strategy can be substantial. We recommend the use of cloud computing as an enabler for two-tier cloud ERP because it gives our clients the ability to roll out standardized ERP to each subsidiary quickly and without overtaxing the IT organization. It also means that corporate can easily access divisional and subsidiary reports through the web – making the organization more transparent and timely. By using a two-tier cloud ERP approach, companies can save millions in infrastructure and software costs compared to using an on-premise deployment, and achieve in months what would otherwise take years to complete.

## Infinite Elasticity and Flexibility

Many companies worry that they will be forced to take out-of-the-box functionality with SaaS and will not be able to meet their unique business needs. However, pure multi-tenancy SaaS solutions often feature an advanced development platform that can be used to extend to the needs of the business unit. This cost of extension is trivial as the platform is designed to upgrade these extensions through centrally managed upgrades. It's a big plus of typical multi-tenancy SaaS.

We see a compelling and growing need in the market for two-tier cloud ERP. This need is especially prevalent with companies that are large and complex with high activity levels of acquisitions, mergers and divestitures, as well as companies that are innovating with emerging products and markets and want a testing ground to monitor and measure the success of these new ventures. These companies should streamline their subsidiaries, acquired companies, divestitures and emerging countries/products on two-tier cloud ERP as a standard, integrating it with their enterprise SAP or Oracle corporate instance.

A stable, robust core with infinite elasticity and flexibility: We believe it's the future of the enterprise applications landscape.



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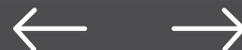


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This contribution by  
**Simon Short**

For a starting business, applying IT solutions from the cloud is already the default option. And although larger enterprises may still see inhibitors to fully embracing it, they can already turn to the public cloud to enable new, edge business activities. Often, these activities are at the core of true Digital Transformation and will provide the best growth opportunities. So look outside-in, at areas such as social, CRM, Human Capital Management, collaborative procurement, but also mobility and analytics to begin to explore the next generation of IT solutions. Create real benefits now.



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For all organizations, small or large, new or long-standing, the world in which they operate is changing dramatically. The digital world, driven by cloud technologies, presents huge opportunities both for success and failure. However, it is not necessarily the technology itself that is driving the revolution but the change in customer (and employee) behavior and expectations that these new capabilities offer.

Most organizations are designed to do what they do internally as efficiently as possible. Standardized processes, back-office consolidation and cost reduction are the language of the operating model and are all focused on the internal workings of the organization. They are designed to do a few things as well as possible and repeat them as often as possible.

## Let's Get Personal

But today's new consumers have different expectations. They don't want a standardized world; they want a personalized one – and they want it now. Driven by their experience with social tools, the immediacy of mobile working and their encounters with companies that have grown up with an internet-first mentality, they expect the same of all organizations.

They want to review and order exactly what they want, when they want it, delivered to where it is most convenient. And having done that through one channel such as their mobile phone, they rightly expect to be able to walk into a store or phone a call center and continue exactly the same conversation or transaction. After all, why can't you return what you bought online yesterday to a store today?

All of this is happening at the edge of the organization and not in the back office where most businesses have spent the last 10 years industrializing.

Operating at the edge calls for a new approach, not just with technology but with culture and organization.

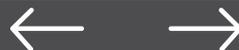
For a new start-up business this is second nature and applying solutions from the cloud is naturally the default option. However, larger enterprises often see inhibitors to fully embracing it, whether that be around data security and compliance or the investment in legacy assets on the balance sheet.

## On the Edge: Quick Results

But the opportunity exists to use the public cloud (and a wide range of easy-to-consume SaaS solutions) to enable new, edge business activities. Standing up a service and trialing it in one outlet or with one team or one set of customers can deliver results exceptionally quickly, especially when compared with developing something on the legacy IT platform. Often, these activities are at the core of true Digital Transformation and will provide the best growth opportunities.

So organizations, regardless of their legacy heritage, should look outside-in at areas such as social, CRM, Human Capital Management and collaborative procurement as well as employee productivity tools, mobility and analytics to begin to explore the cloud and create real benefits now.

To do this, start by mapping edge areas that create new business and customer interaction and look to existing market SaaS solutions with a “buy” not “build” mentality. The underlying service doesn't have to be unique; the way you engage with your customers becomes your unique differentiator.



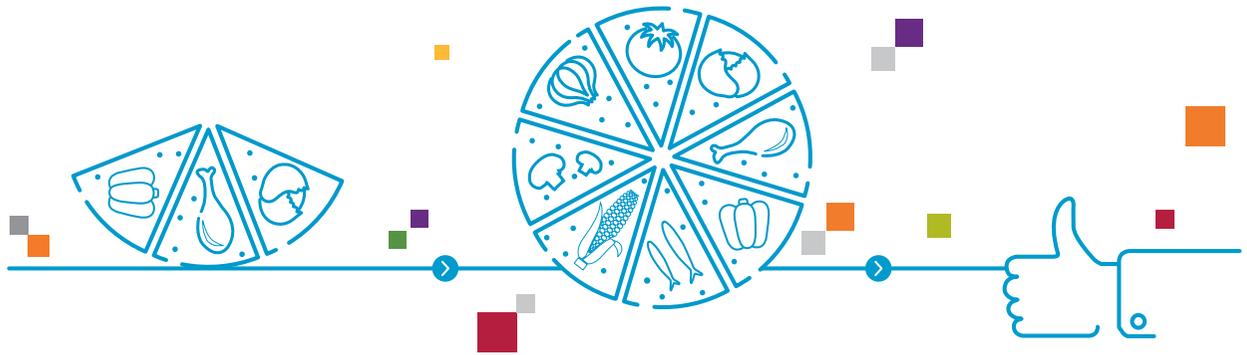
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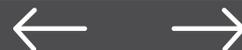
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NO APPS  
**APPS**



This contribution by  
**Ron Tolido**

With core applications becoming vanilla again, the differentiating edge of IT solutions will come from a next generation of applications that are not really applications anymore. They are quickly created by gluing reusable, catalog-based IT services together. They leverage visual, model-driven platforms that work from business process descriptions to generate code. They use self-service BI, BPM and business rules tools to create solutions in close proximity to the business. They apply mobility and portal platforms to create new interfaces without diving into the software underneath.



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Let's assume you have done all the things that transform your applications landscape into a (as we define it in TechnoVision) Sector as a Service: You have adopted industry best practices ([appreciating again the taste of vanilla](#)) and eliminated excess instances, customization and bespoke software; you rationalized and renewed your applications portfolio, [benefiting from new cloud platforms](#); you have applied some of the next-generation SaaS solutions [close to the edges](#) of your business, possibly even within a [two-tier, elastic scenario](#).

Now it's time for the [cars and scooters](#): solutions that are created and deployed in the nearest proximity to the business and have a fast lifecycle. After all, being just as standardized and rationalized as your peers in the sector is a basic necessity, really as a hygiene factor, but it will not provide you with the differentiating qualities to stand out in the market.

For that, of course, your organization needs to establish where it's different, where it's special, where it wants to apply technology to be [digitally relevant](#). Then you want to deploy the right processes, activities and solutions as close as possible to where it really matters: the business. And, most importantly, you want to have the agility to quickly implement and improve your solutions over and over again.

At this point, we are already aware that [detailed requirements will not bring us where we need to be](#): too much time needed, too much friction between demand and supply sides, too much disappointment as a result. You probably also don't want to build all your car and scooter solutions using advanced, but complex programming languages such as C# or Java. They require highly trained software engineers who are not necessarily suited – or interested, for that matter – to work in the middle of the business, even

when [agile approaches such as Scrum](#) are used to bridge the gap between business and IT and get optimized results within a given timeframe.

## The End of (Some) Applications as We Know Them

The future of a certain category of applications may be in not being applications at all, at least not as we know them right now. They could be built with tools and platforms that don't require classical programming skills. It might be, at least to some extent, that business people use the tools themselves to create their solutions or – quite likely as well – business and IT working closely together, preferably at the same place.

Need some examples?

- Platforms such as [Mendix](#) provide easy-to-use tools to create visual business models that are turned into attractive, executable applications without ever seeing a single line of code.
- [Salesforce1](#) provides many different ways to create cloud-based and mobile applications using visual UI builders and point-and-click app logic through formulas, workflow rules, approval processes, visual workflows and – if necessary – a simple but powerful programming/scripting language such as Apex.
- Microsoft's and SAP's [DUET Enterprise](#) gives easy access to SAP ERP services using the familiar SharePoint interface (and while we are talking about SharePoint, what once was a portal tool now has developed into a [full-fledged platform](#) on which collaborative applications can quickly be built).



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## Just Add Rules

Business process platforms such as those from [Be Informed](#) (“just add rules”), [Pega](#), [IBM](#) and [Oracle](#) only require you to insert – natural language – business rules to create solutions that once relied on complex programming (much more about this in our “[Process is the New App](#)” section).

Compelling mobile applications can quickly be developed with the [Kony development cloud](#), serving multiple devices and mostly just requiring drag-and-drop actions plus maybe a bit of JavaScript coding. Data-intensive intelligence applications can be built with self-service tools such as Microsoft’s [PowerPivot](#). And even blogging platforms such as [WordPress](#) provide development capabilities that utilize templates and plug-in scripts to create serious, compelling Internet applications.

When it comes to business agility, the best app might be no app. Hold that thought.



When it comes to business agility, the best app might be no app.”





# TechnoVision 2014

## Thriving on Data

The **Thriving on Data** cluster (together with **Process on the Fly**) provides the technologies that support the new user experiences – individual and social – and in turn feed the enterprise applications with outside knowledge.

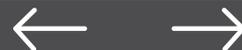
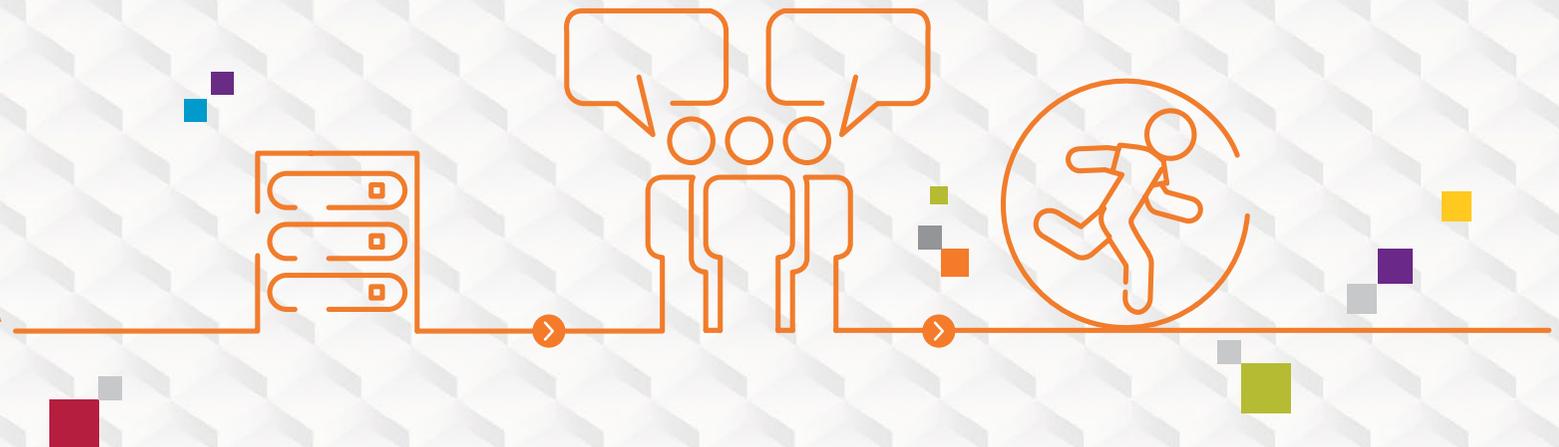
Data is no longer just within the purview of IT. It is now used and generated by customers, colleagues, inside and outside networks, social media and increasingly even by “things.” Combine it with unprecedented capabilities to process, analyze and store huge volumes of structured and unstructured data at almost zero cost, and it becomes clear why data is vital for the Digital Enterprise.

