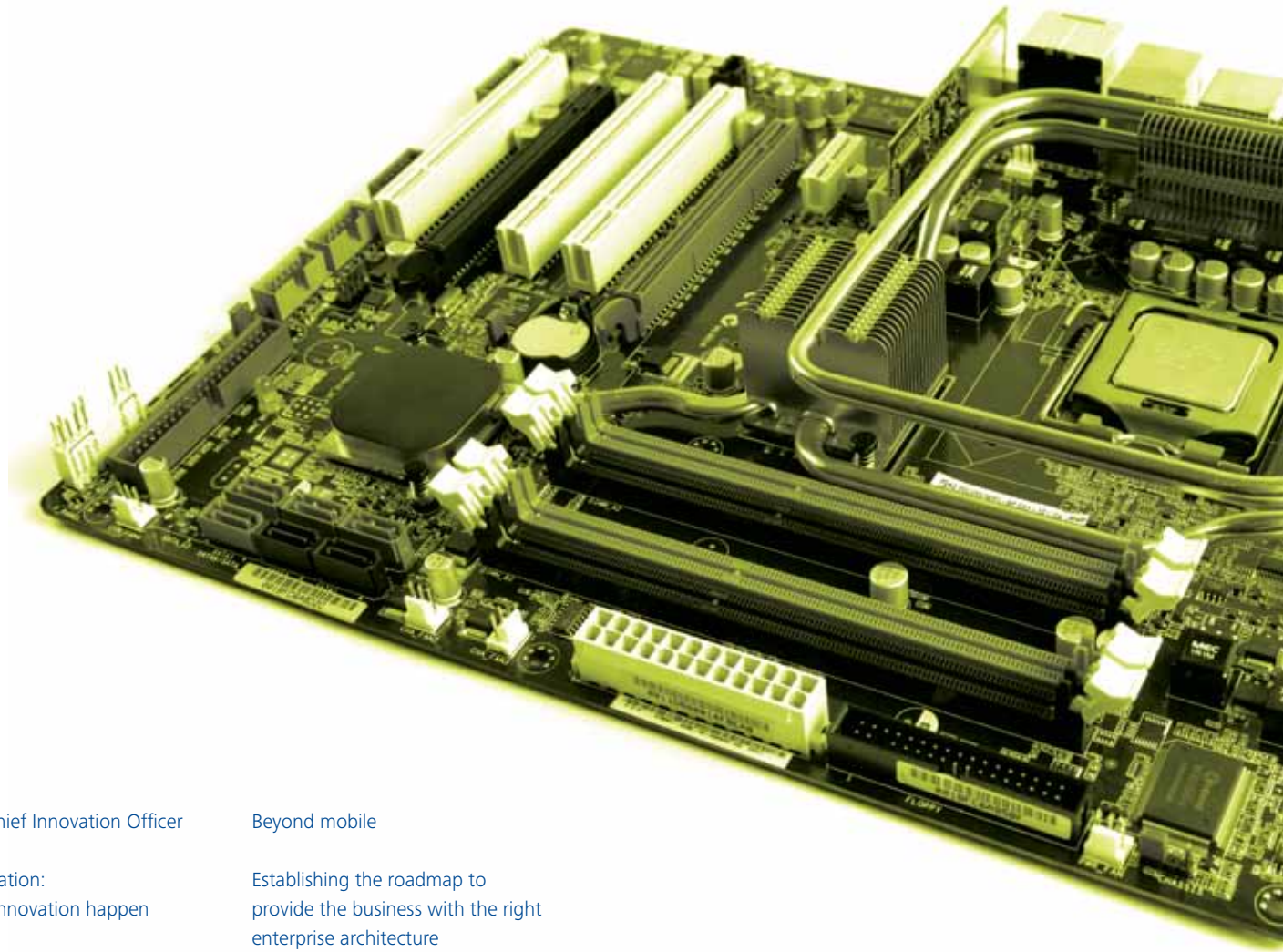


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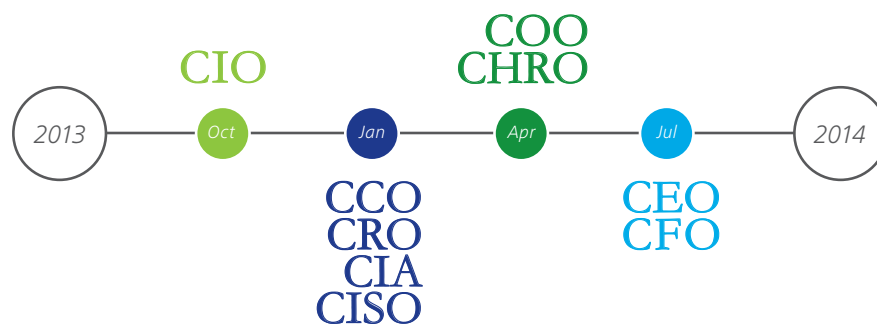
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Each edition of the magazine will be addressing subjects related to a specific function.

Please find below an overview of the spotlight for the upcoming editions of the magazine:

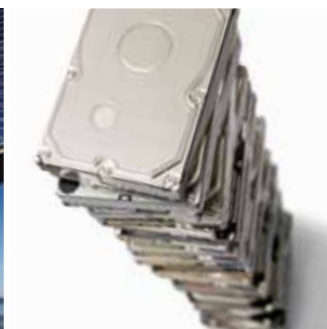


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Foreword



Welcome to the second edition of *Inside Magazine*! This magazine will offer you an exclusive insight into best practices, trends and opportunities as well as look at issues and threats that our clients face today.

At Deloitte, we have a unique market positioning to serve our clients from the definition of their strategy to their organisation, operational and technical implementation until the set-up and review of effective control frameworks from a risk, compliance and internal audit point of view. With this new quarterly publication, we would like to offer a more cross-disciplinary view of topics, sharing best practices, innovations, trends and challenges across business functions and industries.



Inside magazine will provide you with our main points of view and access to whitepapers and studies across all industries focusing on:

- Business and regulatory strategy, corporate finance
- Operations and Human Resources
- Information Technology
- Internal audit, compliance, risk management, board and board committee members' issues

This second issue of *Inside magazine* is dedicated to Chief Information Officers (CIOs) and their teams. We understand the unique challenges faced by CIOs in both the public and private sectors across various industries. With this issue, we hope that we can help CIOs, regardless of the industry, to find innovative solutions that respond to the technological evolution and client expectations.



We hope you enjoy this new edition of *Inside magazine*. Please feel free to contact us and share your thoughts and feedback.

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In this second edition of *Inside* magazine, we are delighted to be able to bring you articles with a specific focus on hot topics and challenges which Chief Information Officers – CIOs – have to deal with, or other C-level executives ask them to respond to.

Various factors influence CIOs work and decisions. Proactive CIOs who want to anticipate changes constantly monitor business and technology trends but also regional and local market specifications such as regulatory challenges and evolving customer behaviour. Now more than ever, CIOs need to use game-changing technologies to transform their business and position themselves as catalysts for innovation. Today's CIOs have to become Chief Innovation Officers in their companies. This role and the importance of innovation in our fast changing environment will be the common theme of this issue. If they do not take up this challenge, someone else will. In that context, the initial findings of the Deloitte 2013 CIO survey show that, after many years mainly seeking operational excellence through cost reduction, businesses are starting to think again of IT and technology to support growth. Unfortunately, the survey also shows that businesses still do not always consider IT as an incubator of innovation. However, who is better positioned than the CIO to understand the impact of innovation on the organisation, its go-to-market, its operations, and its processes when innovation is today still mainly about technology and information systems?

By combining human insight and intuition with machine-based number-crunching and visualisation, companies can use so-called 'Big Data' technologies to answer questions they were previously unable to obtain answers for. If you know how to empower your information systems with mobility, its potential goes far beyond smartphones and tablet PCs to include voice, gesture and location-based interactions, device convergence, digital identity as well as payment in your pocket, and pervasive mobile computing. CIOs also understand the opportunities of using private cloud computing to lower capital expenses, manage operational costs and facilitate new developments. They are concerned about the challenges of cloud computing, regarding unclear boundaries and increased cyber threats.

In this edition, Ethias' CIO, Stéphane Rassart, also shares his experience in managing complex changes and points out how to define and plan the transformational journey required to push innovation forward within the enterprise. He presents how the Ethias Enterprise Architecture transformation roadmap has integrated appropriate innovative technological capabilities and highlights best practice and advice in this domain.

We hope you enjoy reading the topics covered in this issue of *Inside*. Thank you for your interest and support.



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CIO as Chief Innovation Officer

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Post-digital era forces are radically changing the business landscape. CIOs are now well positioned to help their companies reap the benefits of technological changes.

Today's world of business is not just changing—it's transforming

Many emerging technologies promise a beneficial transformational and disruptive effect on the business, and businesses are increasingly measuring the potential of technology as a primary and critical driver for differentiation and competitive advantage. Because the Chief Information Officer (CIO) monitors technology evolution - and revolution - and understands its impact, the CIO is well positioned to steer the business towards corporate innovation and to help the company reap the benefits of technological change.

However, traditionally, the CIO is the safekeeper of corporate information and is often viewed as the manager responsible for the efficient and error-free performance of operational systems. In that respect, the CIO has tended to look inward to IT rather than outward to business strategy design and to customer needs.

The CIO has been logically focusing on optimising IT operations and organisation, on reducing cost, on improving the IT workforce, on maintaining systems, and on using any levers to do more with less—or more realistically do the same with less.

The CIO's role should not, however, be devalued to just seeker of efficiency gains. Information technology can indeed help to reduce the cost-income ratio by not just cutting expenditures but also by increasing revenues by creating value outside IT itself using technology. For the last decade, the CIO has been under pressure to reduce or at least flatten the IT budget over time. At the same time, broader expenditure on new technology in the enterprise has increased substantially outside IT, shifting to lines of business and functions such as marketing. In other words, even as technology grows, the scope of IT control and impact had a tendency to decrease to the benefit of other support functions or business lines that are not intended or fully competent and equipped to master new technology for the whole firm.

Initial findings of Deloitte's 2013 Global CIO Survey even show that IT is not seen as a 'hub' of innovation by business leaders.

On the contrary, most CIO respondents felt that IT could deliver significant value to the business through innovation, both in terms of growth and efficiency. This highlights two key elements. First, it demonstrates the gap perceived between what businesses think of IT as an innovator and what CIOs consider their role to be. Second, it highlights the fact that CIOs still have a tendency to restrict innovation to being a factor for improving efficiency and supporting growth and less as a catalyst for differentiation and competitive advantage.

The Gartner 2013 CIO Agenda report corroborates this, showing that CIOs responding to this survey indicated that on average their organisations realise only 43% of their technology's potential, pointing out an important shortfall in value creation for organisations.

Hence, CIOs are facing the dual challenge of industrialising core delivery and operations, while elevating the position of IT to drive the innovation agenda. How can the CIO be called to contribute to business strategy through innovation when they are seen as yet another part of the machinery or even the administration?

Getting more out of technology and moving beyond IT requires expanding how IT views itself and others view IT. Without this mind shift, organisations will fail in using technology to create value as:

- IT will still be regarded as operational and not transformational
- IT will not attract additional resources and funding beyond that required to function
- IT will not attract the innovators required to imagine applications of new technology
- Business lines are not intended and even not entirely competent to understand comprehensively the impact—or even sometimes the potential—of new technology introduction



Now is the time for CIOs to turn this view around as the emergence of post-digital forces has created an unprecedented opportunity to shift the trajectory of their role firmly in the direction of greater strategic impact. CIOs can use the post-digital tools at their disposal to create that value, lead a strategic revolution, dramatically and definitely change how they are perceived by the organisation.

They can educate and incite passion for transformation among the C-suite, and oversee change that dives deeper than simply painting a thin veneer across existing businesses processes, because who better than the CIO at the forefront of technology can understand the power of it?

For the CIO to realise this change of mindset, CIOs will have to:

Ensure and maintain streamlined, robust, and quality operational states and high-performance, customer-oriented IT services. This is a strong pre-requisite for CIOs to be credible drivers of change.

Build new relationships with other CxO from the ground up in order to be deeply in touch with the business. IT organisations should implement business/IT partnering functions to ensure sustainable communication and relations with their business counterparts.

Deloitte's 2013 Global CIO Survey main results show that having a dedicated business partnering function appears to be the way to maximise chances of excelling as a true partner to the business.

Promote innovation to directors and deputies by demonstrating concrete applications of new technologies using 'Proof-Of-Concept' or presenting what competitors are doing. CIOs should not hesitate to scout for innovation and applications of new technologies beyond their enterprise and specific sector's boundaries. They should also assess how those possible concrete applications can bring value to the business not only in terms of growth, profitability, and productivity but also in terms of customer satisfaction, or differentiation through offering new products or services.

