



# TechnoVision 2012 and Financial Services

**Bringing Business Innovation to Life**



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# 1 Introduction

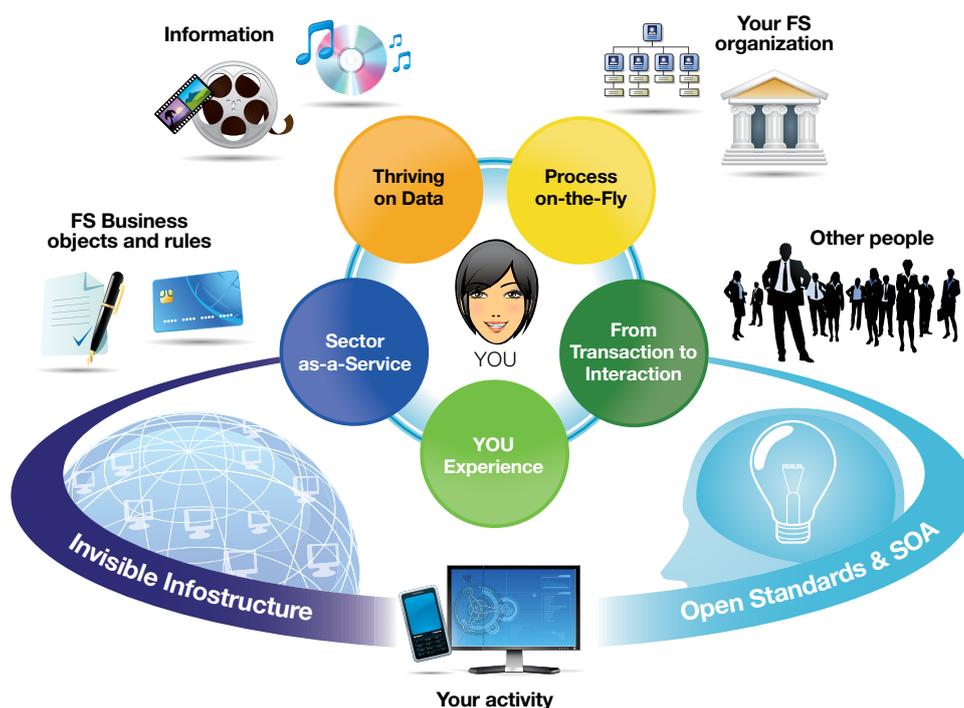
Financial services companies face unprecedented challenges, and the imperatives for the industry at large make it even more important for individual players to make sound operating decisions. Information technology (IT) has long created difficult questions about where to invest, and how to make sure those investments support strategic goals. Those questions will be even more vexing for the financial services industry as it struggles to regain its balance after the crisis of late 2008.

Even before the meltdown in financial services, Capgemini was studying the imperative to link IT decisions to specific business drivers in every industry. The resulting report, TechnoVision 2012<sup>1</sup>, was published in October 2008, and contains a comprehensive and forward-looking examination of technology for corporate users.

Capgemini's TechnoVision pursues two objectives: 1) To provide a clear picture of the information technologies that are most relevant to organizations and their users; 2) To shed light on how these technologies and their evolution will impact business.

TechnoVision groups the key information technology trends into seven clusters which appear as in Figure 1. The value of the framework lies in helping financial services companies to make sense of the essential trends behind the mushrooming innovations, and to map the business drivers of their organization in a simple way to the technology solutions most suited to address them.

Figure 1: The Seven Clusters of TechnoVision 2012 in Financial Services



Source: Capgemini 2008

<sup>1</sup> [www.capgemini.com/technovision](http://www.capgemini.com/technovision).

Five clusters reflect five complementary aspects of IT as it is experienced daily by a financial services company, namely:

- “You Experience” comprises tools that support the activities of an individual user.
- “From Transaction to Interaction”: IT tools to facilitate formal and informal interaction among individuals and groups.
- “Process on-the-Fly: IT as a workflow manager for implementing corporate processes.
- “Thriving on Data”: IT as a way to access information in any form and from any location.
- “Sector-as-a-Service”: IT as a tool to help manage business objects while complying with business rules.

Two additional clusters act as enablers for those five: “Invisible Infostructure” comprises all necessary processing and communication infrastructures, and “Open Standards & Service-Oriented Architecture” enables the interoperability of all other components.

By viewing the technology clusters in this way, it makes it easier to identify and explore the increasingly close link between technology and business—an especially critical set of relationships in Financial Services, where technology increasingly functions simultaneously as an enabler and a disruptor, an engine of profitable growth and a disintermediator.

## 2 The IT Effect in Financial Services

The TechnoVision approach argues that the “right” technology solutions are a function of business drivers, and not just by industry. As we will discuss later, each sub-sector of financial services has its own business drivers, so there are a variety of potential benefits from IT innovations. However, despite signs that the scope and speed of technology breakthroughs are increasing every day, and while many banks and insurance companies are clearly pursuing new technology, they may not be trying hard enough to leverage technology to develop their business and improve profitability.

One innovator is ICICI, the second largest retail bank in India, which has shifted the very metrics of its banking business with the large-scale use of new technology. ICICI is a relatively young bank—established in its current form as a retail deposit-taking institution in 1994, and working under a leadership strategy formulated around 1999. As a result, it has not faced many of the legacy-system migration issues that afflict longer-standing players. The bank has concentrated on new technologies to tap into the growth and potential of the burgeoning domestic Indian market.

Notably, ICICI has deployed a wide range of technology innovations to deliver a high level of customer service and efficiency. For instance, it has embraced differentiating electronic channels to bring financial services to customers across India (e.g., Internet, automated teller machines, call centers, mobile phones). It has installed ICICI web kiosks in villages where Internet is not yet available, and has launched an interactive banking channel for subscribers of satellite television service Dish TV. These initiatives have helped ICICI to deliver services anywhere and anytime, giving new meaning to “reach” and speed of service, and exceeding the proposition offered via physical channels like branches and brokers. Moreover, ICICI has unleashed the full potential of these channels by combining bank-driven (push) and customer-initiated (pull) approaches to pursue a totally customer-centric approach and to maximize cross-selling.

ICICI has used other technology innovations as simple enablers to deliver faultless service, quality and scalability. For instance, the bank has a technology-agnostic approach to infrastructure, leveraging open-source components and avoiding mainframes, and it has deployed a scalable information system based on a core banking package (Finacle). Back-office processes have been fully automated on this basis, from account openings to check clearing, and ICICI takes advantage of this automation at large shared processing hubs, which enjoy economies of scale and a fast cash turn-around.

ICICI's technology approach has helped to lower the total cost of ownership (TCO) of the information system dramatically, bringing the TCO down to 20% of the level typically required to support mainframe-based systems. At the same time, ICICI has developed a culture of empowerment and ownership that has helped to make the bank highly responsive and fast to market. For example, it has mandated that all bank projects be completed within 90 days.

ICICI's approach represents a paradigm shift from traditional retail banking, as evidenced in its major business metrics—achieved even without the lever of external growth:

- Balance of channels (< 10% transactions are performed in the branches)
- Cost-income ratio (40.2% in 2007)
- Customer base growth (An astonishing 1 million new clients per month)
- Revenue growth rate (+40% in 2007 over 2006)

ICICI is arguably a first-mover among a new generation of banks that will shortly compete globally against traditional players—and the scope and scale of its technology strategy begs the question of whether banks and insurance companies in general are leveraging all the potential of new technology to develop their business and make it more profitable.

### **Even Everyday Technology can be Scarce in Banking**

It can even be difficult for bank systems to incorporate innovations even when they have been widely adopted by ordinary users. Consider, for instance, the untapped potential of search engines—a now-ubiquitous tool. Search capabilities have radically increased the relevance of the World Wide Web for individuals. Why, then, is it not possible for banks and insurance companies to search their own information systems to retrieve quickly and easily any client information—addresses, signatures, accounts, balances, outstanding loans, other contracts, links to other clients, favorite operations and channels? Most banks and insurance companies store all this data, but can rarely access it with one click. Admittedly, the data is often distributed across many databases, and there are redundancies and inconsistencies, but that type of information labyrinth is not new to web searchers.

The original motivation for Google and its peers was to take advantage of the availability of cheap computing power to “index” information and enable searching without actually moving the searched databases. This approach has already been adopted in personal computing, changing forever how individuals organize their own files. It can also be applied to corporate information systems, especially where there is a significant amount of “structured” data that can be accessed via smart search functionalities—clearly a superior alternative to indiscriminate data-warehousing.

