

# ***Cloud Computing***

The impact for IT departments  
and the IT professional

by Maurice van der Woude



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# Cloud computing has an impact on all organizational layers

## ***Preface***

With the further development of the cloud computing market, organizations are becoming more convinced that cloud computing is not just a technology shift. Cloud computing has an impact on all organizational layers, starting with the IT departments and the IT professionals working within these departments.

Very often sounds are heard that cloud computing may cost jobs in the ICT sector. However, history has proved that this does not have to be the case, as long as the sector or

professional affected by it is willing to identify new opportunities for themselves. A true cloud professional is able to use technical skills, cloud- and business knowledge towards the new service, and delivery models that typically come with the usage and implementation of cloud computing within organizations.

This whitepaper identifies the impact for IT departments and the IT professionals within organizations that are moving towards cloud computing, how to act upon the accompanying new service- and delivery models, and how to relate IT to the business for these target groups.

# Organizational changes

During the years of existence, every organization changes. With the industrial changes in the nineteenth century, large production machines found their way into the factories and other labor oriented businesses. The machines replaced the work that, until then, was done by human labor. It was a dynamic time for production technology it also had a huge social impact on people working in factories, in agriculture, and other business areas. Through education, most of them found new ways on how to cope with these changes and how to find their new place and position within the newly formed production processes.

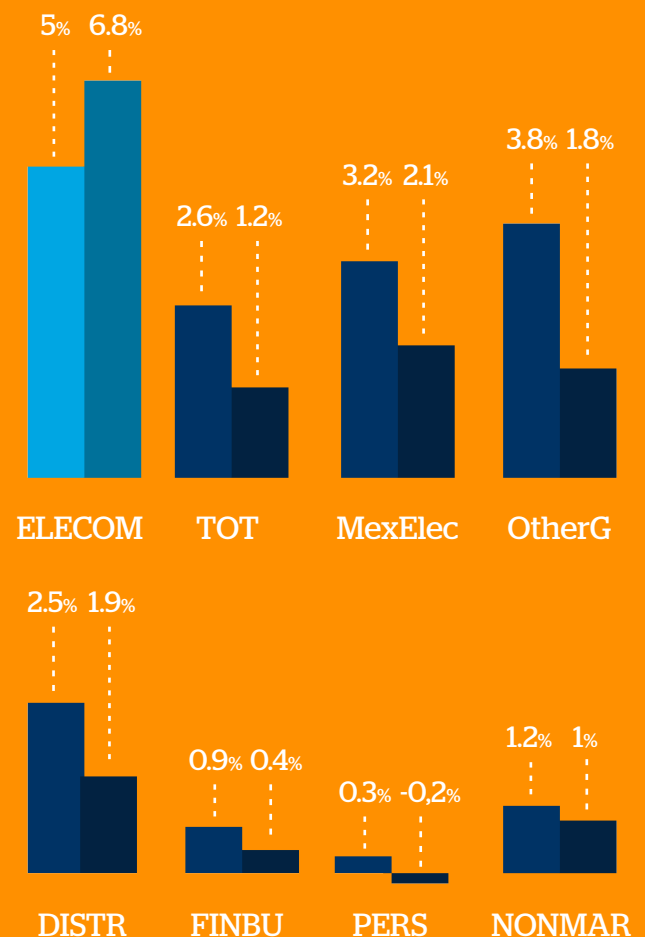
During the seventies and eighties, the IT revolution was considered a fact when personal computers were broadly used, and central server capacity was installed on premise where data distribution was organized through internal networks. In those days the social impact was huge, but this time this revolution created jobs, instead of diminishing them. This number of labor productivity growth in the Electronics market (ELECOM in the graph below) was the highest compared to other business areas in the European Union. This sector even continued to grow, where other sectors decreased in labor

productivity growth. People with a high interest in electrical technology followed education to work with the computers and maintain servers as well as the local infrastructure.

Nowadays, new technology arises: the world is globally connected and people do not have to be within the office anymore to log on to the organizations' computer environment. Portable devices are becoming smarter and faster and are connected with the global internet to acquire any information from almost any place in the world.

