Cloud

Moving to the cloud

A quick overview of why and how

proximus

The digital service provider

Organizations increasingly deliver their services via the digital world. Whether it is sales, delivery or support, it all happens in the digital sphere. E-commerce is blossoming all over the world. Media are delivered mainly by digital means: sales of CDs and DVDs have dropped. Banks offer their services via apps on smartphones and tablets. Retailers use apps as an additional sales channel.
If you look at it, digital services can be categorized as belonging on one of 4 axes: B2B, B2C, B2E or B2M.

B2B Professional Credibility

According to IDC, 91% of e-commerce is on the B2B (Business to business) axis. This represents some 15 T$. Indeed, instead of entering an order, printing it out and sending it by post or fax to the supplier, organizations have the order sent electronically, right into the order-entry system of their supplier. The whole worldwide banking system has been digitized. Billions in money are being transferred electronically, in less than 1 second.

B2C Commercial Succes

The B2C axis is the most obvious part of the digital organization. It is the part where the organization presents itself to the general public via websites, social media, e-commerce, advertising, brick-and-mortar shops etc. It is also an important part for governmental organizations, since they want to improve relations with citizens and facilitate the exchange of information with them. Whether we are talking about international, national, regional or local governmental organizations, e-gov to the citizen (as well as to companies in B2E) is important.

B2E Employee Engagement

In B2E, Business to Employees, we see that organizations are beginning to offer services to their employees in the digital world. Electronic meal vouchers are just one example. But with the advent of the 'new way of working', organizations need to digitize the working environment for their employees. Homeworking can be stimulated by means of offering employees a home Internet connection as an extra perk. In the same vein, offering employees tablets and smartphones combined with mobile Internet packages instead of a traditional laptop, can stimulate remote working. Tools for remote collaboration, file sharing and e-mail come integrated with the concept.

B2M Visibility & control

In B2M, Business to Machine, organizations start automating a whole new gamut of functionalities that used to be separate, such as track-and-trace of vehicles, remote management of HVAC and lighting, video surveillance with automatic number plate recognition, etc. This is the concept of the Internet of Things, where 'things' become intelligent. Road infrastructure, cars, houses, washing machines, light switches, sensors, metering devices, and so forth: you name it, and it can be made intelligent. Want some examples? Compare a modern smartphone to the one invented by Bell, or your smart TV with the one created by Philo Farnsworth. These intelligent devices allow the creation of new services: e-health, e-transport, smart metering, asset management, track and trace, pay-as-you-drive insurances, in-car infotainment, digital signage geared to the people passing by, etc.

4 drivers for change

In fact, the whole economy is starting to be driven by the digital world. In this decade, there are four main drivers of profound change: social media, big data, mobile and cloud. These drivers also increase the pace of these changes. Electronics operate at subsecond speed.

Social media allow people to express themselves electronically. They allow individuals to describe their feelings, opinions, events with text, figures, pictures, movies and audio. Suddenly, because this information is now available in digital form, it can be tracked, analyzed, summarized, trended, influenced and monitored. Actually, when you look at how IT has developed over the long term, we have automated core business processes in the 1970's, the office worker in the 1980's-1990's, the exchange of information with the advent of the Internet in 2000 and now the expression of individuals' lives. This offers new possibilities such as e-marketing, e-advertising and the individualization of products and services.

Big data is just a consequence of the social media. Whereas computer data used to be fairly structured (e.g. a phone bill), we are now confronted with a set of unstructured data: YouTube videos, Picasa pictures, Facebook timelines, etc. With the Internet of Things, where 'things' start expressing themselves, we get a set of data that is sent without being triggered. Big data presents organizations with a large variety of data, changing at high (and often uncontrolled) speed and available in huge volumes.

Mobile is the availability of wireless broadband capacities everywhere. Combined with intelligent devices and smartphones and tablets, it makes digital life available everywhere: at the office, on the road, at home and anywhere in the field. It enables the generation and consumption of digital information anywhere and at any time. To illustrate this, let us point to a big contrast. If we turn back the clock 20 years, digital life was limited to (mainframe or mini) computer terminals and big desktop personal computers. These devices could not be moved since they needed cables to connect to the power supply and the network.