ICICI and Google illustrate the sea-change in technology and its applications—and raise serious questions about the degree to which corporations in general, and financial services companies in particular, are positioned to exploit the potential of technology innovations.

This report explores more systematically the potential for banks and insurance companies to leverage technology breakthroughs to propel their business, and considers the necessary steps for accelerating the pace at which financial services companies can adopt IT innovations.

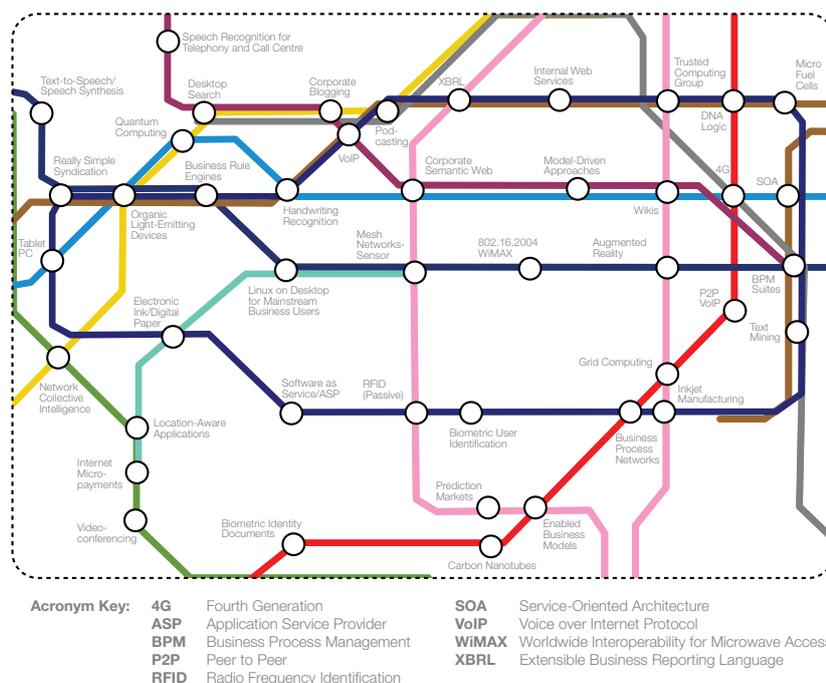
# 3 Evolution and Revolution in IT

Moore's Law famously predicts that the power of microprocessor technology doubles while the cost of production is halved about every 2 years. That dynamic has largely held true for more than 40 years, helping to explain the ever-quicken pace of technology product proliferation.

That dynamic also helps to explain why today, eight years after the Internet bubble burst, it is still generally agreed that all popular web services will eventually find profitable business models. As a result, hardware and software technology improvements are feeding a tidal wave of entrepreneurial innovations in web services. With amazing diversity and growing subtlety these innovations are courting the billion-plus Internet users worldwide. The results are the stuff of science fiction, from the application-heavy but sleek iPhone to the otherworldly avatars of Second Life.

The problem for companies is that the sheer speed of breakthroughs makes it a challenge to keep pace with technology, let alone make real-world sense of the "Metropolitan Jungle" of interrelated innovations (see Figure 2).

**Figure 2: The Metropolitan Jungle of Interrelated IT Innovations**



Source: Capgemini research

### **Consumer-Focused Innovations have Taken Center Stage**

Notably, innovations aimed at consumers have taken the spotlight from business solutions. Microsoft, Yahoo, Nokia and Google—along with the anonymous developers of open-source components—are championing the IT revolution more than business providers like IBM, HP, Alcatel or Oracle. There is also a growing gap between the rapid pace at which individuals accept innovations and the slower pace of adoption in the corporate arena. Against this backdrop, it is unclear to what extent more traditional businesses, including retail financial services, can profit from rapid IT innovation.

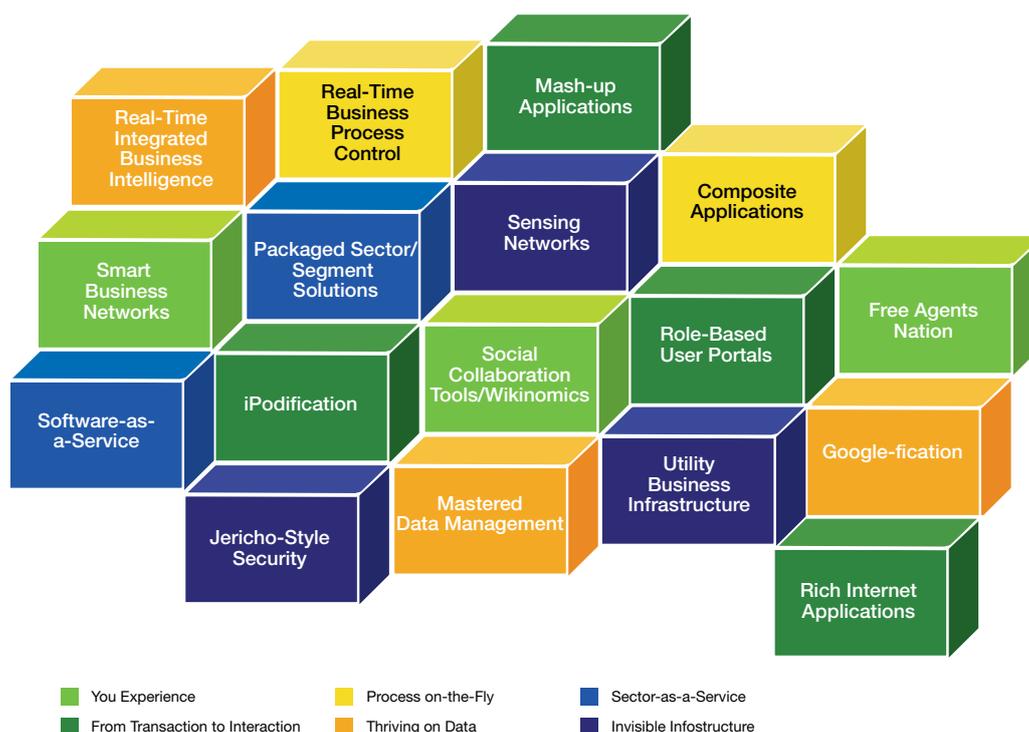
Theoretically, corporate executives continue to see IT as an enabler of cost-cutting and business development, but it has grown harder for chief technology and information officers to identify and communicate the value of technology innovations—especially when so few are actually developed primarily for corporate users. Importantly, many corporations also remain in the dark, because the new consumer-oriented breed of technology suppliers has yet to develop the kind of large-scale corporate facilitation models common among old-school business-to-business suppliers. Manufacturers like IBM traditionally made it a priority to explain their own and their partners' innovations to B2B users, arrange corporate site tests, offer free licenses, and help lobby general management for IT spend. Without this type of facilitation, it makes it even more difficult for CTOs/CIOs to identify, evaluate and capture IT opportunities today.

For financial services companies, IT strategy can be especially vexing. The pivotal role of IT in their businesses is obvious: Banks and insurance companies are heavily information-based, they are intensive users of IT, and they rely on IT throughout their operations. Still, many financial services companies shrink from being IT first-movers today, because they continue to labor under layer upon layer of bespoke legacy systems.

# 4 Behind the TechnoVision Matrix

Perceptions that technology is fast proliferating in speed and scope are borne out in Capgemini's TechnoVision 2012, which identifies 17 important technology trends likely to have a profound effect on business in general, now and in coming years, including "iPodification", rich Internet applications, and "Google-fication" (see Figure 3). TechnoVision also explores the relationships between these trends and specific business drivers<sup>2</sup>.

