

Openforum Academy

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ROUND  
TABLE  
REPORT

OPEN PLATFORMS:  
THE FUTURE OF CLOUD  
COMPUTING?

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12th of November 2015, Brussels

Report

## **ROUND TABLE: Open Platforms: the future of Cloud Computing?**

Brussels, 12th of November 2015

Hotel Silken Berlaymont, Boulevard Charlemagne 11, B-1000 Brussels, Belgium

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## **SPEAKERS**

Adrian Keward | Red Hat (Chief Technologist, UK Public Sector)

Frank Karlitschek | OwnCloud (Project Founder)

Francis Werquin | IBM (Cloud Unit Leader)

*Complete recordings of the various speakers' introductory speeches are available online, on OpenForum Europe's [Youtube channel](#).*

**MODERATOR** | Graham Taylor, Chief Executive, OpenForum Europe

**RAPPORTEUR** | Diana Cocoru, Senior Policy Analyst, OpenForum Europe

*Other details of the event, and the speakers' presentations, are available [here](#).*

## **CREDITS**

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## EXECUTIVE SUMMARY

The current report first sets the scene with a review of key concepts related to cloud computing and open platforms. It then looks at the advantages of using open standards and open source software. Before giving some insight about the future of cloud computing and what it is needed in order to evolve towards it, there is a section dealing with the obstacles for taking advantage of the benefits of open standards and open source.

There is a general consensus that concepts such as “open cloud”, “hybrid cloud” or “OpenStack” are very difficult to define, since every vendor tends to use a different meaning when referring to these concepts. However, there was agreement that customers want to be given the possibility to run the services that they want, when and how they want, as well as the ability to move those services to a different provider, without being beholden to or restricted by a license.

As the world gets more networked, cloud becomes much more complicated, sophisticated and flexible. This comes with an increased demand for more interoperability, but at the same time it is apparent that the largest vendors are not interested in open standards which could ensure it. New startups demonstrate a lack of awareness or lack of concern about enabling interoperability, because some of them are focused on ensuring fastest benefits, without looking at ensuring future-proof solutions. While acknowledging that security and trust remain an issue, the discussion reflected upon the fact that the value of cloud has moved from the infrastructure to what can be done with data, once it can be communicated between different stakeholders in real time. It was also underlined that public administrations have a role to play here.

To enable this open future, what is expected from the European Commission is to prevent favouritism. When it comes to regulation, it was noted that there are various ways of supporting development, of which regulation is an extreme one. Research grants and research projects could be better suited at this time.

## SOME DEFINITIONS TO START WITH

Mr **Adrian Keward** opened the floor speaking about Red Hat's cloud vision. He started by pointing to the fact that a few years ago, there were 475 different definitions of the word "cloud". This means that, in the end, "**cloud**" is effectively whatever one wants it to be. It has the ability actually to compute, to use storage, it is whatever one is trying to use.

While acknowledging that defining "cloud" and related concepts is difficult, with so many different aspects to it, several other concepts were clarified throughout the discussions. The "**hybrid cloud**" was presented as having components running inside a local data center while also using facilities in a public cloud, together forming a virtual private cloud. The reason for not being a fan of the term "hybrid computing" is that it is even less defined than cloud. Different vendors present different products using the same terminology.

Next, "**OpenStack**" was defined as effectively being a data center in a box. It contains many different projects, bundled together. Every large vendor of technology looks at open stack as an opportunity, and most have services or solutions that sit inside it. OpenStack is an opportunity for government to offer services to citizens, while avoiding lock-in, as many providers offer services based on the same open stack components.

Least popular was the term "open cloud", which probably has more definitions than the term "cloud". However, the main characteristics of an "open cloud" are the possibility to run the services the customer wants, when and how s/he wants, as well as the ability to move those services between cloud providers, without being beholden to any license. Nowadays, negotiations for contracts are no longer about technology, they are about exit strategy. Experience shows that when customers in the very first wave of cloud computing adoption (about 3-4 years ago) decided their vendor was no longer suitable and to move to a different one, the surprise was that there was lock-in in terms of the licenses, and not of the software. The customer had to pay to access their data for export. This kind of situation leads to a new level of maturity, where customers take the commercial responsibility and request open access to their data, for when they choose to move the data. It is important to remember that data control is in all sorts of elements of governance, therefore customers need to make sure to have an exit strategy which is as easy to use as their entry strategy.