Cloud is the latest big change in digital life. Digital services are now being enabled through software. These days, software can run on any computer anywhere in the world (since everything is connected). You do not need to have the software on your own computer anymore. This facilitates the development of new services. You can now easily 'rent' software that will allow you to deliver a service by making ready-to-use features available combined with your specialties. It will also significantly reduce your time to market, since you don't have to reinvent the wheel.

"The slightest event in the digital world can take on worldwide proportions in just a few minutes."

Changing business needs

As described here, all activities engaged in by organizations are digital, becoming digital or partly influenced by the digital world. Take away the computers and everybody stops working. This means that the needs of running a business have changed profoundly. Let's go through the different elements.

Digital life at high speed

Digital life means everything is happening online at high speed. Events are triggered via, say, social media or through computers (e.g. machines), are propagated through connectivity that is available everywhere and are captured by other computers (servers). Organizations need to capture the events when they happen. At the same time organizations create events themselves.

But does your server have enough capacity to handle the peak? Do you need more server resources? Do you have the storage to cope with big data? Our long-term view is that we are heading towards 'liquid IT', supported by 'IT-as-a-service' type of services. By 'liquid IT' we mean that a certain function (your e-shop to take a concrete example) can be run wherever needed and can be moved around instantly in accordance with fast-changing parameters (load, traffic, storage, etc.). Whether your e-shop runs in your data center or in the cloud is no longer relevant, as long as the customer experience, the capturing of opportunities to sell and upsell, the tracking of customer sentiment and the monitoring of the machines can be maintained at a high standard.

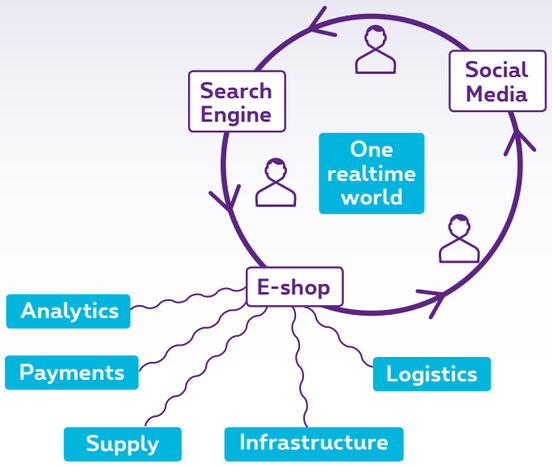
This is where Big Data comes in

To take your business to the next level, you will need to capture a lot of information and analyze it. For example, tracking customer sentiment can be done via Facebook, picture and video repositories like Picasa and YouTube, and of course by tracking your customers' activities while visiting your website. Collecting all this information will create a huge repository of data of various formats with various volumes and which changes at various speeds. The next step is to analyze all this data and then use the results to improve your business processes.

Data will come from different sources. The starting point is always the data you own yourself. Customer addresses, invoices, orders, inventory levels etc. These are fairly obvious. This information is then complemented with data coming from the social networks, mobile devices, sensors, machines, other data suppliers, etc. Most of the big data will come from outside your own scope of management, and most of it will be stored somewhere 'in the cloud'. The best place to analyze this big data is where it is stored. So the analysis may very well be conducted in the cloud (move the software to where the data is, instead of moving the data to where the software is).

Example: e-commerce

Consumers browse the e-shop and make a purchase, which triggers a payment via an online payment system, a transaction in the warehouse (or possibly directly with the supplier) and eventually a shipment from the warehouse to the consumer. Today, systems produce statistics at the end of the day on the number of items sold and possibly on browsing and/or shopping behavior. Additional systems will track the shopping behavior in real time. Suppose that an external event on social media creates a rumor about a product going viral, triggering increased interest in the product which leads to a surge in sales of that specific item. Back-end processes will handle the sales, payment and logistics. Where does this peak come from? Can you influence the viral behavior on the social media and attract even more customers (e.g. through e-advertisements)? Can you upsell (by offering complementary products)?