**Figure 3 Key Technology Trends for Corporate Users**

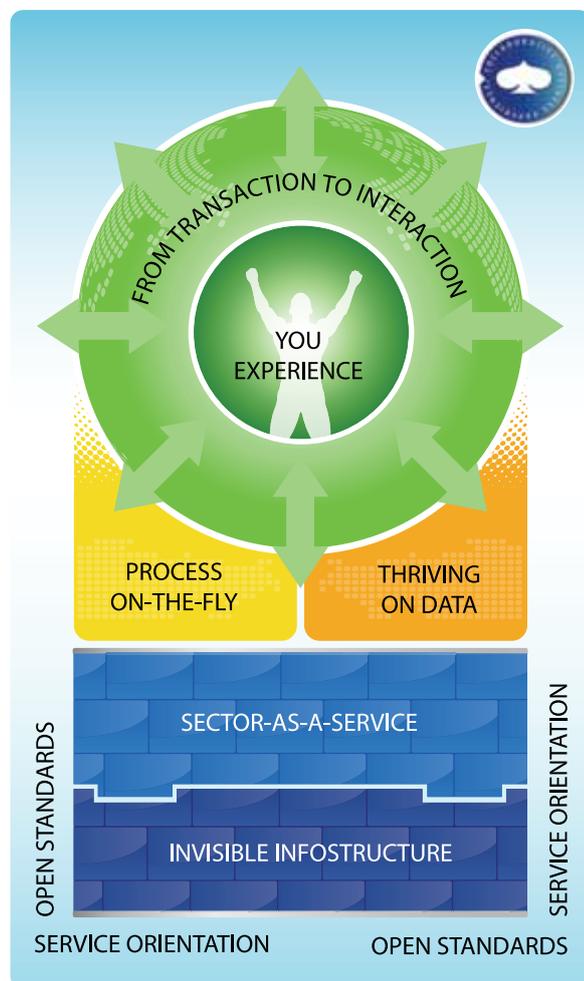


Source: Capgemini research and analysis

<sup>2</sup> In TechnoVision, business drivers are significant efforts aimed at exploiting an opportunity or an innovation, correcting an issue, or coping with a disruption or a compliance need. The drivers range from very specific, such as industry-specific compliance requirements in the public sector, to more general, such as those affecting companies of a sector in a broad fashion.

TechnoVision groups the 17 technology trends into “clusters”, and in its generic form, the framework depicts each of the seven clusters in an iPod-like device (see Figure 4).

**Figure 4 The Seven Technology Clusters of TechnoVision 2012**



Source: Capgemini 2008

Each cluster represents a shift, and together these shifts are driving the evolution of technology and its applications—an evolution that has enormous implications for companies everywhere.

# 5 TechnoVision in Action for Financial Services

To illustrate each cluster for Financial Services, we can look at applications, products and services—some of which are already in use in some institutions—as they relate to the 17 underlying technology trends that TechnoVision identifies as being relevant for corporate users (as shown in Figure 3).

## 1. The You Experience

The “You Experience” cluster comprises the new generation of user-interface technologies and Internet-based desktop tools that make for a compelling, highly individualized experience.

**Rich Internet applications:** Rich Internet applications provide a compelling, comprehensive and highly interactive user experience, which goes much further than classic HTML applications. They represent a new generation of browser-based user interfaces, integrating dynamic functionality and multi-media content, on a par with the most sophisticated local applications.

Rich Internet applications have played a part in many of the latest industry innovations, including recent Internet e-brokerage products like the custom trading tool from Bloomberg, and e-banking and insurance comparison websites.

**Role-based user portals:** Role-based user portals proactively support individuals and teams with a customized set of applications, links and data, wrapped around specific roles, tasks, context, actions, preferences and ‘MyTeam’ collaboration needs.

Some insurance companies have endeavored to develop role-based user portals for their distribution networks, as retail banks have for their channel-customized front-ends.

**IPodification:** More and more non-computer devices are used as the primary access channel to information, transactions and interactions. These include portable, mobile devices like the iPhone and other smart phones, personal digital assistants (PDAs) and BlackBerry hand-helds, surface computing, interactive television, ‘front-row’ interfaces for the living room, gaming computers, and the \$100 One Laptop Per Child (OLPC) children’s laptop.

Mobile banking, a real-life example in financial services, is spreading quickly from Asia to Europe and the USA<sup>3</sup>. So far, there are only about 30 million users of m-payments worldwide, accounting for approximately 2.5 billion transactions—just 1% of the value of global non-cash payments. Asia accounts for 84% of all m-payment users, with Japan, the recognized leader, accounting for almost half of the global m-payments (approximately 1 billion transactions per year). But the m-payments market is growing fast and its development is still wide open to further expansion. In 2007, only 1% of people with a mobile phone used it to make a payment, but in the US, the number of users grew from 1 million to 9 million in 2007–2008. Moreover, several large banks are advertising special services for iPhone users—offerings that will encourage increased usage.

<sup>3</sup> World Payments Report 2008, Spotlight on Mobile Payments, page 52.

**Mash-up applications:** Users can easily create their own mash-ups nowadays, thanks to the availability of advanced mash-up building tools and simple ‘glue’ programming platforms that help combine—with just a click—services and underlying applications from multiple sources in- or outside the organization to create composite front-end applications.

Following the example of investment banking and IT departments, desktop developments for branches in retail banking and insurance do include mash-up capabilities, with the aim of integrating communication tools and facilitating fast push communications from marketing and sales management.

**Case Study: Rabobank  
Using Mobile Banking to Leverage Differentiation and Growth**

**Technology clusters addressed**

- You Experience
- Invisible Infostructure

**Business segment**

Retail banking / Distribution and payments

**Corporate context**

The Rabobank Group is a strong traditional financial services provider in the Netherlands. Once a retail bank devoted to the rich Dutch farming regions, it is now the leading Dutch financial services provider for individuals. Rabobank is characterized by its strong appetite for technology innovations. Indeed, it is the largest Internet bank in Europe, with extremely high loyalty and broad recognition among customers (of which 40% use Internet banking).

**Business drivers**

As is the case among more and more banks worldwide, Rabobank has been considering how mobile payments could increase the profitability of retail accounts that generate barely enough in fees to cover the massive costs of payments handling. In 2006, Rabobank launched its own MVNO (Mobile Virtual Network Operator), “Rabo Mobil”, targeting retail customers with mobile prepaid and postpaid services, and mobile banking and payment services. Rabobank’s strategic intent was to benefit from the convergence of customer services leveraging Internet and mobile banking. The main business drivers in that context are to win market share (new customers segments), to control the distribution of mobile phones with integrated bank services’ access capacity, and to anticipate the market by being the first-mover in mobile payments.

Mobile payments are the key technological innovation within the mobile banking industry—providing the facility to use mobile phones to make non-cash financial transactions while on the move. The principle is that the user holds their mobile phone a few centimeters from an enabled point-of-sale (POS) terminal and validates the transaction by entering a personal identification number (PIN) into the phone. The receipt is received in the form of a text message (short message service).

**Technology innovations**

**You Experience:** The key technology innovations for mobile payments are the smart card integrated into the mobile phone to support banking applications (PIN authentication).

**Invisible Infostructure:** NFC (near field communication) devices in the mobile phone and the POS terminal enable radio communication at short distances while the cell network links the phone with the bank's server. Due to service standardization, prepayment/authorization and settlement are processed by the usual bank systems.

#### **Benefits**

In addition to the fast gain of market share from new-client acquisitions (especially existing clients from the MVNO and younger users), Rabobank has reinforced its Internet leadership position with a very innovative image. Moreover, the launch of its own MVNO has allowed Rabobank to capture more business value than in a classic partnership with a telecom operator. In addition to that, mobile payments offer a viable substitute for cash transactions, which are very expensive for the bank to handle.

#### **Lessons learned**

The buy-out of a mobile operator enabled Rabobank to gain time in terms of sector knowledge and to accelerate market penetration. Rabobank also undertook a strong communications plan, which was a key success factor in overcoming consumers' reluctance to use a new means of payment (e.g., because of fears over transactions security) and the reluctance among merchants to invest in enabled POS terminals in case there was no return on the investment.

## 2. From Transaction to Interaction

In financial services, the shift from Transaction to Interaction involves organizations and individuals in a steady, continual rhythm of learning, experiencing, creating and collaborating. 'Changing the game' and creating new value and growth through business innovation is the challenge here, with markets, players and consumers constantly shifting positions. Global 'open' markets, where information on what is for sale and by whom is readily available and transparent, vastly increase competition from the level that prevailed when local 'closed' markets were built on long-term relationships among a handful of buyers and sellers.

**Social collaboration tools:** Social collaboration platforms mobilize the 'power of the crowd' in many different ways. They let communities create and share knowledge in a highly collaborative way. In fact, the interaction is at least as important as the actual content that is being created. Openness is the norm and sharing of knowledge is a typical cultural asset. These social networks are relevant to organizations as they provide new ways of engaging with existing and potential clients. Mobilizing the potential of so many connected, collaborating resources can even lead to new economic models, such as 'crowdsourcing' (the outsourcing of a task to a large diffuse semi-organized group of people via the Internet).