With an ocean of data coming from so many sources, the classic hope for a unified, single source of truth is fading. Instead comes the pragmatic notion of a federated, distributed supply chain of data, with multiple viewpoints, different owners and diverse stakeholders – data lakes connected by the right web of canals.

Thriving on Data means turning all that data into Digital Enterprise intelligence. More than a science (the science of analytics), this might well be an art, picturing data to make it meaningful. And real time now makes real sense – it is the way to turn insights into actions.

- › My Data is Bigger Than Yours
- › Intelligence Inside
- › Real Real Time
- › The Art of Data
- › Data Apart Together

# THRIVING ON DATA



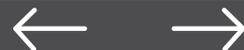


## Watch Capgemini's Manuel Sevilla:

"Big Data is a set of tools that is designed to be low cost and that works on the cloud naturally."

# TechnoVision 2014

## Thriving on Data



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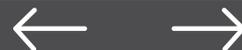
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## MY DATA IS **Bigger** THAN YOURS



This contribution by  
**Manuel Sevilla**

The rise in volume (amount of data), velocity (speed of data) and variety (range of data, both structured and unstructured) gives way to new information architectures and tools that no longer only collect and store but actually use data to create business value and provide usable insights. Start to imagine what is possible when you are able to handle much more data than ever before, from sources inside and outside the organization, integrated and available in near real time.



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Often, the Big Data phenomenon is first seen as a constraint, an issue, a new problem to solve. But Big Data is there; your business and of course your IT are already impacted. It is a fact. It is time to make the most of it, using Big Data to improve customer experiences, to increase market share, to reduce time to market, to propose new services, to develop new business models.

How? Well, under this new Big Data, there is a secret sauce. This new and massive data is not coming alone; it is coming with some new technologies, more particularly:

**Hadoop:** This open source and free software allows you to store and analyze high volumes of data at limited costs. So limited, in fact, that, in many cases, we should consider that Hadoop stores data for free (compared with other storage pricing, it is a negligible cost).

**In-memory:** Working in-memory (without a hard disk, except for reliability) provides an incredible performance improvement, often between 100 and 1,000 times faster than standard applications. Data discovery and analytics are becoming so fast that we can say business intelligence is now truly ready for immediate, agile use.

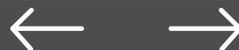
**Event processing:** This concept is about usable insights. Every time something happens, you are able to react to create value (e.g., pushing the

right product in order to increase the shopping basket value) or to improve user experience (predictive maintenance, fast reaction on social networks after a customer complaint). So your operations can be guided, automated and optimized in real time.

**Cloud:** All these new Big Data technologies are available from the cloud. Among other things, this means that procurement cycles shorten dramatically, hence resulting in a very short time to market for solutions. But the other interesting aspect is that Hadoop, in-memory and event processing solutions have been designed from the start to work from the cloud and are ready for dynamic scale in both processing and storage: You pay only what you really need.

When joining these four innovations, it appears we are able to thrive on data without limits: as much data as needed, as fast as needed, on time and at optimized cost. The real border that now needs to be crossed is rethinking your business, taking into account that IT is no longer a limiting factor but instead makes the unthinkable possible.

Now that's what you call "Big."

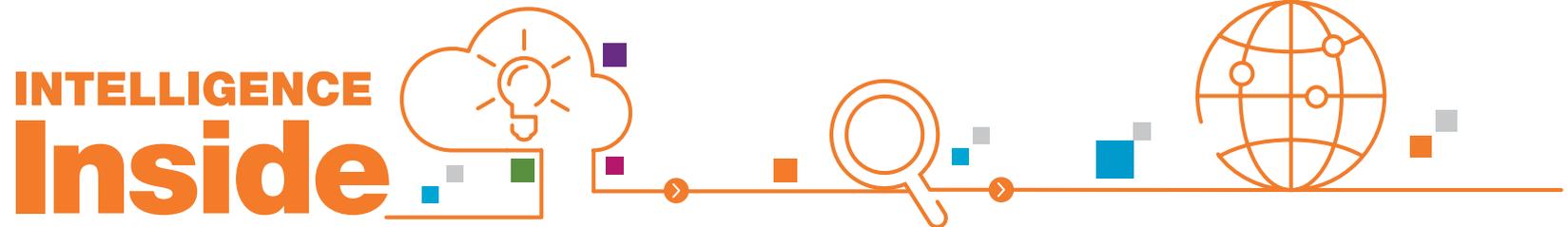


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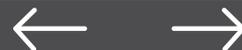


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This contribution by  
**Jorgen Heizenberg**

Big Data is not really about volume; it is about the ability to analyze and act in real time using data from sensors, transactions or interactions, both from inside as well as outside the organization. Data can be used to solve tougher business problems, create more competitive advantage and make better, more informed decisions in a tightly connected world. Where placing data in the hands of many previously was a separate process, exploration now has become a part of daily work. With this comes the increased need to create insights on the fly, done by business users instead of remote IT experts.



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Werner Heisenberg was a German physicist and one of the key creators of quantum mechanics. In 1927 he published his “uncertainty principle” for which he is best known. This principle states: “It is impossible to determine accurately both the position and the velocity of a particle at the same instant.”

This might require a short explanation for the physicist illiterates. Position is the identification of the relative location, in other words: where you are. Velocity is the speed and direction, in other words: where you are going. There is a short “true story” that illustrates this. It is rumored that Heisenberg went for a drive one day and got stopped by a traffic cop for speeding. The cop asked, “Do you know how fast you were going?” and Heisenberg replied, “No, but I know where I am.”

The same seems to apply for many organizations today. They know where they are (or have been) but often they do not know where they are going. The main reason for this is that their (big) data is at rest. It is mostly inactive data that is stored physically in any digital form; for example, a database or data warehouse. Also it is used primarily for historical reporting or analysis on mostly internal data done by the IT department. Although the quality is high (data warehouses, for example, are often associated with a high level of data quality and creation of the single version of the truth), the time-to-market is often slow (batch-oriented overnight architectures) and the value of the data is therefore relatively low.

## From Hindsight to Foresight

To be truly successful many organizations need to transform from hindsight analysts to foresight action takers. This implies that the (big) data is not at rest but in motion or even in use. It should flow in real time through the

organization and change business outcomes on the fly. Not by a small team of IT experts but by everybody within the organization.

Big Data has created a paradigm shift in the way we look at decision making today. Traditionally, structured data from internal systems like ERP has been the main source for this. Now unstructured data comes from sensors in machines, planes, trains, automobiles or even your fridge. They add to the amount of data available.

But this is also the time where external data, from websites or social media, tells us much more about our own performance. Not with facts or dimensions from the IT data warehouse but with opinions from Twitter and likes on Facebook by your customers. This is the time where Facebook can predict when somebody is about to cheat or commit suicide, where Google can predict a flu outbreak, or retailers can predict that your teenage daughter is pregnant. It is about bringing outside intelligence inside your organization.

Although the name suggests otherwise, Big Data is not only about volume. Volume is about data at rest. It is about storing massive volumes of data against lower cost. Big Data also is not about where you are (position) but about where you are going (velocity) with speed as the deciding factor. Research (for example, by *The Economist*) shows that most C-level executives are convinced that value from data can be found in real time. Supported by technology – like in-memory – business users must therefore quickly find usable insights in Big Data from inside and outside their own organization to make decisions on the fly.

To me, there is no uncertainty in that.



# Thriving on Data

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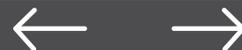
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## REAL Real TIME



This contribution by  
**Manuel Sevilla**

With advances in Big Data such as the ability to store extremely large volumes of data, to deal with various formats – both structured and unstructured – and to apply complex analytics to up-to-date operational data, we have reached a true inflection point. The “end of batch” makes us think far beyond just stepwise improvements of existing business processes, as the need for queuing, waiting times and intermediates disappears completely. Organizations that have the imagination to reinvent themselves can make a decisive leap forward.



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The first time I worked as an IT engineer was for a large bank and everything was done on a big IBM mainframe. Every program was designed to be transactional (i.e., in direct link with a human, with an average performance goal of seconds) or batch (i.e., no interaction needed with a human, average performance goal was an hour).

Technological evolutions have led us to go faster and faster, but at the same time to deliver more complex processes or with much more data, but IT still kept a gap between transactional and batch. Today, technological developments enable us to really change the game.

In-memory computing and data storage combined with event processing technologies and real-time replication allow us to say that it is easier, faster and cheaper to deliver in real time what used to be batch. This is where the new technology underneath SAP's HANA and Oracle's Exadata/Exalytics (to mention only the most obvious examples) starts to shine. If we can use one and the same system – all in-memory or whatever does the job – not only to store transactional data in real time but also to analyze it in a split second so that we can act in real time, something truly transformational is lurking around the corner.

Consider an ERP system (like those from Oracle or SAP). Now try to guess what has happened during the last hour on this system. This is a very difficult question. And “difficult” in IT means costly, highly intrusive and slow. And once we have the complete list of all the events (or more probably a long list of events where maybe we have missed some), it will take time applying our business rules to all these events.

## Go Very Fast

Conversely, ask the same ERP system to send you, in real time, a copy of each event it is processing. Then you do not have to dig into historical events; then you have one isolated event to which you'd like to apply a business rule (or not); and then you're able to go fast; very fast; very, very fast. And it is cheaper too.

Finally, you're able to do something truly new: Reacting early, sometimes proactively, is about new opportunities, new services. If you're with a bank, before each transaction, you can detect fraud or money laundering in order to cancel the transaction immediately. If you're with a retailer, you're able to push a targeted promotion based on current basket. If you're with a telco company, you're able to react immediately after a VIP customer encounters network issues. If you're with an energy provider, you're able to optimize your smart grid in real time.

The challenge to both IT and business is not to consider the new capabilities as just another trigger for stepwise improvement. It requires fresh thinking, potentially leaving behind most of what we think we know about a process. What does it really mean if we can perform profitability or cash analysis at any time of the day, based on the actual transactions going on? What does a supply chain look like if it is driven by the mood of the hour – or minute – at the points of sale? What about credit scoring if a request can be analyzed in depth on the spot, in seconds?



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## The End of Batch

SAP's CTO Vishal Sikka *not so long* ago announced the "end of batch" during a keynote. And indeed, if our systems are powerful enough to store and process any input the moment it is created, there is no more need for piling up, no more waiting queues, no more intermediates.

Clearly, the impact of this end of batch goes much further than IT processes and systems. It indicates nothing less than an inflection point for business, and we need to imagine where it can lead us if there are no waiting times. For anything.

Finally, I would like to discuss the "real real time" expression. I still remember a customer who wanted to do BI in real time. Ten years ago, one of my architects started by designing a complex and expensive solution to deliver KPIs in real time, and came to me to validate the solution. I asked her what the customer meant by "real time." She said "probably a few seconds." Then

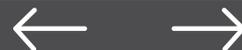
we called her customer. His current BI system was computing KPIs only once a month, and the whole process took about 15 days, which meant 45 days of delay. He was dreaming about having the KPIs in "real time," which meant for him in one or two days.

Formally speaking, real time doesn't exist in IT: The minimum response time is a CPU cycle after all. I have heard customers or vendors speaking about "business time," "right business," "close to real time." Some (of the more old-fashioned, no doubt) speak about "mini batches" or even "fast batches."