Seed innovation: start small and then scale fast. Innovation can indeed be disruptive and disappointing. Businesses cannot afford to invest too much in useless applications of technology. Starting in isolation from the information system and on a small scale gives the insight needed to understand the complexity of implementing the change, and the appeal of the innovation to the target community. If the results are positive, only the CIO can instruct the move to the next level by expanding the scope of the application or integrating it more tightly with the core information system. But what if the results are not satisfactory? Then throw the application away and abandon the idea or try it differently.

Accelerate the development process. Being an innovator is leveraging new technologies before anyone else. Businesses can have the greatest ideas but, if they carry out their implementation later than others, they just lag behind. CIOs should therefore use any lever available in order to speed up the development process and beat the competition on the race for innovation. Levers such as bringing on board external software agencies specialised

in a particular technology, adopting the software rather than adapting it, building an enterprise incubator, using new models to allow the enterprise architecture to integrate new technology easily, etc.

In a nutshell, the post-digital environment creates both the opportunity for innovation and the existential threat of disruption - especially now, as many businesses are inherently digital. The traditional IT function is becoming obsolete and the role of the CIO as it used to be defined is more and more irrelevant. Tomorrow's leading CIOs will forge new identities as post-digital catalyst agents who provoke and accelerate the transition to the post-digital era. They will have to use game-changing technologies to transform every business process, support the creation and delivery of brand new products and services.

To become that catalyst, they need to radically transform how they are perceived: scout for innovation, promote it, understand client needs or, even better, stimulate demand, foster new ways of interacting with the business, and seed and streamline technology introduction. In this context, the CIO's role must definitely move away from protecting their existing situation to embracing new innovative capabilities.

Today's world of business is not just changing—it's transforming.

Tomorrow's leading CIOs will forge new identities as post-digital catalyst agents who provoke and accelerate the transition to the post-digital era

Luxinnovation

Making innovation happen

Silke Brüggebors
Head of Communication & Promotion
Luxinnovation

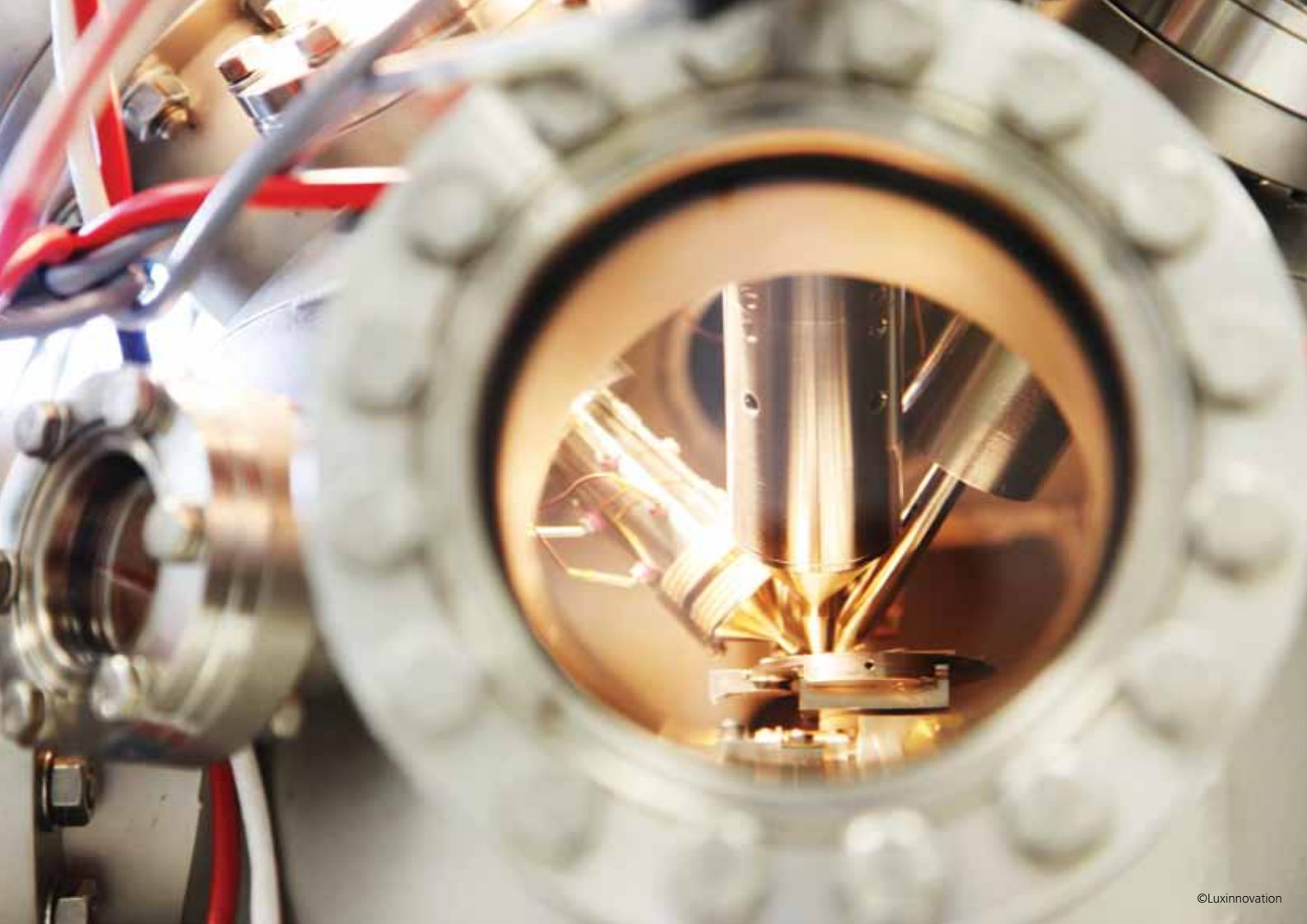
Operating at the heart of Luxembourg's innovation system, Luxinnovation, the National Agency for Innovation and Research, focuses on stimulating the competitiveness of the country's economy through research, innovation, creativity and design.

Well-known as a European capital and an international financial hub, Luxembourg is also an attractive and dynamic location for research, development and innovation. The Luxembourg Government's determined and comprehensive backing and developments in the public and private sectors over the years have enabled research and innovation to contribute a growing share of the nation's economic activity.

Luxinnovation supports these developments by offering easily accessible information, advice and signposting services to businesses of any size, from innovative start-ups to public research organisations. One of Luxinnovation's most important tasks is to detect and nurture ideas for research and innovation projects. In this respect, Luxinnovation acts as a facilitator for clients seeking national or European funding, planning to launch an innovative business, looking for technological expertise or aiming to upgrade their innovation management skills and activities.

Luxembourg Cluster Initiative

The excellence of a scientific and technological environment is usually assessed in terms of two main criteria; the quality of its research and its capacity to capitalise on research results by turning them into products or services that are successful on national and international markets. The Luxembourg government has embraced this insight by launching the Luxembourg Cluster Initiative, for which Luxinnovation has taken on the role of lead player, responsible for coordinating and promoting the different activities. The Luxembourg Cluster Initiative encompasses the following thematic clusters, built around sectors or technologies considered crucial in the development of Luxembourg's economy. This initiative actively encourages networking and collaboration between the private and the public sector. The focus is placed on key technologies that have been identified as being important for a sustainable development of the Luxembourg economy.



©Luxinnovation



The **Luxembourg BioHealth Cluster** aims to reinforce and capitalise on the national strategy developed by the government to achieve scientific excellence in molecular diagnostics, the cornerstone of personalised medicine and to enhance the Grand Duchy's reputation as a recognised and attractive environment for biomedical research, development, innovation and business. Its members are R&D companies, public research organisations, laboratories, hospitals and other key players whose activities are related to health sciences and technologies. With a main focus on molecular diagnostics, the cluster's umbrella also covers other R&D and business domains that are key elements in an integrated patient-based, personalised medicine approach, such as new therapeutics, bioinformatics, medical devices and telemedicine.

www.biohealthcluster.lu



The **Luxembourg EcoInnovation Cluster** supports the development of 'eco-enterprises', encourages collaborative and pilot projects and stimulates contact between public-sector players and companies at national and international level. The cluster brings together enterprises and research organisations that are active in the field of energy, environment and sustainable development in Luxembourg. The activities of the Cluster focus on areas such as eco-design of products, processes and services as well as the 'cradle to cradle' concept, which implies rethinking the entire production cycle to take into account how raw materials could be recycled after the end of a product's life.

www.ecoinnovationcluster.lu



The **Luxembourg ICT Cluster** brings together various players in the field of ICT in Luxembourg with the goal of fostering new and sustainable business opportunities through collaborative research, development and innovation projects. It aims to optimise the uptake of ICT as an enabling technology for various sectors and the further development of the existing ICT sector in Luxembourg by encouraging networking and collaboration between the private and public sectors. The cluster's activities focus on themes such as ICT for a healthy and ageing population, ICT for Green, e-payment & e-invoicing and collaboration with the Space Cluster, Location-Based Services.

www.ictcluster.lu



The **Luxembourg Materials Cluster** actively supports the various players in the field of material technologies in Luxembourg, with the goal of creating and developing new and sustainable business opportunities through collaborative R&D and innovation projects. The cluster focuses on themes such as composite materials, adhesives and high-performance computing. Its activities include the organisation of regular networking events, themed conferences and workshops. The Cluster is currently collaborating with other clusters and universities in the greater region to establish a cross-border cluster based on materials: INTERMAT.

www.materialscluster.lu



The **Luxembourg Space Cluster** brings together renowned and highly specialised companies and public research organisations in order to develop specific technology topics as well as collaborative R&D projects. It focuses on thematic areas such as space telecommunications, global navigation satellite systems and location-based applications including earth observation, maritime security and safety as well as space-related technologies. As an official member of the European Space Agency (ESA) since 2005, Luxembourg provides excellent financial, operational and intellectual support and infrastructure in order to help Luxembourg-based companies and research organisations gain access to innovation within the space sector.

www.spacecluster.lu



www.clusters.lu



Luxinnovation also supports the cluster for logistics and the Luxembourg Maritime Cluster. Both clusters represent further innovative sectors in which Luxembourg aims to gain importance, particularly by placing emphasis on new solutions for multimodal and high value-added supply-chain services.

The Luxembourg clusters actively encourage networking between the private and the public sectors both on a national and an international level with the goal of fostering collaborative innovation projects, enhancing the visibility of its members and exploring new business opportunities. A new governance policy associated with a strong corporate identity was recently implemented in order to develop a shared methodology and community building. Each cluster has determined a specific work programme that includes the organisation of thematic working groups and the development of concrete innovation projects. The implementation of the work programme is coordinated by a highly qualified Cluster Manager from Luxinnovation who benefits from the internal competencies of the agency and its excellent links to national and European networks. The clusters also promote inter-sectoral cross-fertilisation by organising joint working groups, such as 'Location-Based Services' (organised by the Space and the ICT clusters) or the 'Business meets Research' forum, an event dedicated to stimulating collaboration, fostering technology transfer and exchanging ideas for collaborative R&D and innovation projects.

Strengthening international collaboration

Research and innovation certainly do not stop at national borders. This is especially true for a small country such as Luxembourg which, due to its market size, needs to establish sustainable collaboration on an international level. To support public and private players with their involvement in collaborative research at European level, the Luxembourg government has appointed Luxinnovation as the National Contact Point for European research and development programmes (i.e. FP7, Eureka, Eurostars, AAL) as well as for European Space Agency (ESA) programmes. Luxinnovation is also a member of the Enterprise Europe Network (EEN) established by the European commission to help small and medium-sized enterprises (SME) to enhance their research and innovation activities by facilitating access to partners and markets abroad.

Today, this unique network includes more than 600 business support organisations in 45 countries. More recently, Luxinnovation has joined the European Network of Innovation Agencies (TAFTIE) allowing an exchange of know-how and best practices with similar organisations across Europe.

Stimulating innovation

Innovation is not the preserve of large companies or creative individuals, and it rarely occurs by chance. It is first and foremost the outcome of a systematic process. To transform a new idea into a commercial success, it is necessary to have a detailed understanding of the various innovation management techniques. To promote this know-how, Luxinnovation, the CRP Henri Tudor, the Chamber of Crafts and the Luxembourg School of Commerce (LSC) have developed a joint training programme on innovation management techniques. This course, offered on two different levels - for beginners and experts - comprises in different modules that enable the participants to learn how to generate new ideas and how to systematically develop them into innovative products and services which are successful on the market. In order to raise awareness of the necessity to continuously strive for innovation, Luxinnovation organises the Luxembourg Innovation Masterclass. This annual event is designed to respond to the needs of the Luxembourg business community, which is why Luxinnovation involves partner companies in the preparation of the event, particularly when choosing an internationally renowned lecturer and the topics to be covered. After Professor John Bessant (University of Exeter Business School) in 2011 and Professor Keith Goffin (University of Cranfield) in 2012, there is much anticipation to find out who will be the lecturer for the 2013 Luxembourg Innovation Masterclass planned for late autumn.