Banks are beginning to use collaborative tools (chats, blogs, wikis) internally for knowledge development among peer communities. Copying the approach of large IT suppliers like IBM, Microsoft, and Apple, on-line brokers, such as Boursorama, a brokerage and e-banking subsidiary of Société Générale in France, also use such tools as a way to let their clients exchange pieces of advice on stocks or investment plans—supplementing or replacing the need to answer all requests for advice directly.

**Smart business networks:** Increasingly, organizations will dynamically connect, triggered by events in the business ecosystem and then opportunistically exchange information and synchronize services to achieve their business objectives (which typically will target growth and innovation).

For example, when retailers and banks co-brand cards, they share information about cardholders and their activities to facilitate own cross-selling on both sides.

**Free agents nation:** The new generation of collaboration and social networking tools enables distributed, much more loosely coupled ways of working. This leads to a new generation of workers: 'Free Agents' who rely on the Internet to link up to employers and co-workers and actually execute their work, often in less rigid working relationships.

Although the European style of work contracts does not favor the free agent approach, many banks are building on its potential when designing their business continuity plans, including plans for dispatching work to telecommuters (employees and contract workers).

## Case Study: ZOPA Enabling Peer-To-Peer Lending, Disintermediating Bank Loans

Technology clusters addressed	Business segment
From Transaction to Interaction	Retail banking / Loans

### Corporate context

ZOPA (Zone Of Possible Agreement) is an electronic marketplace, based in Britain, which brings together those who want to borrow money with potential lenders. This person-to-person “social” lending involves private contracts without the intermediation of a bank. Founded in 2005, ZOPA is just one of a series of such operators. Others include Prosper (USA), Boober (Holland), Communitylend (Canada), Ppdai (China), and eLolly et Smava (Allemagne).

### Business drivers

There is a wide gap between the rate paid by banks on saving accounts and the one they charge on consumer loans. This gap is obviously meant to pay for a global package of value-added services provided by the bank to both parties (e.g., global matching between borrowers and lenders, duration adjustment, risk assessment, guaranty, cash flows management).

ZOPA is built on the assumption that some of these services could be either operated in a cheaper way with a new technology approach and/or made redundant for educated, self-directed individuals.

### Technology innovations

ZOPA uses an electronic platform to match borrowers with lenders who want to earn revenue from their available cash. The service also links participants with service providers such as legal advisors, credit bureaus, credit insurers and payments operators. Borrowers tell potential lenders about their project and whereabouts directly, and lenders adjust their proposed funding levels and rates accordingly. As a result, ZOPA leverages the wisdom of the crowd to decide which requests should be funded and at what rate—providing an alternative to the view of a single traditional banker.

### Benefits

ZOPA has confirmed its ability to attract both lenders and borrowers without experiencing significant payment defaults. As a consequence, ZOPA has performed well in the UK, where it has secured 120,000 members after two and a half years in business. The credit crisis will be a crucial crash test for this new model.

### 3. Process on-the-Fly

Many organizations will need to offer almost real-time business process execution to respond to changes in the business ecosystem. Processing on-the-fly involves orchestrating the building blocks of these processes. The underlying information systems that support and enable processes must consist of fine-grained, configurable services that can be freely composed and orchestrated into new solutions.

**Real-time business process control:** Business process modeling tools, 'orchestration engines' (typically based on the XML BPEL<sup>4</sup> standard) and 'choreography' platforms (based on CDL<sup>5</sup>) provide some of the options for constructing even more dynamic processes. Using rules engines, these processes can become more and more sophisticated and capable of really changing processes on-the-fly.

In the securities and payments industry, in insurance claims management, and in life-insurance back office processes, this technology has already helped to reduce significantly the rate of manual exceptions handling.

**Composite applications:** Composite applications are a stepping stone to more dynamic control over business processes. Many end-to-end processes currently require interaction between different siloed systems. A high-impact example from financial services is the case of banks distributing products bought from white-labeled producers: The sale process often combines services from the producer (e.g., scoring, contract registration) and services from the distributor (e.g., client identification, pricing). Another example can be found in insurance claims management, where the process involves a variety of experts and other partners (e.g., automobile repair shops, house renovators, lawyers).

Composite applications address the challenge of these interactions by creating an integrated environment where changes can be applied simultaneously to all underlying systems.

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<sup>4</sup> Business Process Execution Language (for Web Services) based on eXtensible Markup Language (XML)

<sup>5</sup> CDL: Choreography Description Language

### Case Study: A Leading French Retail Bank Developing a Customized Industrial Offering

Technology clusters addressed	Business segment
Process on-the-Fly	Retail banking / Offering & Distribution

#### Corporate context

This case is derived from among a leading French group of regional retail banks. This bank tried only recently (like most French banks) to develop personal consumer credit. To make up for lost time, it partnered with a specialist in order to profit from its know-how and systems, and hoping to tap into its large client base to offer consumer loans (which are historically substituted in France by account overdrafts).

However, the initial results were disappointing, because regional banks did not appropriate the offerings. And then the specialist partner was bought out by a competitor.

#### Business drivers

The main business driver was to strengthen the consumer credit know-how of the group in order to escape the bank's reliance on a competitor, while giving each regional bank the autonomy and means to customize its offering freely.

#### Technology innovations

**Process on-the-Fly:** The bank took advantage of a service-oriented architecture (SOA) linking the bank's information systems with those of its credit specialist partner to implement a "business middle-end", processing transactions on-the-fly between the desktops of regional bank salespeople and the partner's services.

The technical added value of the business middle-end is the rules-based engine (ILOG JRules) to enrich—in a mastered and progressive way—the partner's credit scoring processes and to customize offerings for each regional bank. The solution was easy to roll out across all the regional banks, to a direct channel, and even to another allied branch network.

#### Benefits

The main business benefits were the improved time-to-market of offerings in the banks and the ability of the group to prepare to accommodate a second source besides the legacy specialist partner.

Furthermore, the innovation brought a new autonomy to regional banks, allowing each to configure its own offering from of a standard catalog of scoring, pricing and packaging. The result was a fast take-off in consumer credit sales.

The flexibility of the SOA-based standards was successfully tested in the course of the project, when the solution had to be switched to another rules-based engine. But the most impressive benefit is clearly the ability to accommodate a potential second provider.

#### Lessons learned

Rather than waiting for the new system to be complete and perfect—and running the risk of failing to deliver in a timely way—the bank forged ahead with a limited first-run platform in just 6 months, and worked iteratively with users to develop a fully functional and business aligned system.

#### 4. Thriving on Data

Organizations are faced today with a constantly changing, information-rich environment, in which expert retrieval and analysis capabilities are needed to turn data into strategic intelligence. In fact, enterprises that can link data management and utilization to strategic objectives are literally Thriving on Data—although it will take time for intelligence to become an integrated, fully embedded part of the desktop of every worker, supporting real-life, real-time business decisions.

**Real-time integrated business intelligence:** Real-time, integrated business intelligence will support decisions on strategic, tactical and operational levels with comprehensive and constant insight into events and information inside and far outside the organization. Providing intelligence is no longer a matter of building, maintaining and analyzing separate databases and data warehouses; it is about feeding structured and unstructured information into the actual, day-to-day flow of work and the applications that are being used.

For example, the latest generation of anti-money-laundering (AML) and Fraud detection tools includes profiling capabilities based on real-time intelligent data processing able to compute behavior patterns and to detect unusual activities.

**Searching the semantic web / Google-fication:** Constantly improving search technology will help organizations to exploit all information flows—both inside and outside the organization—and provide access to unstructured information as well as structured information contained in databases, transaction systems, and so on. This amounts to a ‘Google-fication’ of all information assets.

New retail banking and insurance desktops tend to include search engines parameterized to search the corporate information system (text and databases) as well as the Internet.

**Mastered data management:** Mastering and governing the core data of an organization is crucial to achieving its objectives. Without accurate master data (location, product, configuration information, etc.) and proper governance, processes will create errors, and collaboration will end in confusion and mismatches. Master Data Management (MDM) solutions tackle the rapidly escalating issues of dimension coordination, integration and reconciliation that organizations face with each incremental year of systems evolution.

The banking sector is a leader as far as reference data management is concerned, owing to its demanding business model in which multiple products are sold to each client, many units interact in selling or servicing processes, and stringent regulators require auditable accounting and risk management.