Whatever your definition, start imagining what "Fast Data" and real time would mean to your business. Not just speeding it up. But actually redefining it.



Organizations that have the imagination to reinvent themselves can make a decisive leap forward."



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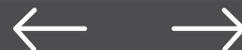
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## THE *ART* OF Data



This contribution by  
**Simon James Gratton**

The main issue with data is that it is often difficult to both understand and exploit for everyday knowledge workers, as it is often isolated from the actual activities they are involved in. We need to apply “data art” to embed data in the operational fabric and make intelligence to the point, insulated from the underlying data complexities, instantly consumable in the context of the interaction and, therefore, instinctive in its application. Think about infographics, accessible visualization, interactive presentation technology and usable metrics as crucial elements of your evolving data art palette.



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## Come in Data Science, Your Time is Almost Up!

Forget “move over Beethoven,” it’s Einstein who needs to make way in the journey to the intelligent customer-centric organization.

Recent focus on data science and data consolidation has failed to address the real challenge of making information accessible and usable to “in-process,” customer-facing knowledge workers without them being jettisoned into a mass of meaningless analysis, delay and interpretation. With average employees taking over 20 minutes after interruption to resettle into high-value business activity, the future of data rests firmly with data artists (yes, that’s you I am talking to, Vincent, Pablo, Claude...).

Acquisition and marshaling of data is now a commodity as underlying data technology reaches a mainstream tipping point and cloud adoption accelerates further. Big Data outputs remain married to the complexities of our corporate data silos, and our journey to data enlightenment remains shrouded behind a veil of Ph.D. statisticians.

With our data assets and data science heading for the divorce courts and our users increasingly frustrated by our inability to deliver meaningful insight, **data art** is the relationship counselor to whom we all need to look.

If we think of data science as our regular banking transactions (in short, capturing the business event data across our points of party interaction), data art is the credit card, as it enables us to make sense of our spend in a format that has personalized context and that enables our knowledge workers to continue to operate at business pace.

## Does My Report Look Fat in This? A Paint-by-Numbers Guide to Success

So, you are ready to “van Gogh” and concede that Big Data success now requires more art than science. What are your next steps?

### 1. Expand your data toolkit with infographics and visualization tools.

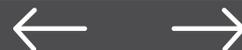
From [infogr.am](#) to [easel.ly](#), through [piktochart](#) to [visual.ly](#) and [quid](#) we need to progressively simplify the complex using accessible visual metaphor technology.

**2. Adopt non-linear intelligent presentation approaches.** Armed with “Dan Roam” mentality and with your printed linear slide decks consigned to the waste bin, try out cloud-based visual presentation technologies such as [Prezi](#), [Sliderocket](#) and [Slideshare](#) to consolidate your ideas from numerous consumer perspectives via a data-driven, dynamic and non-linear format.

**3. Embrace Usable Metrics.** With [Eric Ries](#) calling to you softly through the background music of “Chariots of Fire,” take progressive action to ensure your reports and visualizations focus on a small but perfectly balanced set of metrics through which you can easily monitor the development of your business accurately and, of course, incrementally.

So while data science may provide our corporate data “pump,” data art delivers an organizational “smart meter,” ensuring the right information is delivered efficiently into the hands of knowledge workers in the right format at the appropriate time to deliver the very best next-generation customer experience.

Moreover, it’s coming to a boardroom near you very soon.



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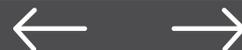
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## DATA Apart TOGETHER



This contribution by  
**Steve Jones**

To succeed digitally means being able to leverage information across disparate organizational units in a consistent way. In this federated world of information, the strength of the links between services determines how genuinely digital an organization is. Governing these core pieces of master data helps the business remain in control in a more distributed, loosely networked context. New tools and technologies can help keep this master data managed, but it's the business governance of information as a corporate asset that really creates the unified view of organizations that are working apart together.



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In 196 BC, King Ptolemy V made a decree at Memphis. At the time Ptolemy ruled a large empire that had multiple languages and spanned what is today many different countries in the north and south of the eastern Mediterranean. The decree was inscribed on a stone in three languages – Ancient Greek, Demotic and in Ancient Egyptian hieroglyphs. The discovery of this stone, now called the Rosetta Stone, in the 19<sup>th</sup> century eventually led to the understanding of hieroglyphics.

So how does this story relate to modern business? The answer is that it is the ability to translate between different languages – or, in the business context, different organizational definitions – that enables multiple parties to collaborate and be understood.

With information now coming from more and more sources, and with those sources increasingly being external to an organization, the need to create the Rosetta Stone for information moves from important to critical in determining the ability of an organization to successfully leverage value from information. This is not a technical exercise but one of business governance, and it is at the heart of information as a corporate asset.

Between data sets there are core pieces of information about which an organization wants to perform analytics. This could be to identify customers between internal systems and their activities on social media, to see how government open data around demographic information can inform a sales forecast, or seeing how procurement can better optimize purchasing by understanding which products can be substituted between suppliers.

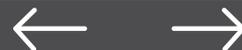
## The Pieces of Stability

These key pieces of information are the master data: customers, suppliers, products, locations, channels and more. They are the pieces of stability in a distributed or even fragmented information landscape around which the events, transactions and notifications flow. To understand the volume of information it's essential to have accuracy on these core pieces of data, a small percentage of the volume but the difference between having reliable and unreliable analytics.

This is not about having a complete, single-source-of-the-truth view of the information about, for instance, a customer and governing every attribute. Yes, Central IT may desire to drive single solutions around data – through Enterprise Data Warehouses and the single canonical form – but the business often has a culture of heterogeneity and likes local solutions for information (see also our [Business Data Lake vision](#)). This is simply about being able to uniquely identify a customer across all channels, even if they are far away from each other and not aligned in any other way.

## A Reliable View of the Real World

Master data therefore is about turning database records into a reliable view of the real world so when an individual walks into a bank you know all their accounts and all their interactions. It's about knowing that the two suppliers make products with the same specifications and tolerances that you require, so you can negotiate better prices. Master data management is about



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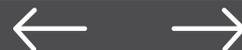
where it delivers value and where it enables business collaboration around information.

The job of technology is simply to industrialize and automate the processes that are established and help the business to deliver the islands of stability that make federated information work. *And when properly combined with Process on the Fly and cloud technologies*, it will bring organizations to the next level of agility as well.

When dealing between companies, there have always been contracts that lay out the terms and conditions of a relationship. Master data does the same for an organization in its dealings both internally and with partners. It is the contract that enables the collaboration to be done in a secure and reliable manner. No group of companies would embark on a major joint investment project without doing the legal and financial due diligence. As information becomes ever more the foundation of value in such relationships, it is essential that organizations – federated and only loosely aligned as they often are – make the same investment in rigor around information.



It's the business governance of information as a corporate asset that really creates the unified view of organizations that are working apart together."





# TechnoVision 2014

## Process on the Fly

The **Process on the Fly** cluster (together with **Thriving on Data**) provides the technologies that support the new user experiences – individual and social – and in turn feed the enterprise applications with outside knowledge.

The internal workings of an organization traditionally obeyed to well-defined, extremely stable processes. It used to be a life-changing event – nothing short of a real transformation – when these processes had to be substantially modified.

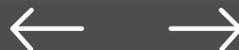
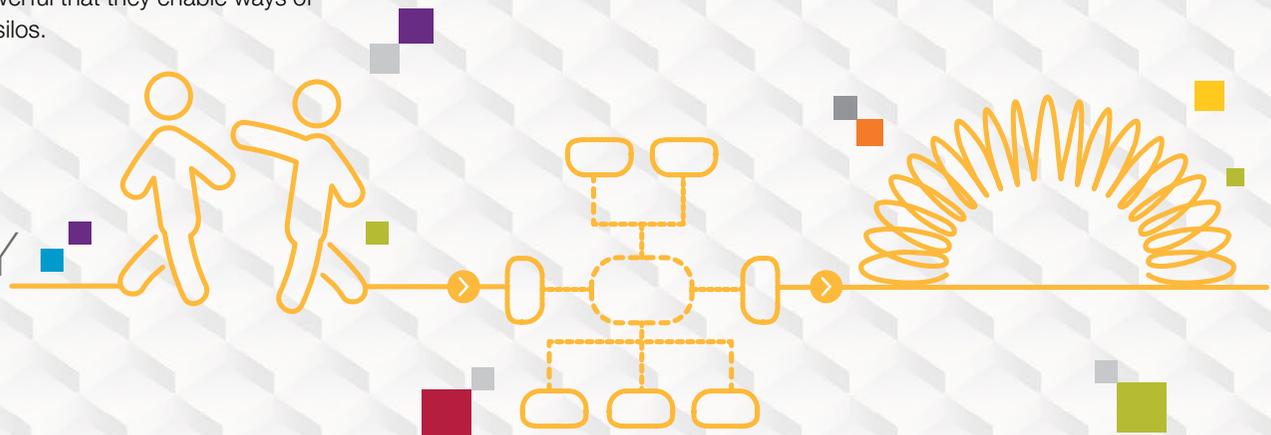
Nowadays, few things are carved in stone, and processes are certainly not among them. For the organization to entertain permanent, close relationships with its customers, and more generally with the inside and outside world, fixed ways of working will not suffice anymore. Agility and responsiveness are key attributes of the Digital Enterprise.

This is where advances in business process and business rules management technologies come in. These have evolved from being able to execute meticulously described, sequential workflows to supporting all sorts of adapted and adaptive process flavors: from document-based to role-based, from ad-hoc collaborative to “no process” at all.

Too few know it, but process technologies are now so versatile and powerful that they enable ways of doing business that yesterday were deemed impossible – even across silos.

- › Shades of Process
- › Process is the New App
- › No Process
- › String of Silos
- › Co-Process

# PROCESS ON THE FLY





## Watch Capgemini's Lee Beardmore:

"Process on the Fly allows us to work more effectively and collaboratively to improve and streamline the processes through the use of technology."

# TechnoVision 2014

## Process on the Fly



# Process on the Fly

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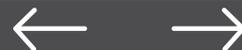
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## SHADES OF PROCESS



This contribution by  
**Ard Jan Vethman**

There are many ways to define, run and manage processes. The state of the art in Business Process Management tooling makes it possible to improve processes in many different ways. Forget carving these process definitions in stone. Nowadays, depending on the specific improvement needs, BPM can provide various flavors of agility, ranging from classic, pre-defined, workflow-style process integration via document-based interaction to dynamic, rules- and policy-based process choreography. It makes process the powerful twin sister of data.



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What if we were to look at the processes within our organization the way we look at Google Maps? Could we identify the different “shades of process” immediately?

We all know the benefits of a good navigation system, using up-to-date roadmaps and real-time traffic information (including your own position on that map). The way we travel by car today is so much more advanced than the state of transport was, say, two centuries ago. But how well do you know the traffic that goes on in your own organization?

Just think what it would mean to have the “sat nav” level of insight in your business processes as well.

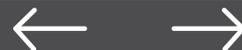
Let’s stay with our analogies for now and have another look at our [Trains and Scooters Design for Digital building block](#). It differentiates the applications landscape in terms of agility and associated applications lifecycles. The train applications are the most stable and predictable, followed by bus, car and finally scooter applications. But who is planning and optimizing this complex “transportation network”? And how do you design a network with a mix of different lifecycle modes?

## Building a Process Network

It immediately becomes clear that the analogy also works well for our shades of process. A train network and schedule is based on standardized routes where the time between stations is known down to the minute. The processes served by the train applications are therefore more straight-through processes with few exceptions. Nevertheless, many people still prefer to take a car and have the freedom to stop where they want, or take a diversion if they choose.

