

Inside

CIO | EDITION

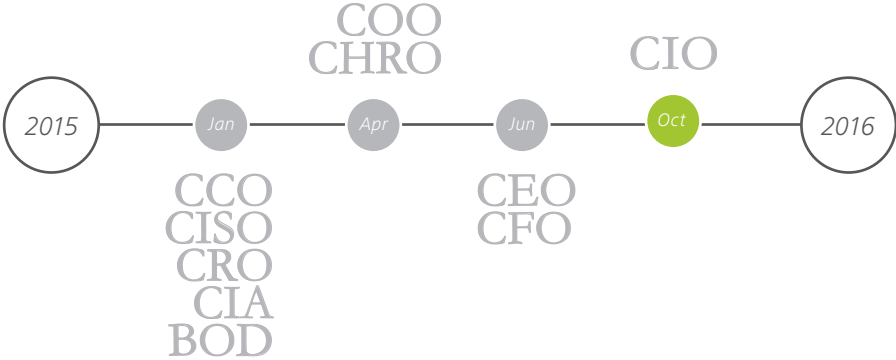
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In this issue



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Foreword



Dear readers,

Welcome to the tenth edition of *Inside* magazine. This is the third year that we have decided to dedicate our October edition of *Inside* to Chief Information Officers (CIOs), still keeping a focus on the financial services industry.

With this issue's green and black visual identity that strongly distinguishes it from previous versions, we want to reflect on and emphasize the current digital disruption the industry is facing and communicate our new Deloitte Digital DNA. We hope you like it.

We believe the Chief Information Officer has a critical role to play in these disruptive times. As CIOs know technology, they are well positioned to educate company executives on their possibilities and limitations, working with them to shape the new business strategy and the operational models to implement in a future disintermediated industry. Getting there in times of profound transformation is more than just a journey, it is a venture.

But there is a lot going on. It is difficult to keep up with all the new concepts and trends and to decide which technologies, such as smart contracts, should be made possible or which fintech deserves consideration. It is not only the CIOs' responsibility but also that of all the executives to really understand all the variables of the equation that will be used to model the financial sector's deep digitalization.

Our expert authors, who are brimming with excitement about these disruptive topics, have written articles to help decision-makers to apprehend the new paradigms—if not to understand them all—and to offer insight on the ways in which companies can be transformed to remain competitive and efficient in the next generation of the financial industry.

We hope you enjoy reading this new edition of *Inside* magazine, and we look forward to receiving your thoughts and comments.

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Editorial

Dear readers,

"Can disruption be planned?" is the question we asked ourselves when we selected the theme of this year's CIO Edition of *Inside*. It is very exciting to know that information technologies will dramatically impact the way we live and we work, but nobody will be foolish enough to bet on what the future will look like, even in the short term. The collaborative economy, the Internet of Things, fintech, artificial intelligence, and robots, you name it, will profoundly reshape our business and operating models. The financial industry will be disintermediated, public sector clerks will be replaced by digital machines, the healthcare industry will employ robot surgeons, and individuals will use 3D printing to get spare parts, and so on.

So how do you plan for the future when you don't have a crystal ball? Well... You start by acquiring a clear understanding of the technologies behind all the buzz, demystifying them, what they are they meant for, and what they are not capable of. In this edition, we give some insights on the collaborative economy, the Internet of Things, open data, blockchains, and other popular concepts.

Then, you have to assess whether your information system is ready to digest and support disruptive innovation and the new operating models that come along—which is certainly not the case, unless you are born digital; but are you? Core system replacement, two-speed IT, and dematerialization of systems are transformational paths that we analyze for the financial services industry with a focus on the role of CIOs.

Finally, you have to become a venture capitalist, be prepared to take on the adventure and to make risky decisions, to invest or venture with start-ups, to completely rethink your business and operating models, and turn to small actors with high potential to be the unicorns of tomorrow's economy. Of course, we have not forgotten your current concerns and hot topics, such as the impact of future EU regulation on data protection & privacy, how you can leverage the current datacenter trends to get competitive advantages, and how you can better manage your work force with the SaaS solution.

We hope that you will enjoy reading this edition of *Inside* and that it will offer you fresh insight.

Yours sincerely,



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Fintech

CIOs as venture capitalists

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Financial technology is following the model of many successful start-ups in the services industry: one does not need to own a product or a service to improve it, or to build further services around it. For instance, Uber is the world's largest taxi company and owns no vehicles, Facebook is the world's most popular media owner and creates no content, and Airbnb is the world's largest accommodation provider and owns no real estate. Something interesting is happening. The world of financial services IT start-ups is currently so vibrant that it has been given its own name: Fintech.

Introduction

Start-ups and tech-savvy individuals now have a chance to shake up the business model of well-established financial institutions. To leverage this new channel of technology evolution and disruptions, CIOs should now shift from the traditional buyouts towards cooperation. There are several ways to go about cooperating with these new players and they are often far from the vision of large financial institutions. CIOs can prepare their organization to deal with future trends by looking at Fintech companies from a venture capitalist point of view.

In recent years, huge mergers and acquisitions in the field of technology have taken place. A widely known example is the acquisition of Whatsapp by Facebook for US\$19 billion. Whatsapp did not emerge from a large organization that wanted to revolutionize the world of digital communication. It was instead created by two former colleagues who identified an area for improvement that would benefit from the support of wider innovations such as the Apple App store and the new wave of smartphone applications. Fintech start-ups are no different from Whatsapp in its early years. While the core business of banking and financial services is clear, the digitization of these services creates a large margin for improvement that is not always visible from an insider's point of view. Fintech start-ups benefit from their proximity to end users and an external view of the industry. There are many reasons for CIOs to pay attention to the Fintech industry. There are even more reasons for them to do so quickly.



Why is Fintech so hot?

Financial institutions have been operating in a challenging environment over the past few years. Consumers and regulators keep putting pressure on the business models of large players while giving an edge to small organizations that benefit from more flexibility. Such companies operating under the Fintech umbrella are now threatening to bring about even more change in the way financial services are delivered. Customers expect more from their interaction with financial institutions, particularly in terms of interaction on digital platforms.

Why are financial services firms making venture capital investments with Fintech start-ups?

But why are banks and other financial institutions investing in Fintech? Is it to make early investments in companies in a growth sector, as they have traditionally done, or is it not to be left behind and be part of the evolution of an innovative IT sector dedicated to providing digital services to meet customer demand? Since the financial turmoil that began in 2008 with the collapse of Lehman Brothers—or arguably with Northern Rock’s demise a year earlier—banks have reined in their spending, with large IT budgets cut along with a reduction in IT support staff.

There has been a structural shift in banking IT. IT solutions no longer need to be built in-house

There are two main reasons behind Fintech’s current boom. The first is the 2008 financial crisis. This crisis resulted in a recruitment freeze and lay-offs for large financial institutions, leaving space for qualified finance professionals to join or create new start-ups. The second reason is linked to technology cost reduction. CB Insights shows that the cost of starting a business has come down by a factor of around 1,000 since 2000. Cost used to be a big barrier for start-ups willing to break into the financial services world, but the rise of supporting technologies like cloud computing dramatically reduced entry costs into this market.

Moreover, the digitization of services is becoming the norm in all industries and customers expect more flexibility and interactivity through digital platforms. These kinds of services can easily be developed by small and flexible companies that are able to provide a good user experience, but often lack the underlying core business to put it in context. On the other hand, large financial players have a strong core business but lack the flexibility and capability to put in place innovative services in a timely manner.

There has been a structural shift in banking IT. IT solutions no longer need to be built in-house. Third-party suppliers are considered as viable for even the most core IT systems. But the biggest changes are driven by the digital revolution. Core system maintenance and the challenge of meeting ever-tightening and changing regulations are very costly.

But while replacement of these legacy systems is rarely in sight, banks cannot avoid investing in apps to provide customers with the services they want. The same research revealed that the replacement of core banking systems is not on the agenda of most European banks, with investments instead being made to maintain current systems and make incremental changes to meet business needs.

Online and mobile banking services, contactless payments, mobile-to-mobile payments and even the use of wearable technology for banking are all being designed, planned or discussed. With in-house development no longer a default choice for banks, the digital revolution means they need to find new ways of developing IT. Meanwhile, IT-savvy firms such as Google and Facebook are gaining regulatory approval to offer certain financial services. Although core financial functions will not be attractive to them, they are perfectly positioned to provide information enrichment in financial services. By making venture capital investments with IT start-ups that offer services to finance firms, CIOs can hopefully create an ecosystem of trusted suppliers from which they can eventually obtain products. To keep their dominant position, CIOs need to introduce digital services quickly.

A clear set of incentives have emerged from the momentum that start-ups and small companies have created, as well as from the risk that competitors might find and invest in the gem that will change the banking landscape first. Investors with a taste for riskier investments may be convinced to engage with this new industry that attracts more venture capitalists every year, growing from about US\$2 billion in funding activity in 2008 to US\$12 billion in 2014 (CB insights – The future of Fintech and banking, 2014). There has been a large increase in the amount of resources invested in financial technology. Companies in the insurance technology space, a subset of the wider Fintech environment, have raised US\$2.12 billion since 2010, a whopping US\$1.39 billion of which has come since the start of 2014. The current year is already the biggest year on record. Investor interest in the space is now as much as nine times its original level (CB Insight). CIOs have a role to play as intermediaries between these growing companies and the large pool of funds that lies in the banking sector.

Making a point for venture capital investments in Fintech start-ups is obviously a challenge in comparison to traditional investments. CIOs acting as venture capitalists must overcome the fact that IT spending is often perceived as a cost with little short-term return and a high failure rate. Nevertheless, cooperating with start-ups is an option that can yield great returns if the idea becomes successful, while limiting the liability of a CIO's organization in the event of failure. Cooperation can be founded on financial contribution or access to resources that would be out of reach for start-ups. A CIO must learn to approach interesting ventures with the right incentives because start-ups often reject the idea of cooperating with large players.



How are they making venture capital investments with start-ups?

Large financial institutions that invest in Fintech obviously want to support the best start-ups, in other words start-ups that have the highest potential for disruption. Herein lies the central paradox for big financial institutions pushing into Silicon Valley. Some want to borrow ideas from the start-ups—or even buy their technologies outright. Yet, those start-ups that are the most successful at disrupting the industry's profitable business activities are the ones that are the least likely to be convinced of the merits of teaming up with an established bank. On the one hand, the culture of big, lumbering banks or insurance companies is antithetical to nimble start-ups, and given the attention that they receive, start-ups have their pick of venture capital investors. On the other hand, financial institutions are not completely out of the picture because they have something that Fintech start-ups often need, such as credibility, trust or authorization to operate (a banking license, an insurance license, etc.).

Meanwhile, larger players who do not need the support of financial institutions are also focusing on developing financial technology. Large companies like Amazon or Google are on the forefront of this revolution and they are able to exert more influence on the tastes and expectations of customers than banks. For instance, if Amazon starts accepting Bitcoins as payment, this will give the virtual currency a boost in credibility due to the reputation of Amazon. On the other hand, if a bank starts accepting Bitcoin deposits without communicating its strategy clearly, it might not have a positive impact on customers.

Regulators have strongly cautioned financial institutions against providing banking services to virtual currency companies and enabling their customers to buy and hold such currencies because it is difficult to track

the flow of the money (Coindesk, 2013). Regulators have been cracking down on banks that have faulty money-laundering controls or checks against money flowing into countries that are under U.S. sanctions. Nevertheless, banks continue to invest in those companies because they need to stay up-to-date with the latest trends and technologies. Deloitte Belgium is cooperating with ING Belgium to develop an accelerator of Fintech start-ups with precisely this purpose.

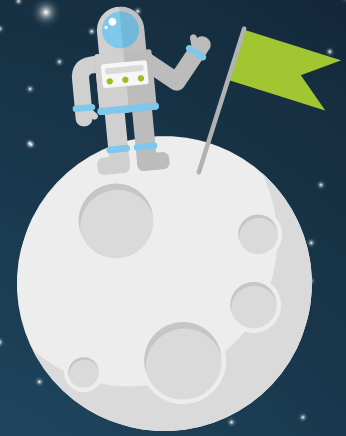
Virtual currencies still present very high innovation potential and banks cannot simply bypass small companies in this field. The ecosystem in which they are used and the underlying technology hold great potential even if the company itself does not represent a viable investment. For example, the block chain concept used by Bitcoin architecture to record transactions has been extended to support the new concept of smart contracts.

These investments could eventually lead to a deeper relationship if the virtual currency industry receives wider regulatory approval to use banks for more back-office services. And this Bitcoin story is only a small example of disruptive innovations arriving on the financial services provider landscape.

Scenarios of evolution

Fintech start-ups are increasingly concentrated in geographic clusters. Places like Silicon Valley or London hold opportunities for the most successful ideas. Large companies are offering incubators and accelerators to increase the chances of cooperating with future leaders in the field.

Fintech companies continue to inspire financial services firms to offer more digital services. However, the Fintech industry is highly fragmented and as it deals with people's money it must have a clear image that conveys ability and trust. This is where financial institutions have leverage over small Fintech companies. People know their financial institutions and trust the regulatory environment in which they operate. This creates a trust relationship that can be used to facilitate the acceptance of new financial technology.



Financial institutions are not the only players assessing this trend. Apple Pay and Google Wallet are clear examples that Fintech products and services are not the exclusive domain of banks or major financial institutions. The competition between banks and digital service providers to develop the next best Fintech product or service will also help identify the best of breed in Fintech companies with which they will attempt to cooperate.

We are currently in the early phase of an exponential shift. As more and more Fintech companies emerge, more products and services will become available. As more traditional models decline, the new Fintech offerings might become the majority rather than the exception if nothing is done to integrate them in a new, revised, disintermediated financial services industry economy. Financial institutions and their CIOs have to start preparing for this change right now. Moreover, banks have to start assessing the likelihood that their customers will accept adoption of these technologies. There is a clear demand from the customer side to improve the current service offering of banks, however customers do not give directions, but rather assess what is offered and decide to engage with it or not.

When Fintech companies start doing IPOs and mergers with large public organizations, the field will gain even more attention and clear leaders will emerge. This will give more direction to the industry and filter out companies that are either too small or not innovative enough to survive on their own.

Sources:

<https://medium.com/bull-market/a-cynic-s-guide-to-fintech-3cd0995e0da3> - A cynic's guide to Fintech
<http://venturebeat.com/2015/03/16/8-emerging-sectors-in-fintech-that-global-investors-should-explore-now/> - Categories of Fintech

Tech Trends 2014 - Deloitte - Technology Services - Insights:

<http://www.seattletimes.com/business/insights-not-profits-draw-banks-to-tech-startups-big-banks-court-tech-startups-for-insights-more-than-profits/>
<http://www.computerweekly.com/news/2240227585/Financial-services-startups-whats-in-it-for-the-banks>
http://cdn2.hubspot.net/hub/310641/file-1445626583-pdf/Rise_of_Fintech_in_Finance/Fintech_DEF.pdf?t=1413451665739
<http://www.ukfintech.com/future-of-fintech/the-fintech-revolution-its-only-just-begun>
<http://hollandfintech.com/money-of-the-future-2015/>
<http://uk.businessinsider.com/these-2-simple-slides-show-just-how-hot-fintech-is-right-now-2015-5?r=US#ixzz3g45EZpmo>
<http://www.coindesk.com/eu-banking-regulator-warning-virtual-currencies/>
<https://www.cbinsights.com/>

Conclusion

There is no guide to Fintech start-ups and this will not change until someone revolutionizes the industry. CIOs of large financial organizations must start building bridges between their organization and smaller players. The Fintech world is likely to be hit with changes that are difficult to replicate and will therefore give a competitive advantage to those who engaged with the change early.

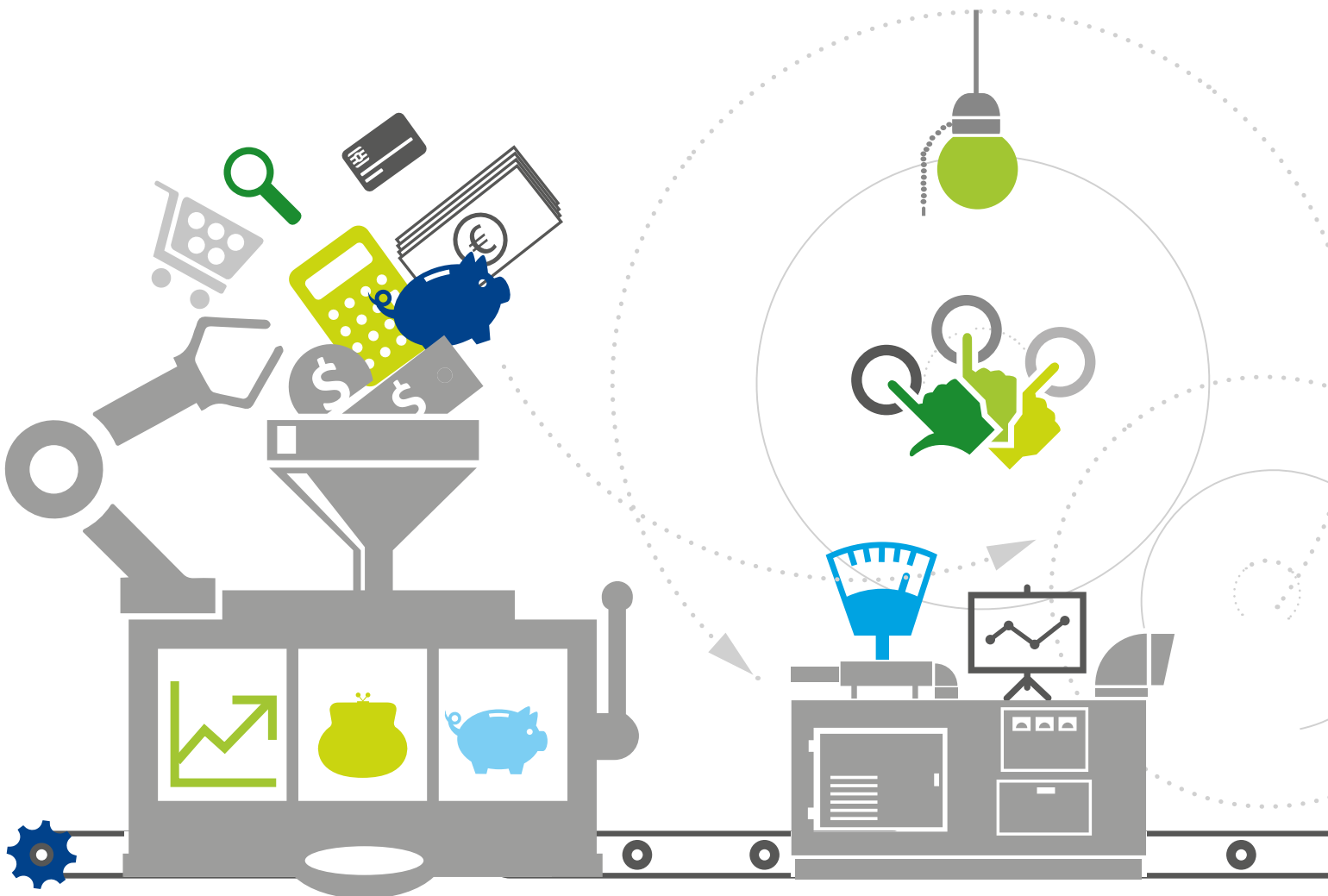
CIOs need to act as intermediaries between more traditional executives and those from the new generation who are developing innovative solutions for the financial industry. They have the expertise to determine whether the technology is credible and to put it in the context of financial services. They need to leverage this expertise to convince both sides that cooperation is the most direct path to success.

Leveraging core IT transformation for top-line growth in the financial services industry

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Core IT transformation is not just a vital part of being efficient in the new regulatory and competitive landscape of the financial services industry, it is also a formidable opportunity for CIOs to foster new revenue generation.

Introduction

Now more than ever, IT transformation is a hot topic for CIOs, as the current regulatory, economic and technological conditions are pushing the financial services industry to either adapt or lose market shares.

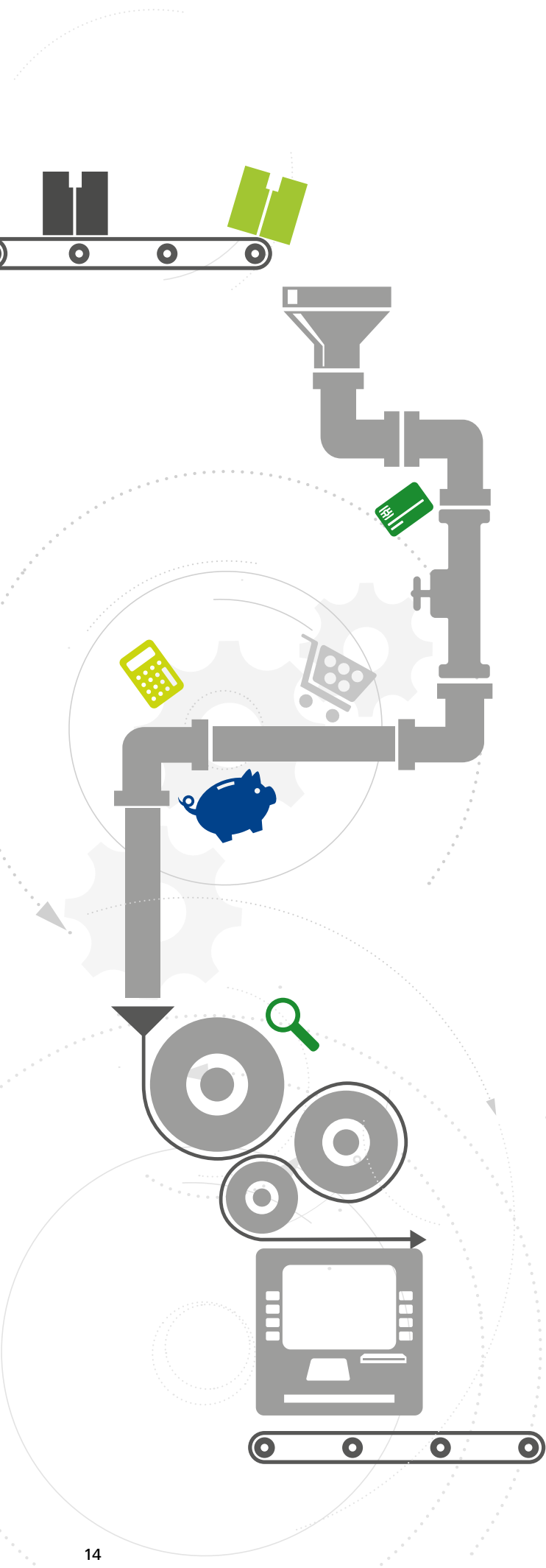
The reasons to transform

The crisis has brought increased **regulatory pressure**. More and more KPIs and reports are requested by regulators, which can lead to an explosion of costs. 69 percent of banks interviewed in the Deloitte Luxembourg IT effectiveness survey rank “regulatory and compliance” first in terms of investment priorities, and this topic represents on average 18 percent of their total IT costs. EMIR, FATCA, AIFMD, tax transparency, and MiFID II are just some of the regulations on an ever-growing list. To avoid the explosion of costs to remain compliant, many companies have launched efficiency initiatives to rationalize the collection and aggregation

of data into data stores that can be used as sources of quality data for reporting and performance measures. However, many ad hoc reports remain, which negatively impact IT costs.

New players are threatening current business models as they typically offer cheaper services to clients and have lower baselines since they do not have to support the heavy maintenance costs of legacy systems. The payments industry, for instance, has shown strong growth in 2014. Tech giants Amazon and Apple do not hide their ambitions to invest and expand in this market for the long term. More and more start-ups are also investing in the various niches of this industry (remittance/money transfer, payment methods, payment processing, payment gateways, etc.), which are not only taking market share from the traditional banks, but also creating a disconnect between those banks and their clients as they are replacing banks in the relationship with the end-users.





Clients are much more demanding as they expect all industries to keep up with the pace of technology that giants like Samsung have fully embraced. Tech giants today serve as benchmarks of the successful use of technology to create a better client experience. A number of banks are currently investing in that area by developing and building flagship branches, for example. But the road is still long to the ultimate client banking experience. Prototypes like Diebold's Responsive Banking Concept (a pre-configured high-tech mini-branch prototype in a kiosk-like environment) are paving the way for banks of the future.

The **competition** is also stepping up the pressure. For instance, in the financial services industry, a recent survey from Forrester shows that 42 percent of participating financial services firms are currently executing a major platform transformation initiative, 9 percent have already finished and 37 percent are planning to start such a transformation before 2016. Here again, improving client service and experience as well as sales capabilities are seen as main drivers for these programs.

Using transformation as an opportunity to increase the topline

Until recently, CIOs were required to control cost and reduce the baseline. They can either continue to do this or use the current context as an opportunity to position their company one step ahead of the competition and increase their company's topline. To achieve this, CIOs need to work hand-in-hand with their business counterparts (Chief Marketing Officers, Chief Digital Officers, etc.) to identify the opportunities for new revenue generation. This can be achieved in several ways.

Perhaps the most obvious way is **to deploy new innovative features** as a means of not only retaining an existing client base but also drawing new clients away from the competition and attracting next-generation clients. This means that companies have to be able to innovate rapidly, repeatedly, and incrementally. For that to be possible, it requires a core system that can integrate small changes within a short time frame and at reasonable cost, which legacy custom-built core systems are scarcely able to do.

Another option is **to open the information system to new interaction channels**. Clients would then be able to choose their preferred communication channels. Of course, the core system should provide accurate, up-to-date information and execute end-to-end transactions in real time, instead of simply providing endpoints for clients to consult already outdated data posted in batch overnight or posting orders to be executed by the back office hours later. But this does not only affect clients. By opening their information system to business partners, companies also generate additional revenue. Again, being able to offer rapid straight-through-processing (STP) execution on electronic channels at a reasonable cost is a pre-requisite to being seamlessly integrated with third parties.

Client service and commercial productivity can be improved through the use of predictive analytics. All too often, companies wait until clients are sufficiently dissatisfied to make a call and complain. Generally, clients change providers without giving any notice or reason. It is now possible to leverage the wealth of client data to anticipate their needs and behaviors and proactively propose adequate services. Predictive analysis, advanced business rules, and automated processes can be used to identify opportunities for cross selling or point out issues and propose solutions even before the clients knows that they need it or that there is a problem. The possibilities are endless. For instance, if clients pay monthly payment fees for accounts that they only occasionally use, it is possible to contact them to propose a type of account that is better suited to their needs before they become frustrated. "Next best action" solutions can also help to deliver value consistently and appropriately through the different channels, proposing tailored offers that are relevant, timely, and promoted through an appropriate channel.

Another way to boost the topline is to leverage the latest artificial intelligence engines to **handle more volume through increased automation** of tasks, which, until now, have been performed by humans. More and more "clever work" can be delivered by robots, and this is becoming a huge trend. Robotic investment, for instance, is providing a way to build and develop an investment portfolio for people who lack the cash assets needed to access most private bank services.

Perhaps the most obvious way is to deploy new innovative features as a means of not only retaining an existing client base but also drawing new clients away from the competition and attracting next-generation clients

And even though robotic investment is currently generally based on passive investment strategies, it does not necessarily mean weaker performance in the long term compared with the active investment strategies typically offered by private banks. Can this be considered a threat to the wealth management industry? Not necessarily, as private banks usually have access to investment opportunities not available to financial technology companies. Also, human interactions are still a cornerstone of most banks' strategies to deliver personalized services to their HNWI clients. It can even be seen as an opportunity as banks could leverage robotic investment to increase the speed and volume of investment advice they give to clients.

Ultimately, a bank can **offer existing or newly built IT capabilities as a service** either externally or to other subsidiaries of the same group that can see an advantage in outsourcing parts of their operations to an IT partner that has already modernized their infrastructure and can therefore offer some services with better value for money. It also makes sense to provide such services to new entrants that do not necessarily have the required capabilities to operate the entire value chain themselves. Moreover, it can prove logical for a bank that has gone through a core transformation program to valorize this huge investment by offering their back-office services through BPO. Nevertheless, banks have to be careful not to restrict themselves by becoming new entrants' back office.

So, where do I start?

So, how should we transform the IT? By adopting a big bang approach? An iterative approach? Should it be delivered internally or externally? We have distinguished four different target models, all of which require different skillsets from the CIO and its team: replacing, revamping, multi-sourcing, and full dematerialization.

Replacing consists in migrating to a new core package, which generally involves a fundamental shift in the company's core operating model in order for the staff to adapt to the processes proposed by the newly deployed core system.

Revamping is a different type of transformation whose objective is to rewrite huge parts or all of the legacy code in more modern technology, thereby also restructuring the software architecture. Generally, the processes are not touched and so the transformation does not entail such a change to the core operating model.

To make such an extensive transformational program a success, the CIO should be a "navigator," ready to sustain the transformation effort until go-live and to reinforce the capabilities of the organization in terms of large-program delivery, the most critical aspect.

The **multi-sourcing** approach is more a best-in-breed concept in which parts of the activities are outsourced to different external business process outsourcing providers, supported by different market packages, or custom-built either internally or by a contracting software development company. The company can focus on what it does well or what are considered differentiators and leave the other aspects to the experts. In this case, the CIOs are the "intermediators." They need to have all the different parties integrating together not only in terms of operations (working together to provide lean end-to-end processes), but also in terms of project delivery and application support. This configuration is increasingly being adopted by big players and requires the implementation of a new role: the multi-sourcing integrator or MSI. This role may have two facets. The first one is more operational to ensure that when a service request (simple request, incident, or problem) arises, it is properly handled and eventually escalated to the correct third-party service supplier. The second one is more project-based to ensure that the

various parties work together to build, test, and deploy effective and efficient end-to-end solutions. This role can be fulfilled by the company's IT department or, otherwise, outsourced to a third party. In both cases, a big challenge is to define the right architecture and to deploy the proper governance to ensure that the roles and responsibilities are clearly defined and known to minimize disputes between the different parties in case of issues.

Full dematerialization is when the company's information systems are reduced to a strict minimum. In this concept, information and execution are distributed amongst different service suppliers, deployed likely on the cloud but possibly on external private infrastructure. The CIOs' role is one of an "aggregator" whose responsibilities are to build and maintain this nucleus information system that aggregates the executional services and consolidates the information supported by external service suppliers. In a sense, CIOs of these types of dematerialized companies are coming back to the essence of their job title, where information—not operational execution—is at the heart of their responsibilities.

Transformation is not a one-off anymore

Such transformation programs typically involve considerable investment and present very high rates of failure. One of the main risks lies in the lack of involvement and adoption by the business, which frequently sees the project as an IT initiative and initially fails to provide the required input, especially in the early stages for the definition of requirements. The CIO is particularly exposed as he or she would be deemed accountable should the project fail. Another typical challenge is that posed by the lack of experience of the organization's IT and business departments, which are not usually used to delivering such large-scale transformation programs. Finally, when moving to a new package, securing vendor involvement is critical to the success of the endeavor as there will be several other projects competing for their attention and for the availability of their resources.

In order to minimize the risk of failure, businesses should adjust the program and integrate new requirements along the journey. To avoid the tunnel effect of such long-lasting programs that are ultimately deployed as big bang projects, CIOs implement

dual-speed IT to gradually bring the IT platform to its desired end state. This means that part of the business is still running on the current architecture while other parts of the business or existing and new functionalities are gradually being migrated to and built on the new architecture, as and when they become available. This approach is particularly suited to digital initiatives, which by their very nature require a different implementation approach than traditional IT. Running digital projects on a different platform will let business and IT take a "learning by doing" iterative approach with rapid feedback loops, development, and testing cycles. But to be a success, both business and IT leaders need to go beyond their traditional relationship as client and provider. They must build a strong partnership, where both leaders need to broaden their mind-set and step in the other party's shoes to drive alignment, innovation, and collaboration between the business and IT teams. Success also requires IT to optimize its processes to be able to release and iterate quickly on software developments.