The pension sector also captures a lot of historical data about customers, but there can be inherent problems with storing data on long-term financial contracts. In the case of pensions, customers often hold their policies for more than 40 years, and pension rules change numerous times over the duration.

Pension administrators would ideally store data on their customers/policies with links to the associated pension rules, and be able to generate linked outputs too. This would be especially helpful in avoiding discrepancies as the variables change over the years. That type of data management is highly sophisticated, but pension administrators can use MDM solutions to integrate and reconcile their information.

#### **Case Study:** **A Leading French Retail Bank Transforming a Branch System**

##### **Technology clusters addressed**

- Thriving on Data
- You Experience
- From Transaction to Interaction

##### **Business segment**

Retail banking / Distribution  
(sales and service)

##### **Corporate context**

The bank (universal type) has developed a comprehensive business including current accounts, saving accounts, all kinds of loans, asset management and brokerage services, cash management services, life and personal & casualty (P&C) insurance. In order to enable its agents to sell and service all these products to each market segment, the bank developed as many as 400 business applications to support business processes, including eventually a full CRM suite. Access to these applications is protected and customized for each category of agents (e.g., sales, advisory, cashier, call centers, back-office) through a complex technical architecture, running on branch desktop clients and servers.

##### **Business drivers**

Ten years after the development of the branch architecture, the system is no longer aligned with business requirements and its transformation is on the agenda of the bank. Retail banking now requires more flexibility (offerings, branch locations) to keep pace with clients' expectations and competitors initiatives; the organization has evolved from a hierarchical structure to a many-to-many matrix web of front and back-offices; direct channels as call centers and the Internet are now core pillars of the bank's distribution system; agents are more specialized and their work involves more complex interactions with colleagues.

The system has therefore become a barrier to adaptation. The user interface is not friendly, few agents use more than 20 of the 400-plus business applications, and they waste a lot of time when they have to search for unfamiliar information or tools. Moreover, the system does not provide alternative means for management and marketing to push their new targets or offerings beyond basic general broadcast emails.

A new project was therefore launched to design a new branch system and workstation leveraging new technology to fit to the new business organization and priorities.

##### **Technology innovations**

**Thriving on Data:** An essential feature of the new workstation is a search engine that indexes both structured databases (e.g., clients information files, statements of accounts), and textual information alerts broadcast through RSS feeds.

**You Experience:** The transformation includes a browser based AJAX (Asynchronous Javascript and XML) Web 2.0 rich Internet application framework, a mash-up portal enabling full customization and subscription to services, including communication services (e.g., phone, email, chat, video).

**From Transaction to Interaction:** Social collaboration tools (blogs, chats and wikis) were eventually built in for professional communities (shared roles on the one hand; shared customers segments on the other) across the bank.

#### **Benefits**

The transformation can elicit huge benefits from a very limited investment, mainly in search engine licenses (as the open-source option was not chosen). As a consequence, the investment could pay for itself in less than a year simply through reducing by 20%–30% the amount of time spent on fruitless searches. Other benefits were only identified in a qualitative way. They include: better responsiveness of the branches to marketing and commercial changes, focused collective efforts and a shorter time to market for offerings and campaigns, more efficient means of transferring knowledge within the organization, especially to young agents, and improved information quality.

#### **Lessons learned**

This case offers some crucial lessons on the pitfalls of execution. The project has yet to reach its full potential, so it is worth examining a couple of the major obstacles to successful implementation. First, the project team did not adequately demonstrate the value of the new desktop workstations to the management of the bank. However, it had the right idea: A comprehensive prototype was developed to prove replacing the desktops could bring benefits to the bank without waiting for an infrastructure overhaul. The prototype (developed in 3 months) enabled business users and process owners to get a full understanding of the potential, and gave IT specialists the opportunity to check feasibility concerns like performance and security issues. An incremental industrialization and roll-out plan with updates every 6 months was based on the lessons learned from the prototype.

Nevertheless, while users and business process owners were thrilled by the prototype, they could not translate that enthusiasm into a compelling business case to present to management. For example, while they could show the system was user-friendly, they could not demonstrate how the system could save time in the sales effort.

Second, the prototype rollout was perceived as a threat by the IT department, which was structured around the infrastructure stream. The new system raised concerns because it would lead to job losses among the team in charge of the maintenance and roll-out of the legacy branch system. It was also seen as a threat to the return on investment of the extensive efforts undertaken to implement the CRM system designed to bring a holistic view of the client to the workstations of the salespeople.

## 5. Sector-as-a-Service

The Sector-as-a-Service cluster relates to technology solutions that help organizations run the non-differentiating part of both IT and business as a utility-style service. This involves lightly customizing implementations of standard software, and generating systems from reusable industry reference models, as well as stabilizing and then 'service-enabling' existing legacy systems. Delivering business services through a SaaS (Software-as-a-Service) approach is an additional step toward supplying integrated business services, including processes, as an in-sourced or outsourced business process utility.

**Rationalizing Packaged sector/segment solutions:** Organizations have different motivations for rationalizing their core services. Whatever the reason, the new core services will need to be more standardized, and more plug-and-play with other services from within the organization or from partners. These services can either be delivered through standardized packaged (industry) solutions, or derived from industry models using Model-Driven Architecture (MDA).

Retail banks and insurance companies are accelerating projects by leveraging—in natural or high-level language such as UML (unified modeling language)—standard credit or pension management business models, which they can customize more easily than traditional packages and then compile into programs automatically.

**Software-as-a-service:** More and more of these basic services can be delivered in a software-as-a-service (SaaS) model. Software as an on-demand utility is currently aimed mainly at mid-size companies, but this can be extended to include part of the services for larger organizations, much like shared service centers.

SaaS available for banks ranges from the most general desktop productivity tools, such as Google Apps, to CRM suites such as Salesforce (used for instance by Merrill Lynch private bankers). SaaS providers of cash management services such as Kyriba supply tools to banks that they can use to better serve their corporate clients. However, these tools also have the potential to enable businesses to manage their cash seamlessly through several banks—and therefore to gain bargaining power with their bankers.

Life insurers are also realizing that back offices do not have to be built independently, and that package vendors offer excellent solutions. Running a back office is becoming more difficult anyway, given increased legislation and demands for lower costs. SaaS offers life insurers a high-performing and future-proof back office at a market standard price.

## Case Study: A Large European Insurance Group Commissioning a New System

### Technology clusters addressed

- Sector as-a-Service
- Process on-the-Fly

### Business segment

Insurance / Commissioning and billing

### Corporate context

This leading insurance group has expanded through external growth. It relies on a complex distribution model that combines employees, agents and broker networks. The optimization of these networks is a major issue for the future of the group.

In particular, the myriad and diverse existing commission models especially complicate any attempt to change products and pricing, and hinder time-to-market optimization.

### Business drivers

The main business driver was to make the group's commissioning system more flexible by simplifying its administration and providing some ability to model how changes in products and pricing might affect the revenue of agents and brokers. In addition, the group wanted to encourage creativity in terms of pricing, especially by tailoring customer prices and billing modes.

### Technology innovations

**Sector-as-a-Service:** The technology innovation is to leverage a packaged solution (Highdeal software) that benefits from telecom industry know-how in terms of accommodating complex pricing.

**Process on-the-Fly:** It is based upon a patented technology "Decision tree", which uses an intuitive approach to assembling components, facilitating the implementation of pricing or commissioning structures and delivering a high level of performance, e.g., in real-time processing of huge transaction volumes.

### Benefits

The optimization of the commission system was, as expected, the first benefit: It enabled the insurer to capture and administer all the existing commission agreements digitally, and model the effects of complex contract negotiations. This optimization encouraged rate consolidation and helped to minimize errors.

Moreover, the new system helped to ensure a short "time to market" for new services and pricing models.

## 6. Invisible Infostructure

Invisible Infostructure is another part of the solid foundation required to support software services. It is the end-state of infrastructure as we currently know it, using virtualization, grid and automated management technologies to deliver infrastructural services—including all facilities to securely capture, store, exchange and process (inter)company information as a commoditized, preferably invisible utility.

**Utility business infrastructure:** The even more basic infrastructure of storage, network and computing capacity is mainly becoming available on-demand or 'on-tap'. Managing capacity across multiple servers and disks and for multiple clients requires more sophisticated infrastructure management software enabling virtualization and/or grid technologies. This also includes remote desktop management, which will enable system operators to monitor and control remote devices, even when they have stopped functioning, e.g., in a virus attack.