NATIONAL AGENCY
FOR INNOVATION AND RESEARCH
LUXINNOVATION



Stay informed at www.luxinnovation.lu

To transform a new idea into a commercial success, it is necessary to have a detailed understanding of the various innovation management techniques

Case studies



NEO MEDICAL SYSTEMS

Neo Medical Systems specialises in installing and maintaining operating rooms in hospitals in Luxembourg and Belgium. This young company created in 2009, was able to base its rapid take-off on a successful research, development and innovation project launched in the medical sector in 2012. After having secured the support of private investors, Neo Medical Systems was still missing a final push to complete its project. This is when it benefited from the Luxinnovation's expertise. The agency's advisory team helped Neo Medical Systems refine its business plan and prepare a high-quality application for the Ministry of the Economy and Foreign Trade, which resulted in the company being granted financial support by the Ministry under the 'Young Innovative Enterprise' scheme. With this aid, Neo Medical Systems has been able to develop the first surgical 3D screen without glasses associated with an eye-tracking system that was patented in January 2013.

www.neoms.com





ROTAREX

Nanoprotech, a fruitful public-private partnership

The Rotarex group, a market leader in valves, regulators and fittings for a range of markets and types of gas applications (automotive, medical, semiconductors) has been developing a surface coating formulation and technology since 2010 in the context of the Nanoprotech project, partly funded by the Ministry of the Economy and Foreign Trade. This nanostructured and multifunctional coating combines anti-corrosive and self-lubricating properties that help simplify and reduce the use of many organic compounds that can interact with the gases involved. This innovation is the outcome of a strong partnership with the Public Research Centre Gabriel Lippmann, which contributed its technical expertise in the physical vapour deposition. Rotarex has also called on the capabilities of the Public Research Centre Henri Tudor for the development of a coating material with similar properties, which in contrast is deposited using a sol-gel process. Contact with these two institutions was established by Luxinnovation in the context of the cluster initiative. Rotarex has also received funding advice from Luxinnovation in order to secure financial assistance from the Ministry of the Economy and Foreign Trade.

www.rotarex.com



SOIL-CONCEPT

The Soil-Concept company based in Diekirch has developed a range of innovative ways to deal with the problem of sewage sludge. From 2008 to 2011, Soil-Concept participated in an EU project together with partners from Germany, Austria, Lithuania and Belgium. The purpose of the €5.2 million ENERCOM project with funding from the Seventh Framework Programme for Research and Technological Development (FP7) was to develop a process in which multiple energy products would be created from sewage sludge and green waste. Known as polygeneration, the process would result in the production of electricity, heat and solid fuels in the form of biomass pellets, as well as compost and fertiliser. The end result was a new, safe, environmentally friendly and cost-effective way to dispose of sewage sludge while maximising energy output and reducing greenhouse gases. Soil-Concept's participation in the ENERCOM project was prepared with support from Luxinnovation. The agency helped identify a relevant call for project proposals and provided the company with the necessary information about FP7 and advice on how to write a successful proposal. It also helped identify the right project partners and assisted during the negotiation phase with the European commission.

www.soil-concept.lu

Luxinnovation, the National Agency for Innovation and Research, was established in 1984 and constituted as an Economic Interest Grouping (EIG) in 1998 with the objective of bringing together national initiatives that promote innovation and research.

As an EIG, Luxinnovation builds on a strong partnership with its members:

- Ministry of the Economy and Foreign Trade
- Ministry for Higher Education and Research
- Ministry of Small and Medium-Sized Businesses and Tourism
- Luxembourg Chamber of Commerce
- Luxembourg Chamber of Crafts
- Fedil – Business Federation Luxembourg

The multinational and multi-skilled staff of

Luxinnovation provides a wide range of services, including:

- Access to national and international funding programmes
- Support for innovative start-ups
- Innovation management techniques, creativity and design
- Technology transfer and partner search
- Intellectual property and commercial use of research results
- Luxembourg Cluster Initiative
- Promotion of research and innovation 'Made in Luxembourg'

How do Luxembourg CIOs compare to their global counterparts?

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A local outlook on the Global 2013 Deloitte CIO survey.

Introduction

This year, Deloitte launched its first global survey for CIOs and equivalent IT leaders, gathering insights from over 720 technology leaders from 36 countries globally including 38 responses from leading companies and organisations located in Luxembourg. This participation by our Luxembourg technology leaders has given us a tremendous opportunity to understand how IT organisations in Luxembourg compare to their global counterparts and identify the key trends, issues and hot topics for CIOs today.

In this article, we are delighted to present to you some preliminary key findings from the global Deloitte 2013 CIO Survey and insights focusing on Luxembourg, based on our local market knowledge. We will very soon be issuing the complete set of our international survey findings in a separate Deloitte CIO survey report.



About our global CIO survey

The objective of the global Deloitte CIO survey was to go beyond spotting emerging technology trends and focus on the impact of the moving technology landscape on IT functions, and the role and concerns of IT leaders today. The survey was designed to address the key issues influencing the role of IT within the enterprise and its interaction with the business today and was aimed at understanding the perceptions of CIOs in the six following key areas:

- **IT budgets and priorities** – what is the current trend in IT budgets and what are the priorities in terms of budget allocation?
- **Business partnering** – what are the expectations for the IT function, are they in line with business priorities and what are the barriers to meeting ever-increasing demands?
- **Talent and capabilities** – do IT leaders have the right teams with the right capabilities to meet these expectations at all organisational levels?
- **Innovation** – what does innovation mean in business today and to what extent is it being driven by technology?
- **Technology trends** – what is the current level of adoption of key emerging and disruptive technologies?
- **Career and development** – where is the role of the IT leader heading and what are the key career progression trends?

Approach and methodology

The global Deloitte CIO survey took place over a period of two months, from May to July 2013. A total of 30 questions were asked to which participants responded electronically through the online Deloitte survey platform. Complete anonymity of responses was preserved throughout the survey while incomplete, duplicate or inconsistent responses were excluded from the final data set, resulting in a final statistical population of more than 700 valid responses. The high response rate achieved across the globe has allowed us to make interesting geographical comparisons and draw strong conclusions on regional and country specific trends.

Survey participants

At a global level, CIOs and Heads of IT from across a range of industries participated, including financial services, consumer businesses, manufacturing and health services while a smaller proportion represented the public sector. As expected, a significant proportion of the participating companies in Luxembourg represented the financial services industry, a characteristic that should be considered when interpreting the overall local survey results. As shown in the figures above, the participating IT organisations ranged in size from those with fewer than 50 IT employees, to those with more than 1000 employees, with Luxembourg respondents generally falling at the lower end of the scale. The combined annual turnover of participants from Luxembourg is in excess of €12 billion, while, at a global level, it reaches €320 billion.

Structure and content of this article

This article provides an overview of the Luxembourg results of the recent Global 2013 Deloitte CIO survey.

We have carefully selected the results for our local market that we believe will be of interest to you, whether in terms of local or global outcomes.

The article is structured around the six key themes of the survey, presenting one section per area.

We have carefully selected the results for our local market that we believe will be of interest to you, whether in terms of local or global outcomes

47% of the IT budget in Luxembourg is allocated to support change

IT budgets and priorities

The worst of the IT budget cuts seems behind most CIOs in Luxembourg.

Contrary to what was observed over the last few years following the 2008 financial crisis with most CIOs being forced to balance IT spending against decreasing IT budgets, our survey reveals that for most of the CIOs in Luxembourg, as in most geographies and industries, the worst of the IT budget cuts are behind them. 71% of the participating companies in Luxembourg have seen their budgets increase or stay the same compared to last year.

Despite this positive trend of budget increases across all industries, 29% of respondents in Luxembourg reported a budget decrease compared to 22% globally, demonstrating a slower rise in Luxembourg than in other countries, unfortunately confirmed by the recent announcements of important cost reduction programmes – especially in the banking industry.

Southern Europe experienced the largest cuts in IT budgets (30% of respondents) as compared to the previous year, which may be explained by the macro-economic environments in countries such as Spain, Portugal and Cyprus. Conversely, respondents in Asia, Africa and South America experienced the biggest increases.

Budget priorities for Luxembourg IT leaders

There are positive signs that IT budget increases are used to support change and growth rather than business-as-usual activities.

Luxembourg survey results indicate an almost even split in terms of how much of the IT budget is allocated to cover business-as-usual (BAU) activities (53%) versus supporting change (48%). This is an encouraging result for Luxembourg to reflect upon. In contrast, globally, 60% of IT budgets are deployed to BAU suggesting that local CIOs are investing more to transform their services.

Even more promising are the results from the financial services respondents in Luxembourg. These report a larger 'change' budget, most probably reflecting the restructuring that the industry is going through and the need to adjust their business models. This can also possibly be explained by the necessary investments to transform the local financial services model to cope with all the latest regulatory changes such as exchange of information, FATCA, EMIR and UCITS. Their 'change' budget, which is significantly higher than their European industry colleagues, is evenly split between supporting business change and supporting its growth.

The Luxembourg private sector has a much greater proportion of its budget allocated to business-as-usual activities (66%) compared to other countries, suggesting that the reported budget increases from 45% of survey respondents focus mostly on improving/optimising their day-to-day activities rather than supporting growth or business development. Interestingly, only 18% of them have seen their budget reduced which could be interpreted as a sign of economic recovery in the private sector or reflect the fact that those budgets reached their lowest threshold.

On the whole, the public sector experiences the highest budget decreases (36%) while 67% of IT budgets are mainly allocated to business-as-usual activities. There is arguably a large international focus on transforming how public sector services are delivered but the survey shows that this is happening at a slow pace.

This year we received the responses of over 700 Chief Information Officers and other IT leaders from 36 countries across the Americas, Europe, the Middle East, Africa, Asia and Australia

IT priorities for Luxembourg IT leaders

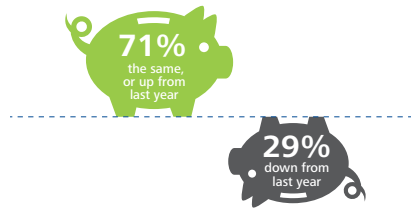
Responding to new business needs was identified as the top priority for CIOs in both Luxembourg and across the world.

In line with the vast majority of technology leaders across all industries and regions globally, responding to new business needs is definitely the key priority (circa 90%) for Luxembourg CIOs. This is consistent with the above-mentioned shift towards change budgets. It may also signify that CIOs will have the opportunity to play a more important role in the change and innovation agenda of their organisations in the near future.

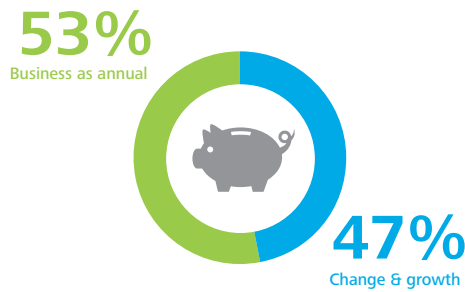
The survey results also indicated an interesting trend both in Luxembourg and globally regarding sourcing: developing IT sourcing strategies and increasing offshoring are seen as very low priorities on most CIO's agendas.

The analysis of the IT priorities of private sector companies in Luxembourg shows that IT cost reduction is still ranked very high on their agendas, explaining why their BAU budget proportion is 5% lower than in other countries, followed by investing in the consolidation of applications and infrastructure while financial services aim at delivering programmes and projects.