The need to increase IT efficiency, together with the opportunities for topline growth, largely justifies embarking on a profound IT transformation project. But this change cannot be considered a one-off project as the pace of technology will drive the need for constant adaptation in the future. This constant state of change will require CIOs to build the right functional and technical capabilities internally to drive and sustain these transformation programs in the future. That requires implementing lean IT processes for delivering projects, such as DevOps, a software development method that aims to bridge the gap between build-and-run activities within the IT department. This is the kind of initiative that directly supports business demand for more flexibility and agility from IT and will help transition CIOs from IT providers to true business partners.

Conclusion

- Transforming their core legacy systems is not only a necessity for companies to survive in the current economic and regulatory environment but is also an opportunity to achieve topline growth and differentiate themselves from the competition by bringing innovative services and better client experience to the market.
- The company should know where to land before embarking on such an IT transformation. Different target models are possible depending on the ambition and size of the company: replacing, revamping, multi-sourcing, or full dematerialization.
- The different models require the CIOs to possess different skillsets and adopt different mind-sets, such as those of a "navigator," "intermediator," or "aggregator".



Bank of the future

Surf on the tsunami of disruption and get ready for the new paradigm

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Banks are currently facing major challenges, such as compliance with new regulations, reducing costs, becoming more agile, providing a compelling client experience, and so on. But this is nothing compared to what lies ahead: the threat of disruption, embodied by fintech companies and other specialised service providers. Are banks ready to survive?





Introduction

While banks are still transforming their information systems to cope efficiently with current requirements, new technology-backed entrants are putting even more pressure on incumbent operators to rethink their business model and banking platform to survive in the new disrupted economy.

Banks have always invested significantly in their legacy core systems, either by custom-building them or by buying them from banking software providers. Due to a lack of vision and architecture planning—and also a lack of experience given that software engineering is a new science—it often results in the stacking of software pieces and the creation of monolithic, rigid, and costly banking platforms, preventing changes at reasonable costs, slowing time-to-market, and hindering innovation.

To become more agile, reduce costs, enable new functionalities, or work with new entrants, banks have already started to modernize and rationalize their legacy information systems.

Different approaches are possible:

- Revamping the legacy systems through software reengineering
- Replacing the legacy systems with banking packages
- Replacing the legacy systems with pure cloud solutions, such as Mambu
- Externalizing part of the process to external business process outsourcing (BPO) service providers

One size does not fit all, and banks, especially large ones, realize that replacing their legacy core banking systems with all the satellites around is not a case of a simple switch. Indeed, it is a long journey. It calls for a lot of investment, bears a lot of risk, and is barely manageable without the proper organization. So, is it really reasonably feasible?

Now, the fintech companies are on the radar, threatening to take over the banking business while a lot of banks have not even begun their transformation. But are they really a threat? Or are they simply an opportunity to transform faster and be ready for the future, when fintechs will inevitably be in the business ecosystem anyway?

How can banks transform, not be left behind, and already have a foot in the future all at the same time? One way of doing it is to fragment the information systems and combine the best of what exists internally with what is best on the market. One bank may choose to focus on what it excels at or how it differentiates itself and leave the rest to the specialists, using the threat of new entrants as an opportunity to operate more efficiently and to white label innovative products that will attract new clients—or at the very least, retain the existing client base.

A little food for thought

Does a retail bank really differentiate on payment? Will a client come to a bank to make an international fee payment of US\$10 when the blockchain will execute it for almost nothing?

Does a private bank or wealth management institution need investment advisors when robotic investment could have the same results for just a fraction of the costs?

Does a client come to a mainstream bank to get a loan when it can request one directly from online and peer-to-peer lending platforms for low-cost, fast, flexible, and more client-focused alternatives?

Does a young entrepreneur ask his banker for funding if his risk profile prevents him from receiving sufficient funds when he can apply on a crowdsourcing platform first?

Do I need to go to my bank to buy/sell securities on a stock exchange if I can buy them directly through my bitcoin exchange?

Why would a bank perform its own Know Your Customer (KYC) process or credit scoring processes itself when centralized information and credit worthiness platforms are able to give the information and immediately score an individual?

To become more agile, reduce costs, enable new functionalities, or work with new entrants, banks have already started to modernize and rationalize their legacy information systems

New entrants will disrupt the banking industry's traditional value chain, forcing banks to reconsider their roles.

A document from the World Economic Forum written collaboratively with Deloitte reports that:

- Financial products will increasingly be offered on a stand-alone basis limiting incumbents' ability to competitively cross-subsidize.
- Financial institutions' ability to collaborate with non-traditional players and other institutions will become essential.
- Financial institutions will need to choose where they will specialize and where they will leverage external partners (e.g., product manufacturing vs. creation of client experience).

It is indeed foreseeable that the banks of the future will mix current models with disruptive ones in creative ways, i.e., product manufacturing vs. creating client experiences.

To enable these creative models, financial institutions need to integrate with numerous:

- Traditional actors of the current banking ecosystems, such as custodian banks, paying agents, central banks, etc.
- New service providers, but from the current banking ecosystems such as BPO service providers or cloud application service providers
- New entrants that disrupt the current banking ecosystem and paradigm

But above all, they shall generate differentiation through the integration of non-financial services in order to offer innovative packages that combine financial products with non-financial ones.

The bank of the future is an aggregator of services.

The infrastructure of the bank of the future will hence probably be more an aggregation of services than a single vertical production chain, a virtual hub allowing clients to have access to financial and non-financial services, sourced internally or externally.

Different business models would emerge, favored by the disintermediation of services and the dismantlement of traditional value transfer rails to be more global, faster, transparent, and cheaper.

Some banks will choose to specialize and will differentiate on specific activities, leveraging legacy assets to provide financial institutions and new entrants with infrastructure and access to specific services.

Some banks may choose to be good at aggregating customers' accounts in different virtual currencies held at different lending platforms for different portfolios, etc. Others would differentiate themselves from other banks by offering their customers loyalty points or vouchers each time they pay with bitcoins. These would be loyalty points or vouchers that they could use to pay at specific online or physical stores or that you could exchange on specialized P2P loyalty marketplaces.

Others may be very efficient in the KYC or risk scoring processing and sell them for other banks that want to focus and specialize on other areas.

Banks of the future will have to switch from a traditional self-sufficient closed vertical end-to-end production model to a “bank as a service” paradigm where everything is a service, exposed or consumed, and interconnected

Commodities will most probably be sourced to fintech companies that use technology to provide low-cost yet effective solutions. High value added services would be sourced internally or to other specialized third parties or banks. When even the core banking system may be sourced externally to pure cloud solutions, such as Mambu or Yubora, there are few limits to what can be outsourced or indeed insourced by specialized banks.

Hence, the bank of the future will have to deal with myriad actors that will need to be seamlessly integrated to offer a comprehensive, consolidated, and friendly client experience. But to make all those actors work together and to expose the bank’s own services to partners and clients, strong integration technology is required. This is the purpose of Application Programming Interfaces (APIs), which go beyond the simple exchange of information via files exchanged between systems.

APIs are the cornerstone of the exchange of data between systems. Without them, you cannot streamline processes and services that involve different applications in your information systems, let alone different applications spread over different parties’ information systems. APIs facilitate a dialogue with an application by describing how to talk to it. The software developer who wants to integrate the functionalities of another system within the software being developed will “name” the functions or services exposed by the other system in line with the API documentation.

Until recently, APIs were proprietary, specific to a certain software application, and accessible only in a specific context, thereby limiting openness, agility,

flexibility, and interoperability. For instance, if you were to change your order management system, you would have to adapt the software code of all the applications interfaced with it, which entails great deal of effort, risk, and money.

For several years, the emergence of a standard API has been breaking down those barriers by specifying common and shared protocols on how to dialogue with specialized systems or platforms. For instance, the Financial Information eXchange (FIX®) protocol documents how to talk to order management and trading systems.

In addition to the software companies, Internet companies such as PayPal, Billtrust, Tilt, Facebook, and Netflix have also opened their information and services to the public through so-called open web APIs, i.e., an API accessible through web protocol (REST, SOAP, etc.). Some of them are free; some of them carry costs or are paid for through ads.

In the same spirit, open banking platforms unbundle payment, credit, investment, loyalty, and loan services so that anyone—or anything—can consume them programmatically. The Open Bank Project and Yodlee are open source banking platforms that allow banks and other financial services firms to expose their data and services in a standard way so that third parties can create new applications or services. The security is managed by standards protocols such as the OAuth protocol.

Several banks, such as BBVA and RBS, have already looked at the API, some of them testing their functionalities and robustness in terms of security in the form of a hackathon—a good way to test their openness, potential to develop quickly, and resistance to hacking.

What are the benefits of the banking API for banks?

They are twofold: outwards and inwards.

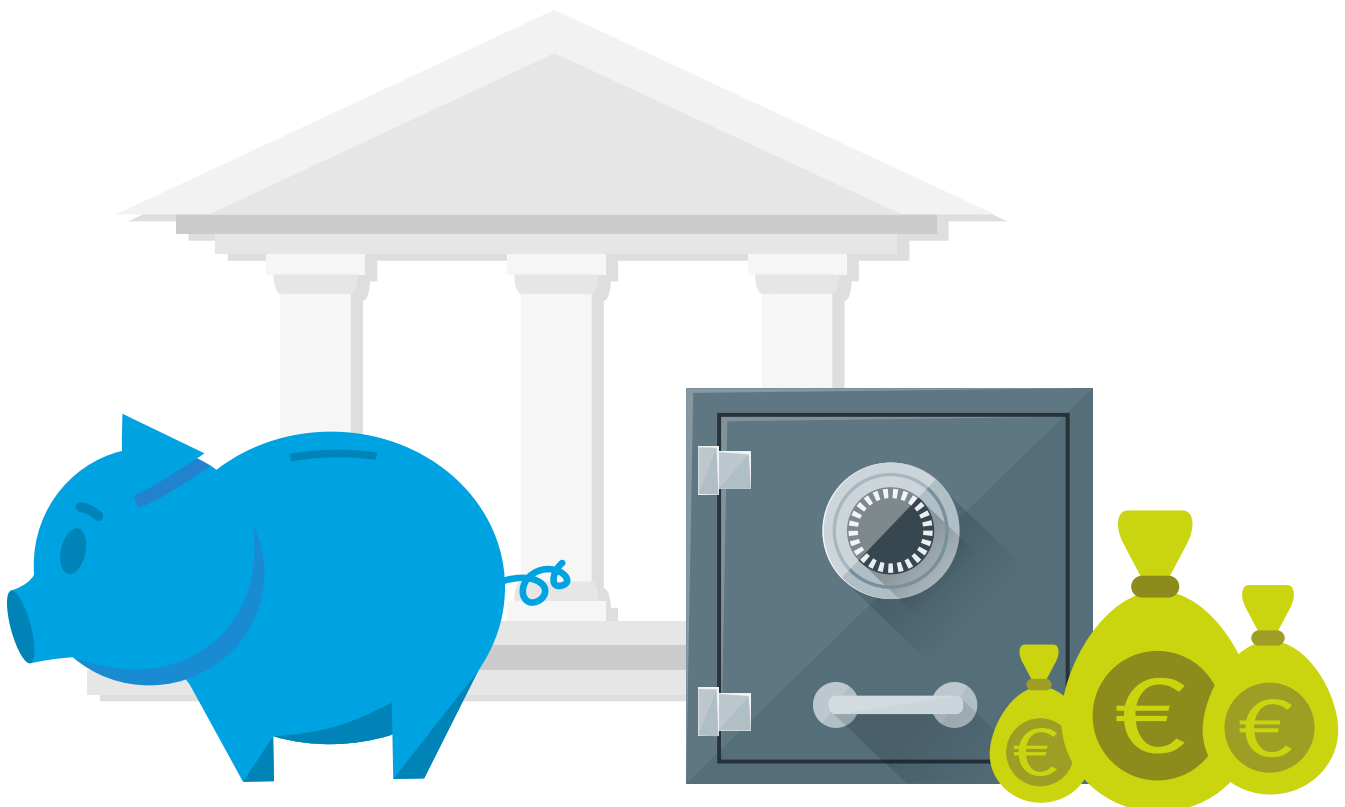
They have outwards benefits because banks are able to expose their services, transactions, and data, and:

- Open their services to the world and integrate the Internet of Things so that they can be consumed anytime, anywhere, by anyone, and... anything
- Multiply channels and client experience by letting external developers build new creative software applications that consume those services
- Seamlessly integrate into third-party financial institution systems and applications through open standards

They have inwards benefits because banks are now able to:

- Specialize in specific products, services, or processes and seamlessly integrate services and data from specialized providers (including fintech)
- Be more flexible by componentizing the information system into interchangeable bricks
- Be more agile by limiting the use of complex internal information systems
- Sell innovative products and services by aggregating services from different providers, whether financial or non-financial

Banks that want to survive in the future will not only have to be able to aggregate services and seamlessly integrate the processes of specialized providers. They will also have to open their information systems to third parties through open APIs. They will have to switch from a traditional self-sufficient closed vertical end-to-end production model to a “bank as a service” paradigm where everything is a service, exposed or consumed, and interconnected.



Leveraging digital solutions to ease cross-border financial services

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By nature, the financial services industry in Luxembourg relies primarily on cross-border business. As a consequence, client relationship managers (CRMs) employed in the Luxembourg wealth management and private banking industries deal with clients located in foreign countries with different regulatory and tax schemes, which increases the risks for their daily business activities.

Financial institutions have chosen to become as mobile as their clients—rather than set up a permanent establishment—in order to serve them wherever and whenever they need it

This is obviously also the case for CRMs employed by financial institutions located in other jurisdictions. In a survey published earlier this year, Deloitte and EFMA outlined that strategic priorities over the next five years include the need for relationship managers to be trained to operate digital tools and handle more complex client requests.

Introduction

New tax transparency and regulatory constraints—especially in Europe—are leading individuals to transfer their assets to their country of residence in order to avoid any potential conflict with their local government. This significant shift from offshore to onshore wealth has forced Luxembourg banks and family offices to rethink the way they serve clients. Interestingly, during this process of “onshorization,” some of them have made the choice to set up a branch abroad in order to follow their clients in their country of residence, rather than losing them to the local competition. In contrast, other financial institutions have chosen to become as mobile as their clients—rather than set up a permanent establishment—in order to serve them wherever and whenever they need it.



This is important for the tax and regulatory compliant (U)HNWI and wealthy entrepreneurs whose business activities are usually global with assets and family members located in different countries. These clients—who are in essence mobile and travel the world—usually like to be served wherever they may be, by the same trusted advisers.

Private banks and wealth management firms should rethink their cross-border operating model and may now, more than ever, take advantage of digital and mobile solutions to avoid regulatory or tax non-compliance issues

In Europe, the “Free Provision of Services” (FPS) principle applies to wealth managers and private bankers crossing borders to serve their clients abroad. This principle allows Customer Relationship Managers (CRMs) of a European entity to meet or serve their clients in another country, even when the financial institution does not have a permanent local presence.

However, European governments increasingly apply stricter rules to the general European FPS principle. CRMs should always be aware of the latest regulatory and tax developments not only in their home country but also in their clients’ country of residence. As a consequence, **private banks and wealth management firms should rethink their cross-border operating model and may now, more than ever, take advantage of digital and mobile solutions to avoid regulatory or tax non-compliance issues.**

Increased regulatory requirements


In the aftermath of the financial crisis, the regulatory pressure on the wealth management and private banking industries has increased. Regulatory frameworks such as national regulations on consumer protection, the Foreign Account Tax Compliance Act (FATCA), and investor protection rules including MiFID have an impact on the cross-border banking operating business model and affect its efficiency and profitability. Observations show that the cross-border banking operating model remains unchanged despite the changes in the local and international regulatory frameworks. This approach can lead to significant risks of non-compliance.

Partial harmonization within Europe

Article 56 of the Treaty on the Functioning of the European Union (TFEU) prohibits Member States from restricting the provision of services within the EU. This right has been implemented through various secondary EU legislations, the most important in terms of financial services today being Directive 2004/39/EC and Directive 2013/36/EU, which respectively define the access to the “EU passport” for investment firms and credit institutions.

This EU passport grants credit institutions and investment firms established in a Member State the right to provide services within the EU either with the establishment of a branch or through the direct “Free Provision of Services” (FPS). **This passport and the relevant directives significantly ease the cross-border provision of services through a partial harmonization of the relevant laws** and the application of the legal framework of the Home Member State in key areas to the exclusion of the legislation in the Host Member State. The scope of this Home Member State control will typically be wider in the case of FPS as there is no establishment in the Host Member State.





If the relevant rules have not yet been harmonized and the Home country control principle does not apply, the Directives require Member States to guarantee the access to the service activity and the freedom to exercise such activity throughout the territory. The Treaty also generally forbids Member States from restricting the free movement by imposing their national requirements on cross-border service providers unless the Member State can demonstrate that the measure is necessary to ensure the respect of one of the limited justifications allowed and that the measure is proportionate. In 2013, the European Court of Justice (ECJ) stated that combating money laundering and terrorist financing constitutes a mandatory requirement justifying restrictions on free movement of services.

Risks related to cross-border business

Even though the rules are partially harmonized in Europe, many discrepancies remain between Member States. The key challenge for Chief Compliance Officers or CRMs of private banks and wealth management firms is to be aware of and understand the gaps that may exist between the local regulations to avoid regulatory and reputational risks. These potential risks are even greater when institutions are dealing with clients located in emerging markets, particularly in Asia Pacific and Eastern Europe. Elements to be considered by private banks and family offices are the following:

- Potential risks arising from the client's location and the approach followed to conduct business
- Increased regulatory (and reputational) risks associated with the dependence on Relationship Managers' knowledge of the cross-border rules while they increasingly travel in and outside of Europe
- Increased competition due to the accrued number of new financial intermediaries
- Strengthened anti-money laundering (AML) and tax requirements in terms of information sharing and cooperation

This complex regulatory environment and the differences between countries mean that financial institutions have to adapt their products and customers' due diligence frameworks, which should take into account the specific regulatory requirements of the client's country of residence. These changes in operations are often quite time-consuming and burdensome as the regulatory information may be spread over many directives, laws and regulations, which deal with many different subjects. This causes a further increase in operating costs with a direct impact on the industry's profitability.

Improved awareness thanks to digital solutions

Mitigating the regulatory, compliance and tax risks associated with cross-border financial services is complex but essential for players to remain competitive. The complexity of cross-border business activities stems from the individual country requirements relative to investment suitability, cross-border regulation, and tax transparency. These are the main risks that should be mitigated.

According to Deloitte and EFMA's survey "Wealth Management and Private Banking—Connecting with clients and reinventing the value proposition," while direct contact with relationship managers is the most important interaction channel, the function of the relationship manager still remains sales-oriented and needs to become more service-oriented and have the ability to call upon the right experts to best meet the clients' needs. Although relationship models vary across the industry, the main role of relationship managers is to have an understanding of client needs, objectives, risk tolerance, and the evolution of these over time. The financial crisis has modified relationship models from a passive to a more active client relationship.

Nevertheless, relationships are still largely product-push oriented. Technical skills are not sufficiently developed for high quality advice. High-quality service from the relationship manager is often more important than absolute return on investment for the client. In many cases, when clients leave an institution it is because of a lack of understanding with the relationship manager and not investment performance. To deliver on increasing client expectations regarding advisory services, relationship managers will need to increase technical sales capabilities to better address client service and value management.

Awareness of CRMs in the field of cross-border business should be increased, as they are the ones who cross the borders and who promote their bank's reputation on a daily basis. However, as CRMs are highly mobile, the various compliance solutions should be as well.

According to Deloitte and EFMA's survey, the top strategic priorities identified by the respondents include an increased usage of web and mobile channels, advisory process re-design, introducing new value-

added customized services, and training relationship managers to handle requests that are more complex and deliver high quality service, all of which directly impact the value proposition and how the bank connects with clients.

The digitalization of country-specific knowledge should condense regulatory, compliance and tax information about acceptable and forbidden activities, products or services under national and international regulations. It should allow private bankers to challenge their strategy by comparing countries' local requirements, by identifying which country allows a particular service or activity, or by ranking countries' openness to banking services or activity. The digital solution should be as flexible as possible covering every possible cross-border situation, independently of whether the client travels to the bank or the private banker travels to the client's location, or when the service is provided remotely.

The digitalization of country-specific knowledge should condense regulatory, compliance and tax information about acceptable and forbidden activities, products or services under national and international regulations



Conclusion

The cross-border business regulatory and tax awareness solution should ideally be digital and easily portable, as CRMs do not always have the opportunity to prepare for a client meeting from their office's desktop but rather prepare "on the go." While digital often refers to connectivity, the solution should allow the database to be used offline as CRMs may participate in meetings where no internet connection is possible.



Innovating to stay ahead



Neil Tomlinson
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The pace of technological innovation has never been greater in the banking industry. Both challenger banks and disaggregated product specialists are eroding the dominance of established banking institutions, and the battleground is the fertile field of new financial technology.

Introduction

Not a month goes by without predictions of the end of banking as we know it.

Innovation is rapidly altering the financial services landscape, whether driven by large incumbent banks, outright challenger banks, agile financial technology (fintech) firms, or even non-financial technology giants (think Apple Pay, Google Wallet).

Are innovative new entrants capturing market share at the cost of incumbents? Jargon is everywhere—'biometrics,' 'wearables,' 'gamification'—but what do these words even mean? And what are their impacts?

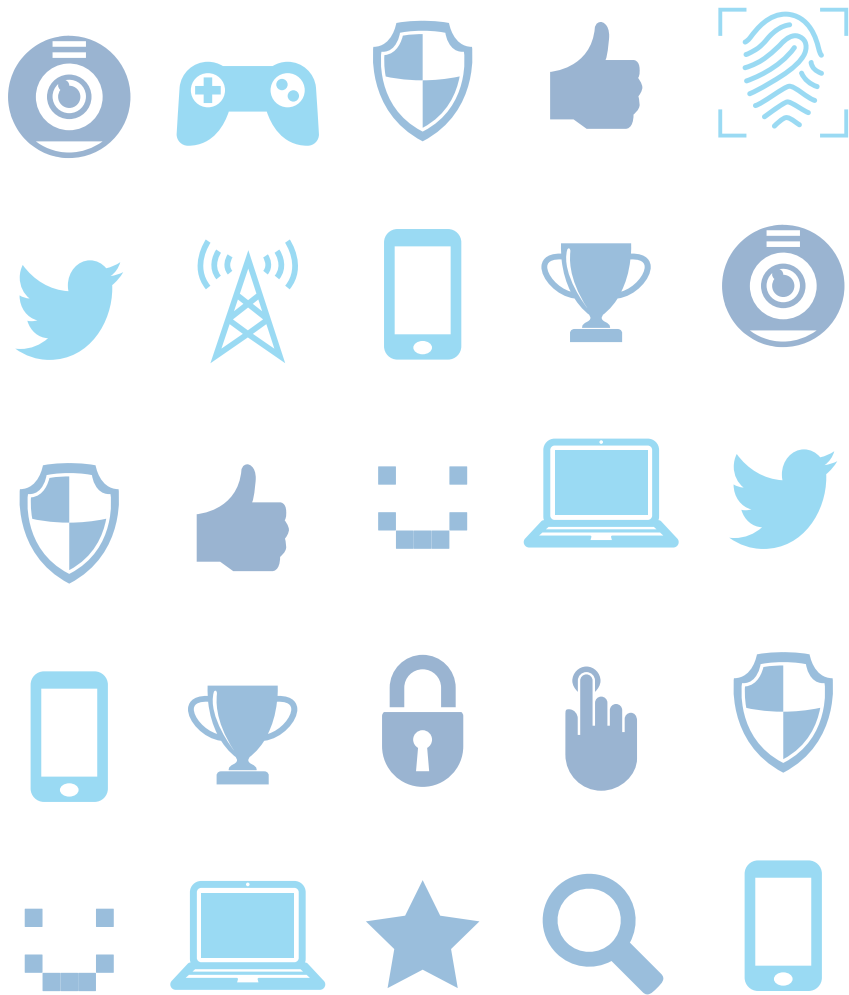
During this period of rapid change, established incumbent banks have a dual challenge: first, that of responding to 'point' areas of innovation—

developing new payment channels for example—and secondly, putting in place a bank-wide framework to harness innovation, whether by setting up in-house innovation offices, incubating, or partnering with fintech start-ups.

This article focuses on the first challenge—identifying the current banking innovation trends—rather than on how banks are responding to innovation.

Although subjective by nature, this list draws on a database of more than 550 banking innovation case studies, catalogued since 2011. These trends do not aim to capture what has passed, nor is this crystal gazing. We see these developments as being at the brink of mainstream adoption, and they are valuable focus areas over the next twelve to eighteen months.





01

Fingerprint identification and verification (ID&V) is enabling the next generation of biometrics in banking



The fingerprint scanner in Apple's iPhone 5S and later models has encouraged consumer adoption of biometric identification, with banks from across the globe enabling fingerprint technology for logging into mobile apps. RBS and NatWest in the United Kingdom (UK) have been early adopters of this iPhone facility for their banking apps.¹

Now we are seeing the next wave of biometrics in banking. Barclays (UK) has announced plans to partner with Hitachi (Japan) and develop finger-vein biometric ID (mapping the subcutaneous veins, instead of surface-level fingerprints).² Hitachi first patented the technology in 2005, but it is being refined for use in tandem with mobile phones.

Meanwhile, Halifax (UK) is trialling technology that can authenticate user identities by analyzing their unique heartbeat rhythm, and Alibaba (China) has announced a pay-by-smile function, essentially using a 'selfie' to authenticate a payment.^{3,4}

Why this matters: Cybersecurity concerns continue to inhibit digital adoption (particularly among older customer segments). Biometrics are by their nature difficult to replicate, faster to process than personal identification codes, and thus provide at once greater security and customer service enhancements.

02 03

Financial services and social media are converging



As more technology start-ups list publicly, they face increasing pressure to generate revenue, particularly when they are free to use for the consumer. In response, many are turning to payments and the wider finance market.

Social media sites such as Facebook and Twitter have been some of the quickest to find ways to capitalize on the possibilities presented by integrating payment functions into their existing platforms.^{5 6}

Barclays has teamed with Twitter to develop payments using just a Twitter handle—no bank details needed—via its Pingit app. Similarly, in Singapore, Facebook have teamed with Fastacash for quick online money transfers.⁷

Facebook is also thought to be planning its own internal money transfer system using the Messenger function, although full details are yet to be released.

Meanwhile eToro (Spain) have combined social media with trading by creating a social network allowing users to follow fellow traders and trade currencies, commodities, and stocks.⁸

Mainstream institutions are also developing their use of social media with Nationwide (UK) by offering direct customer service functionalities via its Twitter account.

Why this matters: At the very least, social media is a new banking channel. However, if the logic of facilitating payments was extended more broadly, cash-rich social media companies could possibly facilitate charitable giving, crowdfunding, cash management, and potentially even build up a view of creditworthiness and lending. Social media could be the next dis-intermediary in financial services.

Wearable banking technology is becoming mainstream



The launch of the Apple Watch has galvanized the development of wearable banking apps with Mysis already announcing the development of a number of in-app features.⁹ Competitor activity is also heating up. Analytics-based personal financial management (PFM) provider Moven (US) is introducing an app with Android, and the traditional watchmaker Swatch (Switzerland) has signalled its entry into mobile payments.^{10 11}

Although the Apple Watch has received the most publicity over the last few months with its release in April 2015, rivals will be watching closely to learn lessons and improve or adapt their own products.

In terms of banking, the possibilities are significant, with not only wearable NFC (near field communication) payments becoming a reality but also more complex banking services such as money transfers, geo-locational alerts, and potentially even videoconferencing with a bank advisor.

This builds on the recent wearable technology trend. La Caixa (Spain) has released payment wristbands to its full customer base, and a tailored suit from Heritage Bank (Australia) offers in-built payment functionality in the jacket cuff.^{12 13}

Why this matters: In essence, wearables do not matter yet. However, the greater the uptake of wearable technology, the greater incentive there will be for banks to invest heavily in the software and apps to match the latest hardware innovations.

0405

The 'gamification' of financial services has begun and looks set to increase



Gamification—the use of the mechanics of (largely video) games in non-game situations—has been a buzzword in Silicon Valley for a few years now, but it has been surprisingly slow to find its way out of the world of life coaches and TED (Technology, Entertainment, Design) talks and into the world of finance. Nonetheless, there are some early innovators emerging with successful offerings.

Bulgaria's DSK Bank has launched a mobile savings application called DSK Gameo, using financial goals and rewards to encourage customers to save.¹⁴ It also allows the bank to better understand its user base.

The virtual trading app BUX (Netherlands) allows those who download the app to practice in a virtual environment with real-time stock prices—earning badges, playing one-on-one battles against friends—before graduating to investing real money.¹⁵

Why this matters: Gamification can be used in several ways, from enhancing customer experience to testing new products and delivering internal training (particularly in areas such as conduct risk). It is now up to banks to use these techniques to get customers and colleagues to see the fun in finance.

Banks are increasingly using digital technology to drive financial inclusion



While mobile wallets and digital app-based payments have been keenly noted and replicated in the developed world, digital mobile financial services have had a significant impact in the developing world.

The impact of M-Pesa ('M' for mobile and 'pesa' is Swahili for money) on financial inclusion in sub-Saharan Africa has been documented extensively.¹⁶

However, the impact of this drive for inclusion is now being felt most strongly in India, where, since August 2014, an estimated 100 million new accounts have been opened, linked to the government's unique identification system, Aadhar.¹⁷ This mechanism allows for direct financial transfers to household accounts in lieu of subsidies and welfare programs for the poor.

MasterCard has partnered with the Egyptian government to create digitized national ID cards onto which salaries can be loaded and then used to pay for products, making use of Egypt's high mobile phone penetration to drive financial inclusion.¹⁸

Why this matters: Enabling financial inclusion is not just a PR success story. Expanding financial access has direct bottom-line benefits for mainstream banks. Using innovative ways to reach out to customers—the use of Barclays Digital Eagles to drive financial education, for example—helps reintegrate banking into mainstream public consciousness and repair a relationship that has been impacted by the global financial crisis.¹⁹

Conclusion

Banking innovation is heating up

The pace of innovation in banking is increasing with new tools, products, and business models emerging every month.

At a macro-level, it is hard to say whether banking will be disrupted in the same way as other industries, particularly given how much more stringent banking regulation is.

Far from fundamentally reordering the industry, we see innovation creating a new ecosystem for financial services. This ecosystem consists of established and new players competing and cooperating across different parts of the banking value chain.

For example, social media players might compete with banks to facilitate high-volume, low-value cash payments while cooperating with banks to provide a broader range of data points in determining creditworthiness.

As the new normal for banking continues to evolve, one thing is for certain: doing nothing is not an option.

Footnotes:

- 1 18 February 2015 - www.rbs.com
- 2 Daniel Schäfer, 5 September 2014 - www.ft.com
- 3 13 March 2015 - www.finextra.com
- 4 16 March 2015 - www.marketwatch.com
- 5 Amit, Chaudhry, 30 June 2015 - www.forbes.com
- 6 25 February 2015 - www.newsroom.barclays.co.uk
- 7 Philip Ryan, 27 February 2015 - www.bankinnovation.net
- 8 www.etoro.com
- 9 www.misys.com
- 10 3 January 2015 - www.mobilemediaxchange.com
- 11 Corinne Gretler, 5 February 2015 - www.bloomberg.com
- 12 3 July 2014 - www.press.lacaixa.es
- 13 www.heritage.com.au
- 14 12 November 2013 - www.misys.com
- 15 Sudip Kar-Gupta, 16 February 2015 - www.finance.yahoo.com
- 16 11 July 2015 - www.economist.com
- 17 29 July 2015 - www.pmjdy.gov.in
- 18 3 March 2015 - www.finextra.com
- 19 www.barclays.co.uk

What financial services leaders need to know about

DISRUPTIVE INNOVATION

Rob Galaski
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Deloitte* recently joined with the World Economic Forum to examine ways that disruptive innovations were reshaping the business of financial services. As part of that study, we consulted with a broad swath of established institutions, financial services startups, academic scholars, and industry observers. What we discovered led us to the following conclusions.