Many banks are relying on grid computing to leverage their idle PCs to support the complicated probabilistic estimation of the daily value and value at risk of complex financial instruments like equity and credit derivatives.

**Jericho style security:** Businesses are increasingly using their networks much more heavily and in far more unpredictable and collaborative ways, so the traditional firewalled approach to securing a network boundary is flawed at best and totally ineffective at worst. Increasingly, information will flow between business organizations over shared and third-party networks, so that ultimately the only reliable security strategy will be to protect the information itself, rather than the network and the rest of the IT infrastructure. This trend is called 'de-perimeterization' (or 'Jericho style' security, after the Bible story of the walls of Jericho that eventually came down) and it has been developing for several years.

Banks' websites are among the first targets for hackers, so banks are constantly improving their security by relying on strong authentication devices (including mobile phones) between users and services exposed on the web.

**Sensing networks:** External events are brought into the infostructure through sensing networks. These networks link 'the Internet of things' to the organization. This goes from the basic identification of goods or persons at various locations using radio frequency identification (RFID) to the sensing of the ripening process inside a 40-foot container of produce as it is shipped from Asia to Europe.

In financial services, the fast developing Pay-per-Use or Pay-as-you-Drive car insurance offering is an example of a sensing network, where cars are equipped with devices linked to GPS (global positioning system) and GSM (General System for Mobile Communications) networks. Another example is the use of mobile phones to locate nearby ATMs.

## Case Study: BNP PARIBAS Controlling the Complexity of Derivatives through Grid Computing

### Technology clusters addressed

Invisible Infostructure

### Business segment

Investment Banking / Risk and value assessment

### Corporate context

This bank is a leader in equity and credit derivatives, which are core products that enable a bank to sell investment products customized to a client's risk profile—products that are in high demand everywhere.

The fast-expanding volumes and complexity of these products have required processing capacity to grow even beyond the rapid Moore's Law pace for front-office (profit and risk a priori simulation) and middle-office (P&L and risk a posteriori measurement) activities.

### Business drivers

The financial crisis has highlighted the need for careful monitoring of risks on complex financial products. Although the business is highly profitable, it requires a sound measurement of profits and risks, with a full accounting of the books at the end of each trading day. At the same time, the required rate of growth in processing power is not sustainable with conventional technology (for economic and even logistical reasons).

### Technology innovations

**Invisible Infostructure:** Owing to new tools supplied by such vendors as Platform and Data Synapse, grid computing allows companies to distribute and execute heavy processing across thousands of processors, provided that programs are designed to be run in highly parallel streams, e.g., risk and value assessment of complex financial contracts against probabilistic simulations of market conditions.

The capacity of more than 2,000 PCs idle at the bank's headquarters can be used for processing outside normal working hours.

### Benefits

The bank gains 7,000 hours of computing each night, free from additional hardware.

The return on the cost of licenses is guaranteed with night-only computing. It can be enhanced further by enlarging the length of the processing time slot.

### Lessons learned

A minimum requirement on memory size was the only limiting factor for using HQ workstations. However, grid computing has some basic behavioral constraints—like the need for people to leave their PCs on when they leave the office. A few machines will inevitably be unavailable—a reality that must be addressed to avoid distortions to the data analysis known as "Monte Carlo noise".

No security issues have been identified, and the approach could be extended to include branch workstations, or even processing power from external providers.

## 7. Open Standards and SOA

Open standards and SOA provide the overall architecture and seamless integration framework underpinning all the other technology clusters.

As more organizations rely on intelligence from outside the corporate perimeter, Open Standards for boundary-free information flows are a necessity, both horizontally (infrastructural) and vertically (industry-specific). Service Orientation is the ubiquitous design principle that shapes solutions throughout the technology clusters. Besides, open standards are shaping open-source services.

Large critical payments systems such as SwiftNet and the French Automated Clearing House STET are built in SOA, and rely on a large number of open-source components and have experienced no breaches in security.

## 6 Technology meets Business Drivers in Financial Services, by Segment

The potential business impact of the seven technology clusters is very strong in financial services—a dynamic already demonstrated in two eternal imperatives: Cutting costs and monitoring risks. For example:

- The consolidation and virtualization of infrastructure and the re-use of services have a strong impact on the cost of IT.
- New user interfaces and collaborative tools enable business-process productivity.
- The ability to access large volumes of data, and to process that data efficiently, has supported the development of more sophisticated risk management—as envisaged in the Basel II advanced method, which relies on probabilistic risk assessments.

Beyond these perpetual business drivers, technology is also having an impact on the specific drivers of individual sub-segments of financial services. Here we outline some examples related to segment business drivers identified in Capgemini's latest series of World Reports. Those drivers affect key strategic and operations activities, including product offerings, branding, distribution, resource planning, eco-system leveraging and management.

### Retail Banking

The key business drivers in retail banking<sup>6</sup> focus on the pillars of operational excellence and new distribution strategies, ranging from fast product innovation, multi-channel integration, and sales productivity through dynamic branch management to multi-brand portfolios, non-financial services distribution and indirect business through partners. Cases show that all these business drivers may be leveraged by technology innovation:

- Product innovation is accelerated by model-driven design and/or rules-based engines, which help to translate product features into system specifications and programs.
- Role-based portals and real-time process control support a seamless multi-channel integrated sales and service process by letting each user (client or agent) access services in a customized way and by orchestrating the resulting process.
- Sales productivity is being enhanced by a new generation of desktops equipped with rich Internet applications, mash-ups and extended search engines.
- Rich Internet applications and real-time process controls are being leveraged to customize for each brand the display and orchestration of shared services.
- Open standards and service-oriented architecture and security, along with derived composite applications, are key to establishing seamless process integration with partners to distribute non-financial services or to develop indirect business.

<sup>6</sup> World Retail Banking Report 2008 ([www.capgemini.com/wrbr08](http://www.capgemini.com/wrbr08)), Capgemini, ING and EFMA.

## Insurance

The must-haves in insurance today<sup>7</sup> include behavioral segmentation, granular monitoring of clients and network value, sophisticated customer relationship management, and optimized multi-distribution and collaboration between networks. New technology has already had an impact on these business drivers. For instance:

- Behavioral analysis, value monitoring and smart CRM are highly dependent on an insurer's ability to access a very large volume of data, internal and external, and to process it in a cost-effective way. This capability is now available, for instance utilizing idle computing power through virtualization or grid computing.
- Efficient multi-network distribution is enabled by role-based portals, which customize the use of shared services to each brand's marketing focus, while dynamic rules-based engines support sales processes and pricing customization, and collaborative tools encourage knowledge-sharing among peers and even among competitors.

## Payments

It is the dawn of a new era in the payments business<sup>8</sup> where innovation and standardization will need to evolve in parallel, as new payment means, new services on top of core payments processing, new regulatory constraints, and new security challenges evolve on the one hand and fast adoption of industry standards and fast-spreading shared payments factories develop on the other. Payments have always been technology-intensive, so it is not surprising to find the arena is already thriving on technology innovation:

- Mobile and contact-less technologies, with their integrated authenticating and electronic signature devices, form the basis for a new generation of payment means around the world (see Rabobank case study), where banks will compete with non-banks like Paypal and telecom companies.
- UNIFI (ISO 20 022) standards have made payments one of the leading business domains to take advantage of standards and open architecture, as exemplified by the huge shift toward end-to-end straight-through-processing by banks and their corporate clients, fueled by initiatives like SEPA (Single Euro Payments Area) and e-invoicing.
- Intelligent data and real-time process control are leveraged to propose new value-added business intelligence services to professional users and build new ways to comply with AML regulations (beyond black-list checking) through smart profiling of suspicious customer activity.

<sup>7</sup> World Insurance Report 2008, ([www.capgemini.com/wir08](http://www.capgemini.com/wir08)), Capgemini and EFMA.

<sup>8</sup> World Payments Report 2008, ([www.capgemini.com/wpr08](http://www.capgemini.com/wpr08)), Capgemini, RBS and EFMA.

### **Wealth Management**

Leading wealth management firms are leveraging technology to design needs-based service models to better serve high net worth (HNW) individuals<sup>9</sup>. The role of service-oriented business and technology architecture is critical in innovation. For example:

- Rich Internet applications, mash-ups, composite applications and role-based portals are used to enhance and better integrate more sophisticated Advisor Workstation and Client Portal technology and thus enable an effective multi-channel team approach to client service.
- Richer, single-client repositories can simplify and enhance client reporting.
- Sales productivity can be improved by better leveraging customer data and implementing advanced advisor and practice management analytics.
- Open standards and service-oriented architecture, leveraged through composite applications are supporting the sale of services delivered by third parties partnering with a bank.