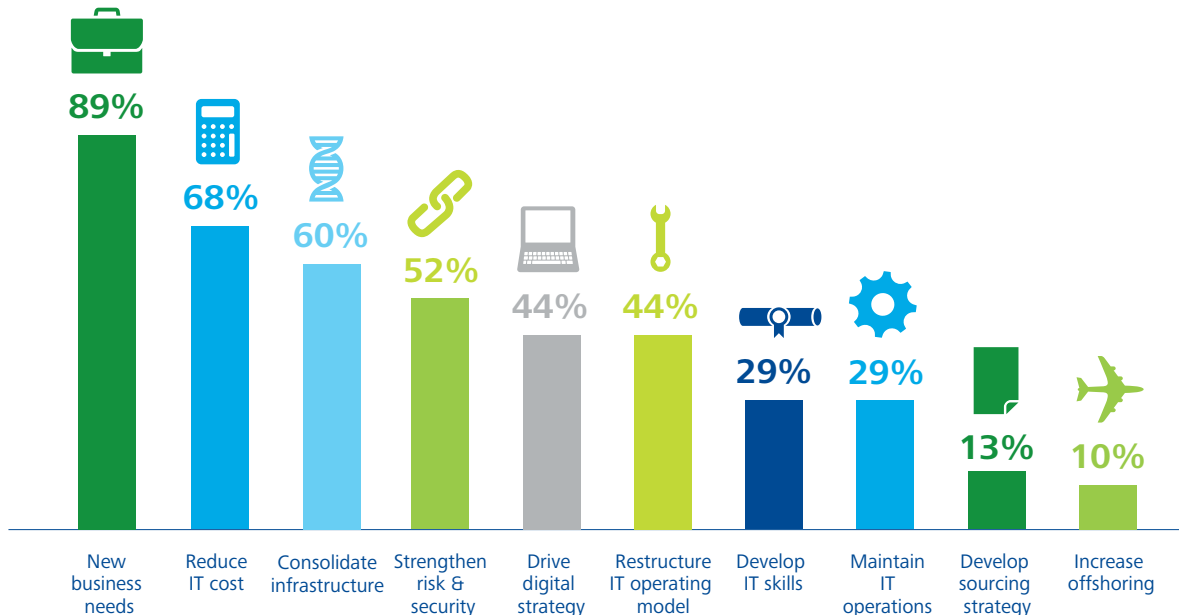
IT Budgets
Annual shifts



Budgets allocation
Business as annual vs. change & growth



IT Priorities
In the next 12-18 months



CIOs are not seen as strategic business partners yet (by their organisation)

Business partnering

IT leaders are clear on the need to become a more effective business partner. Opportunities exist for IT to add more value to the business.

Unsurprisingly, Luxembourg IT leaders widely believe that the business expects their IT function to deliver value by implementing the business strategy. In the financial services industry, the delivery of programmes/projects is seen as the second most important priority for business leaders, while the private sector considers business process optimisation to improve profitability, and as a key objective for delivering value. The Luxembourg CIOs' responses indicate that, with the exception of routine IT services which deliver no strategic value, all other IT services surveyed require improvement, whether in providing high quality data or in optimising business processes. IT effectiveness in the private sector appears more difficult to attain with only two topics exceeding expectations according to respondents.

According to the responses from Luxembourg IT leaders' there is still much room for improvement; only 26% rate themselves as excellent business partners and 71% see themselves as fair business partners. A significant and positive finding from our survey is that establishing a dedicated business partnering function gives the CIO the best chance of achieving excellence as a strategic partner, suggesting that focussing more in this area is likely to yield better results. Of those respondents who rated themselves as excellent as a strategic business partner, 60% had a dedicated business partnering function.

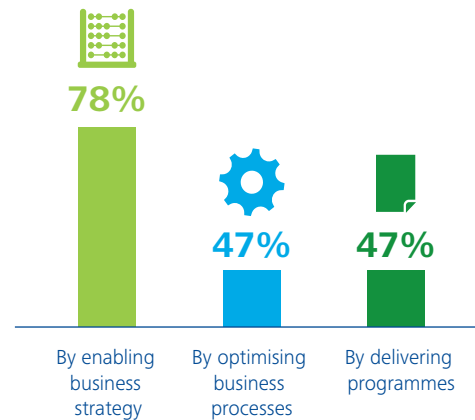
What is then preventing Luxembourg CIOs from becoming excellent business partners? Business perception/ understanding of IT and IT priorities and resources are the main barriers according to CIOs. The lack of a dedicated business partnering function coupled with lack of business understanding of IT, changing IT priorities and resources and reduced business understanding within the IT organisation are the most frequently observed reasons for the ineffectiveness of business partnering.

Despite some regional variation such as in Africa or in Asia, the Luxembourg highlights are in line with global results which emphasise a continuing disconnect between business and IT worldwide and the need for more focus and priority on the IT/Business relationship.

IT business partnership Effectiveness



IT value-drivers Top three ways business leaders expect IT to add value



Strengths and weaknesses Driving business value



Barriers to business partnering Faced by IT leaders



Innovation is a key business development enabler for CIOs

Innovation

Innovation is a key business development enabler for CIOs and IT has a major role to play in delivering it.

There is a general perception among CIOs that IT could contribute more to the business in terms of innovation. In line with global findings, Luxembourg technology leaders consider innovation to be strategic business tool in most organisations today and strongly believe that IT has a major role to play in delivering it. The overwhelming majority of Luxembourg respondents (77%) stated that they had a clear understanding of how their IT function can support the firm's innovation strategy.

When asked about the areas where they believe IT could add the most business value in their organisation, they identified the following three objectives as the most important:

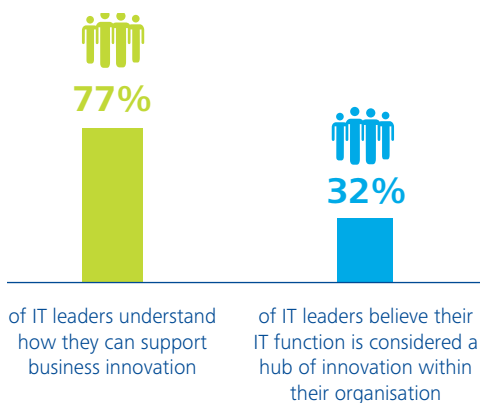
1. Market development/differentiation
2. Cost cutting/operational efficiency
3. Product/service development

Interestingly, despite believing that IT could play a significant role in driving business innovation, only a third of IT leaders (32%) believes that their function is seen as the hub of innovative development within their organisation.

When asked about what the barriers were to becoming this hub of innovation, Luxembourg CIOs identified budget constraints (29%), IT priorities and resources (18%) as key barriers as well as business understanding/perception of IT (11%). This is consistent with what CIOs saw as the barriers to them becoming a highly effective business partner and is potentially significant in this context given that 30% of Luxembourg respondents believed that the business sees innovation as one of the top three ways in which IT should deliver value to the business.

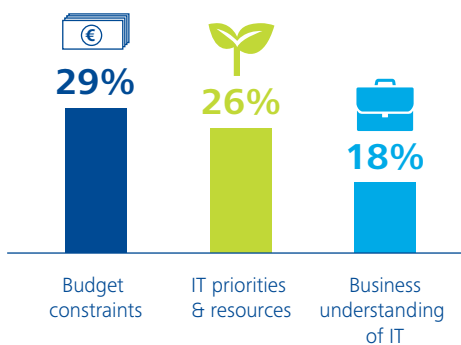
The survey results point to a number of areas where CIOs could consider providing additional focus in order to deliver more in innovation terms and position themselves as a more effective business partner. This includes gaining a greater understanding of their organisation's innovation strategy and the role IT could play in it – a significant minority, 25%, were not clear how IT could support this strategy and indeed 35% were unable to say that they fully understood their organisation's innovation strategy.

Supporting innovation



Innovation barriers

Faced by IT leaders



Business value

Through technology



Private cloud computing is the most adopted technology in Luxembourg

Technology trends

Luxembourg IT leaders share technology priorities with their global counterparts.

One of the objectives of this survey was to understand how CIOs are considering new technology at their disposal and if adoption life-cycles were shortened. Globally there is great momentum behind the adoption of new technology with large variations in adoption, depending on the industry and geography. Luxembourg follows the overall trend which is led by the adoption of cloud and followed by mobile applications, but differs with its clear lack of interest in social media, the third most globally adopted technology as identified by our survey. Luxembourg IT leaders widely consider innovation as a key driver in their market, followed by reducing costs or improving operational efficiency and supporting new products or services development.

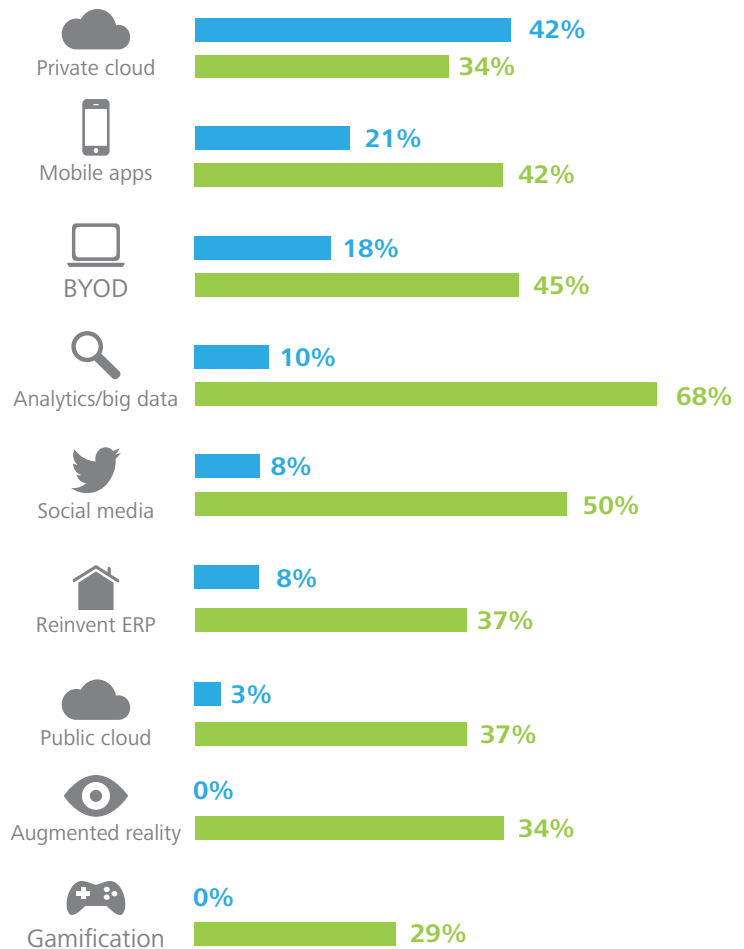
Private cloud computing stands out with its significant higher level of interest and adoption by almost all industries around the world. Luxembourg IT leaders have common technology investment priorities when compared to global results. The priority for more than 42 % of CIOs is private cloud implementation, especially in financial services in Luxembourg. Financial services institutions, naturally, are reluctant to use public cloud due to compliance and regulatory constraints and the main objective of using private cloud is cost reduction and facilitation of new developments thanks to the flexibility of this technology. The public-sector is only just starting research activities on this technology but opportunities look promising considering their market.

The second most adopted technology in Luxembourg, as is the case for all industries across the world, is mobile applications. The level of adoption varies hugely across the population of the survey, but it is certainly seen as a key market differentiator and aimed at responding to younger clients especially in financial services. This seems to be a must-have in services offerings for all industries across the world. While this is a clear trend globally, with 42% of the respondents implementing it or using it in production, it is Luxembourg's second priority for about 21% of IT leaders, with a large majority in private industry. Interestingly, regions around the globe that are more dependent upon mobile telecommunications infrastructure, such as Africa and Asia, have the highest implementation rates.

Bring Your Own Device (BYOD) is showing up in Luxembourg financial services, with more than a fifth of CIOs having already adopted it or in the process of implementing it, followed by big data and analytics which seems to be the next challenge to take up in our country. In contrast with the global pattern, Luxembourg is clearly behind the global adoption level. Nevertheless, 47% of respondents are monitoring it, while a fifth of them are in research mode, certainly to understand whether the big hype and promised potential could turn into reality before making the move. Gamification and augmented reality raise no interest in our market closely followed by public cloud while social media and reinventing ERP projects have a limited stake.

Technologies & Trends

Levels of adoption



■ Implementing/adopted
■ Monitoring/researching

34% report problems hiring experienced staff with the appropriate skills in Luxembourg

Talent and capabilities

Business-centric technical skills and experienced staff are in demand

Closing the talent gap in terms of business skills within their current IT functions and recruiting experienced staff with a suitable skillset are top concerns for both Luxembourg and global technology leaders. According to the results of our survey, the majority of Luxembourg respondents strongly believe that IT organisations today face a significant shortage of talent in terms of business skills. The problem is not a wholesale IT talent shortage per se, but rather a shortage of specific business-focused or business-facing skills. The survey showed that the most critical needs in terms of business skills are for IT staff to communicate effectively (63%), think like the business (42%), and foster and maintain relationships with suppliers and customers (32%). These local findings are largely in line with global survey results, which highlight exactly the same problem, a significant gap in business skills within current IT functions.