Other concepts related to cloud architecture are **open virtualisation format**, which effectively means that the customer has the ability to move that virtualisation technology from one place to another, and the **open container** initiative, which looks at some of the same work done for full virtualisation, but with containers. Containers give the ability to split applications up into smaller components, and run them at scale, as customers see fit. They offer a melding of operations and development that give control all the way through.

## THE ADVANTAGES OF OPEN SOURCE AND OPEN STANDARDS IN THE FRAMEWORK OF CLOUD COMPUTING

Open source allows to do lots of things that could not be done before. Millions of developers are working on open source projects, and this allows people to show innovation. To achieve innovation, successful open source projects need to be open both in approach (in terms of standards), and in terms of the licensing of the results of the project. Using open source components allow far more to be done in terms of sharing and making sure that services can be expanded. Cloud itself has been extended and pushed by plenty of things, such as internet, automation, big data and so on. These are all reasons why people have expanded into using cloud. However, they all need one thing, and that is **standards**. Customers need to be able to take a service up with one cloud provider, and then be able to move and run it somewhere else. This means they need to be able to **avoid lock-in**. The objective is to not to have a couple of suppliers controlling the market, but to enable the market to move with whatever the customers' needs are, be they technology or business. This can only be enabled if the customer is not locked into one vendor's view of the world. Cloud has to be self-service, broadly accessible, and control of the architecture needs to be enabled, so that customers can change their minds, as they move forward.

Commercially, one customer might make a decision based on the cost today, and the cost tomorrow, or resilience, or performance, or whatever criterion is used to make that decision. Regardless of the criteria, the customer needs to make sure s/he has that freedom. Customers need to make sure they do not get locked in with licenses or applications. They need to make sure that they hold, understand, and take account of everything as they move on. They need access to management, they need to be able to control their cloud components, and always to know what they are running, and where. The aim is to make sure the future is completely open for customers.

The objective is to enable to build a mesh network of different providers, different organisations, which can run cloud infrastructure, parts of the cloud, which should be able to talk to each other via open product codes and **open standards**. It is obvious that they would have to collaborate on this to make it possible.

One example of an open source project is ownCloud, that Mr **Frank Karlitschek** founded six years ago. The idea behind ownCloud is that it can offer something similar to Dropbox, Google Drive or One Drive, it is completely free and open source, and customers can run it in any way they want. Inside an organisation, or even at home, or at school, one can build up a service for one's own users, which can do the same as proprietary, centralized cloud services, but ownCloud is open and decentralized. OwnCloud has developed nowadays into a big open source project, with 850 contributors who write code for this project. Four years ago, Mr Karlitschek also founded a company around ownCloud. It is a Boston based enterprise, which offers ownCloud for larger firms. They have about 65 employees at the moment, and their customers come from all over the world.

**The challenge is to make it possible to change from one vendor to another, while also ensuring the adequate security.**

Mr Karlitschek then came back to the topic of open source and its advantages. OwnCloud's development is completely in the open, with every feature documented. Every piece of software, every patch, is made available and everything they do is community-based. His vision is that there are hundreds of thousands of projects out there, and the only way they will work together is to work as a community. With open source, he noted, trust can be gained by offering the possibility to see all the changes and the documentation. Suppliers can work around lock-in effects, and they can drive open standards forward. He considers that the cloud movement is, in a way, a threat and an opportunity at the same time. There is a **risk** to be heading into a very centralized IT future, but, on the other hand, there is also the opportunity that if the right open standards are defined and the right open platforms are put in place - that is, open source platforms that speak the same language, take the same specifications, use the same APIs, that are interchangeable and to/from which data can be migrated - then we can have a future where we can still drive the IT sector in Europe forward.

The **challenge** is to make it possible to change from one vendor to another, to make it easy to integrate it, to keep it portable, while also ensuring the adequate security for the right amount of data and still have the customer keep the visibility and control for the whole environment.

There was agreement that **much more value will come from combining the benefits** that each IT provider can offer, whether it is on the application level, the data source level, or the infrastructure level. If the aim is to tap into that value, there is a need of getting access to all of the programs, to all of the data on different platforms, from different providers. This means that certainly not the whole IT solution can come from one provider. If the objective is to get a maximum value, by default suppliers will be required to adhere to certain open standards. And it is not just about open stack (which is more on the infrastructure), but also about applications. Mr **Francis Werquin** concluded that quite a few standards would emerge, to make sure to avoid lock-in.