Almost every service is being disrupted

Innovation is reshaping nearly every aspect of financial services. The technologies that bring us a connected lifestyle are leading to intense personalization in insurance, making the customer's "walk-away cost" higher than ever before. Robo-advisers and social trading platforms are democratizing investment management, eroding the mass affluent market while signaling a return to white glove advisory services.

In banking and securities, alternative providers are poised to take over the customer relationship. Cash and (quite possibly) credit cards are giving way to digital alternatives that will cost financial institutions at least some influence over the transaction experience. Distributed capital raising platforms are opening up the capital markets, forcing traditional intermediaries to develop new value propositions in order to compete.

* As used in this article, "Deloitte" means Deloitte Touche Tohmatsu Limited and its member firms.

You can see the innovators coming

In financial services, innovation is occurring in clusters. But the clusters are forming around potentially profitable customer segments that are well-known to be underserved in some way. In other words, innovators are addressing the same opportunities that incumbent institutions have identified. The next wave of change is deliberate and predictable.

What's more, successful innovators are more alike than not. Many are marketplace platforms rather than new institutions. They don't require a great deal of capital, and they make significant use of data collection, sharing, and analytics. Because of this business model, innovators are at least as likely to be customers or partners of traditional financial institutions as they are competitors of them.

Some are already feeling the impact

Retail banking is the first to have been hit with disruptive innovation. In the payments arena, mobile applications free users from their wallets and the checkout line. Integrated and streamlined technologies make it easier to settle accounts. Geotagging, biometrics, and tokens protect all parties to a transaction from fraud.

Meanwhile, the lending business is becoming increasingly virtual. Thanks to improved technology, direct banks—ones with no brick-and-mortar branches, only ATMs—can compete on more than just price. Other non-traditional players are offering mobile users conveniences such as peer-to-peer money transfer, photo bill payment, and voice recognition.

But insurance is where disruption will be felt hardest. Already cars have operating systems, run user-installed apps, and connect to the Internet. People manage their health through wearable devices that communicate potential issues to healthcare professionals. Devices monitor the home and pick up risk factors requiring preventive action. The old ways of measuring customer risk are quickly becoming irrelevant.

The disruption will last longer than anyone thinks

Disruption isn't a one-time event. It's not bound by the fiscal year. It's the continuous pressure to innovate that will shape customer behaviors, business models, and the long-term structure of the financial services industry.

Any one of the innovation clusters has major implications, not just for incumbents and their customers but for the overall financial services ecosystem as well. Benefits of scale will erode. The universal banking model will become unbundled. New sources of capital will appear.

Together, they form a long-term trend from which incumbent institutions will emerge as aggressive, adaptable innovators, snapping up the best ideas of the start-up ecosystem and bringing them to fruition. The result will be a sea change in the way financial services operate.

Disruption isn't a one-time event. It's not bound by the fiscal year

There's much more in the World Economic Forum study about how disruptive innovations are reshaping the way financial services are structured, provisioned, and consumed. You won't learn where to place your bets, necessarily. But you might learn where to start your due diligence. You can download a copy of the full report at www.deloitte.com/future-of-fsi.

Is the Financial Services Industry ready for the explosion of Internet of Things?

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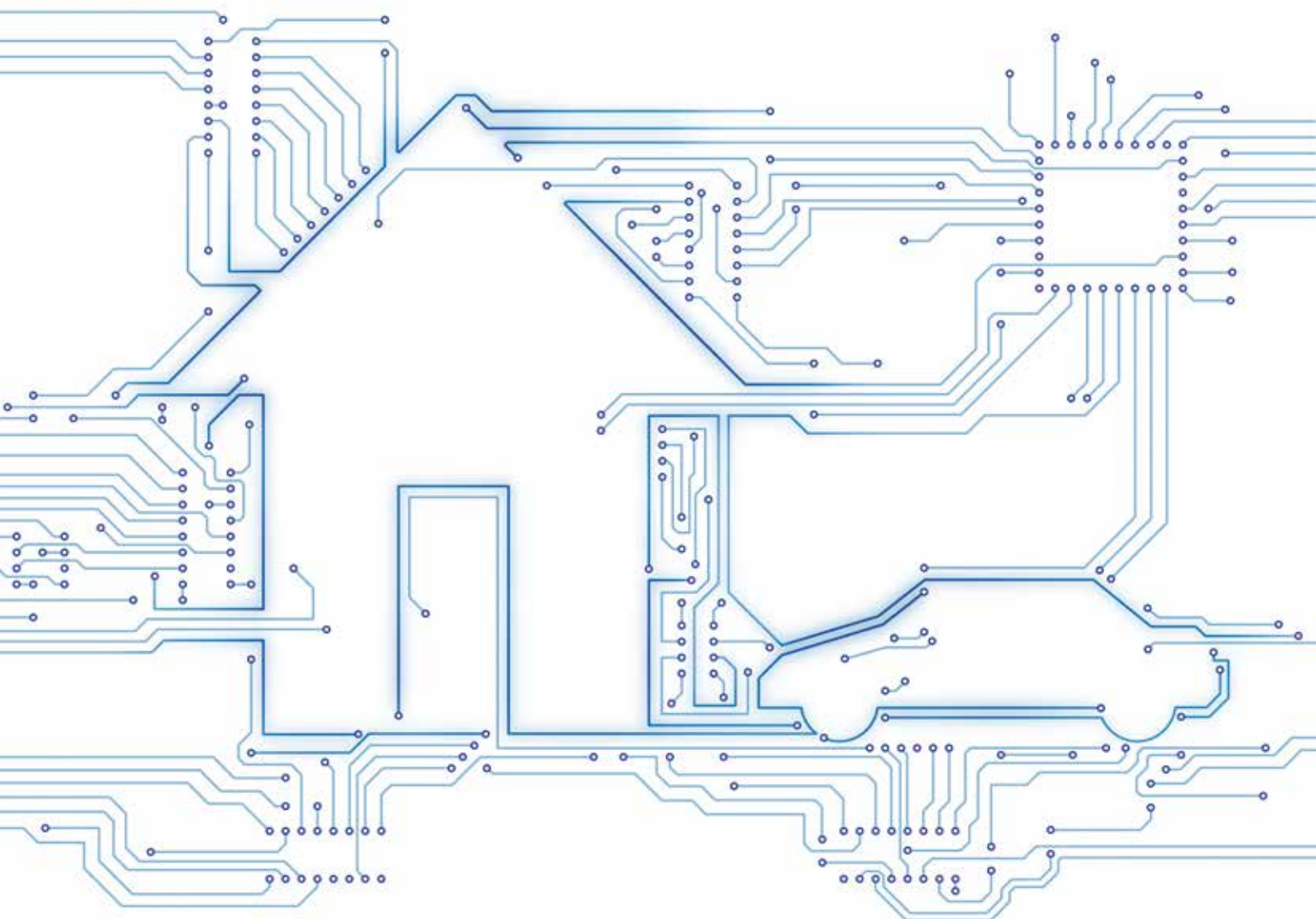
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What is the Internet of Things (IoT) and what impact will it have on your business? The number and diversity of IoT devices is increasing rapidly. These devices provide us with a whole host of data that is extremely important for value generation. There are a lot of challenges ahead, but by making yourself ready and actively participating in the development of IoT, you can stand out from your competitors and provide your clients with innovative services.

Introduction—What is IoT?

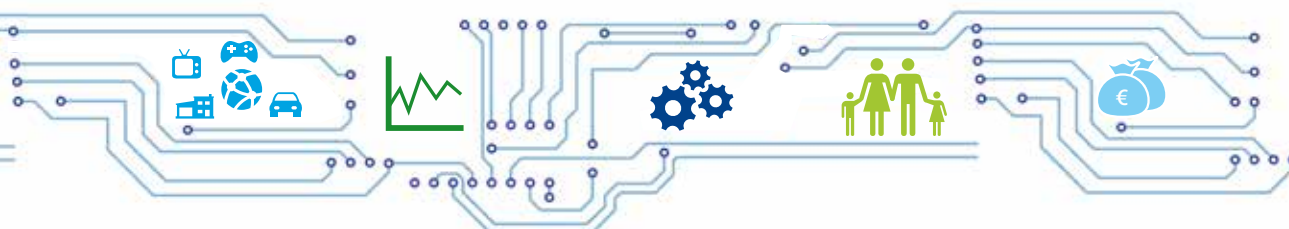
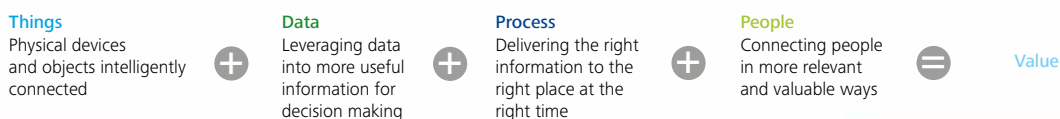
Everybody is familiar with the internet. But what exactly is this emerging trend called the Internet of Things (IoT), sometimes referred to as the “Internet of Everything” (IoE)? Interest in this topic is growing daily. This is a vast subject with many layers of complexity but the key concept behind it is actually pretty simple. IoT is the network of any physical object with embedded technology that allows the device to gather data and transfer it over the internet or to another device.

A lot of devices already fall under the vast umbrella of IoT, ranging from a single-purpose thermal sensor with reporting capabilities to complex systems providing “upgraded” versions of objects from our daily life under the label of smart devices, which feature automation or remote control functions (e.g., smart homes). Today, the public is becoming increasingly familiar with IoT and interest in smart devices is growing thanks to the rise

of wearables. What does this term mean? Wearables—short for “Wearable Technology” or “Wearable Devices”—is in fact a subset of IoT. It refers to all smart devices that are integrated into clothing or accessories that can be worn, such as smart watches

All of these devices can collect and/or display data. The range of devices will continue to be diversified and they will form an ever-increasing part of our lives. Depending on the analyst, IoT is expected to consist of 26 to 50 billion objects in 2020¹. Consequently, the quantity and diversity of data will create new challenges in terms of storage and security but also, and more importantly, new opportunities for business and economic models. Preparing for the future is good; actively developing it is better. Proactive players will be able to stand out from the crowd and create value to differentiate themselves from their competitors.

The pillars of Internet of Things



¹ <http://www.cisco.com/web/solutions/trends/iot/portfolio.html>

Why should the Financial Services Industry care?

With the explosion of IoT, the world of financial services is entering a new era. FinTech, a new branch in the economic industry, is emerging. FinTech actually describes companies that use technology to innovate in the financial services ecosystem. With the high degree of risk related to the security of user information, traditional banking and insurance companies tend to be more conservative. On the other hand, many start-ups, and also major IT companies, attempt to propose innovative financial services and solutions by leveraging the capabilities offered by new technologies. As an example, many IT companies already propose their own mobile payment solutions.

Currently, there are mainly micro-services with limited interactions with each other but, with time, they will strengthen their positions and drive a revolution within financial industries. Even though the entry-level in the market is getting easier, traditional banking and insurance companies are still leagues ahead of most newcomers. Indeed, when dealing with sensitive client data, bank and insurance companies benefit from a wealth of experience and the client trust they have already earned.

How can IoT enhance client value?

The benefits of IoT may not be so obvious for financial services companies. Nevertheless, IoT offers real potential for banks and insurance companies.

On the banking side, mobile payment has increased in popularity over the past few years. But payments are not the only benefit IoT has to offer banks. Despite all the effort put into detecting fraudulent payment and identity theft, instances still occur. Biometric sensors, for example, can help to increase the security of services by adding a strong authentication layer on top of the services provided. Also, data aggregated from multiple sources can help to better evaluate the risks

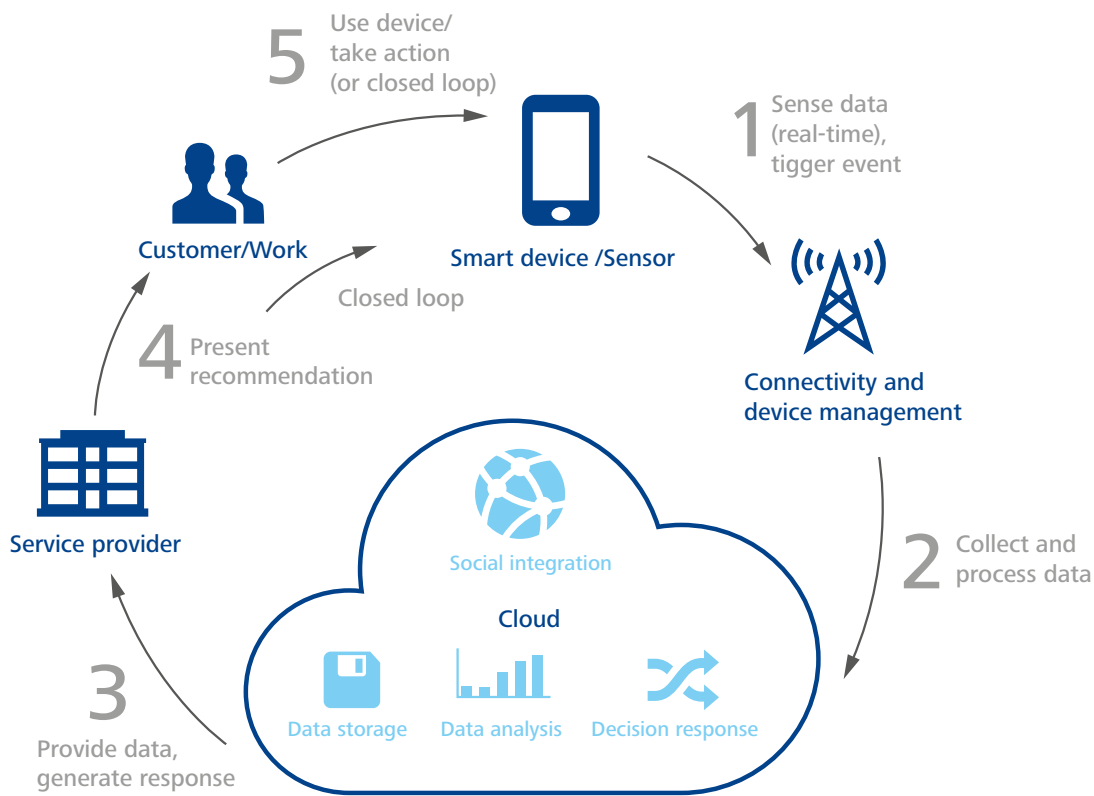
incurred when accepting a loan for a particular client, by determining a more accurate client profile.

The telematics market is emerging as a useful tool for insurance companies. Insurance companies use complex calculations to determine the risk associated with a client and define the price for their services based on the client's profile. However, they usually need to make many assumptions about the real behavior of the client. Using geo-localization technology, telematics can give precious information regarding a driver's habits and allow uncertainty to be dispelled in calculations and a more accurate risk rating to be attributed to each client. This way, services can be tailored to fit the client better and also make him or her more responsible by rewarding good driving practices with innovative plans, like Pay-as-you-Drive.

Another trend emerging for insurance companies is the use of health band data to provide more adapted services to clients, as well as providing emergency assistance by making use of monitoring and analytics technologies on the data collected.

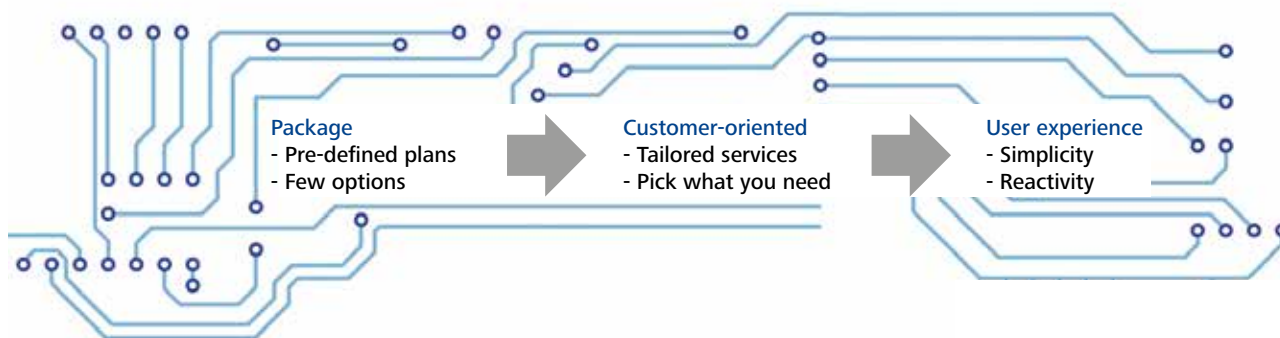
Telematics and health are not the only use cases of IoT for insurance. There are a range of sensors that can be installed in a variety of places to protect clients' properties. It is now possible to detect water-pipe leakage in homes so that repairs can be made before the cost of damages spirals out of control. On top of that, data collected can help to identify and prevent fraudulent claims.

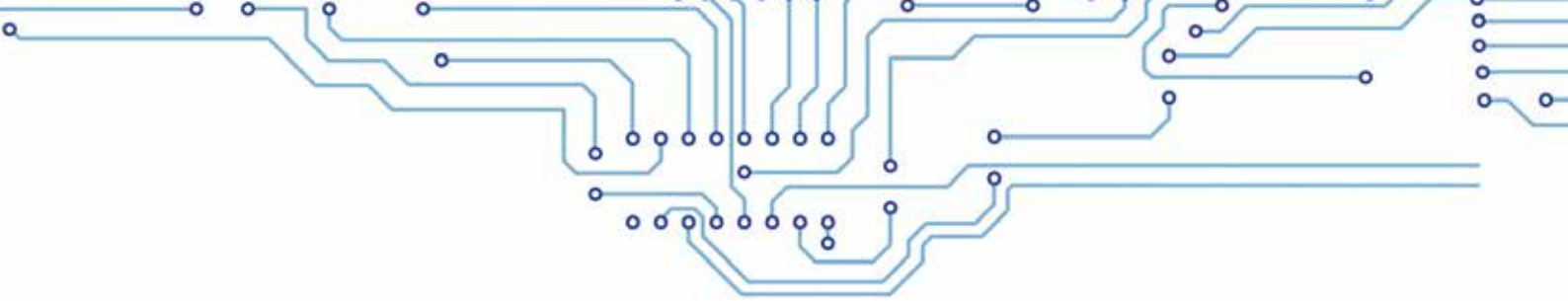
There are two driving forces in this adventure: clients and data. Putting the two of them at the center of the business can lead to a virtuous circle; knowing clients helps to create a proximity relationship and determine their needs, while collecting data is facilitated by the trust the client has in the company. In turn, the new data will allow the company to know the client better.



Which services do you want to develop? Or rather, how do you determine which services you should develop?

Evolution of financial services from yesterday to tomorrow





Over recent years, banks and insurance companies have been getting closer to their clients in order to adapt services to their clients' actual needs and give them an offer tailored to fit their needs with a personal touch. This is a great move, as proximity with clients is critical to having the necessary insight to understand their actual needs. Financial industries not doing this already are probably lagging behind their competitors and most likely not ready to take the next step.

Entering the world of IoT, the increase in information sources creates a situation where financial services can enhance the level of personalization they offer, thanks to progress made in the field of analytics. From simple analytics cases to real-time analytics, or exploring machine learning solutions, there are many ways to improve understanding of data and they can be a real asset for developing innovative services.

On the other hand, we are also entering an era where people are concerned about their privacy. Professionals dealing with sensitive client data are responsible for ensuring the security of such data so that no malicious third parties can access it. Client data is just as precious to a business as the clients themselves.

Over recent years, banks and insurance companies have been getting closer to their clients in order to adapt services to their clients' actual needs and give them an offer tailored to fit their needs with a personal touch

Securing the data is the bare minimum, but from a client perspective, it merely scratches the surface. Should they blindly put their trust in any company providing financial services? The answer is a resounding "No". Each financial services provider has a duty to demonstrate why their clients can trust them. So how can such providers dispel their clients' fears regarding

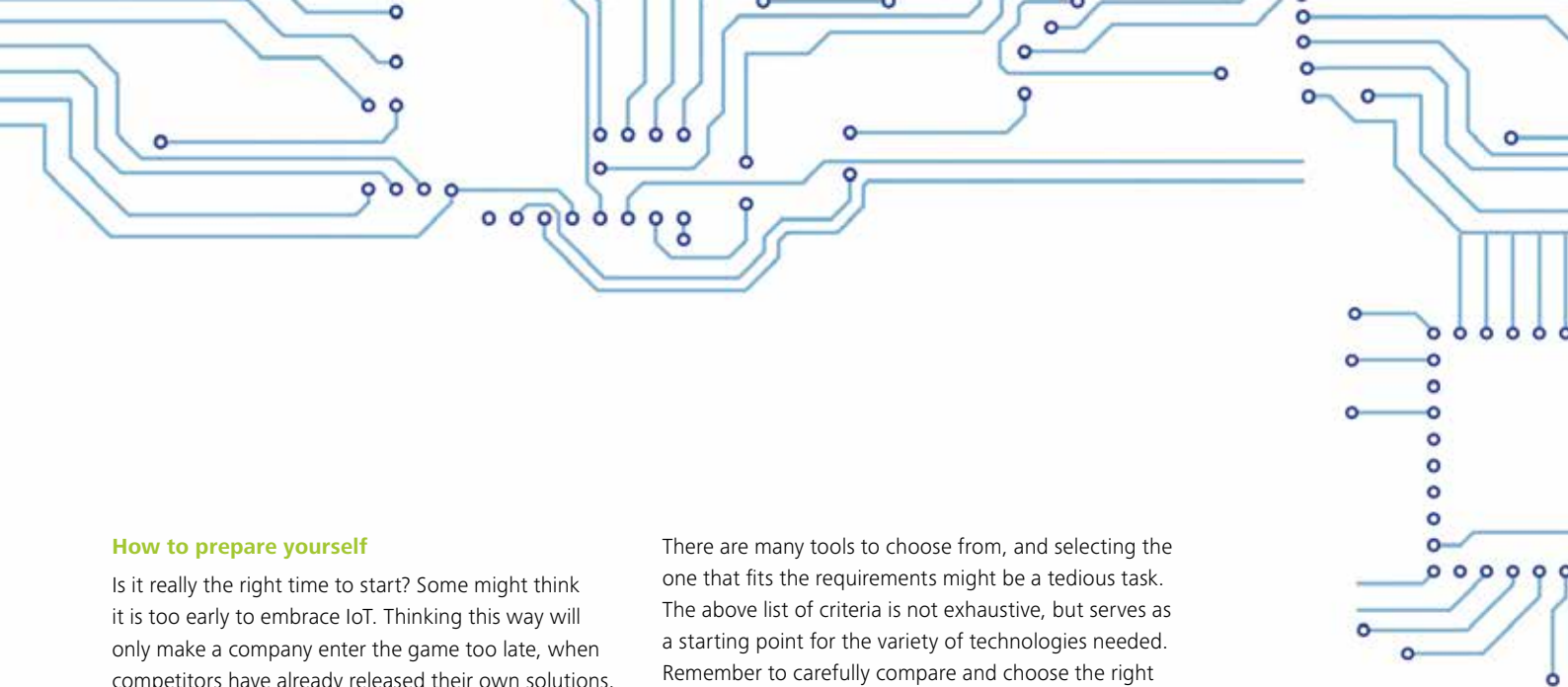
privacy? This is a very sensitive topic; most people do not like the thought of having other people accessing their personal data. A black-box model here would be the worst answer.

In general, clients need companies to be as transparent as possible regarding their use of private data. And this is even truer for banks and insurance companies, which have access to extremely sensitive information about their clients. Even though more and more people are becoming aware of the importance of data security and privacy, there are still many that are not aware or not paying enough attention to it. For this reason, regulators are a step ahead to prevent misuse of personal data. This is the case of the current reform of the European framework of data protection. In the context of industry, and especially for financial services, clear policies must be defined in terms of privacy and security and it should be easy for clients to find and understand what data is collected and how this data is helping to provide them with a better quality of service. The aforementioned step of getting closer to clients will show its value here. Proximity relationships are a real asset to building trust.

From a business perspective, informing clients is good, but involving them is better. What devices are they willing to use? Are they comfortable with letting a company collect specific data? No companies want to develop a service that their clients are not willing to use.

In short, answering the following questions with a focus on clients can be a starting point:

- What are the clients' needs? What are their expectations?
- What IoT devices/wearables are they willing to use?
- How can clients be reassured about their privacy and security concerns?
- What can be done to improve transparency regarding the use of client data?
- How can the privacy policy be made clear and understandable for clients?



How to prepare yourself

Is it really the right time to start? Some might think it is too early to embrace IoT. Thinking this way will only make a company enter the game too late, when competitors have already released their own solutions. For those who are yet to start, they might want to initiate their project today, as it is a large-scale project and doing it right is going to take time.

To be successful in the digital world, it is necessary to support two speeds of IT. The first is the classic cycle needed to lay the foundations. The second is composed of fast cycles dedicated to client-facing operations. Indeed, as client expectations are changing, a shorter time to market is required.

Then, what should you start with? Having solid foundations on top of which services can be developed is vital. Here, we have a long cycle that will ensure the reliability of the underlying infrastructure for storing the data and securing access to it.

Next comes the determination of the short cycles. From a business point of view, what actually matters for financial industries is the data itself rather than the way in which it is collected. As we have seen before, the client is the core of your business, so the key to developing useful and successful services is to understand clients' needs and expectations. Then, the data needed will be determined by establishing the requirements for developing the service.

In most cases, dealing with IoT involves working in a context of Big Data. So, before going any further it is essential to make sure that the infrastructure is ready to handle the huge amount of data that it will have to process. Reviewing needs and constraints is a very large and complex task but here are a few key starting points:

- Storage & Query (SQL, MongoDB, Hadoop, ElasticSearch, Graphs, etc.)
- Replication (depending on the storage)
- Security (user access, encryption, firewall, etc.)
- Availability (failure recovery, real-time, etc.)
- Scalability
- Aggregation
- Analytics

There are many tools to choose from, and selecting the one that fits the requirements might be a tedious task. The above list of criteria is not exhaustive, but serves as a starting point for the variety of technologies needed. Remember to carefully compare and choose the right tools, as migration of data is always a delicate matter.

Once the infrastructure stack is ready, it is time to feed it with data. First, the data sources should be defined as well as the interaction with them. A good entry point here could be the design of APIs. Indeed, APIs may act as the centerpiece of your applications and services. Data collected by sensors can be sent to the API, which will deal with underlying storage. On the other side, application layers can retrieve data from APIs for user display. APIs can be considered as micro-services on top of which you will build your applications (macro-services).

Not only will this make the global architecture cleaner, but it will also make it easier to extend and enhance functionalities as the infrastructure grows. Integration with new tools or alternate data sources will be simpler with a clear understanding of what data is available and how to access it. It is also good to keep in mind that the more entry points are added into an architecture, the greater potential for a security breach there is.

We should now look at the process of selecting your data sources. First of all, a review of the different devices available will allow us to identify those that can potentially collect and provide the data needed. It might not always be possible, but the best way to balance the pros and cons of a device is to experiment with it.

There is no need for financial companies to restrict themselves to a single kind of device as their data source. Actually, one of the strengths of IoT is the variety of data available, and it is the ability to aggregate and analyze data from different sources that will make a difference in the long run.

Of course, it may be tempting to collect as much information as possible from various sources so that the data will be at hand when required. But the transparency commitment toward the client is more important. How is it possible to justify the collection of data when there is no actual need for it?

The following list summarizes all the aspects you should consider before selecting one or more IoT devices as a data source:

- Data collected by the device: does it match the requirements?
- Connectivity of the device: how can the data collected be retrieved?
- Quality and reliability of data: can the user alter the data?
- Upgradability: how easy will it be to add new features?
- Cost: how much does the device cost? Will the company or its clients bear the cost?
- Lifecycle: how often does the device need to be renewed?

As a side note, financial services companies may or may not have all the resources required to deal with each aspect of their project. This does not, however, justify not going forward with the project. Partnerships with specialized companies can be a solution. For example, some companies might not be comfortable with the embedded programming needed for some devices, while others may specialize in that. The same goes for the data infrastructure; some providers may have appliances with the tools already installed for companies that do not have their own datacenter. Remember that it is better to delegate rather than having hazardous support internally. On the other hand, choosing partners must be done very carefully, as it can affect the privacy and security policies. Also, there may be promising FinTech start-ups with similar projects, in which case acquiring them might be an option. Indeed, their technological background may also bring value to the product thanks to the different way in which they approach the problem.

To summarize, depending on the situation, there are several solutions:

- Developing internal resources
- Finding the right partner
- Investing in promising start-ups

Finally, each layer of the infrastructure and services should be tested. Indeed, the world of IoT is evolving fast and keeping up with the pace might prove challenging. In this kind of scenario, it is easy to break compatibility as new features are released or old ones updated. Some principles of agile methodologies, such as Continuous Integration or Test Driven Development, are particularly adapted here, but Agile is not the only approach possible. What matters is to be comfortable with the tools and methodologies and get started.

In short, focus on your data and have the global picture in mind:

- Is the infrastructure ready? What changes are required?
- What data is needed?
- Is the service architecture well defined (micro vs macro services)?
- What sources will be used to collect data?
- Are all the resources available to handle the project internally?
- Is the global test coverage strong enough?



Conclusion

IoT devices, and especially wearables, are offering new perspectives in terms of user experience. With all the data potentially available through all these devices, new challenges such as privacy, security and big data analytics are arising. The following points will help you to define the milestones of your journey into the world of IoT:

- Be the actor of the change; you do not want to be left behind
- Focus on client needs
- Beware that user experience is the new trend
- Be transparent; trust is built over time, but losing it can happen in an instant
- Follow IoT news, it is a fast-moving world
- Learn how to leverage the power behind your data



Demystifying Bitcoin Threat or opportunity?



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Despite an explosion in media coverage, virtual currencies such as Bitcoin are misunderstood. Many articles describe exchange meltdowns, price volatility, and government crackdowns. This focus on Bitcoin as a volatile and even renegade currency may be distracting businesses from its potential long-term significance as a disruptive new money technology.

Introduction

Bitcoin is more than just a new way to make purchases. It is a protocol for exchanging value over the Internet without an intermediary. Much has been written about Bitcoin's payment applications, however Bitcoin could soon disrupt other systems that rely on intermediaries, including property transfer and identity management.

As the Bitcoin ecosystem—relying on the blockchain technology—evolves and use cases emerge, the public and private sectors will face new challenges, opportunities, and responsibilities. Companies may build upon this technology to create innovative products and services. In the future, Bitcoin and blockchains may revolutionize the way we conduct business. The sooner the public and private sectors understand the potential of this new technology, the better prepared they will be to mitigate its challenges and realize the benefits of bitcoin and other similar virtual currencies.

Why did Bitcoin emerge?

Throughout history, many items have been used to store value and as a medium of exchange, such as clay tablets, coins, and now paper money. As our

understanding of money as a store of value, medium of exchange, and unit of account has matured, so have the methods and modes for exchanging it. There have always been functions of the technology available. We moved from precious metal coins to paper money before inventing checks and then credit cards. Yet credit cards weren't created for the Internet era. They have simply been adapted to meet the needs of consumers operating in a networked and digital world. With the consumer-accessible Internet now 20 years old, the question is not why a currency specifically designed for the Internet has emerged, but what took it so long.

Bitcoin is one of the first currencies born on the Internet to be used in the real economy. Other virtual currencies have since been created from the same open-source code as bitcoin, and more are popping up every day. Some of these currencies aim to improve upon Bitcoin's technical or operational difficulties, such as transaction speed and security. However, Bitcoin has so far sustained its first-mover advantage. It is the most popular and has the highest value in circulation. As at 1 August 2015, there are 14.45 million bitcoins in circulation with a total market capitalization of US\$4.1 billion.

How does Bitcoin work?