Reinforcing the above result, when we asked CIOs located in Luxembourg about the biggest gaps in terms of technical skills, again they indicated business-focused skills as being in high demand, with business analysis capabilities causing most headaches (53%). Another interesting finding from the same question was the perceived skills gap in analytics/big data and mobile applications within the current IT teams, confirming the interest for these technologies in the Luxembourg market. A lack of experienced staff to fill the apparent gaps in business skills within current IT functions is observed in the majority of regions worldwide. The results from our international survey support local findings from around the world that recruitment and retention of talent

is a significant issue for CIOs. On the recruitment side, Luxembourg CIOs are experiencing most problems hiring appropriately skilled experienced people according to 34% of respondents and a further 18% indicating problems recruiting both experienced staff and graduates. Only 3% in Luxembourg indicated a problem with recruiting skilled graduates.

More encouraging are the results around the retention strategies for top talent currently adopted by Luxembourg CIOs, which seem to be heading in the right direction and preventing additional hiring issues. When we asked IT leaders what they were doing to close these skills gaps and retain talent, respondents indicated their top three strategies as:

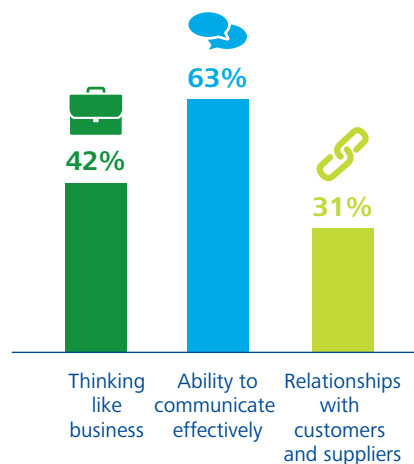
- A. Redesigning IT roles and structure – almost half of respondents indicated this as one of their top three strategies (45%)
- B. Offering tailored training and development programmes (39%)
- C. Providing access to cutting-edge IT projects and opportunities on projects outside the IT function (32%)

These results may be surprising to some who might expected more traditional incentives, such as paying above the market, regular promotions or promoting a more flexible work-life balance. What the results observed might instead suggest is that CIOs need to provide their top talent, and in particular their experienced top talent, with rewarding work and training development programmes that meet their career aspirations within an effective IT organisational structure.

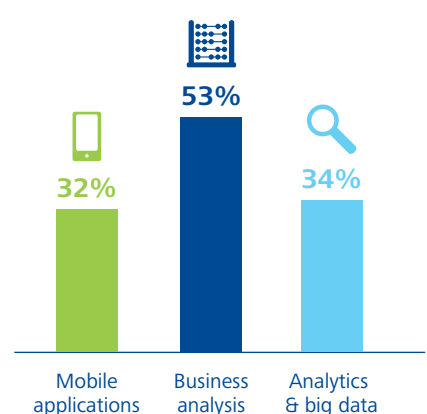
Recruitment Challenges



Business skills gaps Top three within IT functions



Technical skills gaps Top three within IT functions



IT leaders' greatest motivation is to contribute to business strategy definition

Career and development

CIOs desire a more strategic position in their organisations and consider other CxO roles in their quest for greater impact on the business strategy.

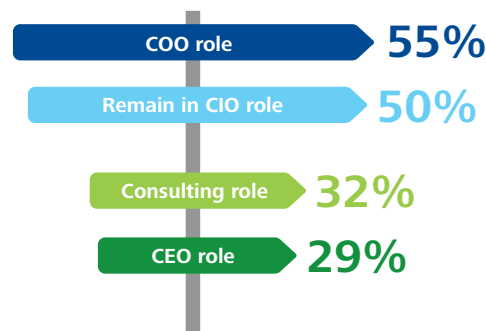
It is clear from the analysis of survey findings that CIOs want to have a more strategic impact on their organisations. When we asked IT leaders in Luxembourg what would motivate a career move, a greater contribution to the business strategy (34%) and a new challenge (21%) were identified as the key factors that would attract them to a new role. Contrary to initial expectations, more responsibility (5%), salary (3%), and a promotion (3%) are not key motivations for a career change.

Does the current perceived inability of CIOs to make the desired contribution to defining business strategy mean that organisations in Luxembourg do not get the best out of their IT leaders? Our findings around business partnering support this hypothesis with 74% of IT Leaders in Luxembourg rating their IT organisation as fair or poor as a strategic business partner.

This result also confirms the well-known problem of miscommunication and misalignment between business and technology leaders.

Certainly linked to the above findings, a significant number of Luxembourg participants (24%) believe that the IT industry does not provide them with the job opportunities for a varied and fulfilling career, a sentiment which was less strong globally (only 8%). This result is also verified by the fact that 55% of the respondents would move to a COO position, while the remainder would prefer to move to a position of CIO (50%), Consulting (32%) or CEO (29%) being especially attractive. Another striking result observed in Luxembourg is the CIO perception that local market IT leaders do not have access to adequate training and development opportunities to meet their career aspirations, a belief shared by 32% of the survey population in Luxembourg but only 10% globally. Likewise, 24% of Luxembourg respondents think the domestic market cannot provide them with a range of job opportunities for a varied and fulfilling career.

Where next? CIO career considerations



Career moves Top reasons to move on

34%
Greater contribution to the business



21%
New challenge



Job satisfaction Training & career opportunities

58%
Of IT leaders do not agree that they have access to adequate training and development



50%
Of IT leaders do not agree that they have access to opportunities for a fulfilling career in IT

Conclusion

The survey demonstrates that the financial crisis is not yet over and that doing more with less remains the leitmotiv of our IT leaders in Luxembourg. Innovation can, in certain cases, help contain costs but the main objective shall remain business needs servicing. Over the past years, the role of our CIOs has clearly moved from a focus on technology expertise and operational management to business support functions or even in some cases to a business partner role.

Close collaboration and understanding between business and IT leaders has become crucial in order to enable, build, deploy and implement the business strategy at the right time to differentiate a business from its competitors. Organisations are not getting the best out of their IT leader, while expectations of the CIO are changing. Gaining business and strategic

competencies within the IT function and fostering and maintaining relationships between IT and its clients, whether internal or external, are definitely the new challenges for most of our IT Leaders who shall now delegate to a strong IT Director or Manager capable of running the majority of the operational side on their behalf. Doing this will free up time from the day-to-day fire-fighting role IT Leaders are asked to take, allowing them to gain experience in other areas of their business - from operations and finance to product development and marketing - and interact with their peers to bring back new ideas and foster innovation.

Thanks to these business points of view and enhanced business experience, CIOs will then be able to engage in the bigger picture dialogue and make a greater contribution to business strategy.

Close collaboration and understanding between business and IT leaders has become crucial



How to ensure control and security when moving to SaaS/cloud applications

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Security concerns are still one of the major barriers to mass adoption of cloud computing

Cloud computing is one of the hottest trends in the IT industry today. Referred to as 'a game-changer' in analysts' articles, cloud technology gives organisations the opportunity to enhance collaboration, agility, scaling and availability while providing them with some exceptional levers for cost reduction through optimised and efficient computing.

Although most organisations have already adopted cloud computing or are in the process of moving to cloud solutions, others are still reluctant to take the plunge. A Deloitte survey on cloud adoption in Europe¹ revealed that for a panel of CIOs who have not yet adopted cloud computing, the main inhibitors are the following:

- Insufficient data security and risk of data availability
- Open compliance and legal issues
- The risk of losing governance or control over data

Another recent survey revealed that 78% of IT managers considered that the lack of trust in security was the biggest barrier to the adoption of cloud technologies.

Security concerns are driven by the perception that holding data in a third-party data centre means compromising security, control and access. Indeed, many organisations are highly concerned by security breaches that could result in their data being lost or stolen, reputation damaged, or worse, a security breach that would allow competitors to gain access to highly sensitive information.

Consolidating huge amounts of data within large public clouds is also perceived as creating a massive point of failure in the event of a communication breakdown (impairing data availability) or espionage activities such as the recent PRISM programme revelations (a clandestine mass electronic surveillance data mining programme created by the NSA - US National Security Agency).

In this context, organisations are seeking reassurance regarding the ability of cloud computing to provide an effectively secure controlled environment and thus ensuring that moving applications and information into cloud computing services is safe.

¹ Deloitte - Cloud Adoption Study - Cloud computing is gaining momentum – October 2011
https://www.deloitte.com/assets/Dcom-Global/Local/%20Assets/Documents/TMT/dttl_tmt_CloudAdoption%20SurveyDeloitte_CIONet.pdf



There is no single security approach that fits for all forms of cloud computing

There are actually several forms of cloud computing. Each offers different characteristics, varying degrees of flexibility, different collaborative opportunities and, of course, different risks. As a consequence, it is fundamental to understand each form and each deployment model with their respective characteristics, in order to accurately assess the risk and the security landscape surrounding cloud computing services. The three fundamental cloud computing classifications are often referred to as the 'SPI model', where SPI refers to Software, Platform and Infrastructure (as a Service), respectively.

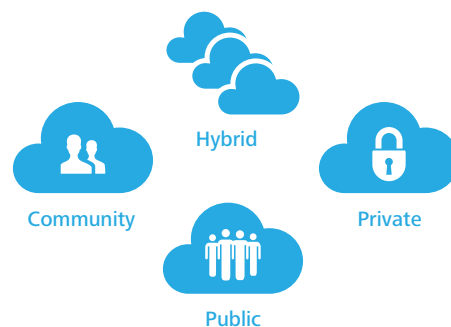
Regardless of the service model utilised (SaaS, PaaS or IaaS), there are four deployment models for cloud services:

- Public cloud: the cloud infrastructure is made available to the general public or a large industry group and is owned by an organisation selling cloud services
- Private cloud: the cloud infrastructure is operated solely for a single organisation. It may be managed by the organisation itself or by a third party and may be located on-premises or off-premises
- Community cloud: the cloud infrastructure is shared by several organisations and supports a specific community that has shared concerns
- Hybrid cloud: the cloud infrastructure is a combination of two or more clouds (private, community or public)

Delivery Models



Deployment Models



With so many different cloud deployment options including public vs. private deployments, internal vs. external hosting and various hybrid permutations, no single security approach and no list of security controls can cover all circumstances. Each combination of deployments and hosting options carries its own risk considerations, including threats, ability to respond and jurisdictional requirements. For example, the 'private cloud/off-premises' combination is protected from mixed use, but carries risks that could lead third-party providers to access confidential data.

As a consequence, when an organisation considers moving to cloud computing technology and Software as a Service (SaaS), a risk-based approach has to be adopted in order to determine (i) the deployment model and hosting option best suited to the organisation's risk tolerance and then (ii) the detailed security control requirements that will have to be implemented in the context of the selected deployment model.

Adopt a risk-based approach for identifying which deployment models fit with your risk tolerance

When moving to cloud computing technology and SaaS, an organisation should adopt a risk-based approach to evaluate initial cloud risks and to identify the most suitable cloud deployment models:

- Identify the asset for the cloud deployment: the first step in evaluating risk for the cloud is to determine exactly which data or applications are being considered.
- Evaluate the asset: this step consists in determining how important the data or application is to the organisation. Essentially, it means assessing confidentiality, integrity and availability requirements for the assets and how the risk changes if all or part of the asset is handled in the cloud. At least, a rough assessment has to be carried out by asking the following questions:
 - Are there any sensitive data that should not be placed into the cloud (at this time)?
For example, should client names, private asset information, health information, personal data, etc. be placed in the cloud? What regulatory restrictions exist (e.g. CSSF requirements on IT outsourcing for financial institutions in Luxembourg)? Any of these items could be deal breakers that prevent the use of cloud resources.
 - Are there any applications that provide a competitive advantage (which would be lost) if a 'generic' version of that application was provided in the cloud? While there is certainly the allure of using cloud applications for many tasks (e.g. customer relationship management) consideration should be given to how those cloud applications would interface with on-premise applications that are a source of competitive advantage.



- Map the asset to potential cloud deployment models: once an organisation has an understanding of the asset's importance, the next step consists in determining which deployment models the organisation is comfortable with. Just as a critical application might be too important or critical to move to a public provider, there might be no reason to select a private and in-premises deployment model including extensive security controls to host low-value data and non-critical applications. Before looking at potential providers, an organisation should know if it can accept the risks implicit to the various models: private, public, community or hybrid as well as hosting scenarios: internal, external or combined.
- Evaluate potential deployment models and cloud providers: in this step, the focus is on the degree of control the organisation will have at each layer to implement risk mitigation, as well as any other specific requirements.

Once all these steps have been completed, the organisation should be able to understand the importance of what is considered for moving to the cloud, what the risk tolerance is, and which combinations of deployment models are acceptable. This should give sufficient terms of reference to determine the required control framework that will have to be implemented and negotiated with the cloud provider.

Determine security control requirements adapted to your specific cloud deployment options

Numerous Information Security standards and compliance frameworks are well established and have matured over the last decade - ISO/IEC 27002, NIST SP 800-53 or PCI DSS, to name a few. Standardised security controls frameworks specific to cloud computing have also been defined, the most established being the cloud controls matrix from the Cloud Security Alliance².