The discussion also pointed to the fact that setting a standard (and communicating about it) is equally important as the standard itself. Governance of the standard is as important as the availability of the standard, and this brought the debate on to *de facto* standards: it seems nowadays there are more *de facto* standards than official ones. The problem with using *de facto* standards is that the 'owner' of the *de-facto* standard can at any time change things to favour its own products over the competition. Therefore, it is better if the *de facto* standard is adopted by a standards-setting organisation with an open model, because it is when single companies are left to define standards that problems begin.

## **WHAT ARE THE OBSTACLES TO BENEFITING FROM THE ADVANTAGES OF OPEN STANDARDS AND CLOUD COMPUTING?**

There was a consensus that with IT outsourcing, customers are trusting someone else to run their IT in certain ways and at different levels. However, it is a fact that there are only platforms and solutions that dominate the market: Amazon, Google and Microsoft. There are only a few vendors and they are all big ones. The market leaders are mainly proprietary and centralised based vendors from North America. This raises concerns as to a lock-in effect and questions about the IT future of Europe. Mr Frank Karlitschek underlined the challenges faced by open standards in this

centralised context. Applying the Gartner cycle to cloud, it seems that cloud computing is so early in the cycle that none of the big players has any interest in open standards. According to him, they all want to make their data stores bigger. Recently, as part of a discussion in one of the big standardisation bodies of the internet, a proposal to create a standard for file synchronization was killed by Dropbox and some other cloud members from the US, because they obviously have no interest in interoperability, since they want to lock users in. Mr Karlitschek further underlined the difficulty to create standards in this area and the importance of making cloud computing decentralised and distributed, in order to avoid most files in the world being stored in the servers of maybe three or four companies.

As the world gets more networked, cloud becomes much more complicated, sophisticated and flexible, there is an increased demand for more interoperability, but at the same time it is apparent that **the largest vendors are not interested in open standards**, for obvious reasons. The question is how long can they maintain that position? In reply to this question, the focus was put on the fact that in the end, it has to be customer-demand that can change that mindset.

Talking about the concept of **data silos**, it was underlined that there will be a time when the IT sector providers and customers realise that interoperability becomes important, because there will be a need to have one interface to match all the data and to make it possible to migrate around. At this point in time, there will be demand for open standards, to export data and then import it somewhere else. History shows that IT companies have changed their business model when they started recognising that they are building a service on top of a core foundation. In this context, open standards become a necessity and thus the need for standardisation arises. Some astonishment was expressed in the audience that today there are still companies that feel they have sufficient strength in the market to stop standards from being developed. However, the truth remains that standards only have value if people respect them.

Another remark which came from the audience was that what is interesting about standards is that the big providers are willing to adopt them only if not adopting them impacts them directly. The raised question to ponder about was: would Europe push for open source, if IBM, or Google, or Apple, went open?

Besides the lack of willingness of big players to define open standards that help avoid lock-in, there is another issue which was brought to discussion: **lack of**

**awareness and lack of concern.** The reality is that some users and innovators who come up with new ideas do not care that much about open standards. They are probably developing something which is “quick and dirty”, and they do not care about portability, because in their conception, most of those things will fail anyway. In answer to this remark, the following idea was put forward: there is a two way IT evolution. First, there are all the existing big companies that have to face the challenges of their existing technology portfolio, given their legacy applications. For them it is a huge cost to move those into the cloud, knowing that it is much easier to take a new project or a new mobile app than taking something which already exists, with all its complexities, and move it to the cloud. Second, it seems that the biggest trend in the cloud movement is coming from new application development, new startup companies, who are growing very fast and have been using cloud since they first launched. Most of these new companies do not care about open standards, they choose a platform even though it is not portable, and they just go with it. They are not worried about what will happen in 10 years, they are just starting a business, so they are just looking for the easiest way to get the quickest value, with the most benefits. It is important to remember that openness needs to begin at the development stage, from where it can then extend into business.

Now the value of cloud has moved up, it is no longer on the infrastructure level. Nowadays, the requirement is to connect data from different sources and provide it immediately to the user. Today, the value of data resides in its “real-time” aspect.

The above ideas were widely supported during the discussions. On one side, vendors who are still trying to lock users into their solutions, and on the other side people who will provide solutions that handle the service rapidly without taking care of being open or standard.