Bitcoin is a protocol for exchanging value over the Internet without an intermediary. It is based on a public ledger system, known as the blockchain that uses cryptography to validate transactions. Bitcoin users gain access to their balance through a password known as a private key. Transactions are validated by a network of users called miners, who donate their computer power in exchange for the chance to gain additional bitcoins. They receive newly created bitcoins for this, which is the only source of additional bitcoins. There is no monetary authority that creates bitcoins. There is a fixed supply of 21 million bitcoins that will be gradually released over time at a publicly known rate; the rate of supply diminishes over time in a predictable way. As a store of value, this means that bitcoins are inherently deflationary. It also means that there is no government or central entity to make discretionary decisions about how much currency to create or to attempt to defend it through monetary policy actions.

In order to process a bitcoin-denominated transaction, Bitcoin verifies two facts:

1. When user A transfers a bitcoin to user B, user A has a bitcoin to spend (prevention of counterfeiting)
2. When user A transfers a bitcoin to user B, user A is not trying to transfer the same bitcoin to another user, user C, simultaneously (prevention of double spending)

As Bitcoin matures, an ecosystem of companies is emerging to support consumers and retailers in storing, exchanging, and accepting bitcoins for goods and services:

- Banks and wallets store bitcoins for users either online or on storage devices not connected to the Internet, known as “cold storage”
- Exchanges provide access to the Bitcoin protocol by exchanging traditional currencies for bitcoins and vice versa
- Payment processors support merchants in accepting bitcoins for goods and services

What are the qualities of Bitcoin as a technology system?

Bitcoin has three qualities that differentiate it from other currencies and payment systems. First, Bitcoin is peer-to-peer (P2P), transferring value directly over the Internet through a decentralized network without an intermediary. Current payment systems, like credit cards and PayPal, require an intermediary to validate transactions; Bitcoin does not. As a result, Bitcoin has been referred to as “Internet cash,” as it can be exchanged from person to person much like paper currency today.

Second, Bitcoin is open, yet securely authenticated. Traditional payment systems rely on the privacy of transaction information to maintain security. For example, the compromise of a credit card transaction can result in the release of valuable information that can be used to conduct future transactions. In comparison, Bitcoin relies on cryptography. As every transaction is validated with cryptography by the network of miners, Bitcoin functions because of its openness, not despite it.

Third, Bitcoin is self-propelling. Bitcoin uses its own product, bitcoins, to reward or “pay” miners who are providing the computing power that serves as the engine of the transaction verification system. As a result, the system does not require the same type of overheads that traditional payment systems might. These three aspects are part of what drives Bitcoin’s success, enabling a nearly frictionless global payment system. However, these same factors have also created challenges.

What are the main challenges of Bitcoin?

In order to achieve wider adoption as a currency, Bitcoin needs to address significant questions around volatility, regulatory uncertainty, exchange security, ease of use, and transaction volume.

Bitcoin speculators have driven significant price volatility, reducing Bitcoin's utility as a medium of exchange. People may be reluctant to use Bitcoin when the price can change by 30 percent overnight. The global regulatory environment around Bitcoin remains uncertain. Any news of new government scrutiny or rumors of a policy change can significantly affect Bitcoin prices, reducing its stability as a currency.

Security problems, punctuated by highly publicized exchange meltdowns, may prevent mainstream usage of bitcoins as a currency. To mature, exchange security needs to be as strong as at traditional banks. Mainstream consumers are unlikely to use Bitcoin until wallet services develop more user-friendly and secure storage techniques.

Validating transactions requires significant electricity, bandwidth, and data storage. The resources required to support Bitcoin's relatively small volume of transactions are already being pushed to their limits. Currently, Bitcoin averages about 120,000 transactions per day, while Visa handles more than 2.1 billion card transactions. In order to support mainstream transaction volumes, the Bitcoin system for validating transactions will likely have to change how it uses electricity, bandwidth, and data storage.

Opportunities with Bitcoin and blockchain

Bitcoin is more than a new currency. Bitcoin and other virtual currencies are creating a new architecture for exchanging information over the Internet that is P2P, open yet secure, and nearly frictionless. Currently, when an individual transfers funds, he or she must work with a third party often charging fees. Bitcoin allows for a direct payment to anyone, anywhere in the world, at any time. This may allow companies to charge lower fees than they do today.

Now imagine how other systems that rely on intermediaries, such as property transfer and identity management, could be disrupted by a similarly open P2P system.



Bitcoin is a protocol for exchanging value over the Internet without an intermediary. It is based on a public ledger system, known as the blockchain that uses cryptography to validate transactions

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Transfer of property

The Bitcoin protocol could simplify complex asset transfers, revolutionizing the services that support this industry. Currently, the transfer of large assets requires significant time and resources. For example, in order to purchase a car from an individual seller, one has to use services to learn about the car's accident and inspection history. The blockchain, Bitcoin's public ledger, could change this. Bitcoins can be qualified in such a way that they represent real-world assets. Bitcoin entrepreneurs at companies like Colored Coin are already working on ways to use small portions of bitcoin to denote physical property. A fraction of a bitcoin would publicly identify who currently owns that property and could include a record of both past ownership and other history about the property. When purchasing a car, one would be able to verify all accidents and inspections over the blockchain and transfer the title on-site.

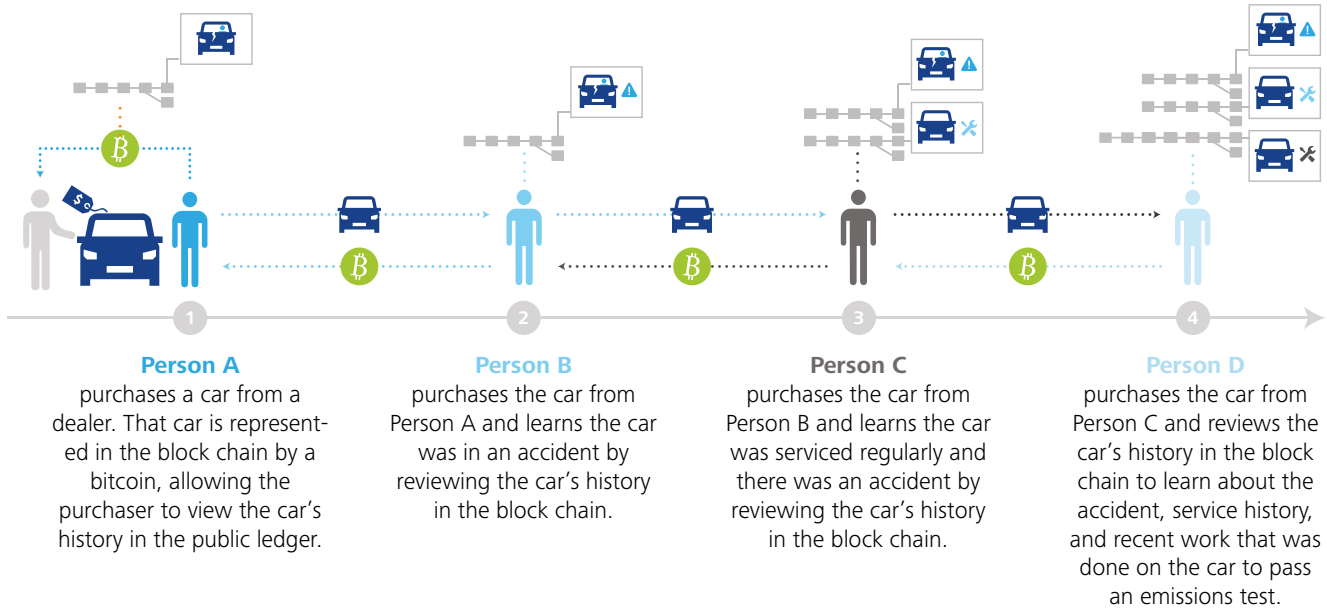
Similarly, real estate and financial instrument transactions could all be executed over blockchain protocol. This could soon create efficiencies and reduce friction by allowing individuals to directly transfer property without the use of a broker, lawyer, or notary to sign off on the transfer.

Identity management

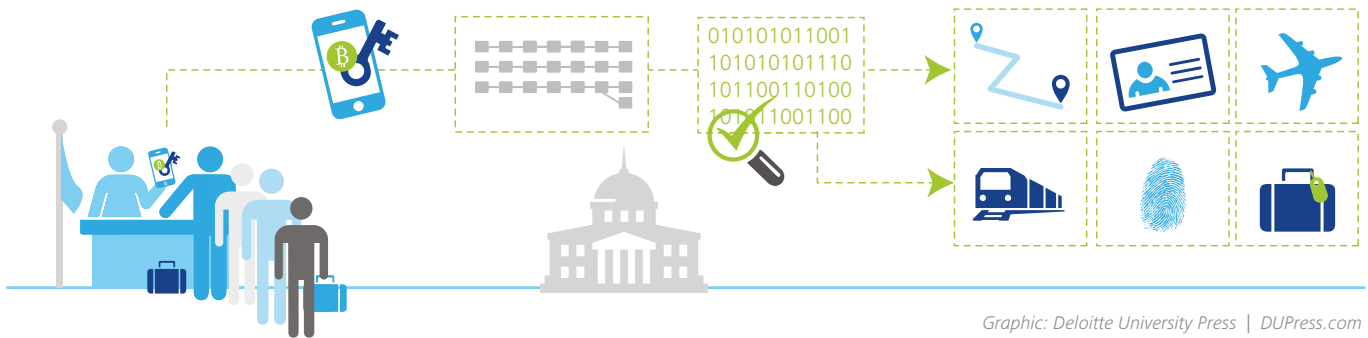
Blockchain could also transform identity management. Much of identity management, including passports, still operates on a paper-based system. These documents are frequently forged and stolen. But what if there was a way to create a unique, verifiable key that was impossible to forge? A cryptographic network based on blockchain could be used to verify individuals' identities and monitor movement across borders. When a person travels through a checkpoint at a border crossing, instead of showing and scanning a paper passport, he or she could present his or her Bitcoin key. A government entity could verify the key and register the entry into the blockchain.

This could also be used for other forms of identity management like social security numbers, tax identification numbers, or driver's licenses.

Transfer of property



Identity management



Deloitte's observations regarding blockchains

To date, many of Deloitte's clients worldwide are still in the exploratory phase of the technology, with most still attempting to determine the differences between Bitcoin and other blockchains.

Some, however, are moving to apply this technology to specific pain points, either to add additional revenue streams or cut costs. Some of Deloitte's banking clients are primarily interested in using the blockchain for the trade, transfer, and settlement of transactions. Elsewhere, retail clients are interested in the use of the blockchain for rewards program management. The challenge is to find use cases where more revenue can be generated with a different client experience or reduced costs.

As far as Deloitte is concerned, for internal use, various areas of interest have been identified. For example, Deloitte US is currently developing a solution using the blockchain to accelerate the audit process. A company would post every transaction in a blockchain. To audit this company, Deloitte would look at that blockchain and all the transactions, as the blockchain is immutable and time-stamped.

On the consulting side, the potential for Deloitte is around the ability to source consulting services through a P2P crowdsourcing platform. For example, instead of asking Deloitte for help on a given strategy, clients could request a service on the blockchain, and the blockchain would match the client with the right individuals to do that.

Identifying opportunities

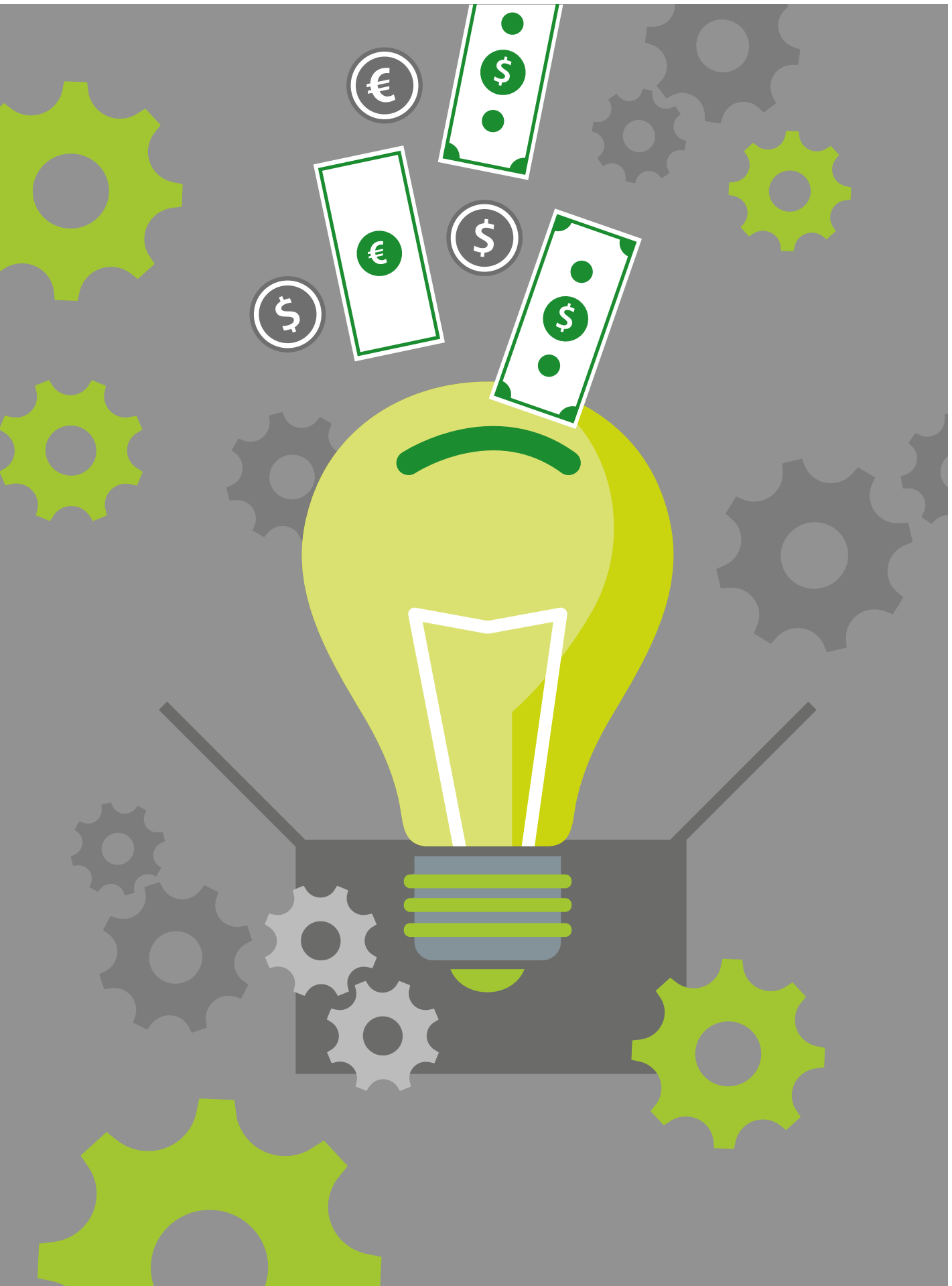
Payments are obviously being influenced by Bitcoin and the blockchain, but enterprise clients are currently interested in the broader applications of the technology. Bitcoin should be considered a technology for all transactions, including those that are not necessarily financial.

Bitcoin is a technology that is interesting for companies wanting to manage any type of transaction: it could be a transaction between two persons transferring bitcoin or asking a driver to pick them up at an airport. Over time, blockchain may become a foundational layer for asset transfer, smart contracts, and voting, but different blockchains may be created that specialize in each of these use cases. These evolutions will nevertheless have to be carefully pushed forward taking into consideration the regulations on data protection.

Conclusion

- Bitcoin is more than a new virtual currency. It is an ecosystem relying on the blockchain technology that has applications beyond payments
- Applications of bitcoins & blockchain technologies have a high disruption potential beyond the financial industry, especially in activities relying on intermediaries
- Many factors will influence Bitcoin's evolution, including regulation, technological innovation, and economic conditions
- Predicting the future of Bitcoin and blockchain today resembles what it must have been like to try to comprehend the significance of the Internet in the 1990s. But if Bitcoin's short history is an indicator, the future of this technology will be an exciting ride!

Sources:
www.blockchain.info
<http://www.coindesk.com/deloitte-blockchain-auditing-consulting/>
Deloitte University Press – Bitcoin. Fact. Fiction. Future.



Collaboration generation

The disruptive shifts revolutionizing our economy

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The collaborative economy: key definitions and contextualization

Thom Feeny was tired of watching politicians “dithering” as the Greek crisis unfolded.¹ Rather than wait it out as high-level talks in Brussels and Athens determined the future of Greece and the eurozone, the British businessman took to the internet and launched a massive crowd funding campaign—“the Greek Bailout Fund” to raise the €1.6 billion euros needed by Athens to meet its IMF repayment. His Indiegogo campaign was ultimately unsuccessful. Having raised an impressive but far-below-target sum of just under €2 million in only eight days,² Thom refunded all contributors—but remained undeterred. Instead, he launched a new campaign, “Greek Crowdfund”, in collaboration with the not-for-profit organization “Desmos”, which is urging people to make contributions that will go directly to

charitable initiatives targeting youth unemployment across Greece, irrespective of the final amount collected.³ In its first six hours, the campaign had raised over €20,000.⁴ After three days, more than €90,000 had flooded in.⁵

The politically charged nature of the Greek situation ensured that Thom Feeny’s campaign received extensive media coverage, but initiatives like his are far from unique. Crowdfunding—the organized online raising of money from internet users—was born in the low-investment recessionary climate of 2008 and has now become a “multi-billion dollar industry” flowing into countless ventures across the world, both developed and developing.⁶ The trend forms part of a growing and transformative phenomenon referred to as the “collaborative economy”—a space Deloitte is extremely excited about. Let’s get stuck right in.

1 Hazel Sheffield, 7 July 2015: <http://www.independent.co.uk/news/business/news/greece-debt-crisis-live-campaign-to-crowdfund-greek-bailout-ends-with-2m-or-0-of-total-needed-10371792.html>

2 Lauren Finch, 7 July 2015: <http://globalvoicesonline.org/2015/07/07/donations-surge-for-second-crowdfunding-campaign-after-greek-bailout-falls-short/>

3 Ioanna Zikakou, 10 July 2015: <http://greece.greekreporter.com/2015/07/10/indiegogo-greek-bailout-fund-failed-british-businessman-relaunches-the-campaign/>

4 Umberto Bacchi, 7 July 2015: <http://www.ibtimes.co.uk/greek-crowdfund-failed-bailout-organiser-thom-feeny-starts-new-fundraiser-greece-1509726>

5 Lauren Finch, 7 July 2015: <http://globalvoicesonline.org/2015/07/07/donations-surge-for-second-crowdfunding-campaign-after-greek-bailout-falls-short/>

6 InfoDev/ The World Bank, 2013: http://www.infodev.org/infodev-files/infodev_crowdfunding_study_0.pdf

Crowdfunding—the organized online raising of money from internet users—was born in the low-investment recessionary climate of 2008 and has now become a “multi-billion dollar industry” flowing into countless ventures across the world, both developed and developing

But first, what is the collaborative economy anyway?

If you're confused, studies suggest you are not alone.⁷ Terms like the “sharing economy,” “collaborative economy,” and “collaborative consumption” are frequently used interchangeably, and different people attach more or less expansive definitions to each.^{8,9} We consider the “collaborative economy” as the practice of individuals transacting with each other directly rather than going to traditional companies to serve their needs. Within this new organizational framework, access to, and sharing of, goods and services replace the traditional consumer focus on ownership.¹⁰

Collaborative Economy expert Rachel Botsman has usefully split this organizational model along four key dimensions¹¹: **production, consumption, finance and education**. In terms of production, individuals collaborate with one another, becoming co-creators and co-producers, pooling their talents and resources and leveraging the power of technology to bring their goods and services to the market. Creative Commission is an example of an online platform that allows music artists to display their talents and companies to select the best resource for their project needs.

In terms of consumption, the market spans a range of companies, from Airbnb (the short and longer-term accommodation rental company) to BlaBlaCar (the French startup that has provided individuals with a platform for sharing long-distance car journeys when they are traveling in the same direction) to GirlMeetsDress.com (an online platform that allows women to rent dresses for special occasions) to zilock.com (where individuals can share tools and household appliances). Indeed, while production and consumption would normally be considered two separate spheres, the power of the collaborative economy lies in its ability to blur a traditional split: **consumers are, effectively, also producers**.

From a finance perspective, initiatives like Thom Feeney's form part of a growing trend towards peer-to-peer lending and crowdfunding. Bypassing traditional banks and financial institutions, individuals are using online platforms to lend each other money, finance innovations (not least innovations in the collaborative economy itself) or, as in the case of Thom Feeney, fund causes they consider worthy. Singularity University recently hosted the “Exponential Finance” conference that highlighted the breath-taking pace of change that technological innovation more broadly is bringing about for the financial sector.¹² The oft-cited “Millennial Disruption

7 Collaborative Consumption Team 2014: <http://www.collaborativeconsumption.com/2014/12/18/what-do-people-really-think-a-summary-of-findings-across-this-years-studies-on-the-collaborative-economy/>

8 Rachel Botsman – 21 Nov 2013: <http://www.fastcoexist.com/3022028/the-sharing-economy-lacks-a-shared-definition>

9 Toon Meelen and Koen Frenken - 14 Jan 2015: <http://www.fastcoexist.com/3040863/stop-saying-uber-is-part-of-the-sharing-economy>

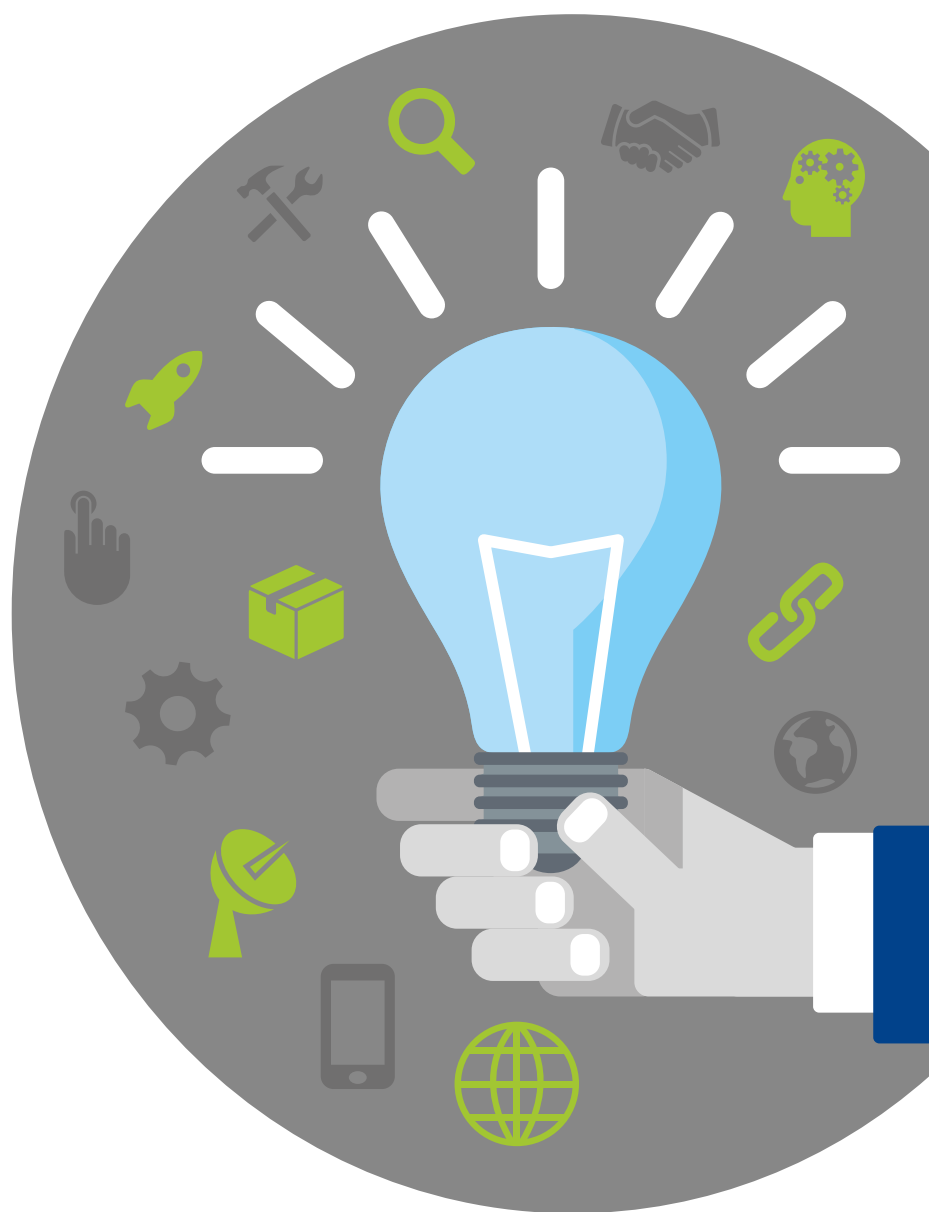
10 Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

11 Rachel Botsman – 21 Nov 2013: <http://www.fastcoexist.com/3022028/the-sharing-economy-lacks-a-shared-definition>

12 <http://exponential.singularityu.org>

Index" (MDI), which looks at the likelihood of different sectors to be disrupted by the millennial generation, identified banking as the sector ripest for disruption, as millennials express low levels of trust in traditional financial institutions.¹³ And while the index is United States-based, all indications point to its deep relevance in the European context: With a 2012 Gallup poll confirming that faith in the banking sector is at a pretty low ebb in EU member states, with a whopping seven of them recording trust rates of below 30 percent.¹⁴ This lack of trust in traditional financial institutions has implications for the collaborative economy, manifesting itself in a growing trend for people to eschew banks in favor of "banking on each other."¹⁵

The crowdfunding market is thriving. In 2014, one study¹⁶ calculated that crowdfunders in North America had managed to raise US\$9.46 billion, an increase of 145 percent on the previous year. While 2014 saw North Americans take the lead here, the Asian market is also growing increasingly strong, with US\$3.4 billion raised, only just surpassing Europe (where US\$3.26 billion was raised). The report estimates that in 2015, the global crowdfunding market will raise a jaw-dropping US\$34.4 billion. To take the example of Kickstarter, perhaps the most well-known of crowdfunding websites, individuals are allowed to raise money for a campaign or project with a target amount set. Kickstarter takes 5 percent of all money raised and individuals lose all money raised if it falls short of the set target (in the latter case, Kickstarter retains 3-5 percent in transaction fees).¹⁷ Different crowdfunding websites operate using different models (for example, Indiegogo offers users a flexible option, which prevents them from losing all the money if the amount raised falls short of their target) and target different markets (for example some, such as the Crowdcube in the UK, are aimed at more experienced investors).¹⁸ Europe is awash with crowdfunding platforms: Funding Circle (UK), Ulele (France), FundedByMe (Sweden), MyMicroinvest (Belgium) and Symbid (Netherlands) are just some examples,¹⁹ which are opening up new access channels for individuals seeking to fund campaigns and innovations in a mind-blowing range of different areas.



13 <http://www.millennialdisruptionindex.com>

14 <http://www.gallup.com>

15 *Banking on Each Other* is the name of a book by Simone Baldassarri, a marketer who has focused much of his work on analyzing the rise of collaborative finance.

16 *Massolution 2015*: <http://www.crowdsourcing.org/editorial/global-crowdfunding-market-to-reach-344b-in-2015-predicts-massolutions-2015cf-industry-report/45376>

17 Kate Taylor 2013: <http://www.forbes.com/sites/katetaylor/2013/08/06/6-top-crowdfunding-websites-which-one-is-right-for-your-project/>

18 Priti Ambani – 30 May 2014: <http://crowdsourcingweek.com/top-15-crowdfunding-platforms-in-europe/>

19 *Ibid*



Beyond crowdfunding, the peer-to-peer lending market is booming. Peer-to-peer lending allows multiple investors to offer various loan packages; borrowers can then choose which investor(s) to borrow from based on the lowest interest rate offered.²⁰ Lending Club is the most prominent example of a business model that hinges on the cutting out of the middleman (read: traditional financial institutions) and directly connecting borrowers and investors, marketing itself as a company using “technology to operate a credit marketplace at a lower cost than traditional bank loan programs, passing the savings on to borrowers in the form of lower rates and to investors in the form of solid returns.”²¹ In May 2015, Bloomberg reported that peer-to-peer loan volume was expected to reach US\$77 billion in 2015: a staggering fifteen times more than its value only three years ago.²² In Europe, the United Kingdom and France lead the way, but across the European continent more broadly, the peer-to-peer lending market is showing healthy growth. The financial industry is, most definitely, being disrupted.

Finally, the collaborative economy has implications for the way we learn: with an explosion of open access lectures and MOOCs, such as Coursera and others, providing free and accessible courses that are impacting, if not yet disrupting, the traditional education sector.²³ Four months into its launch, Coursera had already attracted a staggering one million users.²⁴ And Coursera is hardly alone. EdX, NovoEd, Udacity and Khan Academy are just a few of the swelling number of online education platforms making their mark with 1.5 million and 1.8 million users subscribing to Udacity and EdX courses, respectively.²⁵ To date, these online courses have shown some of the greatest potential for companies, allowing employers to purchase easy and accessible training for their staff.

Deloitte’s Center for the Edge co-founders and experts John Hagel and John Seely Brown have pointed to the massive potential these online training tools have for companies looking to upskill or broaden the skill base of their IT professionals specifically.²⁶ In a ridiculously fast-paced sector like IT, where the shortcomings of the traditional education model are perhaps especially apparent, access to on-demand training material is critical.

²⁰ European Commission: http://ec.europa.eu/growth/tools-databases/crowdfunding-guide/types/p2p/index_en.htm

²¹ <https://www.lendingclub.com>

²² Edward Robinson, 2015: <http://www.bloomberg.com/news/articles/2015-05-14/wall-street-loves-peer-to-peer-loans-despite-concerns-of-a-bubble>

²³ Deloitte 2014: <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-2014prediction-MOOCs.pdf>

²⁴ Tamar Lewin - 6 Jan 2013: <http://www.nytimes.com/2013/01/07/education/massive-open-online-courses-prove-popular-if-not-lucrative-yet.html>

²⁵ Deloitte 2015: <http://deloitte.wsj.com/cio/2015/02/12/moocs-and-more-external-learning-for-corporate-it/>

²⁶ *Ibid*



Sizing up the market

As a 2014 Deloitte study²⁷ noted, in the space of just two years, venture capital firms had invested over US\$2 billion across 500 companies forming part of the collaborative economy.²⁸ Six million guests used Airbnb's services in 2013²⁹ and Deloitte predicts that by 2020, the car sharing market will have some 26 million users.³⁰ Uber is said to be doubling its revenue every six months.³¹ Indeed, founder of Crowd Companies Jeremiah Owyang calculates that, as of June 2015, the "collaborative sharing economy" had already spurred 17 billion-dollar companies. These 17 giants alone have 60,000 employees.³² The numbers are dizzying. The collaborative sharing economy's growth rate is outpacing that of Facebook, Google and Yahoo combined.³³

So extensive are the services now provided that three men, known collectively as "the sharing bros" have begun a mission to cross the American continent—all 21,000 km of it—using services provided only by the collaborative economy, and they are managing. Their carefully chronicled adventures make for fascinating reading.³⁴ And there are good reasons to expect even more growth based on heightened demand.