Changing IT needs

When we look at how IT departments are run now and in the future, we can see only big changes ahead. According to Gartner, organizations will need a Chief Data Officer, somebody in charge of a company's digital assets. Every organization has built up a tremendous amount of valuable information about their customers. This data, combined with data from other organizations, preferably in real time, allow the delivery of services that are even more valuable to users.

IT therefore needs to enable an 'always on' approach of the digital services. It is not enough to simply ensure that all servers are working; they also need to be accessible, offer fast response times and be protected from any external attacks that could jeopardize the privacy and confidentiality of the data. Scalability in the long run and the short run (to absorb momentary peaks) must be guaranteed. Since resources can run in the cloud, IT needs to offer users the possibility of configuring from a distance whatever resources they want to consume so that they can decide dynamically on the cost of running the business.

How the cloud can help

Using resources in the cloud can help IT in deploying means to support the business. The provider of the service has a number of physical and virtual servers already in operation which can be shared among several customers, or which can be reserved for one party only. This is also referred to as 'elasticity', since machine capacity can be reserved in various configurations, depending on load, or pre-ordered volumes. The financial aspect of 'pay as you use' allows you to avoid over-investing and paying your consumption in OPEX (Operational Expenditure) instead of CAPEX (Capital Expenditure or investments).

Safety and security 24/7

It is up to the cloud service provider to ensure the safety and security of the operations. Cloud avoids you having to invest in your own data center that requires its own building, fire protection, air-conditioning and access security. Cloud also allows you to avoid the 24x7 staffing you need 'to keep the lights on'. Cloud service providers also ensure that their data center is as energy-efficient as possible, enabling you to reduce your organization's CO_2 footprint. It is also their responsibility to provide redundancy at a access, machine, building and location level. Cloud provider data centers can therefore be used as a back-up of your own data center.

Automatic back-ups

Depending on the services you opt for, you can benefit from automatic back-ups of your data. Several back-up variations can be delivered in terms of frequency, replication and how data can be restored. In case software is involved, you can enjoy systematic updates/upgrades to the latest software release, reducing your software lifecycle headaches to almost zero.

Accessible from anywhere
The cloud has another advantage: it is accessible from anywhere. So all your customers or users can access your services from wherever they might be in the world. And thanks to the business continuity guarantees, permanent access is ensured. The traffic generated by these scattered users is oriented to the cloud instead of your data center, freeing up your company lines from that traffic. DDoS attacks are typically intercepted in the cloud, avoiding that your entire organization freezes up.

Public versus private
A more complex aspect about cloud is the distinction between private and public. Public cloud means that there is 1 infrastructure shared by several customers. For example, 1 physical machine with several virtual servers. Private cloud means that the infrastructure is reserved for 1 customer. Public has a '1 to many' relationship, whereas private cloud has a '1 to 1' relationship. And to complicate things even more, there is 'hybrid' cloud. In this case you use cloud infrastructure in combination with your own infrastructure, typically in your own data center.

How to go to the cloud
Going to the cloud is not an 'all-at-once' process; it is a question of evolution rather than revolution. The less a given function is integrated, the easier it becomes to move it to the cloud. For example, it's easy to move a mail server or a firewall to the cloud, but much harder to move your inventory management platform, since it is linked to your ordering and accounting software platforms. There are simply too many 'hooks' between the different applications and taking an 'overnight' approach to moving to the cloud may lead to lots of unexpected results, causing many operational issues.

A good approach is to consider applications that no longer deliver the features you need today. In this case you can investigate the cloud solutions on the market and see how these solutions can be integrated with your existing platforms. And since you 'rent' the software, you can go for short-term contracts to experiment with a few test users. Many companies use cloud infrastructure to set up short-term test servers instead of buying physical machines to experiment on.

Customized applications
Using cloud applications may have a drawback in that you use 'standard' software instead of an application that has been tuned to your needs. Whereas lots of companies wanted to use applications made to fit their particular organization, you may now need to reorganize yourself in accordance with a standard software. Lots of companies have also customized their applications to differentiate themselves from the competition. After all, if you use the same application as 'them', what is your differentiating advantage?

Market analysts state repeatedly that innovation will come from the cloud. So you may want to continue using your applications as you are today, and use cloud solutions to provide additional functionality, thus creating this much sought-after differentiation.