The bus network obviously has many more stops and potential delays and detours, requiring a different kind of optimization, and cars use even more routes (and carry individual passengers) at different speeds. As mentioned above, this mode of transport has been impacted the most by our ability to use real-time maps and traffic information to optimize our route planning. And scooters may take shortcuts that were not foreseen in the street design (the so-called “elephant paths”).

The analogy between a transportation network and the “data super highway” becomes even more relevant when we consider that many of the current data packages used to be physical documents transported between trading partners (like letters and officially sealed documents), and that many of the current products are becoming more digital (like music and movies, but also due to the 3D printing revolution). So it is realistic to expect that one day you may see your processes just as clearly as if you were looking at Google Maps (including the associated mash-ups to project data onto these maps).



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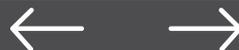
## Improve Your Processes, Over and Over Again

This is where **Process Mining** comes in: a set of algorithms that analyzes process event data and constructs the network of possible routes and traffic densities on these routes from the event data. This way, you discover how data actually travels through the processes within your organization (rather than how you thought you designed it). And one of the typical discoveries is that there are many more scooters moving around than you expected, some using smart short cuts, but others using not-so-smart, risky non-compliant short cuts. Once you know this, you can either try to get people back on the bus, or you can try to provide better optimization information to individual drivers so they can safely get to their destination in the shortest time possible.

So start building your process network more interactively using process mining and discover all the different shades of process and the associated optimal applications lifecycles within your organization. Then use this information – and the right portfolio of BPM and business rules management tools – to improve your processes, over and over again.



Nowadays, BPM can provide various flavors of agility. It makes process the powerful twin sister of data.”



# Process on the Fly

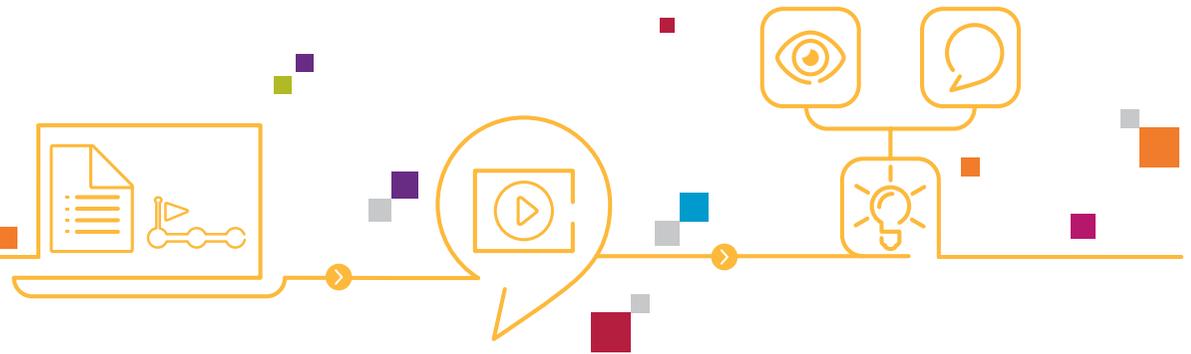
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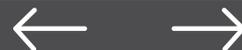
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PROCESS IS THE  
**NEW** APP



This contribution by  
**Léon Smiers**

The next generation of Business Process Management and business rules management tools is so powerful that it actually can be seen as the successor to custom-built applications. Being able to define detailed process flows and decision trees helps on both the business and IT side to create powerful, differentiating solutions that would have required extensive custom coding in the past. Now much of the definition can be done on the fly, using visual models and (semi) natural language in the nearest proximity to the business.



# Process on the Fly

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Over the years, ERP systems have been customized to enter organization-specific functionality into the ERP application. This leads to better support for the business, but at the same time involves higher costs for maintenance, high dependency on the personnel involved in this customization, long timelines to deliver change to the system and increased risk involved in upgrading the ERP system. However, the best of both worlds can be created by bringing back the functionality to out-of-the-box usage of the ERP system and at the same time introducing change and flexibility by means of externalized “process apps” in direct connection with the ERP system.

The ERP system (or legacy bespoke system, for that matter) is used as originally intended and designed, resulting in more predictable behavior of the system. The process app externalizes the needed functionality into a highly customizable application outside the ERP for which it is supported by rules engines and task inboxes and can be delivered to different channels.

The reasons for needing process apps may include the following: The ERP system just doesn't deliver this functionality in a specific industry; the volatility of changing certain functionality is high; or an umbrella type of functionality across (ERP) silos is needed.

## Bringing It All Together

An example of bringing all this together is around the hiring process for a new employee at a university. Oracle PeopleSoft HCM could be used as the HR system to store all employee details. In the hiring process, an authorization scheme is involved for getting the approval to create a contract for the employee-to-be. In the university world, this authorization scheme is complex and involves faculties/colleges (with different organizational structures) and cross-faculty organizational structures.

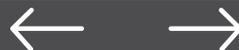
Including such an authorization scheme into PeopleSoft would require a lot of customization. By adding a handle inside PeopleSoft towards an externalized authorization process app, the execution of the authorization of the employee is done outside the ERP: in a tool that is aimed to deliver approval schemes via a worklist type of application.

The process app here works as an add-on to the PeopleSoft system, but can also be extended to support the full lifecycle of the end-to-end hiring process with the possibility to involve multiple applications. The actual core functionality is kept in the supporting ERP systems, while at the same time the process app acts as an umbrella function.

## Gaining Flexibility Outside the ERP System

How to get there? Bringing the flexibility outside an ERP into a process app can be brought into the landscape from two extremes:

- First of all the most basic one: At some point in time a technical upgrade is needed for the ERP, the product version is out of support or the version is not working on a higher version of the operating system. Technical upgrades are a good time to understand and reiterate the need for excess customization in the ERP systems. Aim for a **plain vanilla upgrade** and investigate the potential for flexibility outside the ERP system, which can be implemented via process apps.
- The second reason aligns with the **String of Silos** concept of TechnoVision 2014: An “umbrella function” may be needed across silos, and process apps can contain the process logic, rules and information that are essential to deliver the business outcome, supported by the functionality contained in the ERP systems underneath.



# Process on the Fly

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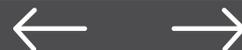
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Shades of Process • Process is the New App • **No Process** • String of Silos • Co-Process



This contribution by  
**Roeland Loggen**

Building on the next generation of Business Process Management, business rules, event processing and case management platforms, new flavors of process can be modeled, executed, monitored and managed. Guided by context-sensitive and analytics-driven support, many fixed, inflexible processes can be replaced by concurrently executed activities that optimize the time of human resources and their knowledge by having them “swarm” around cases and results that need to be produced, never following a predefined path. So in the end, the ultimate process might be no process at all.



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For quite some time, process models, procedures and process-based work instructions have been used to attempt to influence the behavior of employees, in the hope that this creates efficient, customer-friendly and compliant processes. And, as part of IT innovations, Business Process Management technology has been used to create process-aware systems, in the form of workflow systems, that coordinate the execution of processes using these process models.

Although these process models have their power, they have two serious problems:

**First problem: As an instrument for influencing behavior, process models are not very motivating.** Quite the opposite. Most people prefer to leave process models in dusty binders as long as possible. And if they use them, often hesitantly to try to find how to deal with a situation, they frequently get lost (as these models are often incomplete, sometimes quite abstract, and not organized towards the contextual, situation-specific approach).

**Second problem: Process models are rigid.** When a customer request is delivered following the process model, the model is usually deaf and blind for unexpected events, new insights and needs for other activities or paths. Thankfully, most of the time, employees are smart enough to work around the process when needed, but unfortunately we all encounter employees who are not.

## Putting Limits on Freedom

You might compare the use of these process models to driving towards a certain location using a prescribed route that you brought along on paper. You enter a large traffic jam, but don't know an alternative. You pass a beautiful forest, but don't want to leave the route as you are scared to get lost. You realize you want to buy some food on the way, but again are afraid to detour. The process model limits your freedom. And then the inevitable happens: An exit has been blocked due to roadwork. The paper process model is suddenly useless.

Of course, one can attempt to create an all-encompassing model, with all possible events, rules, activities and routes. But this path won't work. First, the process model will explode in complexity. Second, some situations simply cannot be fully prepared at design time. Think of a complex diagnosis and treatment in a hospital – the possible symptoms, causes, treatment interventions and patient reaction to treatment. You can't know everything upfront; the process path will emerge, patient by patient.

In modern car driving, the technology (not perfect, but quickly maturing) to better deal with these process model aspects is, of course, the navigation system. Modern navigation systems offer the strength of a process model (direction: What's the next move to get from A to B?) without the limitations:

- **Context driven:** The system knows where you are, and gives you only the relevant information.



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- **Responsive:** The system offer insights (traffic jams, road blocks) and suggests other routes.
- **Goal driven but flexible:** The system doesn't impose the route – if a driver decides to take another direction, it simply adapts and determines a new route to B.
- **Supports compliance:** The system is capable of advising against certain actions (for instance, driving wrongly into a one-way street), using signals and smart routing suggestions.

Does the driver feel he or she is part of a process? No, not really. That's why we call the trend that we see in these solutions "No Process."

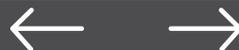
## Just Enough Process

These no-process solutions are proving their value in business as well. In a business context, they can be seen as flexible case management systems that have swarms of possible activities floating around customer cases. Based on technology for rules and events, for a specific customer case, the system can suggest possible "next best actions." This supports the employees to handle (navigate) the situations they encounter. In a way these solutions offer "just enough process," helping employees to pick the best (goal-driven) activity, but allowing the employee to choose another activity or path to deliver the best value.

No process: The perfect solution for today's knowledge worker times. Have a nice trip to your destination – happy customers and engaged employees!



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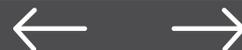
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This contribution by  
**Simon James Gratton**

An end-to-end perspective across departments, applications and even companies is within reach. Business Process Management provides the options to break down the barriers between business and IT silos without the need to reconstruct the silos themselves. After all: Silos are good, if you use them for the right purposes. A flexible, BPM-based layer on top of packaged solutions or homegrown applications quickly brings true business agility and better insights, but without disturbing the stable assets that are captured in the underlying core systems.



# Process on the Fly



## Don't Fly too Low or Solo Through a Silo!

Business processes are literally devastated when multiple applications are tightly coupled to multiple applications via each low-level application-specific API and data model. It drives unnecessary complexity into your organization's integration layer resulting in unnecessary duplication of effort across teams.

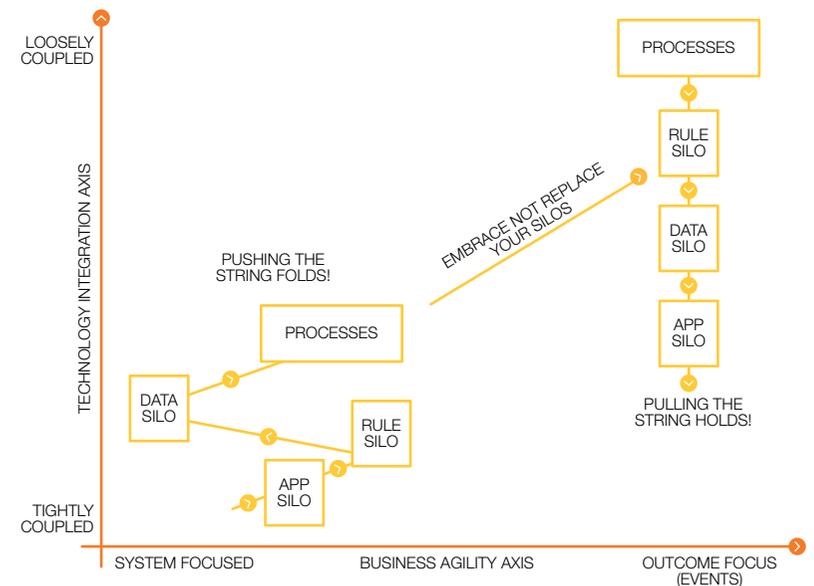
## Who's Afraid of the Big Bad Silo? The CIO Apparently

Silos are not always bad as they provide a level of secure distributed processing akin to "logic firewalls." Despite this benefit (perhaps due to a history of ERP consolidation), the modern CIO still suffers from OIS (Obsessive Integration Syndrome), which is further compounded by the illusion that centralization is more cost effective than the new cloud-enabled distributed processing model.