When polled in the early months of 2015, 32 percent

Last May, Bloomberg reported that peer-to-peer loan volume was expected to reach US\$77 billion in 2015: a staggering fifteen times more than its value only three years ago

27 Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

28 CB Insights data, Deloitte analysis (March 2014) cited in Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

29 Ryan Lawler cited in Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

30 Nick Gibbs cited in Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

31 Evelyn Rusli – 6 June 2014: <http://blogs.wsj.com/digits/2014/06/06/uber-ceo-travis-kalanick-were-doubling-revenue-every-six-months/>

32 2015 - <http://www.web-strategist.com>

33 Benita Matofjska – March 2015: <http://www.compareandshare.com/what-we-know-about-the-global-sharing-economy/>

34 <http://thesharingbros.com>

The explosion of social network sites, mobile technologies, and online payment systems means it has never been easier to create dynamic networks between geographically disparate individuals

of European consumers projected that their sharing behavior would increase in the months leading to 2016. Similar proportions of respondents in the United States said the same (28 percent).³⁵ In terms of acting as providers, over half of European respondents (54 percent) and North American respondents (52 percent) indicated that they would be prepared to rent out their possessions at a cost.³⁶

Moreover, there is **nothing Eurocentric about this trend**. A 2014 Nielsen survey³⁷ polled upwards of 30,000 internet respondents across 60 countries located within Asia Pacific, Europe, Latin America, the Middle East, Africa, and North America with results showing individuals' willingness to share electronics (28 percent), lessons/services (26 percent), power tools (23 percent), bicycles (22 percent), clothing (22 percent), and household items (22 percent). In China, the car-sharing market is projected to grow at a striking 80 percent per year,³⁸ and this is not just or even primarily about Western companies making inroads

in non-Western markets. The Beijing startup Tujia has proved to be a formidable competitor for Airbnb.³⁹ In Singapore, Airbnb bookings have exploded (almost 600,000 clients), but Roomarama, a local startup with a similar concept, has also been making waves.⁴⁰ In Uganda, "Safeboda.com" is seeking to become the "Uber" for motorcycle taxis across East Africa,⁴¹ and entrepreneur Raymond Besiga and his colleague launched "akkabo," an online platform that allows individuals to launch projects and tap into the crowd for funding, using mobile money wallets.⁴² Survey data reveals that Asia-Pacific consumers express a high willingness to participate in share communities, with 78 percent expressing a willingness to share their own goods and 81 percent saying they are likely to rent from others. In Latin America and the Middle East/Africa, 70 percent and 68 percent of survey respondents, respectively, said they would share their personal property, and 73 percent and 71 percent, respectively, would rent products from others.⁴³

35 Ipsos on behalf ING 2015

36 *Ibid*

37 28 May 2015 - <http://www.nielsen.com>

38 Roland Berger, 2014 - *Sharing the future*

39 Colin Shek - 3 Feb 2015: <http://knowledge.ckgsb.edu.cn/2015/02/03/consumers/no-purchase-necessary-the-sharing-economy-in-china/>

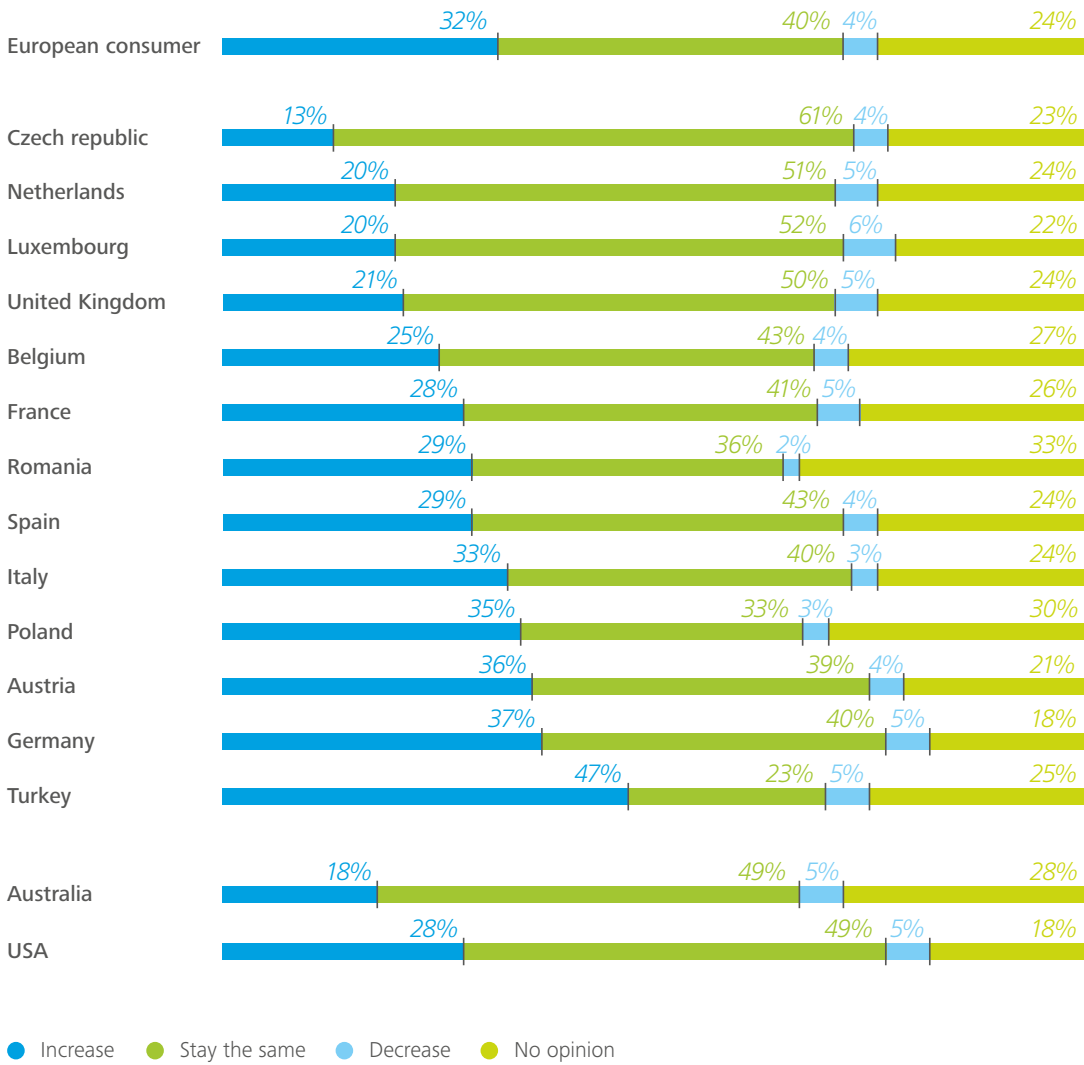
40 Tanya Angerer - 16 July 2015: <http://skift.com/2015/07/16/singapore-singles-have-created-airbnbs-strongest-market-in-southeast-asia/>

41 TechMoran - 5 March 2015: <http://techmoran.com/introducing-safeboda-com-ugandas-uber-motorcycle-taxis/#sthash.mEnbYIXe.dpbs>

42 Watch his TED talk here: <https://www.youtube.com/watch?v=hUmFRwvnosc>

43 Nielsen 2014: <http://www.nielsen.com/apac/en/insights/reports/2014/is-sharing-the-new-buying.html>

“Do you think your participation in the sharing economy in the next 12 months will facilitate transactions, interactions and mobilizations” by country:



Source: Ipsos on behalf of ING 2015. Mobile Banking, New Technologies and Financial Behaviour. What's mine is yours – for a price. Rapid growth tipped for the sharing economy, p. 5)



**Why now? It's the technology, stupid!
(But also things like the recession... and values)**

What is it about the current climate that's causing our economic landscape to be redefined? Technology matters, definitely. **The explosion of social network sites, mobile technologies, and online payment systems means it has never been easier to create dynamic networks between geographically disparate individuals**, allowing the sharing of goods and services between consumers and cutting out the "middleman" (read: traditional businesses), what is referred to as "disintermediation." Sharing goods, offering people a free room, giving people a ride—all these things are now possible at the click of a button (or tap of a screen) and on a scale previously unimaginable via online platforms that have made it their mission to connect individuals who would otherwise never connect, bringing products and services within people's reach to an extent never before possible (location-based GPS has been especially valuable here⁴⁴). In short, "The internet and smartphones have taken over, and search and transaction costs have dropped."⁴⁵ And while it is certainly arguable that some start-ups have branded themselves as "tech companies" in a bid to capitalize on the real and perceived benefits that such a label invites,⁴⁶ the importance of the

underlying technology fueling the collaborative economy should not be understated. As one otherwise quite critical article about the collaborative economy put it: "In effect, it seems every transaction can be managed by a sort of dating site."⁴⁷

Big data plays a strong role here. After all, it is through the sharing of data that individuals let others know exactly what they need, and then big-data algorithms are responsible for matching that need to existing supply, making recommendations to individuals based on what's out there.⁴⁸

While technology is certainly an enabler, **deeper socioeconomic trends** are also critical factors fueling the collaborative economy. In a tough economic environment, the prospect for consumers of monetizing under-utilized resources, getting cheaper access to goods and services, and being granted temporary access or stewardship over luxuries previously beyond their reach makes collaborative consumption a sweet deal. These economic factors, coupled with the availability of venture capital funding for promising projects (funding for collaborative economy businesses has now surpassed US\$16 billion⁴⁹), are creating fertile ground for a new system in which, as Russell Belk has noted, the idea that "you are what you own" has been all but replaced by the axiom that "you are what you can access."⁵⁰

44 H.O. Maycotte – May 2015: <https://powermore.dell.com/business/how-big-data-is-driving-the-sharing-economy/>

45 Deloitte Switzerland report on the sharing economy 2015: <http://www2.deloitte.com/content/dam/Deloitte/ch/Documents/consumer-business/ch-cb-shared-economy-share-and-make-money.pdf>

46 Jim Kerstetter – 2 Aug 2015: <http://bits.blogs.nytimes.com/2015/08/02/in-search-of-the-slippery-definition-of-the-modern-tech-company/>

47 Charles Arthur – 21 Dec 2014

48 H.O. Maycotte – May 2015: <https://powermore.dell.com/business/how-big-data-is-driving-the-sharing-economy/>

49 Crowd Companies – 1 Sept 2015: <http://crowdcompanies.com/blog/>

50 2014 - Journal of Business Research 67



Socioeconomic changes have brought important **value shifts**. A crisis-induced partial rejection of, or at least hesitation toward, the conspicuous consumption and credit mentality of previous times have made collaborative consumption increasingly appealing.⁵¹

And then there's the **community element**. There is intuitive appeal in the idea that the collaborative economy is tapping into some primitive desire to create real connection in an otherwise individualistic and all too frequently socially fragmented world.⁵² Some are certainly less convinced. Eckhardt and Bardhi⁵³, for instance, have conducted research suggesting that "consumers are more interested in lower costs and convenience than they are in fostering social relationships with the company or other consumers." Having studied consumers' use of Zipcar, the global leader in car-sharing services, the researchers concluded that consumers "experience Zipcar in the anonymous way one experiences a hotel." As an illustration of their argument, they compare Uber's tagline "Better, faster and cheaper than a taxi" with that of its competitor Lyft "We're your friend with a car." As the researchers note, the two companies offer almost identical services, yet Lyft's profits have trailed those of Uber.⁵⁴

So, is winning in the collaborative economy about offering consumers convenience or human connection? Affordability or affection?

We would contend that the reality may fall somewhere in between. In our Deloitte report chronicling the changing nature of modern business ecosystems, John Hagel⁵⁵ makes a distinction between three types of platforms being used by these new businesses: **aggregation platforms**, which help to connect users to the resources they are looking for (think Uber), and tend to result in one-off transactions or limited person-to-person engagement; **social platforms**, which foster community (think Facebook/Twitter); and **mobilization platforms**, which bring disparate individuals together virtually to reach a common objective (individuals may come together to form supply chains or distribution networks for a business, or to crowdfund, for example). Individuals may turn to aggregation platforms when looking for convenient goods, whereas the social connection element may be especially pronounced as a motivator for participation on social and mobilization platforms.

51 This is even true in countries such as China, where a high value is placed on ownership and status. Here, companies like Atzuche, a local startup that connects people and allows them to rent out their luxury cars, has proven successful. As Waldmeir put it in an FT article: "The flip side of a liking for opulence is a taste for thrift."

See: 23 June 2014 - <http://www.ft.com>

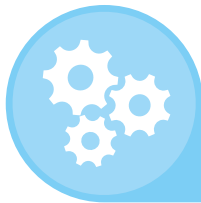
52 Rachel Botsman, 2012. "The currency of the new economy is trust" See her TED talk here http://www.ted.com/talks/rachel_botsman_the_currency_of_the_new_economy_is_trust?language=en

53 Giana Eckhardt and Fleura Bardhi - 28 Jan 2015: <https://hbr.org/2015/01/the-sharing-economy-isnt-about-sharing-at-all>

54 Ibid

55 2015 - Deloitte University Press

Three common platform types that facilitate transactions, interactions and mobilizations



Aggregation platforms

- Facilitate transactions
- Connect users to resources
- Tend to operate on a hub-and-spoke model



Social platforms

- Facilitate social interactions
- Connect individuals to communities
- Tend to foster mesh relationship networks



Mobilization platforms

- Facilitate mobilization
- Move people to act together
- Tend to foster long-term relationships to achieve shared goals

Source: Hagel, J. 2015. 'The Power of Platforms' in Deloitte. *Business ecosystems come of age*. Deloitte University Press, pp. 82-83)

So what? Implications for consumers, employment and businesses

For consumers: empowered but unprotected?

Either way, **the collaborative economy has been a boon for consumers**: variety, affordability, and instantaneous access have been key benefits. There is certainly some concern related to the loose regulation surrounding goods and services purchased through these channels and specifically the **limits of existing consumer protection law** in the collaborative economy space.⁵⁶ Still, it is arguable that the collaborative economy has been by and large beneficial for consumers. The next step is to bring our consumer protection frameworks in line with this new reality; unless we accept the argument made by some that we can trust the industry to self-regulate,⁵⁷ this is likely to require thoughtful policy and regulatory innovation.⁵⁸

For employment: micro-entrepreneurship or the new "precariat"?

When it comes to the **collaborative economy's implications for employment, the situation is perhaps less clear-cut**. Airbnb CEO Chesky has gone on record predicting that platforms like his will be responsible for creating over 100 million micro-entrepreneurs— independent contractors who earn money by providing goods or services on the collaborative economy market. In the same interview, he made reference to emails he received from Airbnb hosts telling him how the renting platform had enabled them to weather the ravages of recession: "because of you", reads one, "we were able to keep our home."⁵⁹

⁵⁶ In 2015, for example, the Federal Trade Commission convened a working group to discuss the implications of the sharing economy for, among other things, consumer protection: <https://www.ftc.gov>

⁵⁷ Alex Howard – 15 Dec 2014: <http://www.techrepublic.com/article/the-sharing-economy-will-self-regulation-by-startups-suffice-to-protect-consumers/>

⁵⁸ Christopher Koopman, Matthew Mitchell and Adam Thierer – Dec 2014: <http://mercatus.org/sites/default/files/Koopman-Sharing-Economy.pdf>

⁵⁹ Gregory Ferenstein – 2 July 2014: <http://venturebeat.com/2014/07/02/airbnb-ceo-spells-out-the-end-game-for-the-sharing-economy-in-7-quotes/>

But there are reasonable concerns that for all its benefits, the collaborative economy may be creating an environment that encourages precarious work. The criticism is that companies presenting themselves as offering individuals the “opportunity” to become “micro-entrepreneurs” by providing their services on a platform are, in reality, “essentially channel[ling] one-off tasks to the fastest taker or lowest bidder... pitting workers against one another in a kind of labor elimination match.”⁶⁰ Moreover, because individuals who work for companies like Uber and Airbnb are not classified as employees, but independent contractors, their “gigs” leave them uncovered in terms of traditional protection like social security benefits, unemployment benefits, or healthcare insurance.⁶¹ The labelling of collaborative economy workers as “independent contractors,” what critics refer to as “misclassification,” also makes it difficult for individuals to rent or get loans and means that they must pay the employer’s portion of payroll taxes.⁶²

There have certainly been **efforts at self-regulation** by collaborative economy companies to address these concerns. TaskRabbit, for example, has implemented its own “minimum wage”: contractors cannot earn an hourly sum of less than US\$12.80, which, as Rachel Botsman notes, is higher than any minimum wage existing across any US state.⁶³ A number of companies have actually given employee status to individuals previously classified as independent contractors in a bid to pre-empt regulatory clampdown.⁶⁴ It may be unrealistic to expect the industry to self-regulate in ways that would undermine its competitiveness vis-à-vis traditional companies, yet it is also true that individual social protection coverage need not necessarily be linked with employment and that this “decoupling” of social protection from employment has long predated the collaborative economy.⁶⁵



60 Professor Dr Standing cited in Natasha Singer – 16 Aug 2014: http://www.nytimes.com/2014/08/17/technology/in-the-sharing-economy-workers-find-both-freedom-and-uncertainty.html?_r=1

Professor Dr Standing also introduced the term “precariat”

61 Natasha Singer – 16 Aug 2014: http://www.nytimes.com/2014/08/17/technology/in-the-sharing-economy-workers-find-both-freedom-and-uncertainty.html?_r=1

62 Gillian B. White – 8 June 2015: <http://www.theatlantic.com/business/archive/2015/06/in-the-sharing-economy-no-ones-an-employee/395027/>

63 Wall Street Journal – 10 May 2015: <http://www.wsj.com/articles/can-the-sharing-economy-provide-good-jobs-1431288393>

64 Jeremiah Owyang – 30 July 2015: <http://www.web-strategist.com/blog/category/collaborative-economy>

65 This point was made cogently by Catherine Rampell – 26 Jan 2015: http://www.washingtonpost.com/opinions/catherine-rampell-the-dark-side-of-sharing-economy-jobs/2015/01/26/4e05daec-a59f-11e4-a7c2-03d37af98440_story.html



If we accept this point, then the emphasis should be on pushing the state to ensure its citizens have adequate protection, irrespective of how they are classified as workers.⁶⁶ Whatever side you sit on, the terms of employment within the collaborative economy will remain a hot topic because these terms will have fundamental implications for collaborative economy company competitiveness vis-à-vis traditional businesses and will decisively shape the way that individuals experience the collaborative economy. This will definitely be a space worth watching closely.

For traditional businesses: disruption vs. adaptation

So we've briefly explored what the collaborative economy means for consumers and employment, but what does it mean for traditional businesses? They're being killed, right? Not so fast.

They're being disrupted and seriously challenged, certainly...

The data can be discouraging. To take one example, it has been estimated that each car-sharing fleet vehicle replaces 32 cars that would otherwise have been bought.⁶⁷ And there is no shortage of collateral damage: auto loans, car insurance, fuel, auto parts, and other services traditionally associated with car buying all take a hit when users choose to share rather than buy.⁶⁸

And it's not just car buying. Traditional taxi services have also been feeling the pressure, pressure that last year resulted in a host of protests on the streets of Paris and saw Uber vehicles pelted with eggs and end up with flat tires and broken windows.⁶⁹

A study into the impact of Airbnb on the hotel sector in the Texas hotel industry⁷⁰ found that the accommodation sharing giant was eating into traditional hotel revenue, with an estimated impact of between 8 and 10 percent. Lower priced hotels faced the most direct competition and were especially badly hit.

But they're also adapting...

A sizeable group of traditional industry players are, however, skillfully adapting themselves to this new reality. As a 2014 Deloitte study⁷¹ notes, a number of major brands like Nestlé and tech companies like Adobe have joined "Crowd Companies," a network established by Jeremiah Owyang, whose aim it is to help traditional companies navigate the collaborative economy landscape.⁷² More generally, the report lists three key ways that established companies are benefitting from the collaborative economy. The first is by "**tapping into the crowd**": the pool of "micro-entrepreneurs" described earlier, whose skills range from driving and providing household services to artistry and product innovation, have become a handy pool for companies in need of on-demand services and talent. As just one example (not mentioned in the Deloitte report), Virgin America has partnered with CircleUp, which is a crowdfunding platform allowing startups to raise capital for their consumer good ideas, to test new ideas and identify new food and drink products to offer on its flights.⁷³ The second way is by **adapting their own services** to meet this new type of demand. A range of car companies such as Toyota, Ford and BMW have introduced car-sharing services in a bid to satisfy consumer demand in a context where traditional





car ownership is on the decline. Finally, companies are **joining the “reuse marketplace”**: one of the examples Deloitte’s report provides is Ikea’s “online flea market,” which provided consumers with an online platform on which to sell their second-hand Ikea furniture. As the report highlights, this was a “marketing tactic” (it was not profit-making), its purpose being to inject collaborative consumption into its own business model and thus avoid losing market share.⁷⁴ The clothing brand Patagonia has invested heavily in this space. As part of its general practices and image emphasizing sustainability, the company has partnered with the mobile-based app Yerdle via which consumers can trade their used goods with one another. Fans have noted how Patagonia’s “Don’t Buy This Jacket” advertisement, which actively encouraged consumers to think twice before purchasing new goods from Patagonia and others unless they really needed them, actually increased sales,⁷⁵ reflecting just how deeply the sustainability mindset has set in.

Until next time...

Our focus, here, has been on the factors behind the collaborative economy’s spectacular rise: the technology and big data enabling and propelling it, the socioeconomic factors encouraging it, and the value shifts underpinning it. We have provided an overview of observable trends suggesting its likely continued growth, and we have highlighted some of the implications this new form of economic organization has for consumers, employment and traditional businesses. As the landscape shifts, are consumers empowered but unprotected?

As “on-demand” labor replaces the traditional employment contract, are we seeing the rise of “micro-entrepreneurship” or increased worker vulnerability? As consumers come to value access over ownership, will we see traditional industry undermined or reinvented? These are critical questions.

When you next hear from us, we’ll be focusing on the implications of the rapid advances in the mobile ecosystem for the collaborative economy and its future. We’re interested in how consumers’ ever-increasing reliance on mobile platforms is determining the development of the collaborative economy. We’re also going to be looking at the new type of marketing that the collaborative economy necessitates (or the exciting prospect for companies in relation to what John Hagel has dubbed “collaborative marketing”⁷⁶), issues of personal data protection in a context where trust and reputation are key,⁷⁷ the general regulatory frameworks surrounding this new form of organization, and the implications of collaboration from a political and social organization perspective. By that time, there will, no doubt, have been a dizzying number of developments in this exciting and impossibly dynamic area. We hope you’re as excited as we are. Watch this space.



66 Catherine Rampell – 26 Jan 2015: http://www.washingtonpost.com/opinions/catherine-rampell-the-dark-side-of-sharing-economy-jobs/2015/01/26/4e05daec-a59f-11e4-a7c2-03d37af98440_story.html

67 Alix Partners 2014 Press Release – 5 Feb 2014: <http://www.cnbc.com/2014/02/04/car-sharing-a-growing-threat-to-auto-sales-study.html>

68 Jeremiah Owyang – 4 June 2013: <http://www.web-strategist.com/blog/2013/06/04/report-corporations-must-join-the-collaborative-economy/>

69 Rude Baguette – 13 Jan 2014: <http://www.rudebaguette.com/2014/01/13/taxi-protest-paris-turns-guerrilla-warfare-uber-car-attacked-freeway/>

70 Georgios Zervas, Davide Proserpio, John W. Byers – 7 May 2015: <http://people.bu.edu/zg/publications/airbnb.pdf>

71 Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

72 Ibid

73 Jonathan Shieber – 12 Feb 2014: <http://techcrunch.com/2014/02/12/circleup-lands-virgin-america-partnership/>

74 Vikram Mahidhar and David Schatsky 2014: <http://dupress.com/articles/collaborative-economy/>

75 Retail Category Consultants 2015: <http://retailconsultant.ca/why-retailers-should-embrace-the-sharing-economy/>

76 Read John Hagel’s views on Edge Perspectives: http://edgeperspectives.typepad.com/edge_perspectives/2006/07/mastering_new_m.html

77 Rachel Botsman has emphasized the role of trust as the new currency. Watch her TED talk here: http://www.ted.com/talks/rachel_botsman_the_currency_of_the_new_economy_is_trust?language=en

Target2-Securities Land of opportunities?

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To the Future

In 1989, the second volume of the epic Back to the Future saga hit the box office and transported us into the year 2015 alongside Marty McFly and Dr. Brown. Who might have thought that one of the main developments of 2015 would be a European market infrastructure rather than flying cars and portable fusion power? Target2-Securities (T2S), a new Trans-European Automated Real-time Gross Settlement Express Transfer System, is being conceived to turn a page on how the settlement of securities is performed with the announced aim to:

- Reduce domestic and cross-border settlement costs
- Facilitate access to international securities
- Reduce operational risks
- Foster the harmonization of post-trading activities

This ambitious project is being rolled out in four phases, or migration waves, throughout 2015-2017, linking more than 20 Central Securities Depositories (CSDs) and more than 20 national central banks (NCBs) into a single settlement platform. The participants of the first migration wave joined the T2S eco-system on 22 June 2015, except Italy that postponed its entry until the end of August to resolve some technical issues. It is no secret, especially for those who are familiar with pre-production phases of major IT system implementations, that the technical complexity of the upcoming move is not making the first participants' lives any easier. Indeed, there are some not entirely unreasonable heebie-jeebies about how it will all work and what will happen if something goes wrong. We are putting more and more eggs into one basket, and the only way to ensure the eggs do not break, is to make this basket as robust and stable as possible. Let us leave this challenge to Eurosystem, which is the owner of this project, and turn our attention to a brighter side, namely the opportunities that T2S offers its participants.

Depending on the participants' type, the impact and opportunities vary quite significantly, so we should analyze them from the viewpoint of the interested party. Central Securities Depositories that see their settlement business, i.e. the revenues from settlement activities, being outsourced to a central platform, seem to be among the most impacted. Global custodians are seeing rising competition from CSDs in asset servicing. Only banks and broker-dealers seem to have nothing to lose, but do they really?

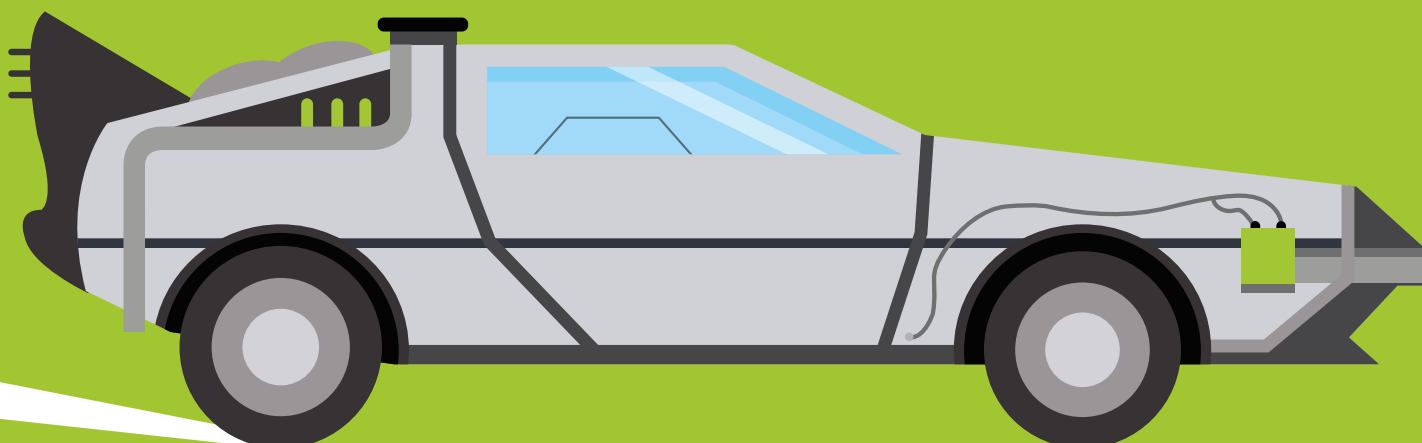
CSDs: Upcoming nightmare or a perfect time for a change?

As previously mentioned, the CSDs will see part of their business disappear following a transfer of their settlement activities into a centralized technical platform. In addition, customers will have a right to choose any CSD to perform the settlement and other activities, instead of using their national CSD. French investors might now use a German CSD to settle their transactions instead of using a French CSD, and vice versa. The time of national monopolies has gone for good. If we add all the costs and hassle associated with the set-up of new interfaces and connections to T2S, the full picture may seem more bleak than inspiring. However, is that really the case? Crises always create opportunities for those who know where to look. T2S could give a competitive advantage to those who are not afraid of embracing a change. A person who suddenly turns blind will enhance their other senses to compensate for the loss; similarly, the CSDs should think about changing their business model by enhancing their value proposition to customers.

Settlement is only a brick in the post-trade value chain, leaving CSDs with other activities, and hence revenue streams, including asset servicing, corporate actions processing, tax and regulatory reporting, and collateral management.

Since CSDs will remain, for the most part, the front end for customers, they should understand that the quality of the services they offer will determine their competitive advantage. This is undeniable. Competition often leads to consolidation, and some post-trade experts even predict that we are moving from 25 national CSDs to 4-5 European CSDs (EUCSD) that will dominate the European post-trade landscape.

Who might have thought that one of the main developments of 2015 would be a European market infrastructure rather than flying cars and portable fusion power?



Global custodians: missing T2S opportunity could jeopardize survival

Global custodians, on the other hand, will see increased competition from CSDs in the field of asset-servicing activities. To keep up with the new challenges they should also focus on enhancing their value proposition. Target2-Securities offers an excellent opportunity for global custodians to provide an integrated solution to their customers, offering their traditional “core” service, such as safekeeping and asset servicing, as well as a new single point of access to T2S through direct participation (Direct Connected Participant model). In the new world, the line between the activities of global custodians and CSDs becomes less obvious, as players of both categories enter each other’s territory. This means that the competition is growing stronger and may ultimately lead to fewer players in the post-trade arena. Similar to CSDs, global custodians’ business could see a wave of consolidations.

Banks and broker-dealers: bright future ahead if the change is embraced

Finally, banks and broker-dealers seem to have fewer challenges resulting from new changes introduced by T2S than the global custodians and central securities depositories. Indeed, they are not losing a part of their business as CSDs are, nor are they seeing increased competition, as is the case for global custodians. The main challenge that banks and broker-dealers face, is to ensure they do not miss opportunities to review their business and operational models. Why is this a good idea? Because the banks and broker-dealers who review and adapt their business and operational models within the Target2-Securities landscape, could reap the benefits of T2S by:

- Reviewing/reducing the number of interfaces to post-trade infrastructures to provide settlement services to their clients (e.g. reducing the number of CSDs they use)
- Reorganizing the sub-custodian network (e.g. reducing the number of local custodians, using services of fewer/single global custodians depending on the required services)

- Getting a clear picture of the use and availability of collateral by using the collateral management services now offered by CSDs and global custodians
- Rationalizing the collateral pool by concentrating collateral eligible instruments in fewer places/markets to increase their accessibility and readiness for use when required

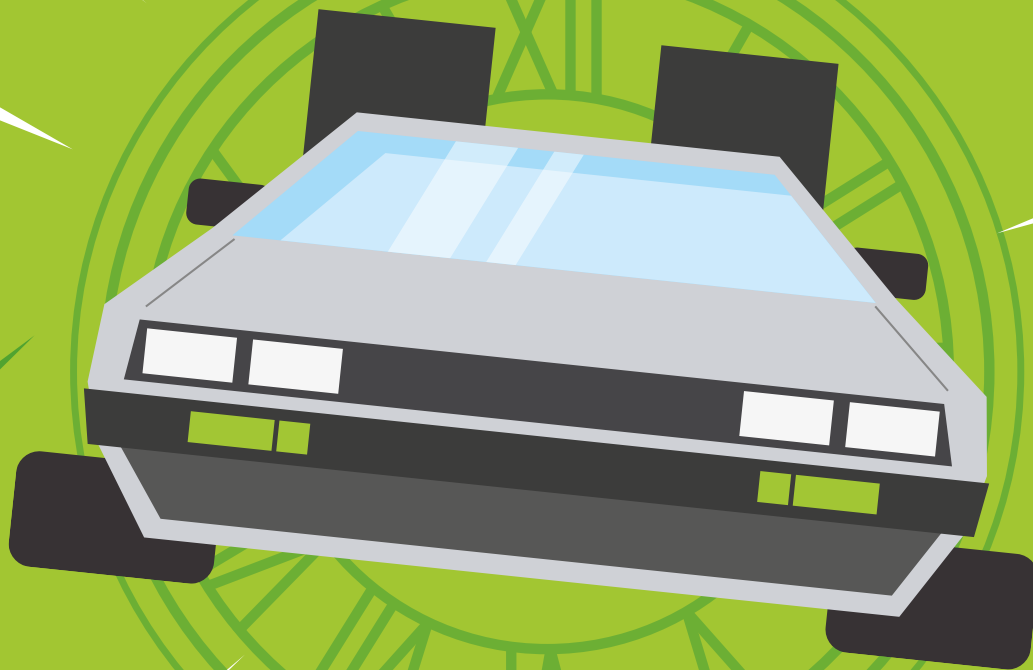
Where are we heading?