Invariably the question of **security and trust** also surfaced during the discussions. While noting that many times trust is just perception, it was also underlined that keeping one’s data in one’s own house might actually increase the risk. Some say security can be improved by moving to the cloud and this is because one of the aspects of cloud is that there is a fully automated process behind cloud. This means that everything can be traced, as opposed to the situation of e.g. taking a USB key

to transfer data, when copies might not get traced. When copying data into cloud, the user needs to provide login details and there is much more visibility, control and traceability with this.

## WHAT DOES THE FUTURE HOLD FOR CLOUD COMPUTING?

Initially, cloud was all about cost efficiency. People were thinking about moving to the cloud because it was cheaper. However, **now the value of cloud has moved up**. It is no longer on the infrastructure level, but on the platform level, on the application level, on finding the sourcing of data and seeing what can be done with different sources of data. Also, looking at the value of data, there is little interest about data which was created last year or even last month. Nowadays, the requirement is to connect data from different sources and provide it immediately to the user. Today, the value of data resides in its “real-time” aspect.

**Public administrations have their role to play. It is expected that public administrations will experience demands from citizens, as well as vendors, that they work with more openness.**

Having acknowledged this, it was also noted that certainly not everything will be moving to the cloud. There may be very good reasons to keep certain data locally, in a private data center. Technology-wise, there may still be reasons (e.g., performance) to keep data and applications local. There are also political reasons why people want to have their own data center. The challenge is to use good reasons to decide which applications should be global and which data should be where. There should be a blueprint to decide what data should go in the cloud, and what data (if any) should be regulated. It was agreed that not all data should be in the cloud. The actual growth will come from the hybrid industrialization of cloud, or just hybrid IT, where one can run on a local data center the data which the customer needs completely to control, and in the cloud the data which requires more computing power and for which the need to control is lower. It is however important to have the same tool set to manage that, in order to not create “islands” that compute.

Then the control and management come down to the tools that are used, which allow the customer to know where the data is located, how it works and which also allow the freedom by not having any governance or licensing issues.

The truth is that if suppliers want to create value right here in Europe, it will mostly have to do with how the data is used, what can be done with it, and how value can be created for civilians. In this matter, **public administrations have their role to play**. It is expected that public administrations will experience demands from citizens, as well as vendors, that they work with more openness. However, government departments do not want to be pushed into a particular sort of device or a certain programming language, what matters is to provide the required service. For this, standards are needed.

The question related to the above was: which are the winning arguments for public administrations to start adopting open standards and open source? The response boiled down to the economic argument. Taking the UK example, which is perhaps the most advanced EU Member State in terms of the adoption of open source and open standards, it looks like most of the documents that are used internally is still written using programs like Microsoft Word and Excel. The only moment seriously to look at making changes is the moment of license renewal. In that context, instead of underlining the technological advantages of using open standards and open source, the focus is put on the ability to integrate the same solution in various systems, and this ensures that savings can be made and there will be no lock-in in the future.

Mr Keward pointed out that the **future** is the application, which has been and always be king. The application should be able to say, "I need this amount of data, I need this access to these components, I need these parts of a network, I need these virtual public networks". Once identified, it then "talks" to other pieces of software to get those components. It then "talks" to the computer, it says how many pieces of the computer it needs, what size, how long it needs it for and so on. As we move forward towards this open future, it then says to the firewall, "I need these ports open, I need this access in the outside world". The app becomes aware, , it becomes 'intelligent'. Therefore, the application basically makes sense of what cloud will be. It will make a decision about where it runs, how it runs, what it is going to do, the associated cost of, the resources needed, and the location, to make those services and solutions available. The application itself will make those decisions. The needed amount of time to get to that point only depends on how apps are managed. The truth is that the application is going to drive standards, and open source can help.

To enable this future, what is expected from the European Commission is to ensure interoperability and to prevent favouritism, by giving equal chances both to SMEs and large firms, because only this will ensure choice. When it comes to regulation, it was noted that there are various ways of supporting development, and regulation is an extreme one. Research grants and research projects could be better suited at this time. There are also examples of top companies involved in common projects, and this is the perfect reflection of how nowadays, when working in a cloud site, it is essential to work with one's competitors, as much as with peers.

The conclusion of the debate was that infrastructure is becoming a commodity and now the need is to add value so that young people get interested, to see what they can do with data, and what they can do with applications. The audience was very much in favour of having as much data as possible open to the community to be harvested.

### **Legal Information**

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