## *Labour Productivity Growth<sup>1</sup>*

1970 - 1995 vs 1995 - 2005 (in %)





It is also a time where the business managers decide how they can accommodate their end-users in the best way with applications they need to use to perform their duties. When cloud computing entered the IT arena, business users started to discover the possibilities of working in the cloud, leaving the IT departments and their technical professionals with a couple of challenges:

1. How do you cope with business requirements where users want to use specific environments and devices to do their work and how do you manage this movement and the data these users create?
2. With more applications offered through the cloud and less local installations or technical management is needed locally, what does this mean for the work of the local IT professional?
3. What is the added value for the IT professional when his or her technical expertise is sparsely sought by the business user?

The answer to the key questions above lie in the resilience of IT departments. The technical IT professional needs to know how he or she can change themselves into new professionals that know how to relate business matters to IT solutions and the connection between those

IT solutions. There will be a shift between the professionals that are capable of moving more towards the business and those who are more technically oriented with less interest in business matters. Current IT departments have a lot of technical skills, but are lacking skills to talk about the business with the business. Due to the reasons above, IT departments need to adjust the way they offer and handle IT to the business and its users. Furthermore, a lot of legacy ICT will still need local management, because not all applications can be transformed to a cloud solution. IT is not going away, it will expand into new areas, with more relation to the business itself.



IT tools and know-how must be embedded within every function

## ***Moving towards the business***

In May 2013, McKinsey wrote a report on the findings related to the above. In their report “Ten IT related business trends for the decade ahead” one of their conclusions was that “Cloud and big data analytics are creating both the capability and the imperative for employees with deep business knowledge to define and marshal their own IT capabilities. IT tools and know-how must now be embedded within every function,

business unit, and team. The inevitable result is acceleration in changes in business driven by IT”.

Also, in a whitepaper created by IBM<sup>2</sup> about the future of IT departments, the model they developed shows what McKinsey already stated in the survey. IT will not just be an entity by itself within an organization, it will be more integrated into the business. EXIN has created within the domain “Management of Business and IT” the qualifications that also look at IT from a business perspective. On other areas more alignment has been created between IT and business, where



the EXIN product portfolio is able to meet all the requirements that can be expected from an IT professional moving towards the business.

To identify the competences and skills the IT professional has, EXIN created the e-Competence Assessment program<sup>3</sup>. In this program the IT professional can identify the business needs related to IT and where his or her role may be within the areas of the business itself. EXIN has positioned its certification programs into 5 ICT domains which are derived from the e-Competence Framework (eCF).

A typical new role for IT departments may well be in the area of contract management. With the multiplicity of cloud solutions to support the business, the amount of contracts may grow. These contracts will need more management. This management may well come from the IT departments. More alignment will be needed between the controller of the organization and the IT department. The controller will need the figures showing the financial impact on the applications used, when a “pay-per-use” model is in place, where the IT department needs to manage the contracts, licenses, application usage, and user requirements. When looking at



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ICT costs, organizations are looking for ways to have more control over their IT spending. The combination of controlling- and ICT departments working together seems to become more logical. The IT department may even get to a point where they are able to become the intermediate between supply from external origin and demand from their own organization.

If IT professionals with high technical skills want to move towards the business, they have to identify the essential knowledge they lack. This positioning is made visible in the picture below. The e-CF is an internationally recognized framework of 40 ICT competences which are divided amongst the 5 ICT domains.

There are a lot of books available about cloud computing but there is still a lot of confusion about what cloud computing actually is. Mostly cloud is still considered technical, where a lot of information about virtualization is given. Virtualization, however, represents only a part of the Infrastructure as a Service (IaaS) aspects of cloud computing, but does not provide any further information about the necessity of Platforms as a Service (PaaS), and certainly does not elaborate about the possibilities and challenges that come with Software as a Service (SaaS).

Understanding what cloud computing actually is, is a necessity to understand the end users and business requirements.





A weak linkage to the business creates a void that limits the quality of the resulting IT architecture

## ***Business Needs***

Every business user within organizations has requirements to be able to do their work. Before the cloud computing era, IT departments decided what to deliver to the business user and how this user should work with the functionalities provided to them. Restricting that user is not the way to go these days. The business user expects that they are serviced with their needs and requirements and that

the IT department will cater to that. The user does not understand the technical implications that come with their question. It is up to the professional to facilitate the user but not at all costs. The IT professional needs to identify the work that needs to be done by the user and then find the best solution for that user to work with.