Target2-Securities, the main European market initiative in the post-trade world, will introduce major changes to the settlement landscape and the way that market players operate. The biggest change will happen in 2016 when major CSDs (Clearstream and Euroclear groups) will join the T2S club.

CSDs seem to be the most impacted and should think about changing their business model by enhancing their value proposition to customers, especially in the domain of asset servicing. Competition from CSDs that step up into the territory of global custodians will force the latter to find ways to differentiate their activities by focusing on quality of asset servicing and proposing new types of services, such as cross-border settlement for their clients. Competition between CSDs and global custodians will be more evident and may lead to some consolidation of the industry, leaving out the “weak actors” who failed to change their business model.

Banks and broker-dealers, the players that seem to be impacted to a lesser extent, should not make the mistake of doing nothing. They can reap the benefits of Target2-Securities by optimizing their custodial network and collateral management.

Defining a winning strategy – where do I want to play in the new T2S environment? – is a complex exercise, since it involves not only T2S but also other aspects such as collateral, EMIR, CSDR, custody reforms (UCITS V, AIFMD...) among others. Sometimes, due to market evolutions and regulatory changes, players are forced to rethink an already crafted T2S strategy. Indeed, take the example of BNY Mellon, a global custodian that, following certain obligations of CSD Regulation and delays in the EMIR implementation, revoked its CSD license after investing significant effort to become a CSD.



Marty McFly might tell us: *“Beware the consequences of a wrong decision!”*

Complexity is also inherent in the definition of the new post-trade landscape within its new limits. It encourages players to think outside the standard national box and develop new settlement and new distribution business within the Eurozone. The most obvious mistake that the companies might make right now is to hide their heads in the sand and let things evolve. The time has come to decide where in the T2S world your company will find its place. Are you asking yourself this question?

Everybody has a chance to get a slice of the new pie, but only proactive and daring players will see the size of their slice increase, whereas those who fail to change might see their future darkening. Marty McFly might tell us: “Beware the consequences of a wrong decision!”



Data Protection within the Digital Economy

Forthcoming EU General Data Protection Regulation

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Introduction and context

In 2012, the European Commission proposed a comprehensive reform of data protection rules in the EU, which are currently based on the EU Privacy Directive 95/46/EC.

Now, the EU is in the final negotiation phase of the reform. The completion of this reform is a policy priority for 2015. The objectives of this new set of rules are to give citizens more control over their personal data and to simplify the regulatory environment for businesses in EU. The data protection reform is a key enabler of the Digital Single Market, which the Commission has prioritized. The reform will allow European citizens and businesses to fully benefit from the Digital Economy¹.

As a result of the digital market evolution, personal data is increasingly collected and exchanged. But what happens to this data? Could it fall into the wrong hands? What rights do citizens have regarding their personal data? These questions are raised more often especially in the context of the current trends in data breaches and data leakage cases involving personal data. Despite the significant negative consequences associated with them, such incidents have unfortunately only increased in recent years.

In this context, a EU unified legislation on data protection, the proposed General Data Protection Regulation (GDPR), for replacing the current patchwork of rules on the protection of personal data in the EU (harmonized by the EU Privacy Directive 95/46/EC), has become crucial for ensuring that the fundamental rights of citizens regarding their personal data are protected while sustaining the development of the Digital Economy.

What is personal data?

In the EU, "personal data" means any information relating to an identified or identifiable natural person ("data subject"). An identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that person.

There are different ways in which an individual can be considered "identifiable." A person's full name is an obvious likely identifier. But a person can also be identifiable from other information, including a combination of identification elements such as physical characteristics, pseudonyms, occupation, address, credit card number, bank statements, criminal record, etc.

When may the General Data Protection Regulation (GDPR) be expected?

The European Commission published its GDPR proposal in 2012. The European Parliament adopted its position in March 2014. On 11 June 2015, the Council reached a general approach on the GDPR². The "Trilogue" i.e. the final negotiation between representatives of the Council, the European Commission, and the European Parliament commenced in June 2015 and is scheduled to end in December 2015. The final text is scheduled to be ready by the beginning of 2016 and clearer compliance goals could be anticipated for early 2018, when the GDPR is scheduled to come into effect. Considering the negotiations are still ongoing, this timeline might still change and the statements in this article are also subject to change.

¹ <http://ec.europa.eu/justice/data-protection>

² The EDPS has published a comparative view: https://secure.edps.europa.eu/EDPSWEB/edps/lang/en/Consultation/Reform_package

“The data protection reform is a key building block of the Digital Single Market, and it brings benefits to citizens and business.” Vera Jourová Commissioner for Justice, Consumers and Gender Equality³

What is the aim of the GDPR?

One aim of the GDPR is to facilitate economic growth. According to some estimates⁴, the value of EU citizens’ personal data could grow to €1 trillion annually by 2020. Strengthening Europe’s high standards of data protection therefore means business—not a burden to innovation.

The Regulation will establish a single, EU-wide law for data protection, replacing the current inconsistent patchwork of national laws and thus enabling companies to deal with one law instead of 28. Furthermore, in certain international cases, organizations will deal with one supervisory authority instead of 28, rendering doing business in the EU simpler and cheaper. Also, certain rules pertaining to international data transfers, such as the approval of binding corporate rules, will be simplified.

Additionally, companies established outside of the EU targeting EU residents will have to apply the same data protection rules as those inside the EU.

Another aim of the GDPR is to ensure a high level of protection for EU citizens by creating trust in the digital market. It will empower citizens with a set of rights enabling them to be informed and remain in control of the use made of their personal data.

To this end, the GDPR introduces extensions of existing rights of individuals such as the right to be forgotten. It also brings novelties such as the right to data portability to allow individuals to have more control over personal data by transferring it more easily from one service provider to another.

What are the main features of the GDPR?

The new principle of accountability entails the responsibility for entities processing personal data to ensure compliance with the data protection principles described in the GDPR. It will require them to put in place controls and to document them. As a result, organizations will need to be able to demonstrate their compliance with the GDPR to national Data Protection Authorities (DPA), such as the CNPD⁵.

Furthermore, the GDPR underlines concepts such as:

Privacy Impact Assessment (PIA)

In case the risk analysis of activities indicate a high risk (e.g. for activities such as the monitoring and profiling individuals or the processing of sensitive data such as health data), organizations will have to conduct a Privacy Impact Assessment (PIA). PIA is a tool for identifying and reducing the privacy risks but also for helping to design more efficient and effective processes for handling personal data.

Privacy by Design and Default

There will be an obligation to implement ‘Privacy by Design’ mechanisms when setting up new business processes. The European Parliament proposal states that Privacy by Design must take the entire lifecycle of personal data into account and should focus on safeguards that protect the accuracy, confidentiality, integrity, physical security, and deletion of personal data. In addition, there will be an obligation to implement privacy-friendly default settings which are referred to as “Privacy by Default.”

³ Remarks by Commissioner Jourová after the launch of the Data protection regulation trilogue: http://europa.eu/rapid/press-release_STATEMENT-15-5257_en.htm

⁴ The EU Data Protection Reform and Big Data – Factsheet

⁵ <http://www.cnpd.public.lu/>

Data Protection Officer (DPO)

The mandatory appointment of a Data Protection Officer (DPO), an internal function to oversee compliance with the GDPR, is still under debate. The Commission requires it of organizations with more than 250 employees; the European Parliament ties the appointment to the level of risk entailed by the processing; and the Council's proposal leaves EU Member States free to impose the designation of a data protection officer in their national law.

Transparency

Much emphasis is put on the principle of transparency that requires information relating to the processing of personal data (e.g. privacy statement) to be easily accessible and easy to understand, explained in clear and plain language. Therefore, organizations will have to explain in an understandable way and free of charge which user data they process in which context. This means that generic and legalese privacy statements will not suffice, more detailed information will be requested.

Consent

The GDPR will make the conditions for consent clearer. If the personal data processing is not necessary (e.g. due to a legal obligation or contract), organizations will need to obtain genuine consent from individuals. "Consent" still means any freely given specific, informed indication of an individual's wishes by which the data subject, either by a statement or by a clear affirmative action, signifies agreement to the processing of his or her personal data. It will no longer be possible to integrate consent for secondary purposes into general terms and conditions.

Consent can be withdrawn freely at any time. Therefore, organizations will have to draft their consent forms carefully as well as reconsider the ways consent will be requested from citizens and clients especially since they will bear the burden of proof.

Data breach notification

Organizations will have to notify certain personal data breaches to the national DPA. The reporting will likely have to be done within 72 hours after becoming aware of the breach.

The duty of notifying certain data breaches is not limited to the DPA. Organizations will be obliged, in some situations, also to notify the individuals concerned by the data breach, unless appropriate security measures (such as encryption) are in place.



Of the boards that discuss technology IT risks, those most often covered include data privacy, which is discussed by 57 percent of the boards, and cybersecurity, which is discussed by 51 percent of them

How will the GDPR be enforced?

Supervisory authorities

The GDPR defines the concept of Data Protection Authorities for supervising the respect of data protection.

Whenever a case relates to multiple jurisdictions (e.g. data controller has establishments in many countries), the Data Protection Authority of the organization's main establishment will assume the lead, coordinate with other DPAs, take into account their opinions, and attempt to reach a consensus. However, the local DPA will remain the sole enforcement authority in its own jurisdiction.

Redress

Persons who have suffered (non-monetary) damage such as reputational or emotional damages will have the right to claim compensation from the controller or the processor for the damage. Prejudiced parties will be able to join forces through class action suits, even in countries where currently this is not possible.

Administrative sanctions

In the event of data protection violations, all DPAs in the EU will be able to issue a written (public) warning against infringers, subject them to regular audits, and impose administrative fines. The maximum fines are still under negotiation, but considering that the Commission and Council propose a maximum fine of up to €1 million or 2 percent of the annual worldwide turnover, and the Parliament proposes €100 million or 5 percent, organizations will have to update the risk rating for privacy compliance.

How should CIOs prepare for the forthcoming regulation?

Data privacy seems to keep CIOs awake at night. Of the boards that discuss technology IT risks, those most often covered include data privacy, which is discussed by 57 percent of the boards, and cybersecurity, which is discussed by 51 percent of them. In addition, data warehousing is discussed by 38 percent and international data transfer by 21 percent of the boards⁶.

Given the restrictive nature of obligations introduced by the GDPR and the mass of personal data currently being processed and used by companies, it is clear that the proposed regulatory changes will have a profound impact on the operational, IT, and control environment of organizations.

Therefore, organizations should prepare by performing a maturity assessment as soon as possible to qualify their current situation against the one requested in the proposed GDPR. In addition, organizations should invest in quick wins by focusing on concepts contained in the forthcoming legislation (transparency, consent, the rights of access, etc.) to already start enhancing compliance.

⁶ Information summarized from "Director 360": Growth from all Directions", third edition: <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/gx-ccg-director-360-growth-from-all-directions-third-edition.pdf>

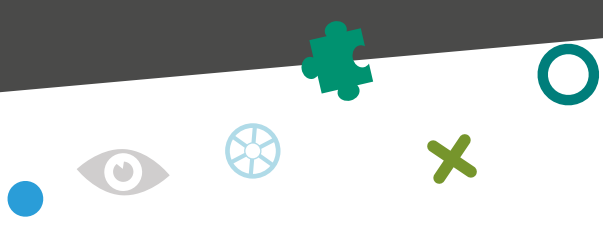


In practice, CIOs should prepare by taking care that an overview exists of the personal data and IT systems processing that data. An IT architecture hosting the organization's personal data that is clearly identified and documented will ease the implementation of the data protection governance through the whole data life cycle. CIOs should support data protection by implementing the required information security measures in the IT environment hosting personal data. Data protection should be part of IT project management processes but also of the incident management processes for allowing the identification and notification of data breaches.

Additionally, it is key to coordinate with the business owners for updating existing documentation such as policies, procedures, privacy notices, and consent forms before implementing tools such as a Privacy Impact Assessment or Privacy by Design and Default to get set for the future.

Today the GDPR is not yet final—changes might still come. Nevertheless, the organizations already starting preparing themselves to be ready when the Regulation comes into effect will have a competitive advantage in the Digital Single Market and will be prepared for meeting the regulatory requirements.

New updates will be provided when the final text of the GDPR is known.



IT Effectiveness Survey 2015

Focused on financial services

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The current post-crisis environment is placing CIOs under high pressure to deliver more with less. It is therefore crucial for them not only to run their business efficiently but also to focus on the right areas for supporting the growth of their enterprise. In this context, Deloitte Luxembourg decided to organize the IT Effectiveness Survey to provide local CIOs with a way to compare themselves with their peers in terms of efficiency and effectiveness. This first edition of the survey targeted banks and involved 13 participants, whose results can be divided into the following major sectors:

- Universal banking
- Asset servicing
- Private banking

The survey focused on five main areas:

- IT cost provides insights into IT expenditures: is the IT budget spent effectively? How much is spent on change vs. run? What are CIOs' priorities in terms of capital spending?
- IT business relationship looks at the effectiveness of the relationship between IT and the business. How do CIOs ensure alignment? How mature are the processes to ensure an effective and satisfactory relationship?
- IT processes and governance provides a view on the maturity of IT departments in the key areas in which they typically operate from a process, tool, and governance standpoint
- IT organization structure explores how IT performance is measured and how services are shared or outsourced
- IT talent explores whether IT departments have the right people with the right competencies to support the business and whether there are any major gaps in roles and skills

IT spending needs to be reviewed but not as a question of how to reduce costs and to do more with less

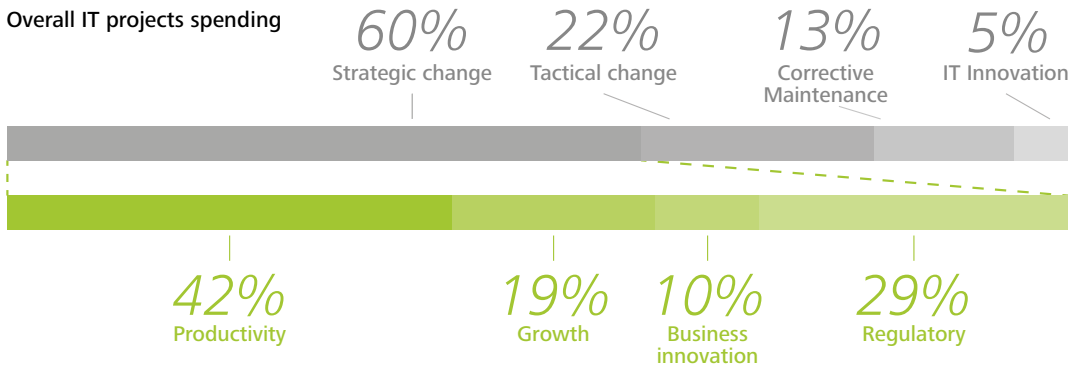
IT cost

One of the key indicators for IT cost efficiency is the ratio of IT spending to company revenue, which is on average equal to 7.5 percent in EMEA according to the latest Deloitte global surveys. In Luxembourg, our results indicate that we have room for improvement, as the average value of this ratio is 9.5 percent. Nevertheless, significant differences exist between the different participants, as results range from 10.8 percent in small banks to 7.8 percent in large banks. This ratio is also largely influenced by the overall profitability of the banks (i.e., cost/income ratio), which was probably more impacted in Luxembourg institutions than in larger international banks.

IT spending needs to be reviewed but not as a question of how to reduce costs and to do more with less. This spending needs to be reviewed to see how to build more effective IT. As Patrick Laurent, Partner, Deloitte Luxembourg, has said, there is an alternative way of looking at IT expenditures. They can be viewed as discretionary and non-discretionary with different ways of tackling each category of spending. The non-discretionary spending keeps the business running, while the discretionary spending should create some improvements in business performance or have some strategic benefits.

The survey identified significant differences in IT projects' spending between the different sectors. Universal banks focus more on strategic changes for which they dedicate more than 70 percent of their IT resources, whilst private banks dedicate 64 percent, and asset servicing only 54 percent.





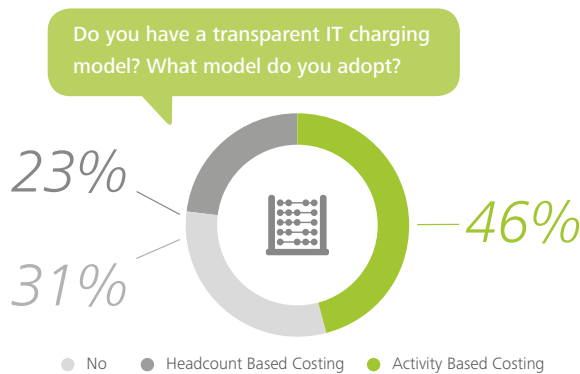
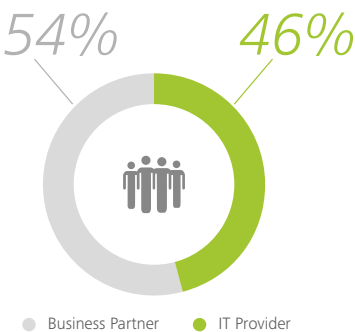
IT business relationship

The survey revealed that CIOs recognize the need to improve their relationship with their business partners. In small companies, IT is considered more as a service provider than a partner, and none of the participating companies see IT as a business leader or entrepreneurial department.

According to Hervé Maillot, Director, Deloitte Luxembourg, one way to become more effective in a business relationship could be to setup a business

relationship manager (BRM) function, where the BRM can act as a facilitator in delivering IT services that would satisfy their business clients. Currently, only 46 percent of all financial institutions confirmed that they have a business partner function or similar role in place. If financial institutions consider investing in a BRM function or similar role, it would primarily be a part-time position. The BRM function seems to contribute to a better perception of IT efficiency by companies as 70 percent of CIOs are seen as business partners when such a function exists.

Business relationship



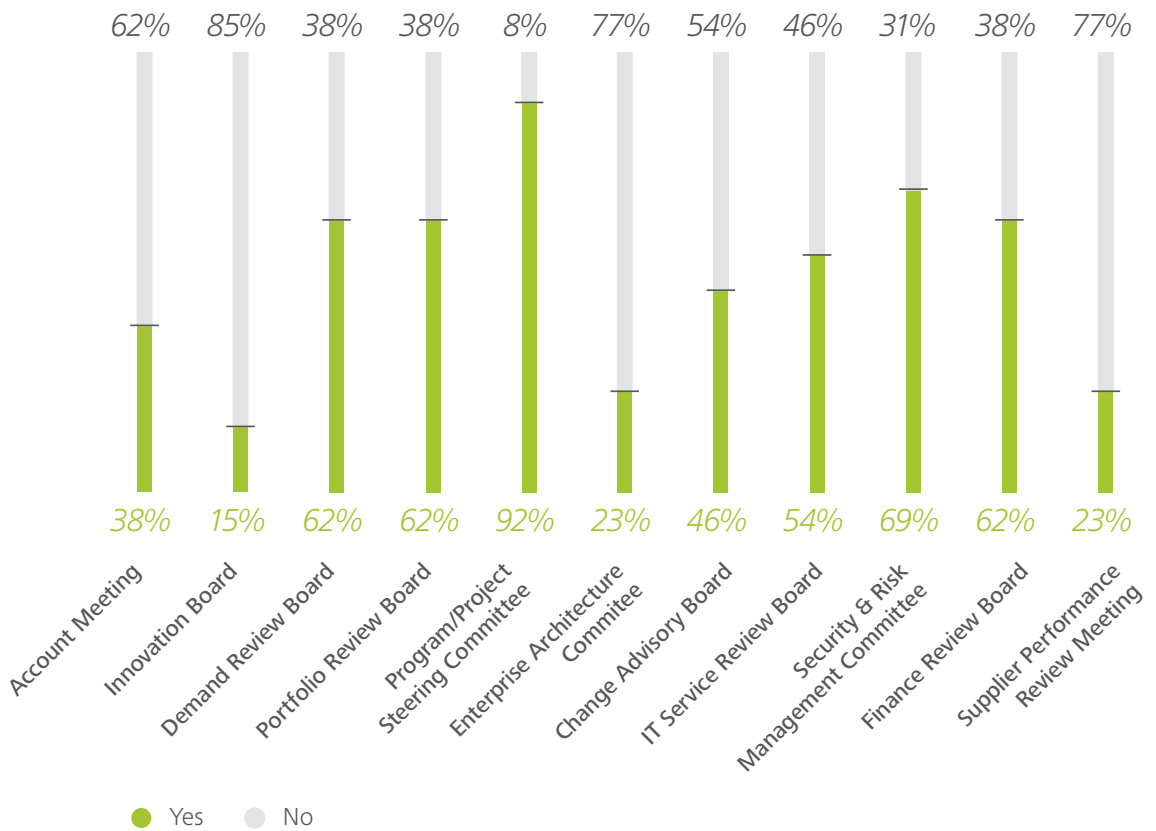
IT processes and governance

The raise of IT spending observed over the past few years in the FSI industry has increased the emphasis on working effectively, implementing controls and governance to manage risks and compliance issues, communicating the IT strategy, building relationships with business units and internal stakeholders, and integrating across multiple external service providers. CIOs know how to successfully run IT, and these processes have clearly the highest level of maturity. Half of the companies deem their service operations as “managed” (level 4), but the other aspects of service

delivery (service strategy, architecture, design, transition, and improvement) are not at the same level of maturity (see next page).

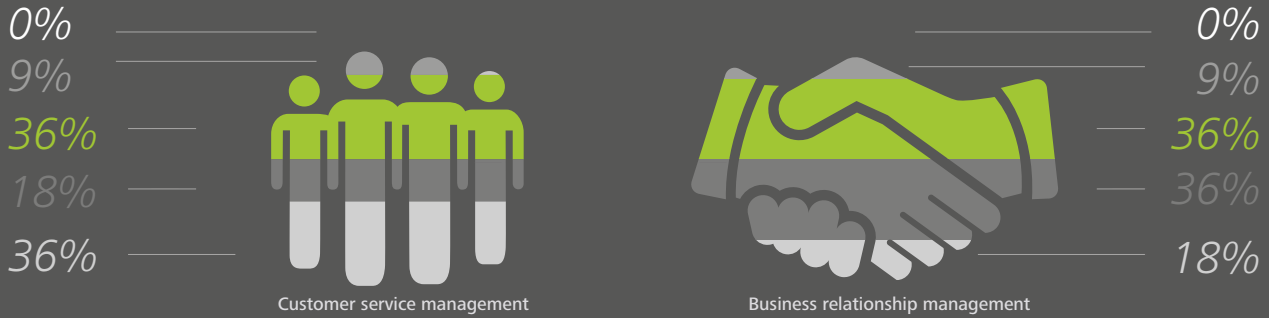
The main areas for improvement lie in the field of business and vendor management. This is evidenced also in governance bodies that are currently in place in FSI organizations in Luxembourg. The low rates of using “account and supplier performance review meetings” reveal that there is room for improvement in the management of relationships with business and suppliers.

What governance bodies do you currently have in place?

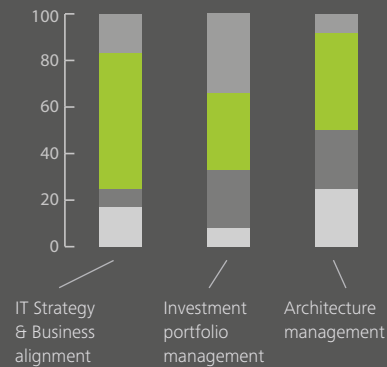


Maturity of IT processes

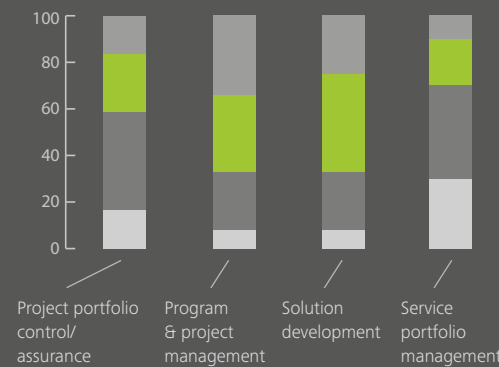
Manage business & customer relationship



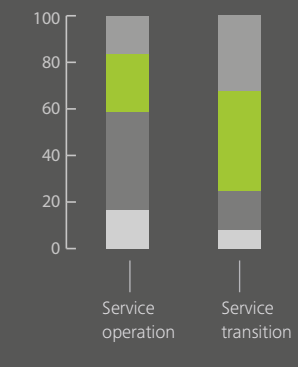
Plan



Build



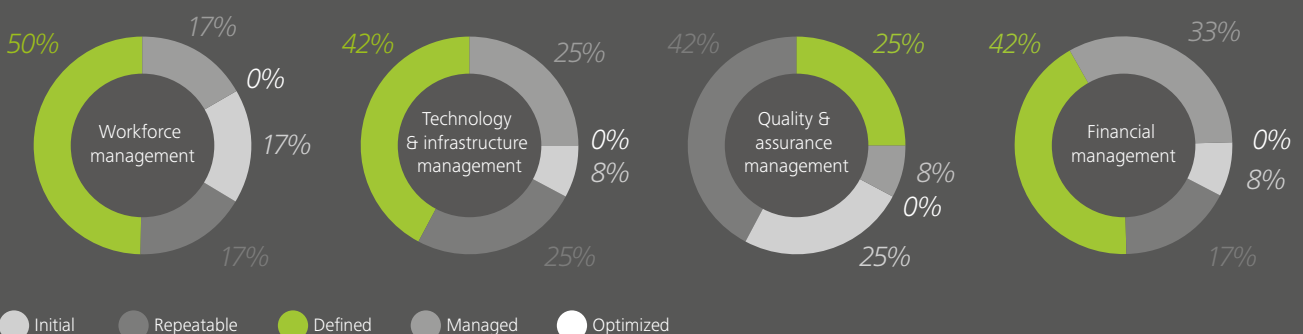
Transition & Run



Manage supplier & vendor relationship



Manage & control



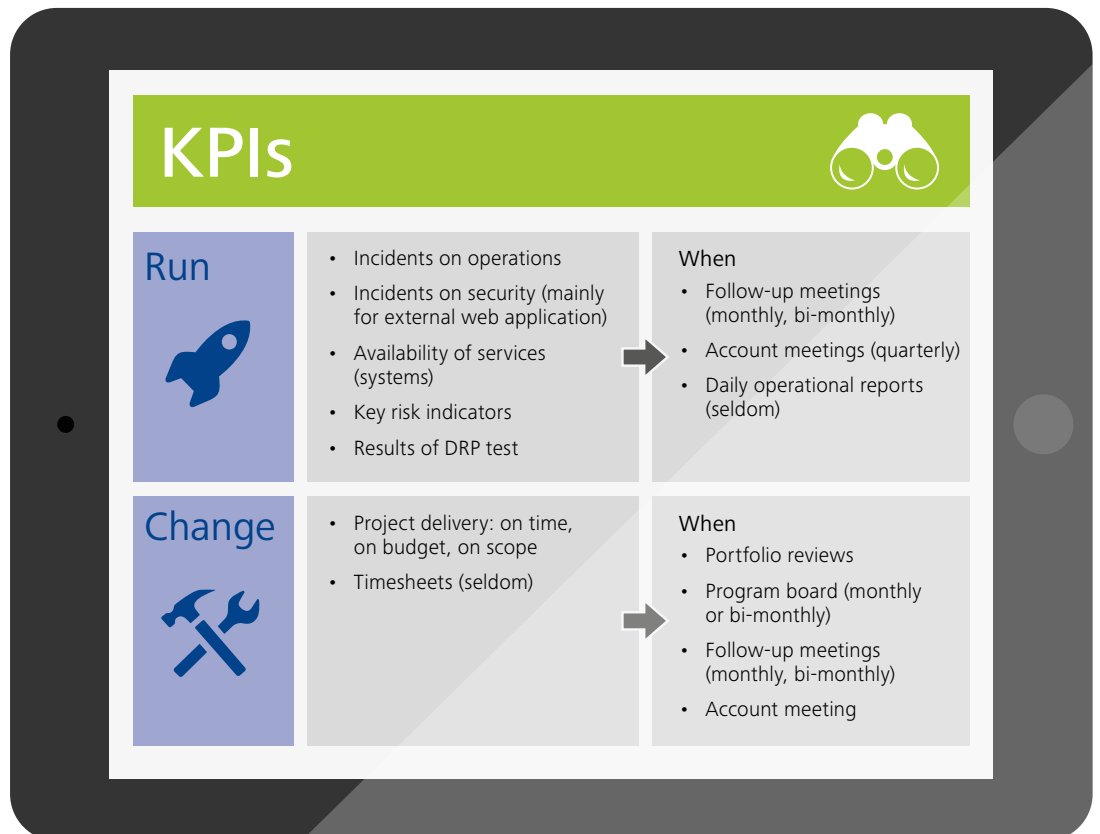
IT organization structure

Most of the banks adopted a centralized IT servicing model, which allows more operational synergies and lean governance. In the survey, we also observed that IT leaders tend to repatriate second level IT teams appearing from time to time within business organization into their central IT functions to keep control over the data and maintain consistency and performance of the overall enterprise architecture. Nevertheless, CIOs should ensure alternative delivery options to foster innovation and to prototype fintech and digital solutions. The distributed IT servicing model is not adopted within a single entity and is observable within a group. Indeed, there is a clear trend for groups to consolidate part of their IT services and follow a federated model to create synergies and to reduce operational costs.

Regarding the “run the bank” activities (RtB), basic key performance indicators (KPIs) and key risk indicators (KRIs) seem to be in place in most organizations, but advanced key indicators that measure the performance of the services in (near) real time are rarely in place. For the “change the bank” activities (CtB), basic KPIs on projects are also in place to measure the deviations against budget and to measure the respect of deadlines. Deviations from scope are seldom measured as well as deviations from initial business cases. Timesheets are mainly used for external people but more rarely for internal persons.

KPIs are collected by IT department, but they are not always or not systematically reported to business lines. If they are reported, it is done mainly during the regular meetings (monthly, bi-monthly, or account meetings). Push reporting of KPIs (and SLAs) is barely in place.

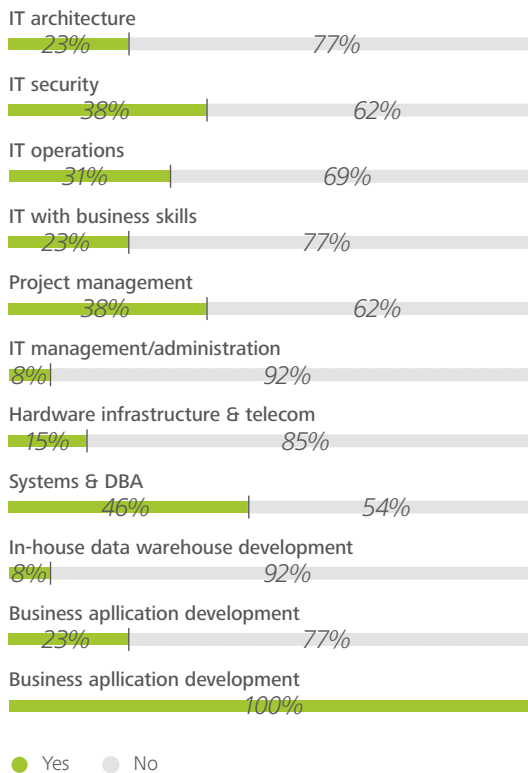
Which KPIs do you have in place to measure the performance of your IT organization?



IT talent

The current Luxembourg IT resources market is tightening up, but IT experts with good backgrounds currently find employment more easily than a couple of years ago. As the economic condition of the FSI market in Luxembourg is improving, there is a high turnover in the IT resources market. Companies, which had been previously cutting costs, now want to innovate and are in need of qualified people with various skills. As the questions on IT effectiveness revealed, the most sought-after and the most difficult to hire resources are expert profiles like DBAs, IT security experts, or experienced project/program managers. Profiles such as IT architects, IT with business skills, and developers are also scarce but in a smaller proportion.

What skills/resources are required and currently missing from your IT organization?