This ailment is serious and requires treatment that comes in the form of a concoction of BPM, MDM and SOA psychology that should be administered liberally to all disillusioned areas of your IT function.

## Treating the Ailing CIO With "String Theory"

So, relax as we are not delving into advanced physics here (although solving this issue may warp your own personal space-time continuum). Rather, it's an approach where application-driven integration is replaced by process-driven outcomes against a "string quartet" of processes, rules, data and application silos (see accompanying diagram).



In short, if we attempt to push process re-engineering efforts from the application layer, the rules and related data foundations are too specific to the underlying systems (APIs); hence our corresponding logic is unlikely to be reusable.

Our string folds under this pressure as we need to expend enormous effort on low-level integration, which in turn means that our new processes not only lack the intended business agility but, in a bitter twist of irony, actually make the situation worse.



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## Like a Puppet on a String – Leverage Your Silos

In the infamous words of the Sandie Shaw '60s hit song, and for 55% of respondents in our [Global Business Process Management report](#), it seems that the lack of “collaboration culture” (with technology at a tipping point) is the main barrier to success. We therefore need to accept and align our efforts across our organizational barriers like the proverbial puppets on a string.

If we start from a common business outcome, then pull only the required processes, rules and information from an interlinked event perspective, we are more likely to align lines of business and existing disconnected projects to our “embrace not replace” cause.

We ensure the string holds as we have built our process and rules in the context of the business outcome and, although we may still have underlying application silos, we are both leveraging these assets and gradually increasing business agility over time.

## Ensuring Your Future BPM Investment is not Money for Old Rope

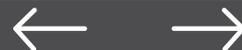
So, how do we save our CIO from further suffering in his quest for process transformation?

**Focus on common business pain and scope tightly.** Prioritize an issue that impacts multiple core processes and spans political boundaries. Get a C-level sponsor (the CEO works!) to align key stakeholders towards a shared-benefit model unlocking departmental budgets, reducing duplicitous project effort and, finally, smoothing unnecessary resistance to the change being implemented.

**Institutionalize an outcome-orientated approach.** Ensure that the scope of your project is constrained to just the processes, rules and information that are essential to deliver the business outcome. At each process iteration (or “shade”), ensure you monitor your progression accurately without deviation.

**Simplify and standardize but do not integrate unnecessarily.** Ensure that you embrace concepts such as [Process is the New App](#) and [Data Apart Together](#) to wrap your applications silos within an insulated agility layer of standard data, services and rules that are event-centric rather than system-centric in nature.

Finally, don't forget that when it comes to effective use of silos in your BPM program, “*You can pull a string and it holds, but if you push it, it folds!*”



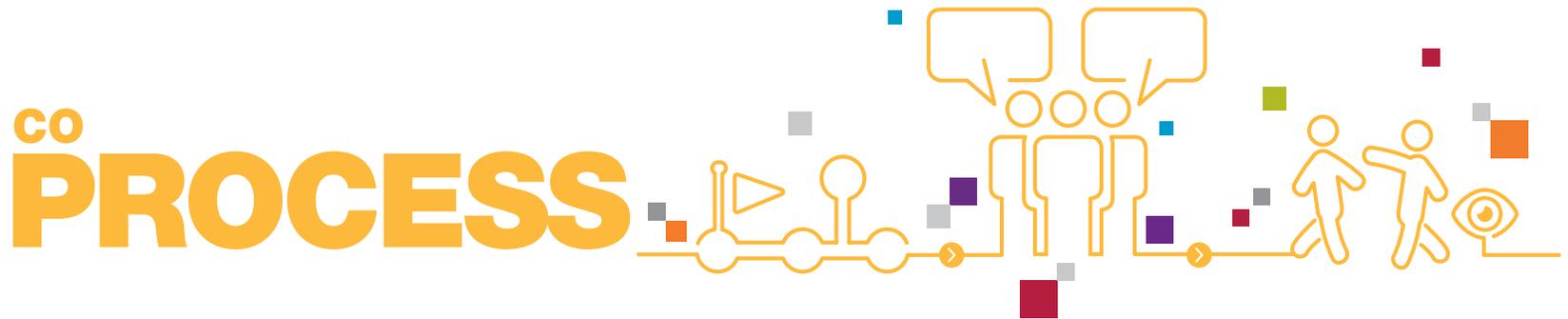
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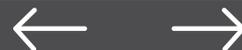
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This contribution by  
**Fernand Khouzakoun**

Business Process Management tools originated from platforms that focused on fixed, predefined workflows. But nowadays, the newest BPM platforms include all types of social networking and process improvement support via different channels. This way, even the early development but also deployment and continual calibration of processes can be done more collaboratively. Processes will “listen” to social networks, and you might even become “friends” with a process to follow the performance and progress of a process online and in real time.



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An organization's processes have traditionally been seen as a secret sauce in its success and hence treated as closely guarded assets. This lack of transparency has been compounded by having **multiple overlapping silos** within many organizations, each governing their own set of processes. This has inhibited the flow of information within enterprises, leading to the rise of information and process autocracy.

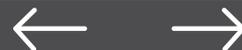
In our view, this absence of process collaboration will be increasingly seen as harmful for business in a highly connected world. Organizations are being forced by market dynamics and consumer expectations to not only adopt but embrace information and process democratization. In this new scenario, customers, partners and suppliers expect to have real-time access to relevant and meaningful process information during their business interactions.

## Collaboration at the Heart

Leading BPM platforms have stayed abreast of this paradigm shift, and introduced capabilities that accelerate this thrust to a much more collaborative environment. The likes of Pega, IBM (**Blueworks Live**) and Software AG's **ARISAlign** have embedded these collaboration capabilities at the heart of their platforms, right from modeling a process to executing and optimizing it. So today internal and external stakeholders can participate across the entire spectrum of Business Process Management to deliver a truly collaborative process, capturing crucial process knowledge while doing so.

These platforms also facilitate certain aspects of the process to be shared with a wider audience, allowing for ongoing feedback and improvement. One way this is being done is by "listening" to social networks to understand consumer sentiment and linking it to the organization's processes. It is now even possible to become "friends" with a process and follow its performance online and in real time.

Business Process Management thus becomes a living, participative and rewarding activity. It's actually fun to be involved in processes that turn into co-processes.





# TechnoVision 2014

## You Experience

The **You Experience** cluster (together with **We Collaborate**) groups the technologies that are visible to the user, individually and collectively.

Arguably, spectacular advances in the user experience of technology are most responsible for the increased popularity of IT, to us as consumers, and then also in our business roles. We are able to create our own, individualized experience, in which we wrap ourselves into the information and apps we want and need, presented to us in the way – and through the mix of devices – that we like.

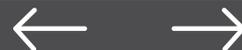
Compelling user experiences – for the customer, for the employee, for the partner – are musts for the competitiveness of the Digital Enterprise. To create and sustain them, the enterprise has to create the platforms that make it easy for users to turn producers.

To be compelling, the mobile user experience should not just be a trimmed-down version of what used to be available at the office: Work and activities need redefining in the mobile perspective.

In all cases, the divide between personal and work life is blurring, and it's up to the organization to facilitate the right mix between enterprise-level security and manageability and an unrestrained, exciting You Experience.

## YOU EXPERIENCE

- › Object of Desire
- › Zen of the Task
- › Sweat the Assets
- › Get a Life
- › End User, End Producer

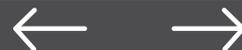




## Watch Capgemini's John Morada:

"In the You Experience, we look at the five building blocks that make up a highly customized all-channel user experience."

# TechnoVision 2014 You Experience



# You Experience

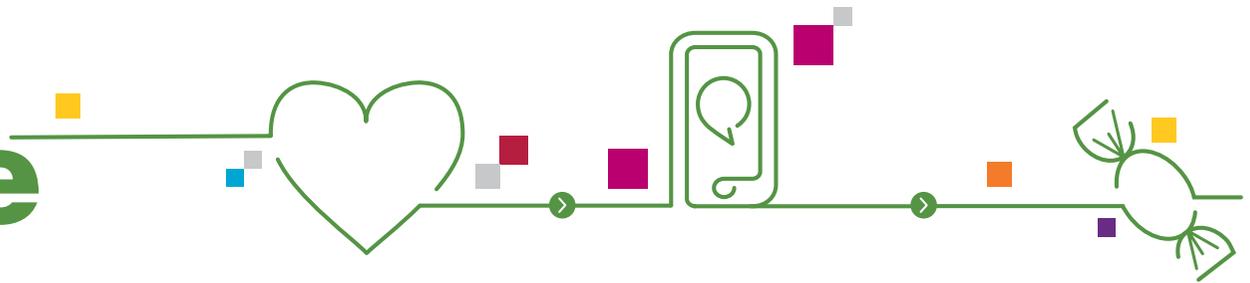
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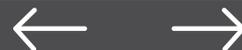
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## OBJECT OF Desire



This contribution by  
**Andreas Sjöström**

We are spoiled, “consumerized” users of technology. We expect compelling, aesthetic user experiences as a default and we want to use our own, favorite devices. If that expectation is not met, we disconnect; in our role as consumers, but also as enterprise workers. How can business address this? Create desirable apps that facilitate specific tasks and contexts and hide what’s underneath. Apply design thinking, gamification and responsive design so that the apps morph into the overall experience of clients and enterprise users. Turn your mobile app store into a candy store and enable any device.





On top of most corporate digital agendas today is digital convergence. Engaging and inspiring user experiences across all channels give products and services unprecedented reach.

Most of us have adopted smartphones, some nearly literally, and rely on a multitude of apps for both business and pleasure. For all practical purposes, the smartphone has become a remote control of life enabling us to manage everything from relationships to financial transactions. The combination of superbly designed phones and visually stunning apps reaches to the level of being a fashion statement, a statement of character and identity.

They have become objects of desire.

## Functionality is Not Enough

User experience and user interface design can be summed up in one word: beauty. Unless the apps or response sites are gorgeously designed, risks are that users will find alternatives. Functionality alone is not enough anymore. This means that IT now has to deal with engagement requirements being business critical.

Besides design aspects, mobile teaches us the true value of ubiquitous access to information and it enchants us with new and unexpected context-driven value. (A great example of an app that engages the user with context-driven value using location, the phone's camera and open data is [FlightRadar24](#)).

In many sectors, mobile has become the new normal (most usage is driven from mobile devices), for example, in the banking and travel sectors. The design trend in these sectors is clear: New-generation solutions are designed for mobile first and with a strong design ambition.

Engagement can also be accelerated using different types of relevant gamification. For example, use top lists of opted-in users based on activity, create levels of achievements, and award the highest achievers with perks and offers. ([FourSquare](#) is an example of a gamification-driven community for location check-in; you may also want to check out [Badgeville](#) for its multi-channel "behavior platform," which aims to engage both customers and employees).

## Design Best Practices

Most successful innovative and stunningly designed solutions were the result of agile design-driven development. We have found the following best practices critical:

- Define and maintain scope and requirements using sketches and mockups.
- Use personas and scenario maps to identify relevant contextual value.
- Design style sheets and mood boards used across all digital channels.
- Collect feedback from users in target groups using prototypes.