Preferably, the IT professional is capable of identifying this for a group of users. In this case, solutions are facilitated per group, leaving more control to the IT department to identify where data is being kept, how data can be retrieved, and how applications can work together with

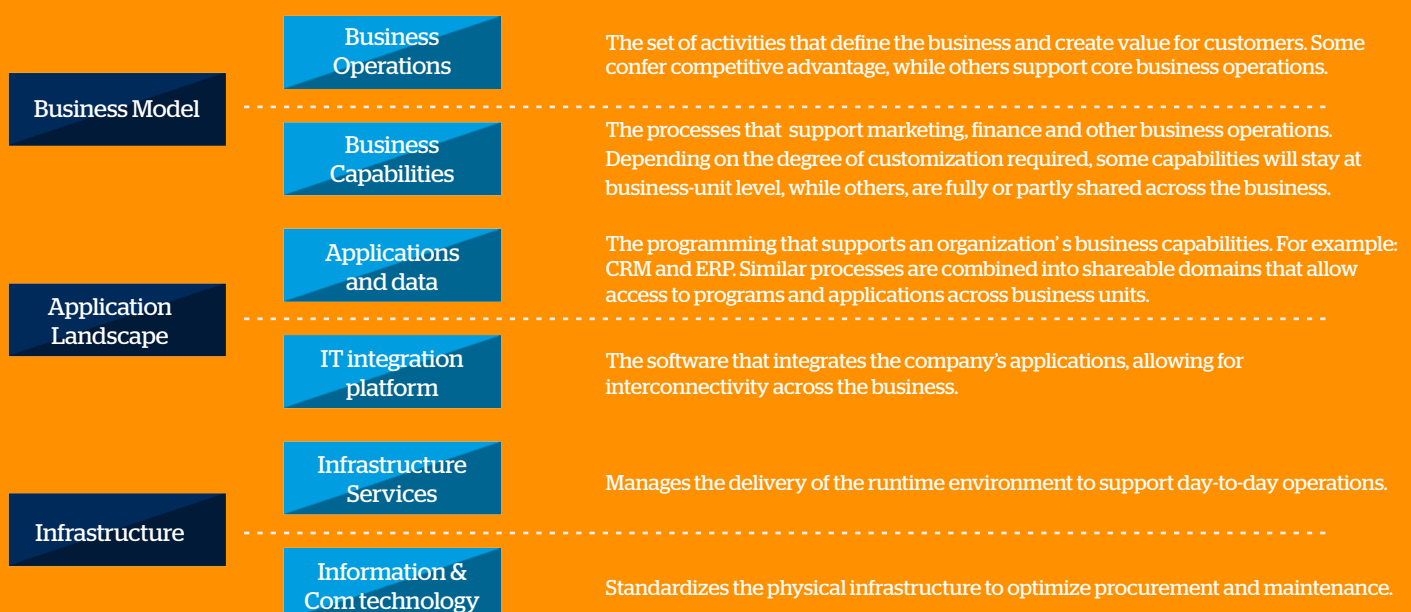
the same data making sure that data is only stored once and is secured. This kind of advice also prevents having multiple contracts and Service Level Agreements (SLA's) that needs management. For the more common tasks the IT professional should recommend the applications that suits the business needs, and identify other business applications needed that are able to work together with the office applications. This is necessary to prevent data to be stored more than once in different places on- and off premise. Of course the business users themselves can come up with specific cloud applications they'd like to use. It is then up to the IT department and IT professionals how they are able to facilitate this with the above in mind.

Though already some years ago, McKinsey mentions in their article "Why business needs should shape IT architecture"<sup>4</sup> a 6-layer

approach to underline how using a business-focused Enterprise Architecture Management model reduces complexity and aligns IT with strategic goals.

The IT that support business processes can become more of an issue when aging legacy systems are held against new applications to support the needs of the business. As application volumes grow in response to a fast-changing economic, regulatory, and business environment, the issue of complexity is becoming acute for many organizations. A weak linkage to the business creates a void that limits the quality of the resulting IT architecture. By using a business focused architecture, the IT department is capable to reduce the complexity and is able to align IT with the strategic goals of the organization.