These control frameworks offer the advantage of providing an exhaustive inventory of all possible security requirements that could apply to cloud computing, but on the other hand, not all cloud models and all deployment options need every possible security control.

Once again, a risk-based approach has to be deployed by the cloud subscriber in order to 'pick and choose' relevant security requirements based on (i) the specific risks inherent in its cloud model and deployment options and (ii) the potential exposure specific to its case.









Organisations will undoubtedly face complexities and challenges when it comes to (i) identifying risks inherent in their specific cloud deployment options and (ii) determining roles and responsibilities between the cloud subscriber and cloud provider. Fortunately, some cloud computing risk assessment frameworks exist, thanks to public and governmental initiatives (e.g. 'Cloud Computing - Benefits, risks and recommendations for information security' from ENISA³) as well as private initiatives (e.g. Deloitte's Cloud Computing Risk Intelligence Toolbox).

Cloud computing is one of the hottest trends in the IT industry today

² Cloud Security Alliance (CSA) is a not-for-profit organisation with a mission to 'promote the use of best practices for providing security assurance within Cloud Computing, and to provide education on the uses of Cloud Computing to help secure all other forms of computing'. Deloitte is a corporate member of CSA

³ The European Network and Information Security Agency (ENISA) is an agency of the European Union created in 2004 by EU Regulation No. 460/2004. The objective of ENISA is to improve network and information security in the European Union

The following is an example of control requirements (including responsibilities between the cloud subscriber and the cloud provider) identified for an organisation moving to SaaS:

Security Components	Security requirements (not exhaustive – for illustrative purpose)	
	Cloud subscriber	Cloud provider
 IDENTITY AND ACCESS MANAGEMENT (IAM)	<ul style="list-style-type: none"> • Select an IAM solution based on current and anticipated access control requirements • Secure authorisation and mature role-based access control life cycles 	<ul style="list-style-type: none"> • Drive access control solutions that align with customer contract requirements and in support of several regulatory requirements for customers • Least privileged access enabled and followed
 CYBER THREAT	<ul style="list-style-type: none"> • Revise patch and vulnerability assessment policies and standards based on risks • Develop mature security assessments and standards for vendor management 	<ul style="list-style-type: none"> • Establish security monitoring processes in conjunction with vulnerability management program • Implement encryption • Establish application-level code reviews, stringent software development life cycle processes, and provide notification of changes
 PRIVACY	<ul style="list-style-type: none"> • Revise privacy statements and programmes to adjust to the geographic challenges of cloud computing • Define privacy practices and processes 	<ul style="list-style-type: none"> • Develop processes for handling sensitive/privacy-related data with defined acceptable use and data protection processes and standards • Reporting process for unauthorised access
 SECURITY OPERATIONS	<ul style="list-style-type: none"> • Create explicit security operations policies and standards for cloud computing • Consider a policy-based approach for consistently consuming cloud services 	<ul style="list-style-type: none"> • Establish a Security Operation Center (SOC) • Define assessment, reporting and response capabilities • Consider a policy-based approach for consistently managing cloud systems
 REGULATORY	<ul style="list-style-type: none"> • Select a cloud provider/vendor that can support your regulatory requirements • Build a vendor oversight programme to monitor/measure compliance to contract requirements 	<ul style="list-style-type: none"> • Utilise a rationalised security framework based on multiple regulatory requirements to establish controls and processes
 RESILIENCY AND AVAILABILITY	<ul style="list-style-type: none"> • Redefine enterprise continuity of operation policies and standards for data replication and backup • Re-establish availability metrics and standards 	<ul style="list-style-type: none"> • Define processes for replication, failover and reconstitution of services related to disruptions • Reassess availability commitments and confirm testing results for compliance with SLAs
 APPLICATION DEVELOPMENT	<ul style="list-style-type: none"> • Use release and change management policies 	<ul style="list-style-type: none"> • Establish application-level code reviews, stringent SDLC processes, and provide notification of changes and release management • Offer self-service change acceptance processes
 ENTERPRISE RESOURCE PLANNING (ERP)	<ul style="list-style-type: none"> • Establish security policies and standards for ERP management and acceptable data usage • Define acceptable use of modules and databases 	<ul style="list-style-type: none"> • Establish security zones, data protection and access-provisioning processes • Offer strong authentication with single sign-on capabilities based on customer roles

Negotiate security requirements with the cloud provider and define your compliance assurance approach

The lower down the stack the cloud provider stops, the more security the cloud subscriber is tactically responsible for implementing and managing. In other words, in a SaaS model the cloud provider is responsible for implementing and managing most of the required controls. In this context, security controls as well as privacy and compliance are all issues to be dealt with legally in contracts. Like any procurement, selecting a cloud provider involves verifying that the business needs and security requirements are fully addressed in the contractual arrangements.

The cloud subscriber has at its disposal a growing number of mitigation strategies in order to reach an acceptable level of assurance regarding the cloud provider's compliance with agreed security requirements:

- **Contractual protection:** organisations should look to contractual protection to ensure vendors adhere to acceptable practices, as well as manage planned and unplanned terminations.
- **Security audits:** it is increasingly possible to perform security audits of cloud providers to ensure the providers' security policies align with those of the organisations. These audits can involve on-site visits and remote testing and may leverage independent third parties.
- **Security certifications:** providers are increasingly certifying their control environments, using Service Organisation Control reports (i.e. ISAE 3402 reports) or ISO/IEC 27001 security management certifications issued by independent third parties.
- **Leverage standards:** the cloud industry is pushing for standards, with initiatives such as the Cloud Security Alliance. However, consensus remains to be built among the major providers.

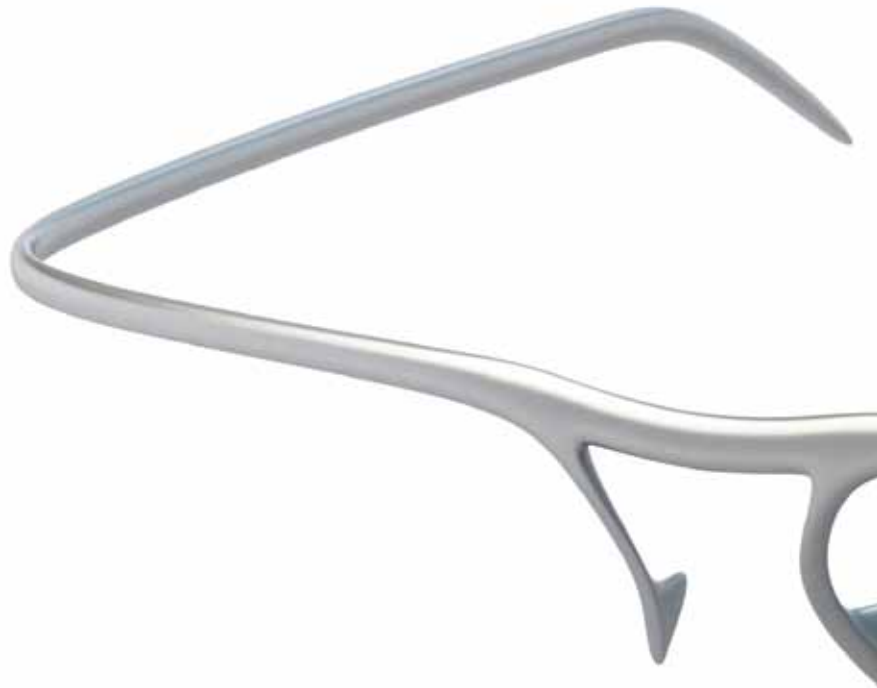
Cloud computing: a threat to security but also an opportunity

As explained earlier in this article, the strongest resistance to the adoption of cloud computing relates to data security and risk of data availability. However, compared with in-house data centres, cloud computing is not necessarily less secure. In some cases, it typically improves security because cloud providers are able to devote huge resources to security that many cloud subscribers cannot afford if they have to do it by themselves. All kinds of security measures such as hardware, software, human resources and management costs are cheaper when implemented on a large scale.

With respect to data availability, most cloud providers replicate users' data in multiple locations. This increases data redundancy and protection from system failures and provides a level of disaster recovery. In addition, a cloud provider always has the ability to dynamically reallocate security resources for filtering, traffic shaping or encryption in order to increase support for defensive measures (e.g. against distributed denial-of-service attacks).

As a conclusion, when moving to SaaS/cloud applications, organisations must take due care to ensure that any inherent risks are appropriately mitigated as well as try to benefit from cloud advantages in order to improve security controls and lower costs.

There is no single security approach that fits for all forms of cloud computing



Beyond mobile

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Mobile apps and devices: their importance in the near future

The mobile ecosystem is moving at lightning speed. Hyper-connected social media and global adoption of natural user interfaces - voice, gesture and beyond - are creating numerous new possibilities for user engagement. The opportunity goes well beyond using mobile applications to do what you have always done differently, it is about doing fundamentally different things.

The big challenge here is meeting user expectations, including those that users are not yet aware of, with a specific focus on 'Gen Y', which cannot live in a not fully connected world any longer. Understanding their needs, desires and routines drives the mobile and application innovation strategy. Because customers interact with the surrounding market through a variety of touch points - from browsing a website to calling customer services - it is important to consider each interaction through the eyes (and fingers) of the customer.

In terms of technology, the rise of the mobile web offers publishers a means to reach many screens at once, without having to invest in expensive native 'apps' (i.e. mobile applications) made for an ever-growing number of specific platforms (e.g. iOS, Android, Windows Phone, etc.). Time will tell if the mobile web represents a real threat to native apps, but the battle has definitely been engaged.

**It is important to consider
each interaction through the
eyes and fingers of the customer**



Augmented reality and wearable technology – a new era for mobile?

Unlike virtual reality environments, in which users are immersed in computer-simulated surroundings, augmented reality environments are those in which the real-world experience is augmented by computer-generated data and visuals.

A few years ago, considering this as technology for the masses would have sounded improbable, and yet today it is available and already used by millions of people on their smartphones to find the nearest metro station, an ATM or review real-time data about their immediate environment. The Google Glass concept, being the natural hands-free evolution in the augmented reality area, promises to bring user experience to an unexplored level.

Today, nobody can tell if Google Glass or any other Internet-linked eyewear is likely to be a mass market item

Today, nobody can tell if Google Glass or any other Internet-linked eyewear is likely to be a mass market item, but it so happens that Apple, Google, Samsung and all the big players are massively investing in the broader and promising area of wearable computing.

The mobile approach - impact on government and private corporations

The prevalence of Augmented Reality (AR) applications is expected to grow in the coming years. With the amount of digital data growing drastically each year, this technology will be considered as an increasingly valuable tool in connecting individuals with the information they need to make improved decisions and engage even more with the services on offer.

In the near future, it seems that even governments (especially security organisations) should consider how AR can be used as a platform to incorporate video analysis, facial and gesture recognition software and remote visual collaboration.

Many companies and governmental bodies find themselves off to the mobile race as mobile is moving too fast for the usual academic 'strategic planning'. Strategy is important, however, it should happen in eight weeks instead of eight months, and it should start with opportunity identification, helping deciders discover ideas for reshaping customer, employee, product and partner experience through mobile.

Prioritisation and focus remain critical, but just as important is a bold vision to think beyond the simple adaptation of existing business and processes. It also goes with the adoption of a more agile approach to delivering first a prototype, and then successive functional iterations.

The big challenge here is meeting user expectations, including those that users are not yet aware of

The challenges of m-payments in the Luxembourg market

With the prosperous development of e-commerce and mobile Internet, and the rapid growth of potential demand from consumers, mobile payment (or m-payment) is increasingly under the global spotlight.

The terms 'mobile banking' and 'm-payment' are often used interchangeably, however, they are quite distinct. Mobile banking refers to any online banking transaction, excluding third-party payments or peer-to-peer fund transfers, which may be conducted via a mobile phone. These transactions may include checking an account balance, receiving alerts or transferring funds between accounts. M-payment refers to the purchase of goods or services using a mobile device. Essentially it involves adding a payment/transaction point to the existing payments network which can either be enabled through near proximity or remotely. These can be peer-to-peer, consumer-to-business or business-to-business.

Luxembourg, with a high level of smartphone equipment and a small market, is the almost perfect testing ground for m-payment. As a consequence, local consumers are already offered two m-payment solutions: Digicash and FLASHiZ (a third one is on its way - Yapital). After installing the dedicated smartphone application and pre-loading money (FLASHiZ) or connecting the application to an existing Bank account (Digicash), both solutions enable the consumer to pay for goods and services in local businesses (e.g. car parks, restaurants, post offices, etc.) by simply scanning a QR code at the counter.