To ensure that your solutions become objects of desire, we recommend embracing four cornerstones: inspire the user, enchant with context-driven value, enable personalization and include some level of innovation.

Regardless of what solution you take on next, if it's a mobile app, a responsive website, a Google Glass app or a Leap Motion controlled innovation, following these best practices maximizes the chances of being taken to your user's heart, as an object of desire.

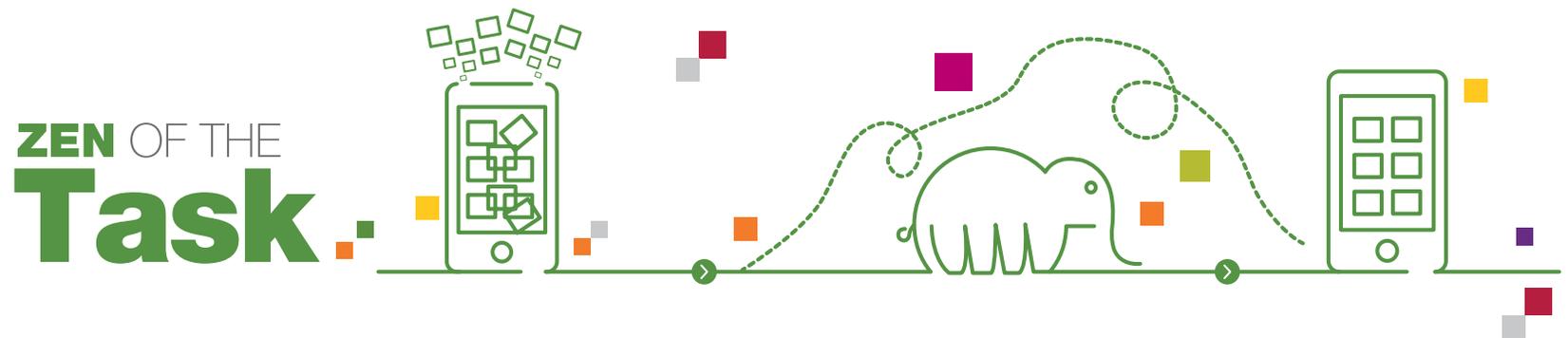


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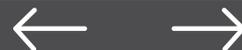


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This contribution by  
**Frank Wammes**

Don't create confusion by building your traditional GUI and fixed workflow approach into your mobile app. It's no longer about the process, it's about the task at hand. Make it easy for your customers and employees to handle single, focused tasks, supported by the features on their devices. Don't over-engineer the app and don't try to put too much functionality in it. Rather, create a new app to serve a specific need. Follow the "Elephant Route," the shortest, most effective route. Keep it simple, it's the task that matters: There is *no process*.



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This weekend, I had a deep discussion with my son about priorities in life, organizing work and, most importantly, the art of self-discipline. He was proud to have a good “work-life balance,” spending two hours on homework and three hours on TV and gaming daily. He claimed to have a great way of organizing his work, being able to memorize everything on the spot, and perfectly capable of putting – and keeping – himself to work.

His school results were nevertheless declining and our joint analysis showed that in actuality he only managed 1.5 hours of effective homework every day. Although he spent more time at the table with his homework, this was not leading to effective study. It turned out that the greatest issue he had was concentrating on the task at hand, as well as setting a clear task for himself. And even if he knew what he wanted to achieve, he had difficulty keeping himself focused. This was particularly due to the books he needed to study, which were full of side topics, pictures and other distractions.

Although age is clearly a dominant factor in the story of my son (it will go away eventually, right?), I am convinced that we face similar issues in the business context.

## Driven to Distraction

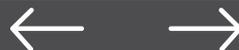
We try to achieve our objectives every day, but we often find ourselves distracted or confused by all the information and events that keep coming in by mobile and other channels. There are many things we could be doing at the same time and often information technology tempts us with many options and potential actions to choose from.

This is the reason why the world of personal productivity (think [Bullet Journal](#) and [Getting Things Done](#)) thrives as never before, as we are desperately looking for better ways to achieve our goals. Most of these methodologies focus on bringing everything that needs to be done down to clear and simple tasks – tasks that can easily be defined and lead to specific, tangible results typically within a short, pragmatic time box.

This also relates to creating a highly individualized, focused “You Experience.”

There are many experiences to be supported – from desktop to mobile – and with more alternative channels popping up, organizations tend to overflow them all with the same information, options and actions to be taken. This leads to ineffective behavior both by customers and employees, who might easily be frustrated by the complexity of an application or seduced to take side steps, continuing to circle around the task at hand without actually finishing it.

If you want your customers to engage, to interact, to buy, and if you want your employees to be productive and results oriented, you need to supply them with simple apps that focus on the task and nothing but the task. This requires a fresh look at your processes, as mobile channels are not just another way of getting access to the same information and applications that are available through laptops and desktops at home or the office. Yes, mobile channels often break the dependency on location and time. But they also give way to potentially many concurrent, competing streams of information and events, all screaming for attention.



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## Break the Process

So break the process: Provide your customers and employees with piecemeal apps that help them to achieve a very specific objective. Supply them with all the contextual information they need beforehand, so they don't have to search for it.

Think mobile first and design the process, if any, from there, rather than simply providing your existing, complex processes with a mobile front end.

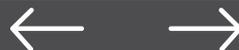
It's also crucial to differentiate between providing information and facilitating a task. They can involve quite different channels. You might, for example,

capture your run performance with the [Runkeeper](#) app and share the analytics and discuss them with your friends through more complex web applications. Some of the most successful mobile apps take this approach (notably [Snapchat](#), the people who heroically turned down a \$3 billion offer from Facebook).

Keep your apps simple and basic. Empty your processes. Find options, actions and information you can get rid of. Have a Zen state of mind about it. It's all about the task.



Focus on bringing everything that needs to be done down to clear and simple tasks – tasks that can easily be defined and lead to specific, tangible results.”



# You Experience

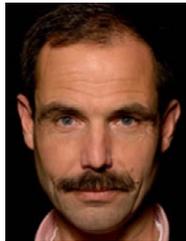
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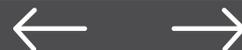
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## SWEAT THE Assets



This contribution by  
**Bernard Helders**

It's not the fact that you can push information that makes mobility one of the great change drivers in information technology; it's the assets within the device that enable new approaches. Using location knowledge, direction, movement, sight and sound – combined with context awareness – provides huge potential to create compelling customer and employee experiences. So apply device assets to the full extent to maximize your impact on whomever you want to reach.



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We haven't seen the beginning of mobility yet. Smartphones, watches and wristbands, sensors, glasses or foldable displays, the proliferation is there and unstoppable. High time for a mobile-first strategy.

Being there with the right content and messaging for your employees, customers and partners is paramount. A new generation increasingly lives in an "alone but still together" space and is likely to stay there as they get older. Their window on the world is defined by an online, social and mobile binocular. So we better make sure we get in their picture.

## Get In the Picture

How? Consider the following:

**You need to be found.** Mobile apps, store locators, digital displays with QR codes that lead to your company's messages or, increasingly, games, are all new ways to get attention.

**Or you need to find them.** Mobile devices have geo location and if applied with caution and consent, consumers are open for personalized offers in the right context. [iBeacon](#) and comparable [indoor location](#) technologies are recent additions to delivering tailored, location-aware messages (see for example how [Macy's is piloting it](#)).

**Think customer journeys.** Customers want to interact when, how and where they like it, 24/7/365. Interactions need to be relevant, tailored and personal. All channels need to work consistently together to provide a seamless experience, with the ability to interrupt and resume the journey. Hassle free.

**Influence at the moments of truth.** The moments of decision are crucial in your interaction with customers. Many potential customers will never be seen again, simply because they don't like your app, website or storefront. There are many ways to improve the dialogue. Location and context awareness are among the potential tools. Augmented reality is another. Small in-device or storefront cameras can estimate age, gender or mood, thus providing a better way to start the dialogue in a more relevant manner. Provide sharable content and the community will do the communication for you.

**Convergence of physical and digital.** It's about a consistent experience across all channels. Face-to-face contact in a bank or shopping at a physical store has the advantage of working all the senses. Product quality, for instance, does not always translate online. However, the physical environment lacks some of the characteristics of online that we have learned to appreciate, like immediate answers to questions on product range and availability. It's literally about all channels to create a brand experience in the connected world.

## Mind the App Gap

So summarizing: Mind the (app) gap between the customer and your organization! Use whatever device assets are available to augment the customer or employee experience and to remove any barriers towards interaction with you. And most importantly: Don't limit your imagination. After all, the next connected device might be right [on top of your nose](#).



# You Experience

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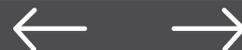
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Object of Desire • Zen of the Task • Sweat the Assets • **Get a Life** • End User, End Producer



This contribution by  
**Fernando Alvarez**

Consumerization has made us extremely sensitive to exciting, desirable user experiences, more and more on the devices of our own choice as the divide between our personal and work lives keeps blurring. Mobile Device Management helps us stay in control and keep such a heterogeneous platform secure. Furthermore, the latest mobile operating systems have strong support for mixing private and business roles and also bring the next level of user experience. It's all a matter of finding a healthy balance between our perspectives as a consumer and business professional.



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The explosion of smartphones and tablets has resulted in the trend for consumers to bring their own devices into the workplace, which is becoming an accepted business practice. In turn, the need to manage and secure those devices has given rise to some sophisticated Mobile Device Management (MDM) tools and security applications. Cloud-based, scalable and affordable MDM solutions are now widely available.

But if enterprises are to maintain a truly secure and carefully managed environment, while also providing their employees with a dynamic and exciting consumer experience, there is a strong case for Bring Your Own Device to be transformed into Bring Your Office Device – providing company-issued devices that can be used at work and away from the office for consumer applications.

## Creating a New Work-Life Balance

Operating systems such as Windows Phone 8 and Windows 8.1 can provide a rich consumer experience as well as powerful and secure business functions, helping organizations and their employees to create a new work-life balance. Employees are more likely to adhere to company policies, for example, if they are able to switch identities easily between business and consumer roles, something Windows provides.

There are some key practical reasons for companies to issue devices to employees, starting with security. By owning and managing devices, companies can be certain they are able to lock them and wipe sensitive data remotely in the event of theft or a security breach. As a result, enterprises are more likely to provide employees with access to critical data and applications through a company-owned and company-managed

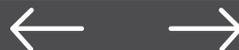
device – often leading to greater productivity. Company-issued handsets can also help to manage and encourage the use of branded enterprise apps and content.

Whether businesses restrict mobile device usage to company-issued products or encourage a Bring Your Own Device strategy, consideration must be given to the apps themselves and how they are secured, managed and deployed. Apps and data must be secure across all devices. Mobile Application Management (MAM) complements device security by wrapping apps and data individually at the application level. Encryption and other security controls offer data protection and access control while still giving users the mobile experience they want.

Enterprises need a coherent, end-to-end policy strategy and a flexible content-management system to manage corporate and consumer apps running across different operating systems. And they need to put in place data loss protection controls that restrict the forwarding or accessing of sensitive data.

It's time to assess the benefits of adopting a Bring Your Office Device approach. Enterprises could take greater control and use the full capabilities of a more business-oriented mobile OS, issuing a company-standard device that is easier to manage and secure and, by switching to a different identity, also satisfies consumer needs away from the workplace.

In the end, however, no matter what approach you choose – Bring Your Own Device or Bring Your Office Device – it is essential to understand the dynamics of our rapidly entwining business and work lives and incorporate that into a proper mobility strategy.