## McKinsey's 6 layer model





# ***The Rise of Hybrid Clouds***

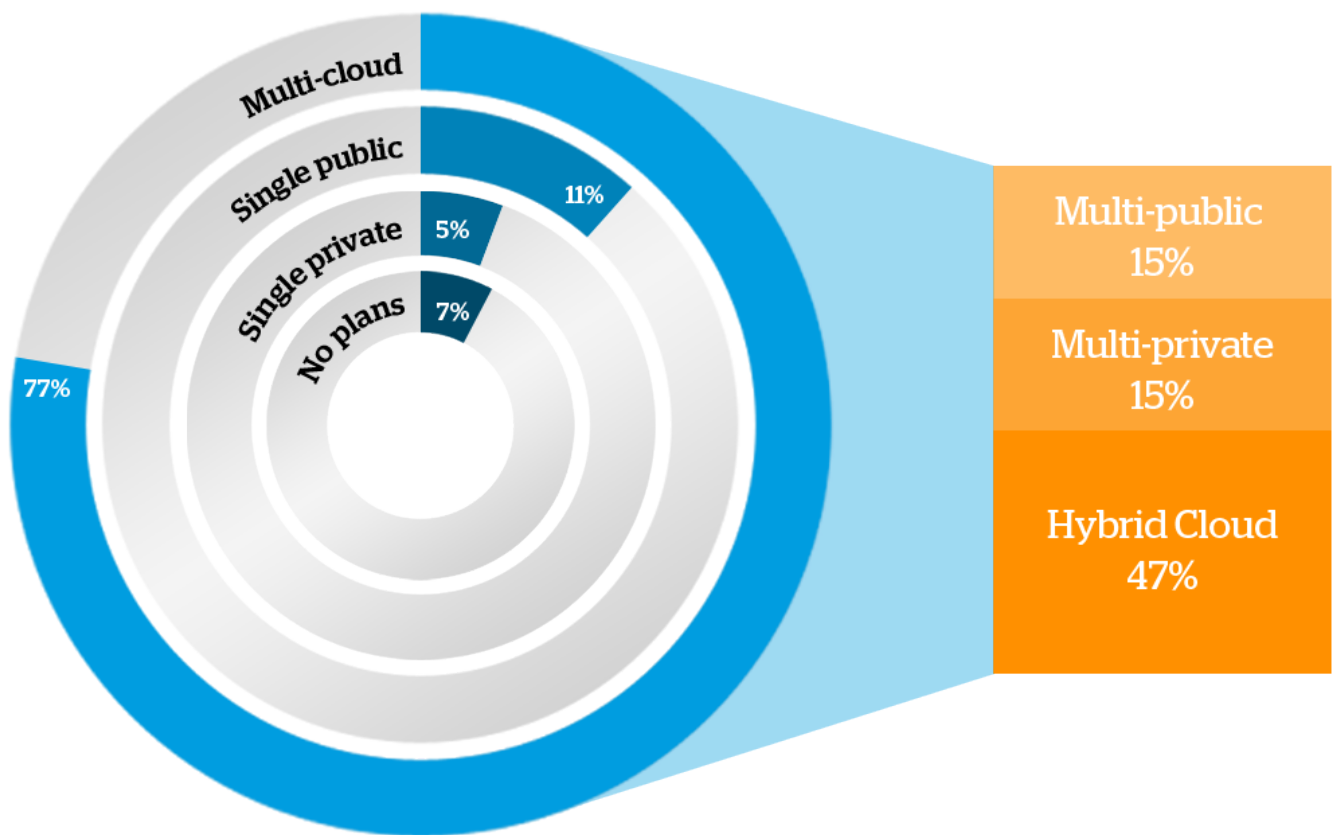
When cloud experts and organizations first discussed the cloud, they very soon discovered that cloud computing would not be a single choice between private, public, community and hybrid clouds. If the main goal in business was to make strategic choices, it would result in implementing a multiplicity of clouds, a so-called “Multi-cloud”, where every cloud is able to meet its purpose for matters of legal issues, privacy or other specific elements that would justify the choice of the cloud usage model.

Gartner identified hybrid clouds<sup>5</sup> in their technology trends report for 2014 as a strategic element to take into account when organizations are looking for ways to capitalize business Process Innovation<sup>6</sup>. In 2013, Rightscale already identified in their survey “State of the Cloud



# Enterprise Cloud Strategy

(1000+ employees)<sup>7</sup>



Report 2013” that Multi-clouds are the strategy choice for the enterprise where hybrid clouds will consume the larger part of Multi-clouds. In their survey, Rightscale presented the figure above to underline this statement.

how to control the multiplicity of clouds within one organization.