Beyond confidentiality and integrity of exchanged data, the big challenge of m-payment globally is the industry's current lack of maturity. Technology and regulatory standards defining m-payment largely still need to be defined, mainly driven by the fact that consumers do expect a 'user-friendly' and homogeneous m-payment experience.

IPv6, Cloud and Gamification: their impact on mobile

As we know, mobile devices - smartphones, tablets and future wearable devices - are highly dependent on their underlying technology. As an example, AR would not be possible without the complex combination of a GPS, an accelerometer, a camera and fast and permanent internet connectivity, all embedded in one device and used at the very same time to create the user experience.

Beyond what is in the device, answering questions such as 'How do I connect?' or 'What should I connect to?' innovatively is also critical to creating value for customers. As the Cloud does today in the data dematerialisation area, tomorrow IPv6 will be a powerful enabler for the next generation of content and services (e.g. peer-to-peer, push, VoIP, broadcast, etc.) which will require always-on global reachability and seamless mobility.

Gamification is a bit more conceptual: it is about taking the essence of games (i.e. fun, play and passion) and applying it to real-world situations. As a process (not a set of features), Gamification proposes switching users from passive exposure into an interactive play within their environment, especially when accessed from mobile devices, as specific and real-time surrounding data are therefore part of the game to further empower, engage and retain users.

In a business setting, that means designing solutions using gaming principles in almost everything (e.g. back-office tasks, career counselling, marketing activities, learning, etc.). Gamification can help to get stakeholders passionately and actively involved with their organisation. More than just a 'buzz-word', Gamification is likely to metamorphose from a tactical concept to a strategic imperative for companies.

Beyond what is in the device,
answering questions such as
'How do I connect?' or
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Establishing the roadmap to provide the business with the right enterprise architecture

Stéphane Rassart
Chief information officer
Ethias

Ethias CIO Stéphane Rassart shares his experience in establishing the roadmap to provide Ethias' business with an agile enterprise architecture to enable rapid innovation and cost effective operations.

The context of the EA Roadmap initiative

"Ethias is the fourth-largest insurer in Belgium, all branches combined, with 8.4% market share and employs around 1,800 staff. The insurer has a good balance between its life and non-life businesses. Despite being affected by the Greek and Dexia crises, Ethias achieved good results: €180 million in 2012. This was notably thanks to its focus on operational excellence.

Ethias has historically been an innovator in technology. The insurer was among the first to use the web as a channel by offering functionality as long ago as the late 90s. Ethias was also one of the first to outsource its IT: in the middle of the 80s, NRB was created as a spinoff of Ethias' IT department. Since then, business users dealt directly with NRB staff to ask for information system changes. This structure, however, had some limitations and, in 2008, I joined Ethias with the mission to create an IT organisation that would serve as an interface between Ethias' business users and NRB and align Ethias'

information system with standards of excellence.

We undertook different initiatives to reorganise IT to serve the business better and provide Ethias' information system with the capabilities to run operations efficiently and implement innovation and change in shorter timeframes to market and cost effectiveness.

Our IT organisation has adopted a new vision and strategy with the ambition to become an internal strategic partner to Ethias' business units and a major contributor to Ethias' strategy by 2015. The vision focuses on four levers: satisfying the business units' requirements, reorganising the IT department in line with the business units, optimising and controlling operations and building an effective and united team. The strategy is structured around nine different dimensions, such as fostering innovation, transforming enterprise architecture, relying less on in-house development, anticipating business demand, etc."



The reasons for an EA Roadmap initiative

“In order to implement the strategy, we launched the Enterprise Architecture roadmap initiative (EA Roadmap) in 2012. The purpose of the EA roadmap is to modernise Ethias’ information system, to anticipate future business requirements and to perform operations more efficiently. The objectives of the initiative are to structurally transform the information system in order to implement a service-based componentised architecture, improve its agility for shorter and cost-effective time to market, provide transversal capabilities, control and enhance IT services, maximise ROI and reduce IT operating costs.”

The approach for the design of the EA Roadmap

“In March 2012, Ethias’ IT organisation mandated Deloitte to support us in this initiative under my direction and the management of Ethias’ Enterprise Architect, Laurent Vauchel. We adopted an approach based on two dimensions: business demands and technical aspects.

The analysis of business demands was based on a standard reference model specific to the insurance sector and resulted in more than 200 business initiatives. Those individual initiatives have been reviewed and consolidated into more global functional initiatives such as data warehousing, product management, enterprise collaboration, external data analytics, cross-channel integration, etc. The technical aspects dealt with the formalisation of characteristics required for the enterprise

architecture, the adoption of best practices and leading principles, as well as the review of the current state. The output was a set of technical initiatives required to align the architecture with the vision and leading principles. Examples of such technical initiatives are implementation of an integration layer, rationalisation of the BI stack, optimisation of identity access management, provision of unified communications, etc.

From the functional and technical initiatives, we derived 22 architectural studies that described the requirements to equip the architecture with new capabilities.

Due to limitations of budget and time, we selected and conducted 13 studies. For each of them, different implementation scenarios were analysed over the summer of 2012. The different scenarios were: make, buy, or rent and only the proposed typology of solutions with a list of potential specific packages. The analysis detailed the impact of the scenarios, their implementation phases and resource requirements in terms of expertise and volumes, as well as their total cost of ownership. For each study, we selected the preferred scenarios broken down into projects and orchestrated them into a roadmap.

The roadmap detailed the target enterprise architecture in Software AG Aris, the implementation plan over the next 7 years and specified the different releases, the capacity planning, the sourcing options, and the budget.”



The results of the EA Roadmap

“By conducting this exercise, Ethias’ IT Department and providers now have a clear vision of what needs to be done and how to align the architecture with current business requirements and anticipate future needs. The business and Ethias’ management fully support the results of the exercise, as they will provide Ethias with a modern information system able to integrate innovation and change quickly and able to operate at reduced cost.

One year after the design of the EA Roadmap, we have stuck to the plan and have already integrated some architecture bricks that have effectively been used to implement business projects. Those bricks are the selected BI tools, the unified communications platform, the Web Content Management solution, the Enterprise Service Bus, and the Customer Relationship Management system. The Composite Application Framework that will equip our information system with standardised web technology tools to update and extract information from different back-end systems is also about to be deployed in production.

The investment is still significant, with thousands of man-days to fulfil and it is still a long journey to reach our target over the next seven years. The extent of this effort is explained mainly by the fact that our information system was built on silos aligned with business units that had great freedom to ask for any change regardless of the other departments’ requirements. This led to a complex legacy information system that will take time and money to modernise through componentisation and factorisation in order to reach the required levels of operational excellence and change assimilation.

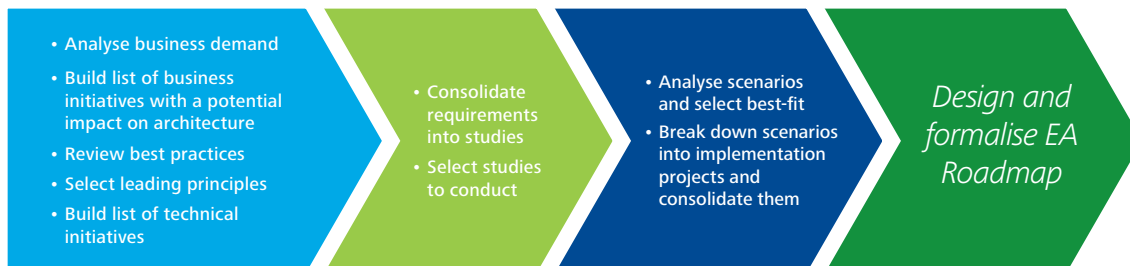
From now on, we will conduct this exercise at least every year to refresh our EA Roadmap with the latest innovation, best practices and business requirements. This will ensure the sustainability of our architecture capabilities, agility, and alignment with market standards. Indeed, we have conducted the second iteration of the exercise and integrated the results of 5 new studies that are Big Data, BPMS and BAM, Brokerage systems, Enterprise Document Management, and Rationalisation of the applications supporting the Collective Life business.”



“We adopted an approach based on two dimensions: business demands and technical aspects”

The lessons I would like to share with my peer CIOs?

1. Do not hesitate to undertake a comprehensive review of business initiatives. You will be able to anticipate business demands and prepare for it in advance. You will be considered a business enabler and not just a cost centre as is quite common in our profession.
2. Acquire knowledge about market practices, solutions adopted by competitors and technological evolution from the experts and facilitate innovation awareness sessions to clarify technology challenges and opportunities, and manage business users' expectations.
3. Get external assistance, at a minimum for the first run of an EA Roadmap exercise. Your team will acquire methodology, develop internal knowledge quickly, and will be able to iterate it.
4. Integrate your external service providers in the exercise upstream, especially if you outsource application maintenance.
5. Manage the expectations of the C-suites. This type of exercise may result in expensive and long-term implementation projects. They have to be prepared to accept it.



Data market in analytics

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Nowadays, businesses face a much tougher competitive environment. They must comply with and respond to emerging regulatory requirements and supervision.

To address the continued market and economic flux, it is essential for organisations to leverage information in new ways to maintain and grow profits, enhance performance and provide information transparency to satisfy regulators, clients and investors. The main challenges in order to fulfil these obligations are to provide not just accurate but also meaningful data—as in, data from which useful assumptions and analysis can be derived.

In order to fully realise the potential of their in-house data, organisations need to clean, complete and enrich their data, and the latter is typically done by using external data (usually from leading data providers). External data can be in the form of additional geographical or financial data, such as house prices for given addresses, which in turn can suggest the relative affluence of clients.

The sale of data is nothing new. Data as a business began in the 19th century when Paul Reuter began providing telegraphed stock-exchange prices between Paris and London. During the same period, five New York newspapers founded the Associated Press, which is one of the oldest sources of news in the world today.

Since the nineties, the web and increased technology use has led to an explosion of data and information providers. During the past 20 years, the ability to discover and exchange data has rapidly improved, completing the offering of well-known data aggregators such as Bloomberg and Thomson Reuters. There are now many data market providers, both large and small, who can offer enriching data to organisations.

The sale of data
is nothing new



Why use external data?

To increase operational efficiency and lower the cost of data quality issues

Most of the commercial consumers of data from today's marketplaces are enterprises wishing to enrich their existing data to overcome obstacles or to achieve market advantage. They may face data quality issues, which they have to solve in order to comply with a regulator's data request or to provide truthful master data in order to ensure that client mail goes to the right mailbox.

For that purpose, they use data from data market providers. In fact, few organisations can be completely confident regarding master data. For this reason, it is worth checking and completing missing salient

information. For instance, in the KYC domain, some software providers have set up all-in-one solutions connected to data market providers which enable the completion of mandatory information or verification of its accuracy and thus enable compliance with regulatory constraints.

To increase revenues

Other aspects where data market providers can be very useful, and profitable, is the field of data enrichment. As an example, a Belgian organisation was having disappointing results from one of its lists of prospects despite the fact that the prospects (as far as the data on the list could reveal) seemed to be similar to those in their existing client portfolio.



They subsequently requested external help to discover why their conversion rate from prospects to clients was so low. A project was carried out to link external data from data market providers to enrich their list and it immediately offered new perspectives and understanding of the prospects on the prospect list.

Armed with this meaningful analysis, the organisation was able to reveal undiscovered patterns and define target prospects which led to an increase in the conversion rate to more than 20%.

To improve the customer experience

Generally, by adding another external dataset to their own business data, organisations can create additional insights into their clients' needs. For instance, by mixing an IP address database with the logs produced by your website, you can understand the geographical location of the visitors to your site visitors (usually your customers and prospects). That is just a starting point: when combined with other data strategies, you can leverage this knowledge. For example, if you add demographic data to the mix, you have some idea of socio-economic bracket and spending ability.

Nevertheless, saying that insights are useful for analytical purposes only is a narrow view of the great potential that these data can offer. Instead of only trying to discover patterns in your data to increase, or strengthen your business, you can also provide value back to customers. For instance, recommending the phone number of the closest garage when your customer's windscreen breaks while travelling on holiday is the best time for you to give a very welcome helping hand to your customer—while building brand loyalty and customer approval.

While many datasets are useful, few are as potent as location data in the way that they offer a clear context to client and prospect activity.

While many datasets are useful, few are as potent as location data in the way that they offer a clear context to client and prospect activity

How to capitalise on integrating data

When trying to integrate external data into enterprise operations, three different approaches can be considered:

- **The ad-hoc approach:** in this model, external data is integrated in a project mode to tackle a non-recurring objective like a one-shot data quality improvement project or to enrich an individual exercise of advanced analytics.