Cloud may be a good starting point for backing up your data or extending your storage into safer data centers.

Moving to the cloud may be considered when:
- Your server reaches end of life or needs to be upgraded
- Reorganising or merging departments or datacenters
- Your specialist leaves and you want to invest in other skills
- Consolidating or virtualising your servers
- Rapid deployment of servers or applications
- Test configurations
- Extending resources
- Lack of staffing
- Business continuity
- Data back up
- Budget restrictions

Proximus' answer

As there is no single solution to meet all your needs, Proximus offers a broad set of services. Whether you want to go for hybrid, private or public, you can always mix and match the services to fit your specific requirements.

The most obvious services are 'infrastructure-based'. This is about placing your server, whether a physical or a virtual machine, in our data centers. Another approach may involve having your secondary disks stored in our data center, so that your data is backed up in another location.

Software in the cloud
Another strategy may be software-based. Which applications do you want to move to the cloud? You may want to move your e-mail server, sharepoint servers, collaboration applications or business applications. Maybe you just want a configuration to develop and test some software, without having to invest in additional machines. Web servers are regularly stored in our data centers to take advantage of immediate high-speed connectivity to the internet.

But your data remains your key asset. As mentioned earlier, you can have your secondary copy in our data center. You may require additional tools to actually perform the back-up from your servers and/or laptops. More advanced data management tools can be provided on top of the regular backup software.

Consumerization of IT
An important trend in cloud is driven by the consumerization of IT: laptops are being complemented or replaced by smartphones or tablets. This leads to data storage issues (on which device) and the need for multiple licenses for the same applications. To avoid this, many organizations use office applications in the cloud, combined with data storage. In such configurations, it does not matter what device is in the hands of the user, since everything is located in the cloud. These workplace management services can be complemented with automated data back-up strategies.

Why choose Proximus
Our primary goals in serving the cloud are continuity and security. In 2013, our data centers had a measured availability of 99.99% and we are continuously investing to improve on this result even further. At the same time we are constantly investing in the electronic and physical security of the infrastructure. Protecting your information and IT assets are of utmost importance to us, now and in the future.

If required, we can add several managed security services, with, for instance, firewall in the cloud, distributed DOS protection, anti-virus and many other advanced security approaches.

Data remains in Belgium
Our strategy is to make sure that our data centers are in Belgium, so that your data and applications remain in Belgium. Belgian and European laws apply, which is important with regard to privacy, data protection and commercial contracts. Of course, our technicians and help-desk staff are local as well, assuring you clear communication without any misunderstandings.

Permanent accessibility at high speed
On top of the availability of cloud infrastructure, we strive to ensure permanent accessibility of data and applications through our broadband connectivity. Your cloud assets are connected with the major Internet providers in Belgium through high-speed interconnects. Our 4G, copper, FON and fiber networks allow anybody in Belgium to enjoy the shortest path to your infrastructure. This ensures efficient and rapid access to your applications. Our Explore managed WAN portfolio provides you with optimal access from all your offices through well-defined SLAs.

If you are not sure about moving to the cloud, we can help you with consultancy. Our consultants can guide you through the decisions based on the enterprise architecture, network and IT designs you want, so that an optimal choice can be defined. Regardless of which partner you may choose in the next steps. In case you have some infrastructure on your premises we can perform an audit to ensure alignment with your organization's governance.
By the way, we also use our data centers ourselves to provide our customers with mobile, fixed, voice, data and TV services in real time.

> "In 2013, our data centers had a measured availability of 99.99% and we are continuously investing to improve on this result even further."

Conclusion

Whatever your vision with regard to where your business is heading and how to run your IT, Proximus is there to help you. Our green data centers offer 99.99% availability along with high-speed connectivity from your offices straight to the Internet and the cloud. Whether you are looking for infrastructure, storage, applications, workspace, data center or workplace solutions, whether in the public, hybrid or private cloud or on-site, Proximus offers you the full spectrum of solutions to meet your current and future needs.

Security, performance, availability … and … 'c'est du belge'.

More info

Contact your account manager or surf to
www.proximus.be/ict

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