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<sup>9</sup> World Wealth Reports 2007 and 2008, ([www.capgemini.com/worldwealthreport](http://www.capgemini.com/worldwealthreport)), Capgemini-Merrill Lynch.

# 7 Key Learnings

## Lessons Learned on IT Project Management

Technology innovations are shifting the traditional success anchors of IT projects. Traditionally, IT projects were mainly focused on four objectives:

- Developing functionalities compliant with business requirements.
- Integrating those new functionalities seamlessly into the information system (IS).
- Delivering the new system within the agreed time schedule.
- Keeping build and run costs within budgetary limits.

With the advent of new technology, these still-essential objectives should be far easier to achieve. On the other hand, new fundamental questions will arise:

- Is the architecture flexible enough to accommodate future changes?
- Have all re-usable components been used and will new components be available for re-use?
- Has the scalability of new services been checked against fast and intensive user adoption?
- Are new services fully taken into account by the management of the information system?

Project managers will have to consider and accommodate these new challenges in their scope and adjust accordingly their choice of resources, their set of methodologies, their organizational options, and the scope of the metrics on which they report to management.

## Lessons Learned on Change Management

It has always been a challenge to manage the “people” dimension of change initiatives, and the increased pace and scope of technological change is going to make the task even harder.

Some of the people challenges are largely cultural, others more operational; some will afflict the IT department itself, while others will affect adoption on the business side. For example:

- IT people could resent the effect of innovation on their role and purview, and those who have been naysayers in the past may be slow or unwilling to embrace change.
- IT must be willing and able to acquire new skills and manage new processes, especially if it wants to avoid using a legacy mindset to implement new technologies. For instance, IT will need to understand high-level business objectives and act creatively to promote new technological levers to support business product and process innovations. It will also need to replace the traditional top-down architecture approach and enforce standards and service level requirements, and reinvent acceptance and quality control processes, ensuring the global system still functions properly while accommodating customization by individual user groups.

- Business managers who are used to dictating IT efforts may fear a loss of control when business units and IT are allowed to launch decentralized initiatives—even though it is probably the most efficient way to conduct innovative technology-based business experiments.
- Business units will need to adapt to a new paradigm in IT—one in which individuals and business lines may feel they have less autonomy and less control over the information and processes they use and manage. Business people (especially older workers) will also face a potentially uncomfortable learning curve as they adapt to new technology, and the reengineering of products/ services, processes, and organizational structure.

Financial services companies will need to prepare themselves to deal with all of these internal change management issues, and above all, they must make sure IT and business people are not given any option to revert to a legacy-system mindset—a relapse that will undercut the company's ability to capture the opportunity of technology innovation.

There are likely to be obstacles to innovation from outside the company as well. For instance, traditional hardware or telecom providers will no doubt try to protect their proprietary business monopoly, and business partners, suppliers or corporate clients may balk at the changes required in their own systems to accommodate or leverage new technology.

It is important for financial services companies to recognize that while resistance is likely, they cannot afford to be sidetracked from leveraging IT innovation to fuel their business development and competitive advantage.

### **Lessons Learned in Evaluating IT**

If, as an FS executive, you wonder whether the benefits of IT innovation outweigh the challenges, and you are questioning to what extent your company is committed to capturing the opportunity of technology, it is worth pondering a few key questions. For example:

- Is the productivity of IT expenditure high enough?
  - How do my IT expenditures compare with the best in class, especially in my industry?
  - What proportion of the IT budget is free to be devoted to new projects?
- Is the agility of IT strong enough?
  - How does the time-to-market of my offerings compare with the best in class among my competitors?
  - How often do I get 'no' as an answer from my IT department?
  - How will my IS respond to the increase in regulation/compliance that is likely to follow the 2008 financial crisis?

- How long will new generations of young customers stay happy with traditional banking services?
  - When was the last really innovative offering from my company and from financial services in general?
  - What would my son / daughter think of my company's user interface?
- Are new players (e.g., non-banks and banks from emerging countries) a real threat to us in the long run?
  - Am I comfortable that our firm can combat competition from new entrants like Paypal, ZOPA or ICICI?
  - What if the Apples, Googles, Amazons or eBays of this world decided to offer financial services on a large scale?
  - Do I have a clear vision of the full implications for financial services of the increasingly widespread use of smart phones?
- Is my IT department a strength or a weakness when I think about future mergers & acquisitions?
  - How will my IS compare with the IS of my company's next acquisition?
  - Can my IS be rolled out to replace the IS of my company's next acquisition?

# 8 Putting TechnoVision 2012 into Practice: How to Proceed?

As we said, there is no shortage of opportunities in financial services to put TechnoVision 2012 into practice. Here we identify some key areas in which the seven TechnoVision technology clusters can be mapped to existing Capgemini solutions—offering an indication of where many financial institutions could start when looking to bring business technology innovation into practice. These areas include:

Solution		You Experience	From Transaction to Interaction	Process on-the-Fly	Thriving on Data	Sector-as-a-Service	Invisible Infrastructure	Open Standards and Service Orientation
Retail Banking	Customer Experience Transformation	✓	✓	✓				
	Inbound Customer Marketing	✓	✓	✓	✓			
Insurance	Policy Administration Framework			✓	✓	✓		✓
	Pension Workbench				✓	✓		
	Life Insurer in a Box					✓		
	Life Policy Administration Renewal			✓		✓		
Wealth Management	Advisor Workstation	✓	✓		✓	✓		
	Client Online Portal	✓	✓	✓		✓		
Payments	Target II and SEPA Business Analysis			✓	✓			✓
	AML Compliance and Business Intelligence Services			✓	✓			
Compliance & Risk Management	Solvency II				✓			
	Basel II				✓		✓	

### Retail Banking:

**Customer Experience Transformation (CET)** addresses the core issues of customer retention and revenue growth by identifying the integrated capabilities required to deliver optimal customer experience. Our solution addresses all key success factors, including people, process and technology.

It relies heavily on “You Experience” and “Transaction-to-Interaction” techniques, which are especially important to support efficient and genial interaction with customers at the branch or through remote channels.

**Inbound Customer Marketing (ICM)** relates to offering products and services to customers who have initiated contact via call centers or the web. It is a maturing practice, but employs simple approaches like applying business rules and leveraging basic customer information, such as segment and profile data, to determine which offers to extend to a given customer. Sophisticated approaches, such as real-time marketing, use instantaneous learning algorithms, often in conjunction with the scores derived, to turn insight built by “Thriving on Data” into sales-oriented customer interactions and experience.

### Insurance:

**Policy Administration Framework (PAF)** solution drives to the heart of the insurance business by providing “vision to implementation” solutions for transforming policy administration, which involves complex and often archaic processes and systems. The PAF offering is flexible across multiple solution platforms and has a proven, flexible application architecture that can scale to meet an insurer’s processing needs. It also has an extensive library of functional service-oriented business-system design and development documents that avoid the need to develop from scratch. This technology innovation around Reference Data Management and SOA facilitates consistent step-by-step upgrading.

**Life Policy Administration Renewal Solution** provides life insurers with a new platform capable of managing the products of tomorrow, while safeguarding the policies of yesterday. This solution is especially important right now, as insurers manage the dual imperatives of new-product development and compliance. On the one hand, unit-linked policies have been hit hard by financial-market volatility, prompting customers to demand new products with more guarantees and a more predictable performance. On the other, life insurers are facing a slew of new legislation, most notably demands that they provide clearer transparency into e.g., the performance of unit-linked products and related costs, such as provisions made to brokers/agents. Managing the impact of these two imperatives will be challenging for almost all life insurers, as most have long-established policy-administration and back-office processes that can be difficult to change. For life insurers, the end-to-end renewal solution offers:

- Predictable and smooth policy migration.
- Less software maintenance, since the platform is supported by the provider.
- Increased transparency, and the ability to shift to market-standard administration costs.

This solution illustrates both “Sector-as-a-Service” and “Process on-the-Fly”.