# You Experience

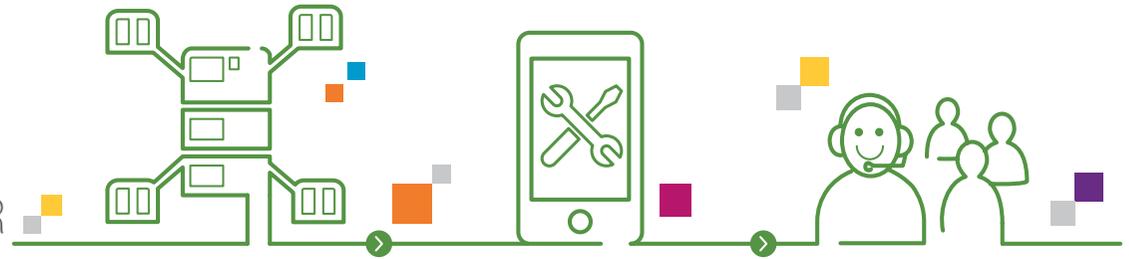
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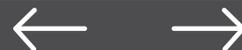
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END USER  
**End** PRODUCER



This contribution by  
**Arthur van den Boom**

Centrally gathering all requirements, compiling them into a list of mobile initiatives and then building the apps – one by one – does no justice to the development potential of the crowd, nor does it provide a short time-to-market. Focus on building a “hub” platform instead: a catalog of enterprise-level services and APIs to catapult new apps, built by yourself and others, both inside and outside the company, by individuals, business units or external partners. Then focus on mobilizing, enabling and supporting your end producers; they will create the greatest mobile apps in return.



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Apologies for starting with an almost classic statement by now: Apps are here to stay. But I would like to argue that there is a completely different way to leverage the **app effect**. This involves not investing in apps anymore, but to do something that a growing number of organizations are successfully picking up: think “Platform First.”

Many organizations have spent a lot of money and effort building apps to engage with their customers and employees, but they feel continually haunted by the need for new versions, new apps and even support for new devices. It's a **Car and Scooter world** in which it can be difficult to prioritize; it's a tough job to get the right requirements from the business side anyway – volatile as they are – and budgets are limited.

The result? Impatience and dissatisfaction, on the business side and for the customer base and workforce. In some organizations, business units may choose to develop their own rogue apps out of frustration, with all the potential risks around security, integration and manageability.

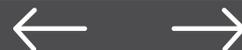
## Connecting Two Worlds

Providing a mobile platform (or hub) that connects the two worlds can mitigate these risks while also unleashing the power of a community far outside the perimeter of Central IT.

There is technology that can improve the interaction between the highly consumerized outside world and the corporate systems of record (the latter typically the bastion of Central IT). This technology includes Application Programming Interfaces, or APIs, giving access to crucial data and services within the corporate systems but also to capabilities that help to quickly build powerful, safe and consistent mobile apps.

Using APIs, an organization can build its own mobile engagement platforms, reaching out to its own business units, all the way to consumers, business partners and even competitors. It's not just a great way to more quickly create better mobile applications; it may also unleash unexpected sales channels and alternative ways of doing work, even pointing to entirely new business models.

With that, building a mobile/API platform involves much more than just selecting technology and building the right services. Organizations need to think about how and to whom they will make their catalog available, what the terms and conditions should be, and if there should be any form of subscription model. And, most importantly, they should find ways to reach out to the potential community of creative developers – inside and outside the organization – and inspire them to start working on new apps. Then, it's a matter of staying engaged in order to find the most valuable additions to the platform and keep the flow of apps coming.





## Join the API Party

Lately, we see many vendors joining the API party (also in the context of the Internet of Things, by the way, where APIs are just as crucial for success). They focus on capabilities to quickly build new APIs that are secure, easy to use and manageable. A few players you may want to be aware of include: [WSO2](#), [Apigee](#), IBM's Cast Iron and Intel's [Mashery](#). These vendors support established telco companies, retailers and even financials that all successfully leverage APIs for their business.

A striking example can be found at online retailer [bol.com](#) ([find their APIs here](#)). Bol has been actively working on positioning its APIs to the outside world, rather than focusing on building its own mobile apps. The result is a whole series of apps, all incorporating access to the bol.com platform. There is an enthusiastic developer community, actively supported by the organization. Contests are held and – maybe even better – commissions are earned when an app is being used by customers to buy.

As another example, [salesforce.com](#) hosted a [hackathon](#) to inspire entrepreneurs, developers and designers to build the next-generation mobile apps (and maybe even business models) on top of its platform; substantial prizes were awarded.

Your user may also turn out to be your favorite producer. Or to put it differently: Your most successful salespeople might soon turn out to be developers coding with APIs.



Focus on mobilizing, enabling and supporting your end producers; they will create the greatest mobile apps in return.”



# TechnoVision 2014

## We Collaborate

The **We Collaborate** cluster (together with **You Experience**) groups the technologies that are visible to the user, collectively and individually.

No more need to evangelize the phenomenal potential of social: Even if the organization has not yet fully embraced it, its customers and employees have already, and practice it daily. Connecting to the network as individuals is attractive; but social power comes from engaging with others – even if they turn out to be “things” – communicating, sharing and creating.

The power of “we” so far has been mostly the power of the customer – either becoming pressure groups, or collaborating under the aegis of the enterprise to create with it and support each other.

Exploring the power of social within the organization – and, *a fortiori*, across organizations – is just starting. To make employees social workers, the Digital Enterprise has to invent new ways not just to put knowledge in motion, but also to unleash the required motivation.

Collaborative technologies are so powerful that social may well be the new oil, but the enterprise has to create the different engines it will power – while accounting for all sensitivities around data privacy and ownership. Yes, we want to collaborate. But on our terms.

- › Social is the New Oil
- › Profile as a Currency
- › Social Workers
- › No Work
- › Friend Your Vending Machine

# WE COLLABORATE



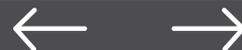


## Watch Capgemini's Rick Mans:

"We Collaborate is about using the crowd to do better – and different – business."

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## We Collaborate



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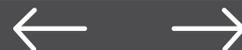
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This contribution by  
**Simon James Gratton**

Consumers not only share what they might think, but also what they actually do, further driven in the forthcoming years by the rise of the Internet of Things. It brings the unique opportunity to link intent with actions for those organizations that become essentially social and customer oriented. If it is possible to use social data to predict stock market sentiments multiple days upfront, why would organizations not use it to predict customer wants, needs and behavior and then proactively improve their products and services? Social could be the biggest corporate asset of them all.





## Call me an old romantic; it's about being corporately sentimental.

I am a sentimental soul (or so my wife tells me) and, as such, I care what people say in my personal life. The question is, should our organizations care just as much?

Brand sentiment and customer intent are potentially powerful weapons to win not only the battle of the boardroom but the ongoing war of consumer loyalty. If we can second guess the intent of an individual or, better still, a demographic and tailor our customer experience accordingly that would make a real difference, wouldn't it?

## The heart of tomorrow's boardroom needs to beat to the "tweet" of consumer intent.

With social sentiment now a key digital commodity, investment in tweets rather than seats (physical, channel-based interaction) should be a core focus for the boardroom; this requires a paradigm shift in board perception of the strategic value of social data.

We are moving towards a world of interconnected, always-on sensors and hand-held devices where our brand interactions are traded on a "digital commodity exchange" against consumers' future needs.

This exchange will deal in complex futures such as:

1. Our likelihood to buy product X over product Y at time Z
2. The most optimal "bundled" and discounted product strategies
3. Our best product and demographic focus to extend our customer base

4. The next best course of action with a currently interacting customer

Now is the time to construct "digital refineries," processing this "crude social oil" of sentiment-to-intent insight as the emerging commodity for an increasingly digitized society.

## Social oil refineries take customer experience from crude to shrewd.

We need to be able to handle large-scale consolidation and refinement of both marketing insight and consumer sentiment. Raw social data simply represents consumer noise and, as such, through advanced deployment of social media, predictive analytics, digital, mobile and Big Data technology, will need to be increasingly refined into common themes that resonate with your current product capabilities and the mainstream market movements.

## Would you like a short back and sidecuts, sir?

*Oil is distilled into fractions called sidecuts, which in their different forms are incorporated into the hundreds of potential product variants based on market need.*

We should avoid the common mistake of analyzing our social data at a level of minutiae; our focus should be to identify general trends, distill them, and then relate these sidecuts of insight to tangible metrics through which social sentiment can be linked to actual business performance. If our insights are not refined appropriately, it would be akin to putting diesel into your customer's petrol engine resulting in a failure to convert or, worse still, a customer loss.





## A happy collaboration generation leads to CFO bottom-line revelation!

There are many skeptics out there attempting to undermine the true value of social media when it comes to improving business performance. If your approach to refinement is scattershot in nature, the skeptics' reservations will be well founded.

The new generations are connected, computerized, community orientated and have grown up using social networks as a means to brainstorm and solve a wide variety of problems (my children are intravenously attached to Facebook from dawn to dusk; they could use a smartphone before they could write).

Your future customers will expect immediacy of response and it will therefore be to your organization's ultimate benefit if you can make their experience positive.

## So, how do I grease the wheels for social oil refinement in my organization?

- 1. Stop thinking of social networks as just another venue for marketing.** Focus on specific customer experience-led outcomes; start small and prepare a centralized store of clean and irrefutable customer data on which to measure your social media insights before you start your "refinery" processing.

## 2. Prepare for a challenge nearer to fracking than deep-sea oil drilling.

Do not think of social oil refinement as non-contentious. Although your early refinement activities may feel like an insulated offshore operation, once you start putting forward transformational adjustments to your customer experience based on this distilled insight, it will feel more like you are setting off incendiaries under your colleagues' desks.

Be prepared to challenge the status quo with a metrics-driven foundation that shows positive impact across at least two business quarters before you widely communicate recommendations, potential benefits and impacts.

## 3. Focus on immediacy of response through agility of approach.

A recent survey found that 71% of online customers expect to receive assistance within five minutes of reaching out to a company and 33% of these customers prefer contact through social media rather than the telephone. Furthermore, a good social media experience means that 70% are likely to recommend your company and 21% will increase their corresponding spend.

Ensure you view social activity as a core channel for your organizational journey to a truly responsive customer experience. More than ever, consumers turn to social media when they experience a problem and that means you will need to be able to understand, adapt and respond accordingly.

The question is, are you ready to move at the speed of the new consumer generation? 5, 4, 3, 2, 1 ... time's up!



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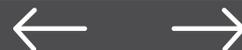
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## PROFILE AS A CURRENCY



This contribution by  
**Arjan Kramer**

If the product is free, then you are the product. And the more data you provide, the easier it is to market you. The “freemium” model is now supported by consumers providing their profile data. This data can then be used by organizations to target their consumers better or by selling it to other organizations. This raises the question about whom consumers trust when sharing their profile data and what is acceptable to them in terms of how that data is being used. To organizations, it is a matter of understanding whether to hold profile data themselves or get it from the best external source.



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The title of this post might fool you a bit, as it seems to be just another one in the “as a Service” category. Rest assured, it’s not. It is about you as a user and consumer of social media services and how much money you are really worth.

In the last couple of years, the **amount** of information people share through social media has increased dramatically. And not only the amount of data, but in a lot of cases also the “quality” of the data. Admittedly, some people still think the outside world is interested in what is going on inside their homes and what they are feeding the dog, but in general people share information about what they really care about.

The same goes for the information that people put in their online profile, accounts and avatar. It’s more accurate and usable to determine the true “values” of people – valuable data **once you can dig into it** and really make sense of relationships between different elements.

Of course, the best and by far the most widely applied approach is to search and scan social media for input about the organization’s products or services and react to that; let’s call this proactive customer service.

## Making Money the Social Way

What I want to describe, however, is a step beyond this: actually making money with your personal profile and with what you share, either as an organization or as an individual.