According to our study, 50 percent of FTEs in Luxembourg's financial services industry are dedicated to RtB, which is aligned with global average (53 percent in 2014). Large or universal banks invest more in CtB projects than small or medium structures.

Conclusion

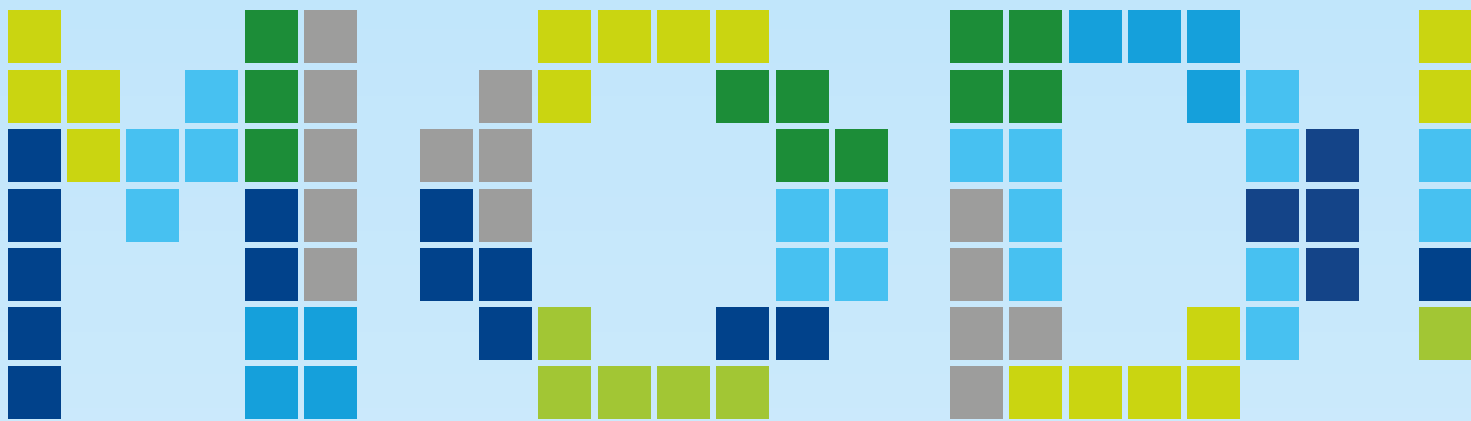
Banks are undertaking IT landscape transformation programs to improve their ability to realize their long-term business strategy and to increase the efficiency of their daily operations in all business lines. This can help to secure and support further expansion of financial services in the Luxembourg market.

Current CIOs should be able to put transformation in the broader perspective of the target IT architecture and then decide on the optimal sequence of implementation projects on the IT landscape implementation roadmap.

IT in the financial sector should become a strategic asset to an organization. Helping IT to become an effective business partner requires careful planning and execution. Deloitte can provide subject matter experts who are focused on the challenges in designing and delivering an optimised, business aligned, efficient IT function and who can help you on your way in meeting your goal of effective IT organization.

IT in the financial sector should become a strategic asset to an organization

MOVING FROM TRADITIONAL SILO-BASED DATA CENTERS TO



COMPUTE-CENTERS FOR INCREASED BUSINESS ENABLEMENT

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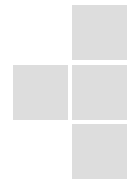
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Competitive advantage is not permanent, as many organizations have painfully experienced, and the search for it has frequently proved unfruitful. If successful, the advantage often only lasted a short while. If competitive advantage is to be lasting in this new digital era, where disruption is a constant factor, businesses must build and ensure a stable yet flexible technology platform, which can easily adapt to future business needs and requirements. Creating such a technology platform must be considered a hygiene factor for future business success and absence of adequate technology services a thing of the past.

Organizations that do this first will have a real opportunity to focus on developing their business proposition and not on dissatisfactory ICT services. In turn, this can offer a foundation for (business) innovation and a real competitive advantage.

At the core of these services is the data center with all its technological complexity and security constraints. Getting ready for the next generation of DCs will prove critical for every organization, large or small, private or public, if they are to thrive in the insights-economy.





Introduction

Gordon Moore defined his prediction in 1965, which observes that over the history of computing hardware the number of transistors in a dense integrated circuit has doubled approximately every two years. Mark Kryder's projection observed later that magnetic disk areal storage density was increasing with a pace much faster than the two-year doubling time of semiconductor chip density posited by Moore's law. The doubling period was around 18 months. Furthermore, Butler described the amount of data coming out of an optical fiber as doubling every nine months, thus, excluding transmission equipment upgrades, the cost of transmitting a bit over an optical network decreases by 50 percent every nine months.

On the basis of these "laws," the technological evolution has been staggering and the changes in our lives enormous over the past decades. Technology now pervades our lives and almost nothing we do would be possible without this "technology revolution."

For companies and organizations, the implications have also been drastic, and almost every industry has changed dramatically as a result. At the core of these changes is the data center. The model used when discussing data centers includes everything from facilities, through computing & storage and network capabilities, and ends with security and IT operations.

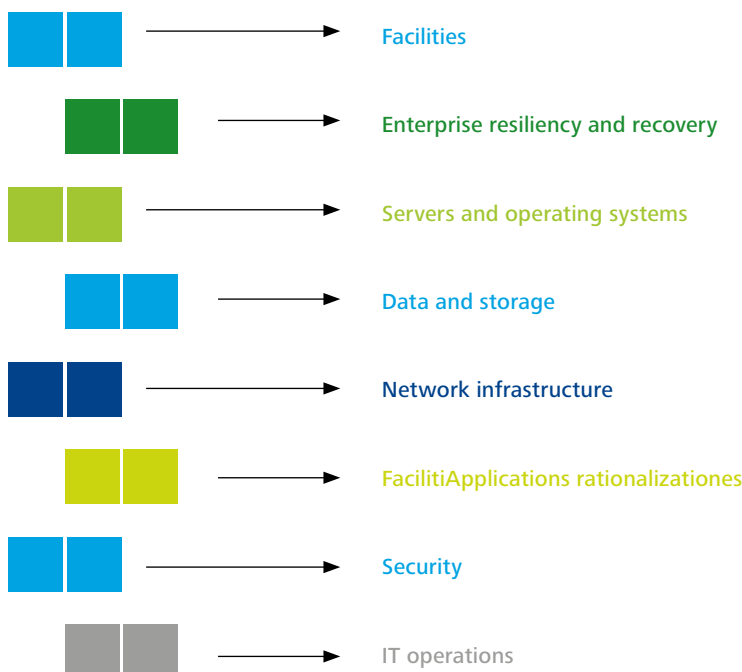
Data center progression

The "vertical DC" is the initial data center structure where organizations and companies locate their costly computer equipment in a classic silo-based approach. Each system, or application, is contained in its own limited and non-shared technology landscape, which has resulted in very low utilization rates and high costs. The power consumption was inordinate and management practice non-standard. Standards were mainly proprietary, and interoperability was often a challenge.

Security in these DCs was initially poor, but with the advances of the internet, ring-fencing the DC became the norm. Often there was little or no focus on recoverability, and discussions were centered around terms like "mean-time-between-failures" (a typically hardware component term).

As scaling and cost became increasingly uncontrollable, new technologies and methods started to take hold. This produced what is often referred to as the "horizontal DC." Virtualization starts to make inroads on several layers of the technology stack as well as utilizing co-location services for the DC facilities. This results in better management, much higher efficiency rates and a lowering of the cost of processing, and sometimes replacing capex with opex. A dual-DC setup became the norm in many industries with better scalability and adaptability to follow. Standards are increasingly open, and system growth tends to be seen mainly in client/server configurations.

The technology security had to change as well to accommodate the changing and challenging world of the connected data center. Security-in-Depth was born and became the approach of choice.



Current trends

Today, new trends have emerged based on further technological evolution, standardization and interoperability efforts. The digital era is upon us, with very strong effects from social, mobile, analytics, and cloud forces. This era is changing every organization, whether private or public. If this is not already the case, this will certainly be the case in the near future.

To be ready for this disruptive new era, every organization must find a way to deliver innovative new services, which will—or already are—put strains on existing IT organizations and their capabilities. For instance, faster time-to-market requirements demand better provisioning times, integrating social media interactions into the fabric of a front office demands new applications and interfacing, and requirements for better information and insights result in advanced analytics platforms and visualization tools.

As a result, data center services must change as well. Some of the main trends we are currently seeing in the data center space are:

- **Fabric-based computing**—an architecture that brings together loosely coupled compute, storage, and networking components into logical compute resources
- **Opex replacing capex**—removing many capital intense services from the organization's balance sheet and starting to use pay-as-you-go models
- **Cloud computing and private capability clouds**—deliver as-a-service finished business oriented solutions with lower provisioning time and higher standardization
- **Storage efficiency based on the business value of data**—gearing up for managing the explosive growth in data but doing so selectively based on what matters
- **Business focus on security**—elevating risk & security from the IT department to a C-suite concern
- **Sustainable green IT**—environmentally sustainable computing

All these trends have the ability to change how we select, operate, and service our data center services as well as what and how we deliver technology services to the business.

Data center amendments

So what does the next-generation data center look like? And how can we prepare ourselves for the new business requirements, making use of new technology, and incorporating the trends we see?

Many difficult choices will have to be made, but the successful organizations will have the possibility to thrive and be competitive in the new digital insights economy. Looking at the changes currently taking place, structured based on the DC model above, the following amendments warrant our attention.

Facilities

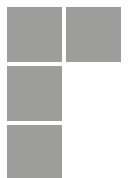
- Increased outsourcing/CoLo—approximately 69 percent of firms in North America and Europe use self-owned facilities, but many expect to move towards other models within a few years
- Green DC/CSR—sourcing green energy for DCs is high on the agenda for most of the large DC providers as well as companies like Google, Facebook, Apple, Microsoft, etc. But you can also make a difference by running your DC services effectively and efficiently

Enterprise resilience & recovery

- Real time systems—using redundant systems, active-active clustering, etc. ensures IT failures have less business impact and keeps service levels high

Servers & Operating Systems

- High density computing—optimization of compute nodes in the DC racks with much higher rates of CPU/area
- Virtualization—technologies used for most equipment to abstract the configuration from the hardware, enabling better utilization and performance ratios
- Containers—technologies to wrap up complete file systems, including code, runtime, tooling, system libraries, etc.
- Vendor Agnostic—ensuring no tie-in to specific vendors to ensure better competition, thus better results
- Open Compute—DC designs shared between larger DC operators describing best practice





Data & storage

- Storage Area Network—snapshots, disk copies, de-duplication, etc. have made a big difference to storage allocation and management practices
- Disk-to-Disk backup—an efficient method to back up, thus eliminating or reducing tape usage and handling
- New protocols—using existing communication infrastructure for storage replication can reduce the DC complexity and cost/Gb

Network & communications infrastructure

- Software-defined networks—an approach to networking in which control is decoupled from the physical infrastructure and allows network administrators to support a network fabric across multi-vendor equipment
- IPv6—replacement of IPv4 with larger addressing space, hierarchical address allocation methods, and security/configuration possibilities

Applications rationalization

- COTS—not a new concept but still relevant in many industries
- BYO-X—usage and support of users' own technology, often in a self-service mode using specific business apps and features
- Mobility and mobile devices—purpose-built applications that can be used on mobile devices wherever and whenever the user needs them

Risk & security

- Risk management—focusing on risks to determine where the technology security budget is best spent; close integration into the enterprise risk framework
- Identification & access management (IAM)—in the (open) enterprise it is necessary to ensure the identity of everyone before entrance on the network (“trust no one”) as well as what each user is allowed to access
- Security-in-Depth—replacing the traditional ring-fencing approach with a layered security model taking into account the enhanced threat landscape

IT operations

- Real time service provisioning—being able to provision systems in minutes, rather than days or weeks
- Cloud services (private/public/community/hybrid)—services provided as SaaS, PaaS, or IaaS from own or provider's DC—sometimes referred to as ‘cloudifying’ the data center
- X-as-a-service—delivery of services as opposed to technology solutions as well as purchasing external services directly
- DC Infrastructure management tools—determine how much power is used and how it can boost efficiency
- Extended user-base (external parties, etc.)—many organizations now face issues of having a large external user-community where control and data security require new approaches
- Self-service IT—services provisioned to users on a self-service basis

IT management

- Outside-in focus—management approach with focus on external expectations and demands as opposed to pushing services to the business
- Service management—focus on delivering services and on how these are most effective and efficiently produced/sourced
- Performance management—managing results from the IT organization by information and metrics and verifying how well the organization is prepared for future demands



Conclusion

If you imagine these characteristics implemented in the data center you have radically eradicated the silos of the vertical DC, improved upon the horizontal DC, and the business is likely using a mix of services delivered based on a hybrid modular service model. Services will be real time, provisioned in a few minutes, with scalable performance, and from different but approved sources (internal or external). This is the outline of the new data center and service provisioning model and thus the next-generation data center is born.

IT can now start focusing resources on the less technical disciplines such as business alignment and quality improvement but critically on innovation. It is at the crossroads of these changes that IT becomes a business partner, the CIO can finally become Chief Innovation Officer, and where the data center becomes a factory and a laboratory for business innovation.

Organizations performing such transformation successfully are taking full advantage of the many technological developments and innovations and will have the possibility to focus on core business and the clients, i.e., the real reason for the services in the first place.

Sources:

1. <https://en.wikipedia.org/>
2. Gartner research
3. Forrester research

Play now!

The insurance industry is in a state of disruption

The cloud as a solution

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The insurance industry is undergoing major change due to new digital technologies. In this article, we discuss three disruptive forces: connectivity, big data and changing consumer behavior. We shine a light on what these changes mean, and, more importantly, how to derive value from them. We believe cloud computing is a major enabler in dealing with these disruptive forces, and that Salesforce is best positioned to provide a personalized client experience and allow the industry to build a client-centric approach. Deloitte is a global strategic Salesforce partner with extensive expertise in digital and client transformation within the insurance industry. We believe that we are well-positioned to support the insurance industry with these changes.



Three disruptive forces are impacting insurance companies all over the world. These forces revisit the go-to-market and the client journey to provide a more personalized and digital experience.

1. Connectivity: recent statistics indicate that the average person in Europe owns three connected devices.¹ Furthermore, Cisco estimates that this average figure will grow to five internet devices by 2017.² With all those devices, clients want to access the right information and support on any device, anytime, and anywhere.

2. Big data: the Internet of Things revolves around machine-to-machine communication. It's built on networks of data gathering sensors. It is mobile, virtual and means instantaneous connections. One example specific to the insurance industry is that of telematics-based services. Telematics technology enables telematics-based insurance, such as telematics-based motor insurance. Via the Internet of Things, a huge amount of data is available. By collecting and mining the data, the insurance industry will be able to provide more personal offers at the right time, set better pricing, and increase personalized and proactive client service.

3. Changing consumer behavior: consumers' attitudes and needs are changing. The rise of digital has not only changed what people demand but also disrupted how they want it to be supplied. Furthermore, as clients better understand insurance dynamics through independent online research and social collaboration between them, self-service (DIY) will become more popular and consumers may seek to buy directly from online channels.

How to deal with these disruptive forces and derive value from these changes

Connecting all of these new technologies and getting the right information out of all the large data volumes presents a huge challenge. Cloud computing is well-positioned to facilitate tackling this complex challenge.

The main characteristics of cloud computing explain why investing in the cloud is a strong choice. First of all, its multi-tenancy means you can provide a personalized experience and build a client-centric approach without having to worry about continuous IT availability and maintenance upgrades. Since the cloud is maintained centrally, you can focus on creating business value. Secondly, you can work with a scalable approach, which allows you to spread the risk of this complex digital transformation. Thirdly, the data is not stored on local devices but instead in the cloud, allowing you to access the right information anywhere, anytime. Finally, you pay as you go, meaning you remain in control of the investment costs, which are more OPEX in nature and less CAPEX.

A good illustration of the impact of these characteristics is the music industry. This industry was among the first to deal with digital disruption and the impact of the cloud model. The first big transformation moved distribution from the physical CD to the cloud, e.g., iTunes. Today, the transformation goes even further. In the recent past, users would buy music online and store it on a physical device; today, they no longer own the music but instead pay a subscription fee and consume the biggest music libraries in the world by streaming. A similar transformation is now occurring in the insurance sector.

The cloud is a strong enabler to provide the processes and functionalities needed by a company to respond to this client revolution. It provides the platform to support hyper-connectivity disruption with clients, partners, and other business stakeholders. Finally, the cloud enables data to be captured and distributed, allowing you to create data intelligence to accelerate your journey to becoming a client-centric organization.

Challenges

Even though many actors agree that cloud solutions remain the best approach to dealing with these disruptive trends, we should consider two main challenges.

One important challenge, which is independent from the cloud solution, remains the integration between many different channels and sources. Although cloud solutions usually work with open APIs to make integration as easy as possible, it remains one of the key challenges and should be considered from the beginning of a transformation.

Secondly, because the data is not stored on local devices, you have to deal with the perception of risks related to compliance and security. While dealing with these challenges, it is important to keep in mind the value drivers and business benefits the cloud will generate. Finding a good balance between risks and benefits will be important for your success.

The main characteristics of cloud computing explain why investing in the cloud is a strong choice

1 Statista (2014). "Number of connected devices per person in selected countries 2014." Consulted 10 August 2015. <http://www.statista.com/statistics/333861/connected-devices-per-person-in-selected-countries/>
2 Business Insider (2015): "By 2017, We'll Each Have 5 Internet Devices (And More Predictions From Cisco)." Consulted 10 August 2015. <http://www.businessinsider.com/cisco-predicts-mobile-2013-5?IR=T>

Salesforce—the customer success platform as a service

Salesforce is best known for its customer relationship management (CRM) offering, comprising Sales Cloud, Service Cloud, and Marketing Cloud, but it also offers a development platform (Force.com) and Analytics (Wave). Their offering is fully mobile, social, and cloud based (Software as a Service).

Most analysts rate Salesforce as the absolute leader among the enterprise application software that can support sales, service and marketing transformation.³ Salesforce aims to support agile client and digital transformations and to drive industry innovation in the front-office space. Their applications are easy to use and customize, embed social collaboration amongst clients, partners and company teams, and drive process optimization via automated workflow, embedded analytics, and easy legacy systems integration.

Today, the global CRM software market is valued at US\$27 billion and outgrowing all other technology enterprise software markets. It is expected to hit the US\$37 billion mark by 2017.⁴ In 2014, 47 percent of the total CRM software revenue was generated from SaaS applications in which Salesforce has 18.4 percent market share and has seen annual growth of 30 percent for the past four consecutive years. This makes Salesforce the sixth fastest growing company in the Fortune 500's fastest-growing companies. This demonstrates that client and digital transformation through the use of cloud applications are currently high on the agenda of many business executives and technology leaders.

Deloitte as a global strategic Salesforce partner

Deloitte Digital's vision is simple: empower our clients to reimagine how they connect and engage with their customers. As a long-term Salesforce global strategic partner, Deloitte Digital has built a dedicated team of more than 2,800 consultants in more than 28 countries, fully dedicated to IT, including 100+ in Benelux.

In order to maximize client and digital transformation based on Salesforce, Deloitte has created over 25 industry-specific accelerators worldwide. These accelerators provide a very strong foundation for a client and digital transformation (and, in some cases, very advanced solutions). They allow our clients to be more cost effective, realize a faster go-to-market, and invest in the real competitive capabilities for their industry.

Our focus has led to strong success, including in the financial and insurance industry. Our experience has led to the creation of an insurance-specific accelerator: *FastConnect*.⁵ This is a pre-configured solution on Salesforce, built by Deloitte Digital, with specific processes and capabilities designed to match insurance industry requirements.

Our accelerators create an immediate impact:

- Instant benefit achieved through pre-configurations, pre-integrations, and developments
- Use our pre-configured point of view to speed-up the process of assessing business requirements
- Faster deployment and realization of ROI
- Saving of minimum 200 man-days in implementation effort
- Reduction of transformation risk, as it is a proven solution

³ Gartner (March 2015). "Magic Quadrant for Enterprise Application Platform as a Service, Worldwide," article G00271188

⁴ Gartner (July 2015). "Hype Cycle for CRM Sales," 2015, G00277788

⁵ Key features of *FastConnect* in a 3min movie: <http://youtu.be/za3TN8RwMzo>

Conclusion

The insurance industry is undergoing some major changes, and it's only getting started. The industry must acknowledge these disruptions and use them to its advantage by creating the added value clients expect. A way to cope with these changes is by using cloud solutions like Salesforce. Over recent years, Deloitte has demonstrated its ability to successfully deliver client and digital transformation based on Salesforce for many insurance companies. Alongside our past experience, our vision, and our industry accelerators, Deloitte Digital has the ambition to be a valuable and trusted partner for the insurance industry.







Boost your venturing results through data-driven venture scouting

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Recently, an increasing number of corporations have been using data to map and tap into growing ecosystems. This data-driven approach allows corporations and investors to explore opportunities in a more effective and structured way. As a result, corporations can expand and strengthen their positions in innovative ecosystems and optimize venture investments and related initiatives.



With more smart people outside than inside your corporation and knowledge neither centralized nor equally distributed, more and more corporations understand that they don't have all the required innovation capabilities in-house and are looking outwards for solutions

When everybody dreams of unicorns

Everybody is innovating. We are swamped with warnings about the current pace of change. Most of us know by now that we have to iterate to fit a changing landscape, and adapt continuously to meet evolving market needs. Competition diminishes margins with disruption as a possible consequence.

Change used to trickle down locally, now it runs globally, cross-border and cross-sector. New technologies disrupt entire industries in no time and from unexpected angles. And it is more than just an economic and technological transition, it's a social and cultural transition.

Individuals and corporations alike are experiencing a growing challenge to stay relevant and fit. There is friction between short-term and long-term goals with corresponding investment-, management- and cash flow- issues. We are searching for a balance between efficiency and creation.

Tapping into growing ecosystems

With more smart people outside than inside your corporation and knowledge neither centralized nor equally distributed, more and more corporations understand that they don't have all the required innovation capabilities in-house and are looking outwards for solutions. We see successful examples of corporations that actively participate in growing ecosystems. They are working together with large and small corporations to adapt to change and fulfill the changing client and market needs.

Successful corporations share a common practice. Management has a dedicated team in place whose main purpose is to explore and pursue opportunities in related or (seemingly) unrelated business areas, while the majority of the organization focuses on the current core business. Typically, these teams work separately from the rest of the organization to such an extent that it allows them to employ a more independent approach to identifying and exploring opportunities. These teams look outwards and actively explore, participate in, and add value to innovative ecosystems. It should be stressed, however, that finding the right balance is important, as these teams should not become too detached from the organization. Corporate venturing is on the rise as an effective method to actively contribute to ecosystems.

Several large corporates already have aggressive corporate venturing activities like Google Ventures, Intel Capital, Salesforce Ventures and Qualcomm Ventures

(together, jointly these corporations have invested in over 300 ventures). These examples are limited to technology corporations. We observe, however, that an increasing number of less tech-savvy companies feel the urgency for corporate venturing. In the financial services sector, for example, significant budgets have been allocated to venturing activities in recent years and we have seen a large increase in the past few months. Allocating a budget is a first step. The second step is applying a corporate venturing model that suits your strategy, culture, and goals.

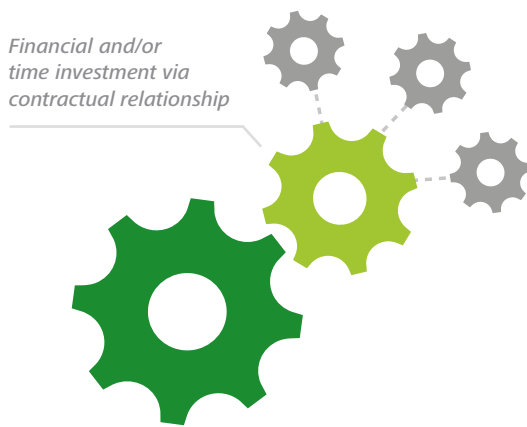
Four models to collaborate with fast-growing ventures

There is a variety of models available for working together with start-ups and fast-growing ventures, ranging in intensity from learning from each other and contractual relationships/joint ventures to minority stakes and full acquisitions.



Partnerships

Financial and/or time investment in multiple disruptive start-ups via experiments (contractual relationship)



Characteristic

Acquisition				
Integration				
Control				



Best in class:
TomTom



Rationale:
Become an active ecosystem player and learn from start-ups



Criteria:

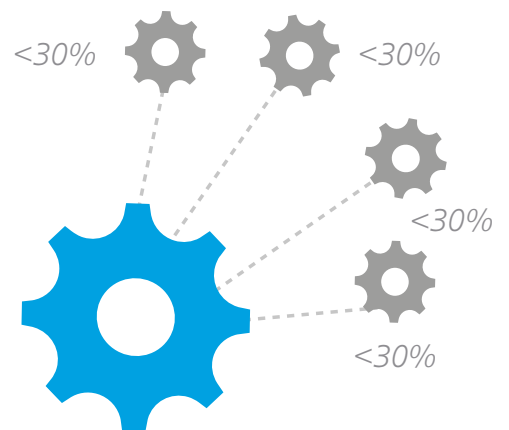
- Potentially disruptive
- Learning opportunity
- Partnership (yet not exclusive)



Dedicated innovation team

Venturing

Invest minority stakes in multiple disruptive start-ups



Characteristic

Acquisition				
Integration				
Control				



Best in class:
Salesforce



Rationale:
Become an active ecosystem player and learn from start-ups



Criteria:

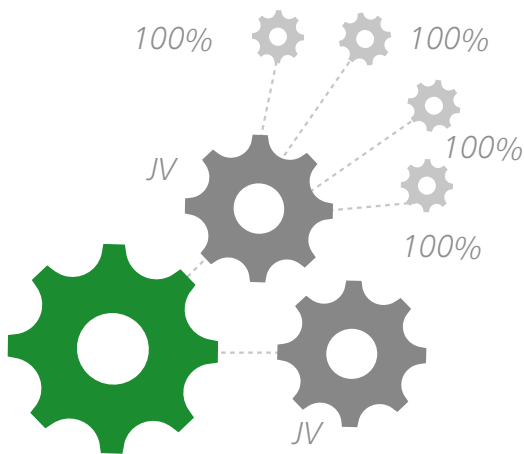
- Potentially disruptive
- Learning opportunity (board seat)
- Partnership (yet not exclusive)



Dedicated venture team

Buy & Build through platform company

JV (Joint Venture) with platform company to initiate (pan-European) consolidation in still fragmented industry



Characteristic

Acquisition				
Integration				
Control				



Best in class:
Axel Springer



Rationale:
Benefit from entrepreneurship (partner) and scale, funding & skills (M&A)



Criteria:

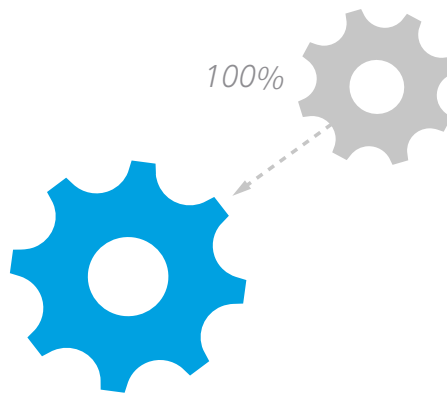
- Activities are adjacent to the core
- Yet, potential to become the new core business through buy & build
- Medium to large investment



Board ownership & dedication M&A

Full acquisition

Acquire 100% of the shares and take full control



Characteristic

Acquisition				
Integration				
Control				



Best in class:
Cisco



Rationale:
Take full control of growth and synergy realization through the business



Criteria:

- Activities are core to the business
- Proven technology/business model
- Synergies are manageable



Business responsible

Traditional M&A focuses on acquiring capabilities with strong synergies with your own capabilities or geographic expansion and growth ambitions, or simply acquiring a direct competitor to expand market share or protect own business. With the continuous development of dynamic ecosystems, this is no longer sufficient. Two related trends drive the need for a more flexible M&A model. One is the increasing speed of continuous change through technological innovation; an investment decision today might be obsolete tomorrow. Secondly, due to increased connectivity and digitalization, global capabilities are suddenly within reach; it is no longer necessary to internalize all required capabilities for your business. You can achieve the same goals just as easily by tapping into an ecosystem of corporations in a specific segment. Diversifying your M&A model will increase the level of flexibility to adjust your choices based on changes in your ecosystem. Connecting yourself to a wider and more diverse group of adjacent capabilities can add significant value to your current business.

When connecting through corporate venturing you can use several different models. Each model provides different levels of control and integration, which should fit with your specific goals. Your choice of model is not only vital for the success of your innovation drive, it also affects the level of learning within your own organization.

Successful corporations
don't rely on luck;
they apply a structured,
data-driven approach

Partnerships

Some corporations appoint a dedicated innovation team tasked with creating partnerships with start-ups and fast-growing ventures to learn from culture and capability differences, accelerate required transformations, or to integrate or develop new products and services. This approach is specifically suitable when a corporation is starting to explore new adjacent business areas. Strategic partnerships are formalized through contractual arrangements.

Venturing

Venturing entails taking minority stakes in multiple potentially disruptive start-ups active in strategic focus areas. The obvious, but valuable, advantages of minority stakes are that they are more flexible. Investing can be executed either through a captive investment strategy with your own dedicated fund, or by partnering with an external fund. In general, starting with an external fund can help to develop and internalize the necessary venturing expertise. Corporations often lack internal subject matter expertise to appropriately screen cutting-edge sectors.

Buy & build

If the specific disruption to your business is well defined, and a significant leader exists in that segment, venturing through a platform corporation can be the right way to go and give you a head start in an adjacent market and its ecosystem. Through further acquisitions of this platform corporation, you will build a new business, which can eventually become the new core business.

Full acquisition

Full acquisition is one of the more traditional models. It will give you full control over the acquisition target and gives you the option (which doesn't necessarily mean you should) to integrate the target fully into your own corporation.

As is clear from the descriptions above, there is not a "one size fits all" model. The appropriate model will depend on your goals, structure, and assets; it may change over time and may differ per opportunity.

Tapping into ecosystems will boost your innovation capabilities beyond your company limits

It's all about combining different data sources and using algorithms to search, filter and compare company profiles or create visualizations of markets and trends. The number of new corporate intelligence offerings rises quickly. They use a wide variety of data sources to build a comprehensive database: high-end non-public company data sources, publicly available information on listed and unlisted corporations, patent filings, crawling information from important social or data platforms, tech sites, and start-up incubator and accelerator programs.

In different ways, these new corporate intelligence tools track investment patterns, patent filings, press releases, and job postings to find early signals about any start-up or venture you are interested in, the entrance of an unexpected player in the market, or an upcoming product launch. We see a shift from regular lengthy reports to ongoing intelligence streams to identify threats, thus enabling a proactive approach.

These intelligence tools are continuously improving and with advanced natural language processing capabilities, you are able to query unstructured data to see all the significant events relating to the market you are in.

By incorporating this data-driven approach, you can:

- Take any corporation and see its competitors across dimensions including narrative positioning, IP, acquisitions, social media sharing, key executive moves, and compare multiple data streams to give you a different perspective
- Look at financial news about a topic, and then compare with the patents that are being filed within this space. You can quickly identify leaders, laggards, and the outliers that are bridging markets in new ways
- View summaries of any selected corporations, group them by growth rates, funding activity, or new entrants
- Zoom in on the most attractive investment targets, reveal hotspots of innovation through the mathematical patterns within patents, scientific papers, and capital allocation
- Use visual business intelligence and patent analysis tools to map the areas of IP that are highly contested versus being dominated by a single organization
- Understand the relationships between established sectors, identify technology whitespaces, and find opportunities for commercialization

Information technology should also be used to have employees from one business unit share favorite insights, visualizations, trends, or company profiles with other colleagues at other business units or your M&A, strategy or business development division. Sharing insights will ignite fruitful communication that will result in action and new value. This will increase the number of scouts in your organization; your corporation will in effect open up more to its business environment and steepen the learning curve of the employees involved.