Since hybrid clouds seem to become the de facto standard, ways need to be identified how to control data on premise, when the application itself may be facilitated from somewhere else, or



In the classic world all management was done by the local IT department.

## ***Be aware of technical orientations***

Within the area of cloud computing the known service models are identified as Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS)<sup>8</sup>. How these service models are related and what part of the model you manage as an organization is explained in

the following graphic (see next page).

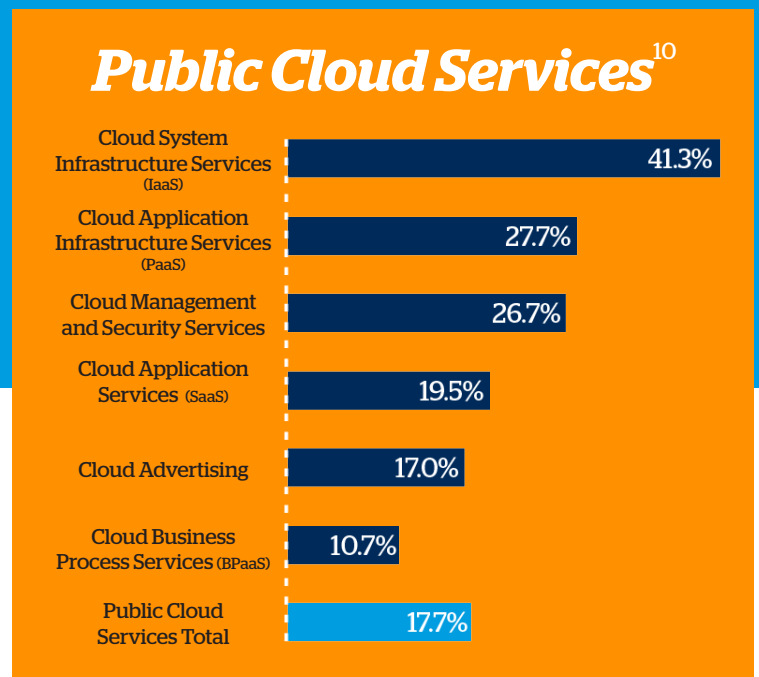
In the classic world, where all IT was run on premise, all management was done by the local IT department. When moving more towards cloud computing, a multiplicity of areas is managed by others. With the cloud computing service models, Platform as a Service looks at the most complex service model because the IT department handles the multiplicity of applications, including the data generated by the business users. Yet, PaaS is the service model that is about to grow rapidly over the next years. According to Gartner in their study in February

2013, Platform as a Service (PaaS) will achieve a 27.7% compound annual growth rate (CAGR) through 2016, with Cloud Management and Security Services attaining 26.7% in the same forecast period.