This approach does not of course require any additional governance or specific technology to be set up.

- **The integrated batch approach:** to address recurring issues like reporting, controls or master data enrichment, external data is integrated on a daily or less frequent basis. This model requires that clear ownership is defined to ensure all data management aspects are covered, especially the data definition and the communication of changes to external data users.

On top of this, the data architecture must enable regular delivery of external data, quality controls and traceability.

- **The real-time approach:** in this model, external data is integrated into operational processes in real time. The most obvious example of this model is stock price integration into asset management processes.

Due to its real-time nature, this model requires a very strong service level agreement with the data providers, especially in terms of data quality and availability, to reduce operational risk.

Furthermore, the data architecture is also a focal point as it must be service-oriented and cope with the robust requirements of real-time activities.

All these models imply different levels of data architecture and governance but in all cases, particular attention must be paid to the legal aspects. This domain evolves constantly to take into account the increase in data consumption and people's exposure to social media, as well as how to take advantage of the data.

The border between public and private data is very thin and must therefore be monitored on a regular basis. For these reasons, experienced staff are required to make the most of external data.

Indeed, the impact may be significant in terms of integration and the expected benefits. It is therefore essential to leverage proven approaches.

Where to start?

As we saw, external data is already bringing and can still deliver many benefits to organisations in the areas of asset management, marketing or customer services.

When starting to use external data, it is advisable to perform a pilot project in order to demonstrate on a particular subject the value these external data can bring and what you can expect from them.

Subsequently, you can leverage this pilot as a communication tool within the organisation and apply a similar approach to other groups of data. However, if you have already carried out such projects, it is advisable to review what has been done previously.

Indeed, it is a fast-moving domain, and new data sets as well as technology solutions are constantly created and can have a significant impact on operational excellence, revenue growth or the customer experience.

There are now many data market providers, both large and small, who can offer enriching data to organisations



Insurance and social media

Reinventing a 'social' model for insurance

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A 'social' model for insurance

This article demonstrates how mature insurance businesses that are present in markets outside Luxembourg are making use of social media to embrace the new 'social business' model.

Today, some insurance companies still underestimate the potential of so-called 'social' technologies (such as blogs, wikis and social media), either by relegating them to the realm of internet marketing or by dismissing them as a passing fad.

However, attitudes are changing as baby-boomers increasingly embrace digital technologies and young people of Generation Y join insurance companies' workforces. Social media plays an increasingly important role in our day-to-day lives, opening the way for a new model known as 'social business'.

The most mature insurance companies have already been using social technologies for several years as part of collaboration, communication and content management, through both internal (for staff and/or representatives) and external (for current and prospective customers) social networks.

These proprietary initiatives can be developed using public social media (such as blogs, community sites and social networking sites), such as when interaction initiated on an insurer's social platform is re-posted on YouTube or Facebook.

This phenomenon has far exceeded the mere use of tools and technologies. Indeed, for relatively little investment, operational and economic insurance models can be transformed: processes and structures can be rethought to incorporate a social approach that creates added-value more rapidly.

Moving to a social business model can begin with themes external to the company and many insurers have already chosen this approach as the first step in their transformation. Marketing managers wishing to gain greater insight into customer sentiments and the positioning of their products therefore pay close attention to opinions expressed on social websites.

Some insurers have also introduced internal micro-blogs that enable staff and/or representatives to feed ideas and expertise back to the company and to work together in a more spontaneous manner.

These kinds of projects are all excellent starting points, but there are many other ways in which the entire insurance value chain can be transformed – creating new products, finding new customers, promoting sales, providing services and managing customer relations, partnerships and human resources.



Social business can help organisations move away from a model based on isolation to one based on engagement, by opening up new platforms where ideas and expertise can be discovered, developed and shared.

At the same time, there are still more practical advantages that have an immediate impact on an operational level. Take for example, the number of interactions between distributors, actuaries and managers when drawing up insurance contracts that require several levels of approval. By using a social networking model, the process is made 'flatter' and more fluid, thus enabling faster, more efficient dialogue between the various parties involved. This can have a significant impact on costs. Such a transformation requires insurers to adopt a more active approach regarding social tools and media.

In addition to monitoring and listening to online discussions, the most mature insurers have set up dedicated teams to interact with customers and the market within the social sphere. Some interactions are purely transactional, such as managing customer relations or benefits/claims, while others aim to promote customer loyalty or boost the company's reputation.

For example, regarding property, accidents and life insurance, insurers can provide information about their products on social networks to create better-educated prospective customers and generate potential sales

opportunities. They can then use data analysis to identify any signs of interest from prospective customers and personalise their messages in real-time to match customer behaviour.

In addition to this, customers have access to social resources (such as comments, notes and categorisation), helping build a sense of community and belonging. These trends rest on a basic principle: individuals are at the heart of the system. Power has shifted from the institution to the individual.

Technology has made it easier to discover and engage using social networks, but it has not changed the fundamental values of content, authenticity, integrity, reputation, engagement and involvement. Social business allows organisations that share these values to overhaul their entire market approach.

This is a unique opportunity for insurance companies to bring together the interests of both their staff and their customers. Companies which succeed in doing so will corner the market.

**Individuals are at the heart
of the system. Power has shifted
from the institution to the individual**

This is a unique opportunity for insurance companies to bring together the interests of both their staff and their customers

History repeats itself

Prior to contributing to the emergence of social business in insurance, social media, collaboration and knowledge management have had to overcome several challenges.

What were the obstacles facing social media?

Those from generations preceding Generation Y were slower to adopt social media, making decision-makers sceptical about its usefulness in a commercial context. Security, confidentiality and compliance risks were all common issues. Intellectual property could be compromised, competitive advantages shared and brands damaged by individuals' behaviour.

Insurance companies had invested in pilot projects focusing on technology and in systems that imitated successful mechanisms in the private domain. In some cases, by adopting an 'open and they will come' approach, they have failed to pursue a result-oriented strategy of defining business needs, identifying the most suitable social network, implementing technology and target media, evaluating results and adjusting targets. The stage that is most commonly missed out is choosing the most suitable social network for interacting with others.

What are the emerging trends in social networks?

The social tools market (collaboration, content management and communication) has exploded in the past year. 'Cloud' versions of social tools have made it easier to open systems up.

Public social media sites are no longer viewed as an end in themselves by insurers, but rather as one strand of a broader social business strategy. They are mainly used as a source for indicators of customer opinion and a vehicle for brand management and external communication, as well as a platform for customer service and sales.

Young people from Generation Y who are now joining insurers' workforces are connected and use these social, mobile platforms extensively to make friends, socialise and resolve problems. Insurance companies that do not have internal governance tools for social media and digital platforms could see their younger staff turn to public tools as a well-intentioned, but risky alternative.

Several insurers, both large and small, are now making targeted investments in using social technologies on social networks that are suited to specific business needs throughout the value chain.

What obstacles have collaboration and knowledge management faced?

Many insurers have to tackle inefficiencies in the way work is produced and shared when implementing collaborative working solutions (such as static and/or badly defined groups of people). Such solutions are often based on old systems that are limited to document sharing and do not offer the option of turning communication into discussions and communities. These systems are often limited to just one function, field or role and do not make the most of the range and depth of the company as a whole.

The first knowledge management tools focused on gathering and managing content but were not able to capture the context or business processes that made this intellectual property valuable. As a result, these tools became libraries or static collections of documents that were neither circulated nor curated (i.e. selecting, editing and sharing the most relevant content).

What are the emerging trends in collaboration and knowledge management?

Insurers' internal social business can facilitate discoveries and interaction among staff and real-time collaboration on tasks and documents, producing a systematic insight into relationships between staff members, their individual skills and the way in which work is produced.

New social tools can be used in both collaboration and completing tasks, thus motivating staff to use them in their daily work. The context of the task is preserved and linked to the content, encouraging both new discoveries and usage. For example, if a sales advisor sends a supporting document to a manager to set up an insurance policy and a discussion ensues between these two parties, then this exchange can be traced and attached to both

the supporting document and the insurance agreement. Categorisation, tasks and relationships can be used to identify correlations and to document and find information. Thus 'taxonomic' discovery can build bridges between structured, non-structured and semi-structured sources of information, helping find new links between content and offering means of discovering and creating 'intelligence'. This is of even greater importance for insurance companies with an ageing workforce, where decision-makers are seeking to facilitate large-scale knowledge transfer.

Technological implications

Social business uses the shared interests of individuals to create common value. Technology can help make these interactions efficient by making it easier to discover new information, share content and work together on ideas or tasks, as well as by allowing the use of data and parts of transaction processing systems on social platforms.

- **Social tools**

Introducing collaborative working tools such as wikis, suggestion boxes and skills directories is a major task. The main criteria that underpin the scope and usefulness of each solution include naming conventions, structures, rights management and archiving. The value of social tools can be further increased by integrating email (for traditional correspondence), instant messaging and other communication tools, as well as content collection to make it easier to access information outside silos.

- **Sentiment-analysis tools**

Advances in artificial intelligence should lead to ongoing improvements in sentiment-analysis products, but the tools currently available require specific expertise in terms of configuration, monitoring and maintenance. Tools for monitoring social media, such as Radian6, Mantis and Lithium, reflect a shift toward a type of data analysis where configuration mechanisms are no longer complex.

- **Digital-content management**

Information about the product or brand, staff/intermediary data and other content must be consistent across all of the insurer's platforms, including branches, travelling advisors, websites, telephone platforms, mobile applications, social networks, TV and other innovations yet to come. This multi-platform world means that managing digital assets and content is even more important and it highlights the need to manage content and communities simultaneously across all platforms.

- **Digital identities**

Social business helps develop the potential value of individuals and relationships, whether involving staff, current or prospective customers, intermediaries or partners. The correlations between distinct identities through different bodies (public and private) require a unified third-party digital identity service that can check the authenticity and indisputable character of statements relating to an individual's identity and approve access authorisations. Within an insurance company, a uniform identity approach for access, authentication and certification is needed.



Case studies

Using customer interests to increase market share

A leading U.S. property and casualty insurer wanted to increase its business volume with car collectors and its market share in this niche area. Car enthusiasts normally take out specialist policies rather than standard car insurance. The insurer set up a community page on Facebook and invited enthusiasts who had previously attended collector car auctions. In just 30 days, it launched a community website. Less than three months following the launch, the number of users and posts has risen significantly, with enthusiasts posting photos and information about their vehicles. As a result, the insurer has become much more widely known within this community and the number of policies taken out by community members has risen sharply. The insurer plans to introduce similar initiatives for other luxury niche markets.

Incorporating social networks into customer relations

American Family Insurance wanted to incorporate social platforms into its customer relations management strategy. In order to achieve this goal, the company set up nine platforms dedicated to social media, aimed particularly at its representatives and current and prospective customers. The insurer is now able to engage in online discussions on whichever social platform is used by current or prospective customers. Sentiment analyses are carried out in real time: when a positive comment is identified, the company passes it on to its network

of representatives so that each can then make the most of the comment by reposting it on his or her own social network pages. If a negative comment is identified, the platform then immediately tries to contact the author of the comment in order to find a solution to the problem. In 15% of all cases, a dialogue ensued and following such discussions, 33% of Internet users returned to their social network to post a positive comment. The company also capitalises on the involvement of its representatives and their 2,500 Facebook pages. In order to ensure consistency across all of these pages, the company has a system that provides representatives with pre-approved content for publication while also leaving them some scope to personalise their messages.

Reducing costs through social data

In the United States, the costs involved in assessing whether applicants are eligible to take out a pre-need life insurance policy can prove expensive for insurers. Depending on the type of medical examination required, costs can range from US\$250 to US\$1,000. An insurance company piloted the use of behavioural data gathered by online retail sites and other third-party databases as inputs for a predictive model that assesses health risks. The results were conclusive: out of 60,000 applications, this technique of analysing behavioural data gave similar results to traditional analyses using medical examinations, whose costs were drastically reduced to around US\$5 per application.

What we have learned

In insurance, social business is still only in its early stages. These first initiatives seek to move beyond preconceived ideas about human behaviour and the nature of relationships and to make the company's traditional vision of its markets and staff more rounded. The creation of value increases as companies restructure their processes and organisation around social engagement. Companies are increasingly customising their messages, offers and even products, according to the needs of individuals and communities.

Raising awareness of social tools and media is now giving way to engagement, empowerment and accountability by once again putting individuals at the heart of the system. An incremental approach is needed if we are to tread the social business path without losing our way. We must begin with a sensible scope for the project and be sure to focus on measurable results where causal links can be clearly identified. Once the fundamental points have been decided, we are free to push the boundaries of innovation while always keeping an eye on the importance of authentic dialogue, it being the key to the success of social business.

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