By obtaining these types of working methods and a solid data-driven approach, you drastically improve the value that you will derive from the extensive corporate venture investments. Instead of being disrupted by new entrants, you can now cooperate with new entrants.

Principles for successful corporate venturing

When you make the choice to go for a structured corporate venturing approach, you need to keep some important principles in mind:

- The majority of relationships come from referrals and are opportunistic in nature. A structured data-driven approach enables you to remove subjectivity from your selection process
- To effectively use search technology, you need to know what you are looking for. Use subject-matter experts and text-mining technology to come up with as many words as you can to describe the capabilities, solutions, offering or corporation you are aiming for
- As large corporates, we sometimes tend to think that money buys us everything. But just offering money is not enough. To become successful in your venturing strategy, you need to define the specific differentiating added value that your corporation will bring to the venture and ecosystem

Conclusion

Tapping into ecosystems will boost your innovation capabilities beyond your company limits. A data-driven approach will enable you to drastically improve the value that you will derive from the extensive corporate venture investments. Will you be the disrupted or cooperate with the disruptors?



Diving into Open Data in a financial world

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Open Data has been around for a while now. The term “Open Data” appeared in the 80s, but industries have only started to become aware of the concept in the last few years. Open Data promises a long and exciting journey for those who realize its potential. However, as with every new concept, standards have not yet fully emerged and many challenges lie ahead.

What is Open Data?

Open data isn't a new trend in our economy. The term started to emerge in literature in the 80s, but it was only in 2012 that the Open Data Institute gave a complete definition: "Open Data is data that anyone can access, use and share". Pretty simple to understand, but what can an Financial Services Industry (FSI) actor do with this kind of data when it is already struggling with its own data? In what way can it benefit from Open Data?

To answer this question, we need to go several years back in time and try to understand where this data comes from and see the potential behind it. Open data is a consequence of technology and social factors.

From a technology point of view, the internet brings people and the economy together, allowing them to purchase almost anything over the internet, and more importantly to exchange thoughts, opinions, and knowledge at a tremendous frequency, relegating epistolary to antiquity. On the social side, a majority of people have a digital life today through platforms like

Facebook, and this is certainly not restricted to human beings. Nowadays, sensors from the Internet of Things (IoT) world can enable anything to produce Open Data via a whole host of devices, such as healthcare bands, smart watches or on-board car telematics devices. Even pets can be monitored with GPS tracking solution for example.

Governments are also joining the movement through new e-services—which have made interactions with citizens easier—and also by digitalizing the administration, allowing them to produce figures on almost anything pertaining to both the state and its citizens alike: statistics on criminality, poverty, unemployment rate changes, weather conditions, etc. Today, Open Data is almost everywhere, produced by anything and anyone.

All of this data represents a large mass of information, which can be classified in seven categories: Government and Political Data, Data Aggregators, Social Data, Weather Data, Sports Data, Universities and Research and finally, among the most verbose, News Data.

The potential behind Open Data for the Financial Services Industry

Thanks to its diversity and richness, Open Data can intervene in several operational processes of the Financial Services Industry.

Marketing departments can leverage this type of data through the enrichment of client and prospect databases. Indeed, data coming from social media is a real asset, as it can be used to make client segmentation more accurate and build strong links between loyal clients and prospects. It creates a de facto micro segmentation that is very close to what matters for the client and therefore reduces the risk of clients leaving.

On the other hand, it can also be a good indicator of which clients to avoid, such as people exhibiting objectionable behavior that does not comply with company expectations in terms of social responsibility.

Another valuable application for marketing departments is the monitoring of their e-reputation, which allows companies to better understand their clients, prospects, and market perception. This way, companies can improve their marketing strategy in order to win or retain clients.

As an example, insurance companies can make great use of Open Data provided by governments; crime data for instance, can help in the risk evaluation process by providing a more granular view of the market, and hence more adapted pricing. Weather data are also precious for insurance companies in the context of telematics as well as fraud prevention to correlate with goods damaged due to weather conditions.

From a subscription perspective, Open Data can effectively reduce subscription time thanks to autocomplete. Moreover, updating client profiles could be automated by monitoring changes on social media front ends.

Open Data's greatest strength is that the more it grows, the more powerful it becomes. Indeed, reusing and mixing various sources lets innovative services and products emerge. The only limit is how businesses can see the data at their disposal being utilized.

Open Data has an extremely high value. Not only does it make access to information easier, but it also helps to create standards that increase the value of data by making it more consistent, hence facilitating inter-operability and aggregation. Banks and insurance companies participate actively in Open Data development thanks to regulatory bodies such as the Securities and Exchange Commission (SEC). This commission requires financial statement information to be submitted in a structured XBRL (machine-readable eXtensible Business Reporting Language) format for Basel III and Solvency 2. This format facilitates analysis and adds value for the public, investors and regulators. Rather than a constraint, such regulation should be considered an opportunity. Thanks to XBRL, not only do companies have access to standards that facilitate their reporting processes—thus reducing their costs—but they can also have access to a more global view of the market and benchmark their competitors based on this public information. The UK is one early adopter of the XBRL format and of the Open Data movement in general. Today, there are approximately 1.9 million UK companies using the XBRL format for filing accounts and tax statements¹. The success of the adoption of XBRL in the UK is due to the use of iXBRL (or inline XBRL), which is a human-readable approach to XBRL that uses tagging with advanced taxonomies to generate XBRL reports. This way, companies can present their accounts using iXBRL in an easily understandable way, instead of having to develop their own extension to integrate XBRL into their tools.

Open Data and client data automated sharing is transforming the Financial Services Industry. It offers start-ups an open door to compete with big retail banks and insurance companies in a market that used to have a really high entry-level barrier. But it is not only about competition. Start-ups also have a lot to bring to major players and collaboration will drive new business opportunities.

Open Data has a great deal of potential and we are only seeing the tip of the iceberg for now. There are many studies dedicated to assessing the potential value that could be created by using all its levers.

Making it to the next level

It is essential to understand that we are entering an era where people care and fear for their privacy. In this context, company transparency will be an asset for company image and the MiData movement is emerging. MiData does not belong in the world of Open Data but is of a very similar mindset. The idea behind it is that a company facilitates users' access to the personal data collected about them. Doing so helps users to clearly see what data are collected and creates a feeling of trust as users are less prone to think the company only attempts to make money out of their data.

Companies are starting to realize the potential behind the use of this kind of data, but this is only a first step. A common issue for companies is the dilemma of opening their own data.

As we have seen before, regulators are appearing and pushing for companies to open some of their data. But beyond the legal aspects, what are the benefits of doing so? Many companies are not confident about opening their data, and they have strong arguments for it. The most common one is competitive advantage. There is a fear of letting competitors make money out of their data. Also, data has a high value and companies know it. Many companies make money by selling data, so opening it would represent an initial drop in revenue. But, looking at the UK's experience with Open Data, we can see that opening data lets standards emerge and facilitates inter-operability and aggregation of data. This is not just true for legal usage; but also when collaborating with partners and suppliers.

Companies are starting to realize the potential behind the use of Open Data, but this is only a first step. A common issue for companies is the dilemma of opening their own data

¹ <https://www.xbrl.org/recipe-for-xbrl-success-in-the-uk/>

What companies have to realize today is that mindsets are changing, and so is the market. Data is raw value, but what matters most now is how they can extract that value from the data they have at hand. The tendency is driven by innovation and is moving towards producing high value services by extracting and aggregating relevant data.

Most companies entering the world of Open Data do so by starting to release small subsets or samples of their data and we see freemium models emerging where third parties have to pay to access more detailed data. The Data-as-a-Service model is also gaining popularity with Open Data, by selling analysis and high quality services on top of Open Datasets.

One benefit for a company of opening data is getting communities involved. Realistically, a company may have various projects in mind, but only the time and resources for some of them. Releasing data in the open domain can be a strategic move to encourage crowdsourcing by driving the community. As a company, you might have a large vision of what can be done with the data you have, but the budget and resources for some projects only. Projects developed by communities can add extra value to the services already in place but is also an opportunity to get feedback on the quality and structure of the data released. Moreover, crowdsourcing or Open Data competition is the opportunity for a company to attract talent that can be an asset for its team. Finally, it also serves to enhance the company's visibility and its products because there will be more ways to access the different services it provides.

Getting ready for Open Data

As stated above, data comes from various sources and as such, quality levels are very disparate.

Therefore, only FSI actors with a certain degree of maturity could benefit from this new source of data. Indeed, a strong data management framework should already be in place to ensure a business case. Typically, data coming from the open-data world should be monitored prior to any leveraging to avoid data pain points. Moreover, before any integration into operational processes for production, a data integration project should be deployed by an appropriate profile, such as a data scientist.

Analysis of Open Data and correlation with internal data can be tough. It requires not only specialized human resources, but also material resources such as digital infrastructure or computing power. Each data provider has its own standard data format, therefore data transformations are necessary when integrating it into the company's system. When using Open Data, a company should always consider the following issues:

- Aggregation
- Normalization
- Clean-up
- Quality control
- Verification of Authenticity
- Validation of terms of use

All of these elements should be integrated into the decision-making process. It is also valid in the context of producing Open Data. Indeed, releasing low quality or inappropriate data could dramatically damage a company's reputation.

In addition to technical challenges, using Open Data can be a complex task in terms of legislation. We saw earlier that governments are pushing Open Data forward, but the regulatory framework is complex and most individual institutions have their own policies or their own licenses regarding dataset provision.

The major concern are data protection and respect of privacy. Some countries are more permissive than others but the Council of the European Union had many discussions about data protection law and attempt to define the limits for collection and analysis of data. Under EU law, personal data can only be gathered legally under strict conditions and for a legitimate purpose. EU law guarantees that personal information, collected and managed by an organization, must be protected and respect the rights of the data owners. Even though it is not completely harmonized yet, European directives are going toward this direction. Therefore, a user has the right to complain or to obtain redress if its data are misused under European territories.

Conclusion

Open Data is both an opportunity and a challenge. It does not only concern start-ups or small firms. Every sector, such as financial industries, is impacted. Challenges generated by Open Data are not easily solvable, but financial industries are most likely familiar already with many of the concerns.

Involvement in the Open Data ecosystem could be evaluated as follows:

1. Open Data: what is it?
2. I know about Open Data
3. I am aware of the potential of Open Data
4. I have project plans that leverage the potential of Open Data
5. I have the knowledge to perform the correlation between Open Data and my own data
6. I already use Open Data in some products
7. I am opening part of my own data to the Open Data space

As of today, where do financial industries place on this scale? Evaluate where you are and determine your objectives to tame Open Data and make full use of the power it can offer to you.

Sources:

<http://www2.datainnovation.org/2015-data-innovation-agenda.pdf>

<http://www.theguardian.com/technology/2015/jun/15/eu-privacy-laws-data-regulations>

<http://gjin.org/2015/03/03/putting-the-open-in-open-data-creating-a-global-standard/>

<http://ec.europa.eu/justice/data-protection/>

<http://www.nemode.ac.uk/wp-content/uploads/2013/11/Bonina-Opendata-Report-FINAL.pdf>

<http://www2.deloitte.com/content/dam/Deloitte/uk/Documents/deloitte-analytics/open-data-driving-growth-ingenuity-and-innovation.pdf>



The concrete impacts of BCBS principles on data value chains

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The application of the BCBS 239 regulation will have a direct consequence on banks' data management. Indeed, all of the principles exposed in the text aim to push banks towards risk evaluations based on optimized, documented and transparent data usage. Banks have to deal with several challenges that can be tackled without too much difficulty if they perform the right technological component selections and organizational designs.

Context

In January 2013, the Basel Committee on Banking Supervision published the BCBS 239 paper: "Principles for effective risk data aggregation and risk reporting". The objective of this regulatory framework is to ensure that data used for risk calculation and, ultimately, the required capital definition, is of the appropriate level of quality. Furthermore, over time it will enable the decision-making process to be improved, and losses due to bad risk management to be reduced within all relevant banking institutions. This means that not complying with these principles would jeopardize the trust of regulators in the provisions made by banks, which could lead to capital add-on.

At this stage, G-SIBs and D-SIBs are affected by this regulation but within different timeframes (1 January for G-SIBs, three years after designation for D-SIBs). This way, G-SIBs and D-SIBs are at different stages of implementation but SIBs will have to prioritize and efficiently organize their project portfolios to meet deadlines.

The BCBS 239 principles represent an opportunity to improve data management and IT infrastructure. Making appropriate investment in information systems will generate enterprise-wide benefits, such as data quality, process optimization, and improvement of decision-making processes.

Data quality controls must assess the reliability of data and demonstrate that the level of quality is sufficiently high for risk assessment purposes

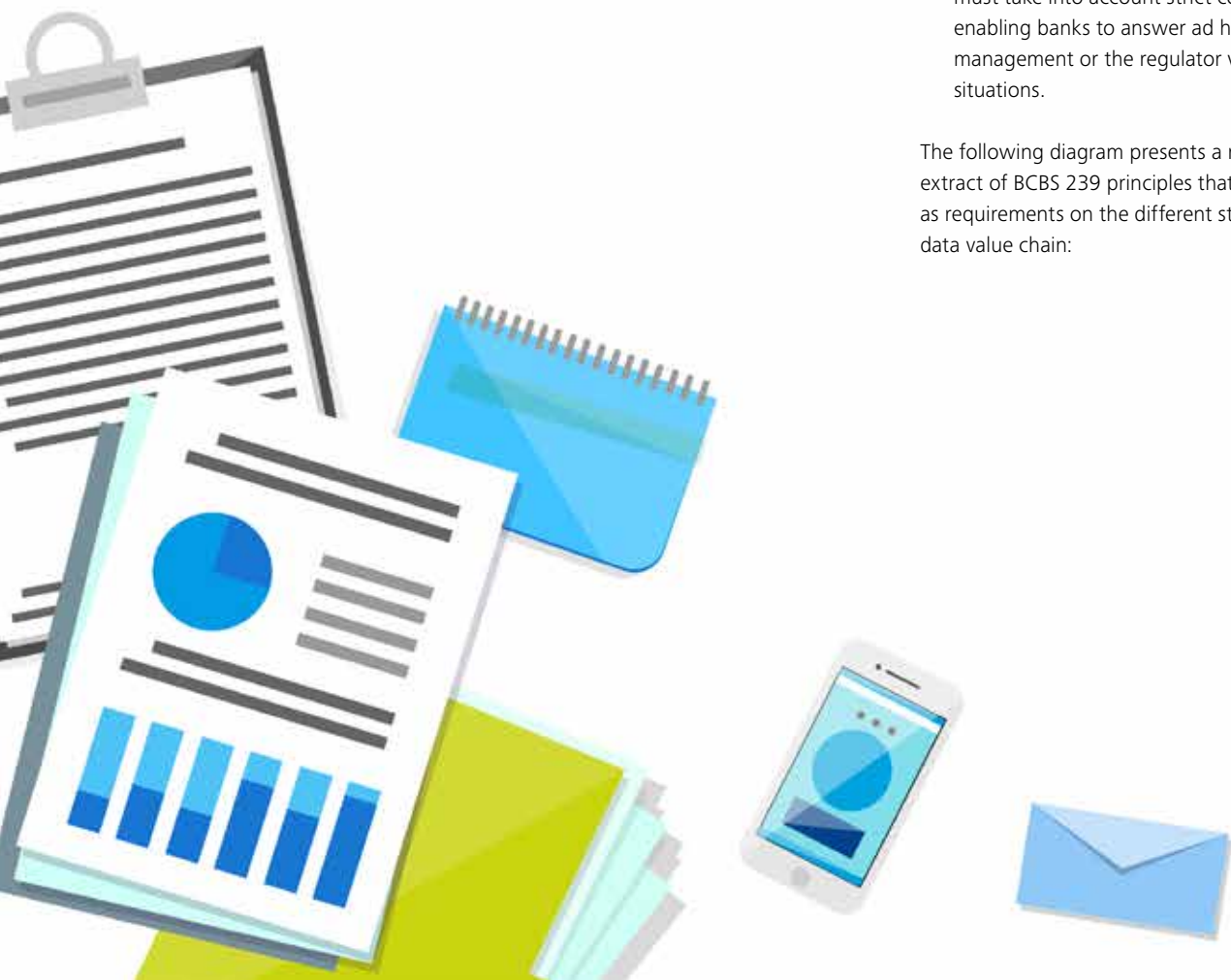
What are the requirements of BCBS 239?

How BCBS 239 requirements impact the data value chain

A typical data value chain can be seen as the succession of four main steps:

1. Data collection, which enables all the required information used to calculate risks to be centralized. There can be different types of sources, as they are associated with specific applications from each banking department.
2. Data quality controls must then assess the reliability of data and demonstrate that the level of quality is sufficiently high for risk assessment purposes.
3. Data aggregation can take place once the data has been collected, cleansed and validated by its owners. This step is particularly sensitive as it must be flexible enough to quickly accommodate market changes and potential new risk drivers.
4. Finally, reporting shall be produced. This step must take into account strict constraints, such as enabling banks to answer ad hoc inquiries from the management or the regulator very quickly in stress situations.

The following diagram presents a representative extract of BCBS 239 principles that can be mapped as requirements on the different steps of a typical data value chain:



1 Data collection

Principle 3: Accuracy and integrity

37: As a precondition, a bank should have a “dictionary” of the concepts used, such that data is defined consistently across an organization

Principle 5: Timeliness

45: The Basel Committee acknowledges that different types of data will be required at different speeds

2 Data quality controls

Principle 3: Accuracy and integrity

38: There should be an appropriate balance between automated and manual systems.
40: Supervisors expect banks to measure and monitor the accuracy of data

Principle 4: Completeness

43: Supervisors expect banks to produce aggregated risk data that is complete and to measure and monitor the completeness of their risk data

3 Data aggregation

Principle 1: Governance

30: A bank’s senior management should be fully aware of and understand the limitations that prevent full risk data aggregation, in terms of coverage

Principle 3: Accuracy and integrity

35: Banks should develop and maintain strong risk data aggregation capabilities to ensure that risk management reports reflect the risks in a reliable way

Principle 5: Timeliness

44: A bank’s risk data aggregation capabilities should ensure that it is able to produce aggregate risk information on a timely basis

Principle 6: Adaptability

48: A bank’s risk data aggregation capabilities should be flexible and adaptable to meet ad hoc data requests
50: Supervisors expect banks to be able to generate subsets of data based on requested scenarios or resulting from economic events

4 Reporting

Principle 6: Adaptability

49: Adaptability includes (...) capabilities for data customisation to users’ needs (e.g. dashboards, key takeaways, anomalies), to drill down as needed, and to produce quick summary reports;

Principle 8: Comprehensiveness

57: Risk management reports should include exposure and position information for all significant risk areas (...) and all significant components of those risk areas
58: Reports should identify emerging risk concentrations, provide information in the context of limits and risk appetite/tolerance, and propose recommendations for action where appropriate
60: Supervisors expect that risk management reports to the board and senior management provide a forward-looking assessment of risk

Principle 9: Clarity and usefulness

62: balanced report (risk data, analysis and interpretation)

Banks should develop and maintain strong risk data aggregation capabilities to ensure that risk management reports reflect the risks in a reliable way

The data governance aspects should not be underestimated as this may have significant impact on the bank's organization

This mapping enlightens four major areas of impacts to consider to meet the requirements:

- 1. Data quality technology**
The technology components for data quality controls should be robust but flexible enough to meet the accuracy and adaptability principles
- 2. Reporting technology**
The reporting technology should encompass strong visualization, exploration and self service capabilities to meet clarity and adaptability principles
- 3. IT Governance**
The impact on IT governance and especially release management may be significant as the BCBS will require more agility in the release cycle to reduce the time to provide the end users with new reporting.
- 4. Data governance**
Although most of banks already took this into account, the data governance aspects should not be underestimated as this may have significant impact on the bank's organization.

How can banks meet these requirements?

As we have seen, aside of the data itself, banks will have to act on the governance, process and technology side to comply with the BCBS239 requirements.

Data quality technology

The architectural choices to be performed when implementing the data quality technology shall be weighted carefully as they might imply significant recurring costs. In the context of Solvency II, many insurers realized that a standardized approach, although requiring more investment at implementation, has an excellent return on investment considering the significant number of controls to be performed. Concretely, this standardized approach is based on a standard set of controls that are parametrized to meet the specificities of the different data sets. In other words, instead of implementing new rules for each dataset, the project team only defines a small set of parameters. This approach drastically reduces implementation costs as well as recurring costs. Furthermore, it enables a much more systematic approach towards quality control.

While many of-the-shelf packages covering these functionalities exist on the market, it is very unlikely that banks will find the solutions that fits into their (often complex and heterogeneous) IT landscape. It is therefore expected that like insurers in the context of Solvency II, many actors will deploy their own data quality IT component to get the best balance between cost, integration and effectiveness. Depending on the existing data architecture, this new component will typically occur at the entrance of the data lake, data warehouse or risk data mart.



Reporting technology

Although many organizations have reporting and visualization tools used within different departments, only few of them govern these tools centrally and are able to assess if they can meet the BCBS requirements. The first challenge will therefore be to get a common understanding of the as-is situation to identify if there is a need to select a new reporting tool or not.

On the tool selection itself, we have analyzed the market of reporting and analytics IT packages and noticed that a lot of solutions exist, but, unfortunately, it is impossible to find any 'one size fits all' solution. To meet both adaptability and accuracy principles, banks will have to evaluate their own reporting landscape and often consider the addition of new reporting components. Considering the timelines, the analysis and the tool acquisition processes to conduct, these activities should be started as soon as possible.

IT Governance

To meet flexibility requirements, a two-speed development model may be put in place. Today, most organizations follow release calendars, preventing them from reaching the forthcoming flexibility constraints. In order to tackle this challenge, IT organizations will consider that some components will have to be moved to a faster release cycle management process.

Data governance

To meet BCBS expectations, organizations will have to be increasingly data driven. Strict data governance is needed to support the end-to-end data flows, and has to be organized with every business unit in the bank. This means that ownership and stewardship of the data has to be clearly defined, agreed and known in the organization, as well as the data management processes.

How far along are the banks today?

The Basel Committee has published a progress report entitled 'Progress in adopting the principles for effective risk data aggregation and risk reporting' (BCBS 268). This is based on a self-assessment survey completed by the largest banks and supervisors. In particular, the report underlines that *"many banks are facing difficulties in establishing strong data aggregation governance, architecture and processes"*, and are resorting to *"extensive manual workarounds"*. Banks need to *"significantly upgrade their risk IT systems and governance arrangements"* to address these shortcomings.

Conclusion

The application of the BCBS 239 regulation will have direct and significant consequences for banks' data management. To meet these challenges, banks will have to consider the adoption of generic components to manage data quality and also conduct an appropriate review of their reporting tool. On top of this, successful implementation will not happen without new approaches to data governance and release management. These major changes shall be addressed with a broader perspective with for example an enterprise data warehouse in order to get benefits for the whole company in terms of reporting and make a viable business case out of the regulatory constraints.



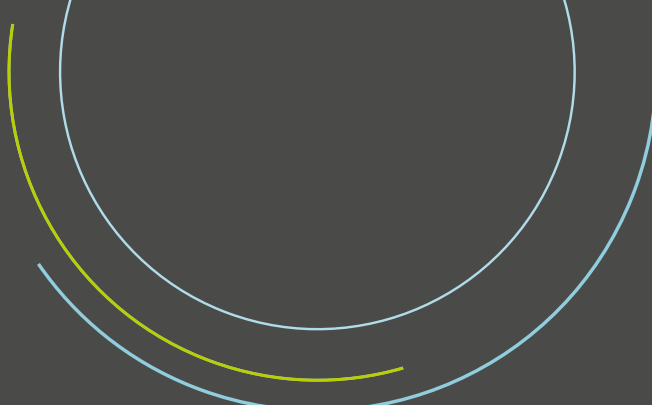
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A growing number of organizations are considering their HR departments as competitive differentiators and strategy enablers. For the HR function to play a strategic role in supporting corporate objectives, HR professionals need IT solutions that combine ease of use, flexibility, and accessibility with best in class capabilities and sophistication. Such a combination was difficult to achieve using on-site solutions. Today, cloud technologies and especially the Software as a Service (SaaS) delivery model have brought innovation, flexibility and cost effectiveness that makes this emerging strategic role for HR function possible.



Customers are able to configure the solution in order meet their specific business requirements, but they share the same application and database with all the customers

Software as a Service consists of using an application, hosted by a cloud provider, on a subscription basis. Customers are able to configure the solution in order meet their specific business requirements, but they share the same application and database with all the customers. This delivery model brings multiple benefits such as user experience, flexibility, and innovation, but it also has risks and challenges such as data privacy and compliance. This article aims to provide HR and IT executives with useful information that will ensure successful SaaS implementation programs.

Key benefits of SaaS solutions

SaaS applications benefit from the latest technological advances, such as multi-tenancy, virtualization, and web services, making them a reasonable option to replace legacy HR solutions. Some of the key benefits are:

- **Enhanced user experience:** one of the major benefits that SaaS solutions has over traditional on-site solutions is that it is extremely user-friendly. The user experience is significantly enhanced, and subtle features can make it easier to use than legacy systems
- **More flexibility:** SaaS solutions are easily administered systems. Customers can configure and maintain an important part of the solution without requiring specific expertise. The SaaS provider performs hardware and software updates, removing a significant workload from in-house IT department
- **Increased innovation:** SaaS providers are proposing frequent updates including new features, mainly related to changes in regulations or new functionalities, addressing emerging HR and employees' requirements. This speed of innovation is now possible thanks to advanced development approaches such as service-oriented architecture and continuous improvements based on clients' feedback and requests
- **Focus on strategy:** reducing IT operational and maintenance costs implies also a change in the role of the organization's IT department from a support function to a strategic and innovation role. Instead of simply providing technical support and expertise, the IT department becomes a service provider and a real partner to the business offering increased value added through consultative advice and flexible IT solutions
- **Cost reduction:** as multiple users are using the same SaaS solution, this allows an important economy of scale in terms of servers' utilization and cost of software and hardware maintenance. The ease of administration also makes the costs of SaaS solutions more competitive



Customers are facing serious challenges when choosing the right solution that will meet their needs and maximize benefits with fewer security and integration risks



Risks and challenges

Though SaaS has many benefits, there are multiple risks and challenges that need to be addressed before moving to the cloud. A deep analysis of the risks with a strong mitigation plan ensure a smooth transition to the cloud. Key SaaS risks and challenges are:

- **Data privacy:** if sensitive company data and business processes are to be hosted externally in shared databases, then issues such as identity and access management need to be addressed. Because data protection is their core business, SaaS vendors are massively investing in data security procedures and technologies
- **Compliance:** when business data resides in a service provider's data center, ensuring that the organization complies with the relevant government data-protection regulations is vital. Leading SaaS providers are delivering localized solutions that ensure compliance with local regulations
- **System performance:** a browser-based application hosted in a remote data center and accessed via an internet connection is likely to cause issues about performance when compared to software hosted on-site. Even if SaaS providers are investing in high-performance servers using virtualization technology to enhance the response time, the performance still needs to be carefully assessed
- **Reversibility and data mobility:** what happens to the data and implemented business processes if the customer needs to change the cloud service provider? Customers should ensure they maintain ownership of their data in case they decide to change the SaaS provider

Choosing the right SaaS solution

SaaS for the HR market is expanding rapidly. Customers are facing serious challenges when choosing the right solution that will meet their needs and maximize benefits with fewer security and integration risks. The selection process needs to be formalized and key departments have to be involved. Selection criteria needs to go beyond functional coverage and costs to include the degree of flexibility, performance requirements, and level of support.

- **Run a formal SaaS provider selection process:** it is important to assess SaaS providers using multiple selection criteria, such as their roadmap, functional coverage, financial records, support level, performance, system security, and costs. Multiple services in the organization need to be involved such as HR, IT, Legal, and Purchasing
- **Assess integration options with existing systems:** SaaS HR solutions will need to be interfaced to numerous in-house and third-party applications, such as benefits, payroll, and financial systems. Customers should understand the native integration supported by the vendor and tools available for custom integration. Based on current IT landscape, the best deployment approach should be defined
- **Assess the degree of flexibility of the solution:** SaaS providers claim to give HR professionals more flexibility to adapt the solution easily as a key differentiator from traditional on-site solutions. Customers should ask for system demonstrations to see how easy is to adapt the solution to meet their changing needs
- **Ensure performance requirements will be met:** due the fact that SaaS IT infrastructure is located in the vendor's premises with access relying on internet, customers may be facing performance issues. Performance requirements should be part of the established service-level agreement with the SaaS provider
- **Assess the customer support level:** SaaS providers will provide technical support in case end users will be facing issues in using the solution. Rapid, trusted, and efficient customer support is key to keep the users motivation for adopting the solution

Regardless of the benefits that SaaS solutions may offer, customers should first make sure the cloud is the right choice for their organization

Key considerations for SaaS implementations

For a successful SaaS implementation projects, customers need to consider specific activities, helping the organization for the new organizational, functional, and technical changes, introduced by the new SaaS solution. Customers will have to:

- Assess the readiness of the organization: before adopting SaaS, an organization must demonstrate clear business objectives for the initiative and assess its organizational readiness for the change. A readiness assessment can help identify business, technological, operational, and cultural challenges that could interfere with a successful adoption
- Prepare HR processes and core data: SaaS implementation may require extensive HR process and policy design. Because of limited customization of the solution, organizations may need to redesign their talent management processes and remove existing customized systems that may become obsolete. Organizations need to be willing to evolve their talent management processes and policies. In addition, core HR talent data such as jobs descriptions and competencies will need to be prepared prior to any SaaS implementation
- Change management: plan for a strong change management strategy. Despite the fact that SaaS solutions are user-friendly, change management still plays a key role for a successful implementation project, as SaaS implementations always introduce new HR processes. A readiness assessment, stakeholder management, communication plans, and trainings are the activities that will help users adopt the new solution
- Rigorous testing planning and execution: even if SaaS solutions only allow configurations and custom developments are not possible, testing the solution is a vital activity that will ensure the designed solution meets the business and technical requirements
- Implement an upgrade management process: SaaS systems are stable, upgradable, and maintainable. However, this rigidity may be a problem for some customers. In order to have the necessary new functionalities, customers will need to highlight these with the SaaS provider, who will decide to include them in the next release. Such software upgrades occur several times a year, typically every quarter. This can be both exciting and overwhelming. New features and functions are delivered at a speed that can be difficult to digest. Depending on the type of organization, this can be either an added value or a hindrance



Conclusion

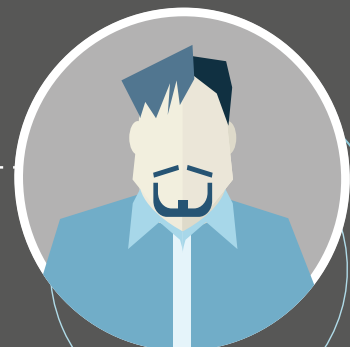
The SaaS market is rapidly expanding. Flexibility, innovation, user experience, integration, functional coverage, rapid deployment, and cost reduction are the key drivers for this trend. Regardless of the benefits that SaaS solutions may offer, customers should first make sure the cloud is the right choice for their organization. Every organization is different, and there is no unique implementation strategy. Customers should first start by assessing whether their organization is ready to adopt the cloud.

Before engaging in the SaaS provider selection process and the implementation project, customers should first define HR processes and prepare core talent data such as job descriptions and the competencies catalogue.

Choosing the right SaaS provider is key for the success of an implementation project. If cost is still an important criterion for the selection process, it may not be the only driver for the decision. Data privacy, vendor long-term strategy, service level, performance, flexibility, and functional coverage are important criteria to consider.

The SaaS implementation methodology is different from traditional implementation approaches. Customers should understand the main differences between both approaches. In most cases, the SaaS providers propose an iterative approach, which consists of frequent reviews of the solution by the customer within the configuration phase.

Finally, customers should define and implement a change management approach, which will enforce the adoption of the SaaS solution by end users and achieve the expected benefits.



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Our expert authors, who are brimming with excitement about these disruptive topics, have written articles to help decision-makers to apprehend the new paradigms—if not to understand them all

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