**Life Insurer in a Box** provides life insurers with a cost-effective tool for launching new products. The insurance markets in Western European and North American are quite mature, and the double-digit year-on-year percentage growth in policies is a thing of the past. As noted in this report, introducing new products is an expensive proposition, but insurers are currently looking for ways to offer less complex products for lower prices. Existing back offices cannot handle this type of product at competitive rates, but the Life Insurer in a Box solution offers life insurers a cost-effective way to offer products that meet customer demands for e.g., variable annuities, low cost and transparency. The benefits include reduced software maintenance and support, and standard prices per policy. Insurers can also use this powerful solution when expanding into new geographies, such as Central-Eastern Europe and Asia Pacific, where the insurance markets are still showing significant year-on-year growth. The solution typifies “Sector-as-a-Service”.

**Pension Workbench** simplifies the maintenance of complex pension rules, which change every year. For example, tax rules change and unions negotiate new pension rules with employers. Pension administrators have just a few actuaries working on assessing these rule changes, and effecting the resulting changes in documentation. Those piles of documentation are then handed to the IT department to implement changes in applications. This entire process has for decades been a bottleneck for most pension administrators, most of which use proven technologies like Word and Excel for documentation purposes, which means there is no testing or consistency-check done up-front for these crucial rule changes. The Pension Workbench solves many of these issues by simplifying the maintenance of complex pension rules. As a result, the Workbench:

- Improves the quality of work.
- Improves the track and trace of pension-rule modifications.
- Captures and safeguards knowledge of complex pension rules.
- Separates rule design and testing from the run-time environment.
- Generates the rules for almost all existing rule engines.

The Workbench is a prime example of a “Sector-as-a-Service” and a “Thriving-on-Data” solution.

#### **Wealth Management:**

**Advisor Workstation** solution helps financial services firms to accelerate the implementation and adoption of their next-generation processes and tools to capture new clients and manage clients in a holistic, closed-loop fashion. Next-generation workstations enable advisors to better leverage technology to meet clients’ needs. Advisor workstation software is becoming more integrated, technology is enabling an effective multi-channel team approach to client service, and advisors are using the online channel to enhance the client relationship.

**Client Online Portal** is an end-to-end solution that enhances the online experience by integrating the advisor desktops, call centers, advisor/client collaboration, improved market data and tools, alerts, enhanced transaction and account management, and financial planning. Existing online frameworks/solutions are leveraged to deliver a client- and financial advisor-centric online solution with a comprehensive set of out-of-the-box functionalities, which can be scaled to support a comprehensive wealth management offering integrated with all of the client's intranet and Internet sites.

#### **Payments:**

**Beyond Target II and SEPA** solution compares current and future business processes, ways of working, procedures, tasks, roles and responsibilities, governance, skills, and competencies to develop a clear picture of future roles and to help define the best long-term strategy based on competitor assessment, customer needs and segmentation, internal capabilities, and a robust business case. The implementation of processes and systems supporting that strategy relies heavily on the richness of "Process on-the-Fly" and "Open Standards and Service Orientation".

**AML Compliance and Business Intelligence Services** address two compelling features of the payments business going forward: 1) anti-money-laundering, which is required by regulators, and 2) business intelligence services, which offer the most promising way to develop value-added services that can balance the growing commoditization of payments processing. Neither would be manageable without the underlying technologies of rules-based data analysis and real-time process control - and they ably illustrate "Process on-the-Fly" and "Thriving-on-Data" capabilities.

#### **Risk Management and Compliance:**

**Basel II Commercial Impact** solution helps firms identify commercial opportunities from Basel II implementations, rather than just focusing on compliance. These commercial opportunities take advantage of detailed segment and credit risk data extracted and processed from numerous and varied databases via to indexation and grid computing.

**Solvency II** solution includes tailored frameworks, unparalleled business intelligence and proven methodologies to put insurance firms quickly on the path to capturing competitive advantage via compliance. Pre-emptive risk data collection and warehousing can also reduce the cost of compliance by allowing clients to jump-start their data collection and avoid costly manual recovery in later stages of compliance.

# 9 Next Steps

Banks and insurance companies that decide to pursue the opportunities of technology innovation will need to take four distinct steps:

1. Make sure IT and business managers identify and agree on key business drivers.
2. Pilot chosen technology solutions to demonstrate their value and build buy-in.
3. Roll out the innovations across through the organization, with processes and governance designed to encourage iterative improvements.
4. Conduct regular in-depth reviews of technology-based opportunities for business lines, and for the company as a whole.

## Agreeing on Business Drivers

There must be a formal process for bringing IT and business managers together and raising their understanding of how technologies are linked to the drivers that matter most to their business.

At Capgemini's TechnoVision workshops, for example, attendees from IT and the business lines together map their company's business drivers and their relationship to technology innovations (e.g., caused by, requiring, enabled by). This process ensures executives align their technology priorities more closely to business needs.

## Piloting Projects

The aim of a pilot is to demonstrate clearly the value of a given innovation. Only by proving the value of a technology can the company hope to blunt naysayers and skeptics, and build outright support for a large-scale roll-out.

Ideally, then, the pilot should meet a business need that has already been identified as a priority, but has yet to be fully met. New technology experts should seek to build technology solutions that are clearly better (e.g., faster or more economically) than traditional approaches. It is important to identify the best pilot among the possibilities within a wide-ranging portfolio of initiatives (e.g., new product launches, new channel roll-outs, new partner integration, or productivity and quality enhancements through process optimization). The choice should be a high-profile opportunity, but should weigh the potential business benefits against the risk of introducing a new technology solution (even if that risk could be largely mitigated with a proper technology maturity check and through a risk-sharing agreement with a partner able to provide experienced staff and resources).

## Rolling out Piloted Technology

Even when a successful pilot has built the business case for a wider technology roll-out, there must be an iterative process for ensuring the innovations continue to be the best solutions. There should also be some formal oversight—IT innovation champions, for instance—who are empowered to monitor the evolving technology clusters and the relevance of associated services, and to propose innovative alternatives to traditional solutions.

These IT advocates should be continually seeking to re-validate and question the use of solutions, asking for instance:

- Are the business objectives clarified independently of a specific solution?
- What innovations could be applied in this case?
- What examples from other sectors guarantee a good probability of success?
- What benefits would be brought to the bank/insurer from the innovation?
- What changes are required from IT and business people to implement an innovative solution?

This process will at least ensure that technology strategy is not driven solely by precedent or the boundaries of the user's comfort zone. Partnering with an experienced solutions provider can also help to ensure a rigorous approach to evaluating innovations. Technology partners can share lessons learned from prior experience of helping companies in financial services and other sectors to transform their IS governance and processes and their IT departments (processes and skills).

### Conducting Regular Reviews

Last but not least, banks and insurance companies should set up a regular in-depth review of technology-based opportunities for the company or its business lines, probably as a part of the yearly budgeting and planning process. The review process should typically include the following:

- A comprehensive update by the IT innovation champions of technology innovations being planned and deployed by companies in financial services or any other sector.
- Brainstorming with business units and/or corporate function managers on the potential leverage that each technology innovation could have on the firm's business.
- A comparison of the portfolio of the technology-enabled business initiatives being considered by business units and/or corporate functions.

To open up and scan new technologies efficiently, companies can take advantage of unique accelerator sessions to view and define their way to becoming an "Enterprise 2.0" (e.g., in a Capgemini Accelerated Solutions Environment (ASE) workshop). This type of review can also help to align business and IT people, and facilitate their mutual acceptance that the rules of the game are being changed by technology innovations.

The findings of this type of review help in prioritizing projects by focusing the efforts of IT innovation champions on the levers deemed most valuable by workshop participants.

# 10 Conclusion

For financial services companies, technology innovation can be a double-edged sword. Its transformative power is obvious—and is already being captured by many players in many ways. And yet the very speed of innovation, and the sector's history of rigid, bloated systems, poses a challenge to even the most enthusiastic and tech-savvy CIO/CTO, and can leave many wondering if they are leaving too many technology dividends on the table.

TechnoVision provides a framework for viewing technology through the prism of business relevance. Looking at various key business drivers in financial services as a whole, and in the sub-segments of retail banking, insurance, payments and wealth management, it becomes easier to zero in on the ways in which technology can actually drive a company faster and farther toward its business objectives.

Admittedly, to succeed in their journey, banks and insurers will need an open mind and a rigorous approach to project management—and probably a willingness to change at least some aspects of metrics, processes, governance, and culture—but the payoff will be turning the seeming science fiction of technology into a real driver of business development and profits.

## Capgemini TechnoVision 2012 in Financial Services

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