Let’s take a LinkedIn profile. There are several ways to benefit from a LinkedIn profile:

- 1. For an individual**, a good profile – one that really sets you apart from the others – can help you find a great new job, maybe even without doing anything on your part. Recruiters might automatically be attracted to your profile and ask you to apply for a job instead of the other way around.
- 2. For an organization**, if its employees have set up compelling, convincing external profiles – which show how skilled they are and how passionate they are about working for the company – they may create new business as the entire company is perceived as more knowledgeable, experienced and energetic. Furthermore, professionals in the market who are considering changing jobs may see these profiles and become better informed about the company and the people who work for it.

## The Product is You!

So profiles are valuable. Some companies rely solely on this fact. Did you ever wonder what Facebook is selling, what the products or services are it offers? Many will argue it’s the platform, but it’s actually something else. Facebook’s product is you: what you put in your profile, what you share with your friends, your friends’ friends and with the world. And in the slipstream of that, it makes money with placed ads. But the fact that you share your life is what makes advertisers **pay money** for Facebook.



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Think about how McDonald's or Starbucks builds local social communities around a particular store, city or region. They target individuals in these communities with specific, even local offers, based on what they share in the community. And what about special offers you get in your local supermarket based on, for instance, the fact that you tweet about a barbecue you are putting up for your friends or that kids' party that you announce on Facebook?

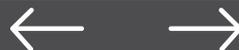
## It's a Currency

Yes, profile is definitely a currency. Consumers are learning how to benefit from their social media profiles. And they're learning fast, as they come to appreciate the real value contained in them. For organizations, vast opportunities exist in harvesting and analyzing profile data from their customers and communities. But it's all a matter of supply and demand, mutual trust and understanding about who sells to whom.

When a currency becomes scarce, the stakes become high. So place your bets, the ball is already rolling!

“

Consumers are learning how to benefit from their social media profiles. And they're learning fast.”



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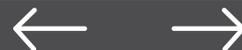
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## SOCIAL WORKERS



This contribution by  
**Rick Mans**

No less than 80% of modern knowledge work is about collaboration and knowledge sharing, while the dimension that is still most frequently getting optimized is the area of business processes. Enterprise social networks leverage our “consumerized” affinity with social tools to help organizations reap new benefits and improve their innovation power, also decreasing costs and driving top-line growth. It’s fun too for anybody involved.



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Enterprise social networks provide a different way of selecting what platform will be used in your organization. It is not the IT department that is leading the initiative; it is the users themselves. It is not based on a feature list compiled as a checklist; it is an honest selection by the user based on one criterion: Does this help me do my job better?

This could mean that you end up with a multitude of platforms (such as Yammer, IBM Connections, Spigit, Salesforce1 Chatter), since not every user group has the same demands or will get the same toolset. This is where the CIO could play a role, because this is about application rationalization and it requires a broader view than looking at just a single silo.

## Social in the Center

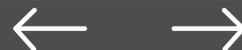
Although work has changed over the years, don't make the mistake of transitioning work and processes one-on-one to the enterprise social network. Take a step back, focus on what the outcome should be and then redesign your process with **social in the center** and the enterprise social network as an enabler. Otherwise you end up with a suboptimal solution: a situation with 19th-century processes run in a 21st-century environment – and just waiting for things to break down.

Still, rationalization – as always – makes sense. Do not focus on a single enterprise network to be used by all. Different roles have different needs and therefore it could make sense, depending on the size and diversity of the organization, that you end up with two or three social networks. The link between these networks is what integrates best: *employees*.

Employees connect with each other and therefore are the integration layer between different social networks. They are indeed becoming Social Workers.



Enterprise social networks leverage our 'consumerized' affinity with social tools to help organizations reap new benefits. It's fun too."



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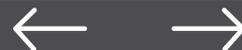
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## NO WORK



This contribution by  
**Rick Mans**

Providing customer support is hard work. However, customer support doesn't always have to be provided by the company itself. A few years ago outsourcing was a trend, preferably to a country with lower costs so it was easier to deal with peak situations. After that, insourcing became a trend since customer loyalty retention and satisfaction were deemed more important. Now it's time for the logical step of "unsourcing," which leverages the power of social networks and media: Don't do it yourself. Initiate peer support – customers helping customers, and customers helping you.





If you are the one handling customer support, how much do your customers really care about you and your products or services? Or to phrase this less negatively: How easy is it for the outside world to use your products and services?

For both questions the answer is most likely: not so much.

Your KPI should never be about solving complaints, nor should it be about solving complaints really fast. Complaints don't fit in any equation; your product or service should work. Because your customers might spend more time with your products than you do, they are the experts on what can and cannot be done with them.

Your customers don't have a vested interest in your company, they are most likely not biased and don't benefit from other customers buying your product. They are the most authentic resource to help other customers solve issues, and by doing so they might become your best service people. This can take place on a platform that you own, but it is more likely to happen on the platform of the experts, your customers, and therefore a platform or a place on that platform which you need to earn.



Because your customers might spend more time with your products than you do, they are the experts on what can and cannot be done with them.”

## “No Work” is Hard Work

The best way to value your customer is by making sure the perceived value of your products and services is higher than the money your customer spends on them. When this is the case, the customer is more willing to go the extra mile. You might even consider offering incentives in exchange for the services of your customers. Since it is normal that you pay your customer-care agents, why not pay your customers if they take over this role on an ad hoc and per-case basis?

“No Work” is not a cost-cutting program; it is about making people care enough about your company that they are willing to support it beyond the transaction.

No work is hard work. However, it's worth it.

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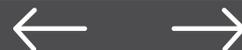
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## FRIEND YOUR VENDING MACHINE



This contribution by  
**Bernard Helders**

Operational Technology and Information Technology are fusing, powered by smaller processors and better sensor and network technology. The Internet of Things is coming as we “get physical.” This provides the opportunity to create smart connected products, with every product potentially offering a direct, proactive route to the hearts and minds of consumers. Combine it with social networking, and the consumers’ lists of “friends” could look very different a few years from now.



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Social is the New Oil • Profile as a Currency • Social Workers • No Work • **Friend Your Vending Machine**

Machines get increasingly more intelligent and connected, so they can learn about themselves and about their environment and share what they have learned. Cars, road sensors, engines, fridges and, indeed, vending machines all will become more “intelligent” in their own way. Soon there will be over 50 billion connected devices, roughly about 10 for every inhabitant of our planet.

Some describe it as the Internet of **Things** or the **Industrial Internet**, and some describe it as the **Internet of Customers**, since behind many devices are consumers. All foresee a world in which devices generate content, making the creation of content no longer the exclusive domain of human beings.

And in that world being social will no longer be the exclusive domain of human beings either. Data will be generated in such quantities that we will need strong analytic technologies and visualization to thrive on these data waves. We will also need lightning-fast technologies to let these devices connect to other devices for the appropriate response.

Or to people.

## Prepare for a New Kind of Friendship

To prepare for this new friendship, consider the following:

**1. Think of any device as a potential sensor.** Think about what you want it to “learn” and tell you or another device.

*What happens when it breaks down and needs repair?* Technology is already in use that automatically sends messages to the maintenance engineers of a jet engine or the repair workshop for your connected car.

*What does it say about my preferred tastes?* The Coca-Cola Freestyle vending machine allows a consumer to mix his or her own drink and experiment until a favorite is created. A better consumer panel could hardly exist to guide Coca-Cola about what to offer next to this consumer.

*How can it help me stay healthy or keep me safe?* Think about how it could monitor your health condition when on the move, or tell you about dangerous areas of town to avoid.

**2. Think about how to make the dialogue with the consumer more intelligent.** Even if you don’t want to be identified by name, a device can “recognize” your age, gender, fingerprint or mood with a remarkable level of accuracy. So it will be better at starting a sensible dialogue with you – either in the real world when you are in front of it, or in the virtual world when, for example, your car reminds you about the next overnight recharge of the battery. The potential seemed significant enough for Toyota to start investing in its **Toyota Friend**.

Devices will be made intelligent, connected, talkative and social in their own, highly unique way. And it’s up to our creativity to maximize our friendship with them to create better customer experiences, more effective operational processes and maybe even entirely new ways of doing business.





Now What?  
Make  
TechnoVision  
YOUR Tool!



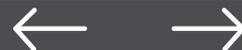


## Watch Capgemini's Pierre Hessler:

"We will help you use TechnoVision for your purposes."

# TechnoVision 2014

## Make TechnoVision Your Tool



# Now What? Make TechnoVision YOUR Tool!

Introduction | Digital Transformation | Clustering | How to Use | Building Blocks | Now What?



## Now What? Make **TechnoVision** Your Tool!



This contribution by  
**Pierre Hessler**

So you took the time to read through [TechnoVision 2014](#). Maybe you liked some of the graphics. Some views caught your fancy. Some headlines irked you. Overall, we hope a picture of our near technology future emerged – an amazing picture of radical change.

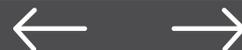
Now what? Forget it? Go to the next agenda item? Put it aside for a while? Wait for the 2015 update? Wait for the future to just happen?

Here is our suggestion: Make TechnoVision your tool.

TechnoVision is a multi-purpose tool that you can use for five different purposes.

### 1. As a tool to **LEARN**

Each of the building blocks opens up learning avenues. Each describes a design principle or a trend in a few words – the place and direction to start digging, taking clues from the contributions and the suggested publications and papers. And the clusters provide the structure to organize learning – making it so much easier.



# Now What? Make TechnoVision YOUR Tool!



## 2. As a tool to COMMUNICATE

TechnoVision aims at clarity. Use it to discuss technology with your colleagues and partners. Making technology palatable and understandable to business has always been a major objective of Capgemini's successive TechnoVision series. Now that technology is an essential component of business thinking, business should be, and will be, eager to get the best understanding as early as possible – not to appreciate how to translate business into technology, but to grasp how technology creates business opportunities.

## 3. As a tool to DESIGN

Digital Transformation changes businesses in depth and breadth. Every function, every process, every plan is touched. The opportunities are too numerous to count – and they never stop changing. By way of contrast, standstill could well be deadly. Even more than with classical information, the transformers need to know where they are going – what should my Digital Enterprise look like? As TechnoVision gives a broad view of the possibilities, combining immediate impacts with longer-term trends, it will help you design what you want to achieve.

## 4. As a tool to REPOSITION

Once your design is clear, the transformation task will look ominous. With so much on your plate already, how could you possibly add new endeavors, new projects?

TechnoVision will help you look at your efforts under way, and for each of them ask yourself: Is it "Design(ed) for Digital"? Is it at the right technical level? How future-proof is it? And maybe most importantly: Does it bring me closer to the Digital Enterprise model?

With the answers to these questions, you can then reposition your projects, tune them, adjust them – adding this Big Data dimension, strengthening that aspect of mobility, linking with those touchpoints of the customer experience. As a result, in addition to their original objectives, they will move you – in a modest way, in a good way, in a crucial way – towards your digital future.

## 5. As a tool to TRANSFORM

It will come as no surprise that in Digital Transformation projects, technology plays a significant role, provided technology is well understood and well mastered. We hope the TechnoVision tool will help you on both counts, so that your transformation is technologically inspired, technology driven and fun. Because don't forget: Technology has transformed our ways of living and working – sometimes with a little pain but typically for our pleasure and enjoyment. Why not aim for the same in the Digital Transformation of our businesses?

As you make TechnoVision 2014 your tool, don't forget one of our crucial building blocks: [End User](#), [End Producer](#). We count on you to help improve what we have and produce the next updates!





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## About Capgemini

With more than 130,000 people in over 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2013 global revenues of EUR 10.1 billion.

Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

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