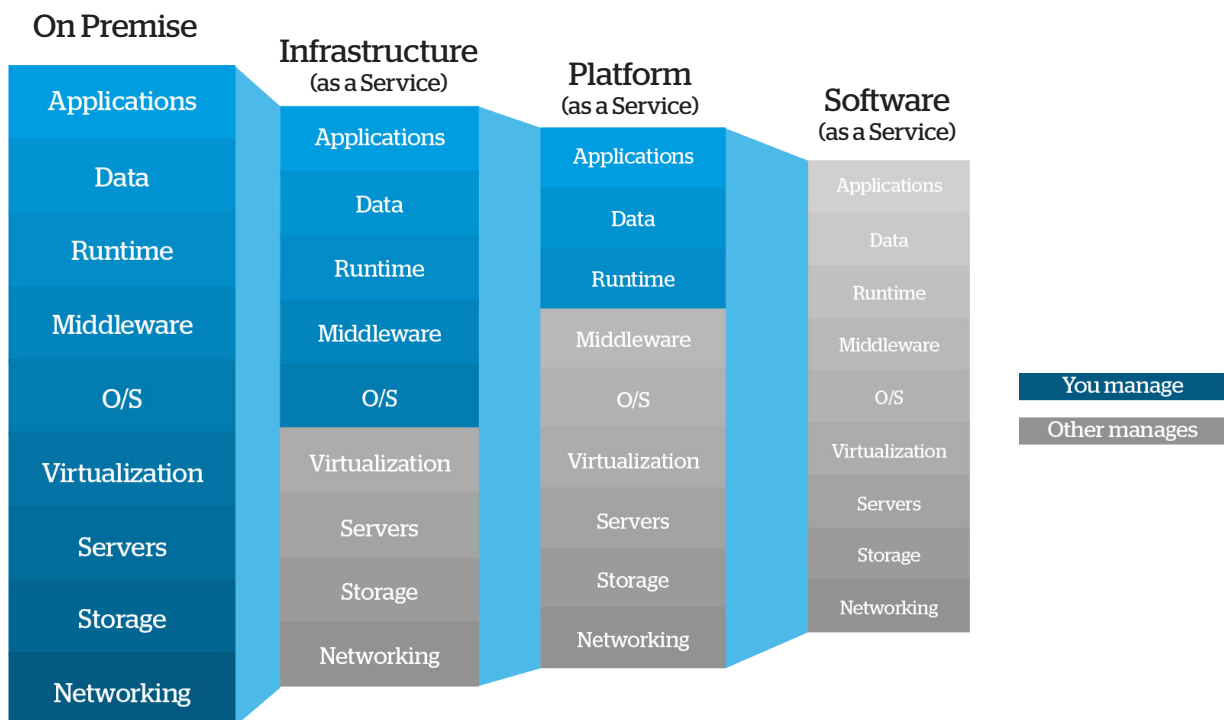
Gartner predicts that the potential spending in PaaS technologies is an average of \$360 million per year from 2011 through 2016. “The fundamental appeal of PaaS is the opportunity for ISVs (independent software vendors) and IT organizations to create new software solutions

with minimal capital expense and without the hassle of provisioning and configuring the underlying infrastructure,” said Yefim Natis, distinguished analyst at Gartner.

The following graphic illustrates the differences in CAGR in the forecast period of 2011 – 2016:




## Seperation of responsibilities<sup>9</sup>





When the infrastructure has been outsourced to a vendor and multiple applications are used across the organization, it will be necessary, and a challenge to exchange data or to ensure that applications are able to be connected with each other, that would be defined as interoperability. Preferably, organizations would like to use one single platform or, when this is not desirable or possible, make sure that data can be exchanged across the platforms in an automated way. This is the part where the technical IT professional will have a certain role. In a lot of documentation about Platforms as a Service (PaaS), platforms are mainly referred to as programming languages only.

We tend to look at platforms in a broader sense where the meaning of platform as a service can be a software programming language but can also be an application that has a lot of additional functionalities that can be created by or for business users. The basic application and initial functionalities may run on any server somewhere in the world while additional functionality, the blocks, can be created per organization depending on their needs.



The IT professional needs to identify ways how he or she can relate more to the business.

## ***Conclusions***

With every new IT development, new challenges arise for the IT department and certainly for the IT professionals working in it. Huge amounts of data generated by individual business users and the combination of different types of clouds, with legacy software and the storage of data from different sources, with different responsibilities, will be a major challenge for the coming years. Cloud computing is not only a very young market, it will also grow very fast in the next years. The faster it grows, the more

complex it will become to manage it all.

The business users will require a large diversity of solutions to help them to do their work more efficiently. The IT department needs to cope with these developments ensuring that the business will be served in a fast and secure way. In order to meet these new requirements, the IT professional needs to identify ways how he or she can relate more to the business. The role of the IT department will probably migrate to an intermediary who understands the business and the requirements of the business users. With an IT department that is currently more

technically oriented, the IT professionals will need to update their knowledge to get a clear and deeper understanding of the new roles for them. They also need to learn how they can put this newly acquired knowledge to good use to support the business and users of services.

The IT professional needs to identify where his or her strength and interest goes to and should act accordingly to update his or her knowledge towards the area(s) of interest.



Maurice van der Woude (CEO BPdelivery) has been involved in major changes in national and international organizations to make them move to more efficient and (cost)effective organisations. Nowadays the focus is on Cloud computing and turning businesses successfully to this new delivery model from suppliers and end-user perspective. Next to the above he is also very engaged with the European Commission activities regarding the “Digital Agenda”.

BPdelivery helps organizations with their cloud computing strategy and how to implement this new way of working within the organization.

For more information visit [www.bpdelivery.com](http://www.bpdelivery.com).



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