

5 IT TRENDS



In order to anticipate and take your digital infrastructure to the next level, our experts provide you with insight on which major trends, new uses and technologies to keep an eye in the months ahead.



GLOBAL INSIGHT

Cloud, cloud, and cloud again

Digital “transformation”, “transition”, “revolution”, you certainly are already familiar with these expressions as these phenomena are not new. But to the extent to which they will spread is going to be unprecedented*. What we have experienced until now is only the first phase of greater disruptions that will become widespread and have an impact on society as a whole, on all companies regardless of industry.

The cloud will now receive more attention than ever, as the model of technology “as a Service” is a key component of this transformation. When coupled with innovative business models, disruptive technological tools lead to optimization, development, and transformation of the value chain of companies.

Digital transformation makes it possible to implement more efficient processes, launch new products and services, and improve the customer, citizen, and employee experience. As for startups and small businesses, it allows them to find innovative ways to deploy new products and solutions in global markets in a very short period of time. Whether they concern development environments, business software, remote compute or storage services, outsourced cloud services have become essential when putting an idea to the test, developing projects and speeding up expansion, without immobilizing significant amounts of capital and human resources for hardware configuration and maintenance. Discover our predictions for 2017. For ease of reading, a cloud lexicon is available at the end.

Sources

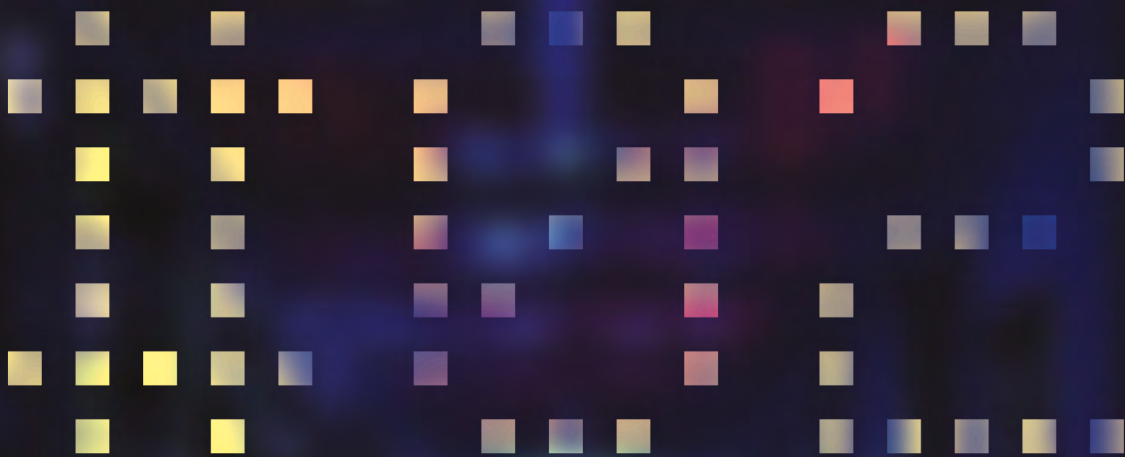
* Research firm Gartner “The Scale of Digital Disruption is increasing. They used to come out of nowhere. Now they cover large areas over time”. For its part, IDC predicts that “By 2019, 75% of CIOs will recognize the limitations of traditional IT and embrace a leadership approach that embodies a virtuous cycle of innovation.”



Using the hybrid cloud to facilitate migration

For small and medium size businesses who haven't adopted it yet, the transition to an outsourced cloud (very often called "public cloud") raises the question of the coexistence and integration with the existing information technology systems currently in place in the company (software, servers, backups... available in-house). In this context, the hybrid cloud seems to be the most appropriate solution. As far back as 2013, the research firm Gartner predicted that 50% of enterprises would use a hybrid cloud solution by 2017. Hybrid cloud is coming into widespread use, mainly because it is perfect to start migrating, to keep all critical operations running on premises while benefiting from the main key advantages of an external cloud: lower costs, control over financial resources, and time savings.

Moreover, the external cloud that we connect to an internal cloud may be made of fully shared resources (public cloud), or dedicated and guaranteed resources (private cloud). The second category provides the benefits of totally dedicated and isolated resources, and will enable the gradual implementation of all the most critical policies (consolidation, disaster recovery plans, gradual total outsourcing). By homogenously, interconnecting different types of technology across various sites while ensuring full security, hybrid clouds allow companies to extend the limited capabilities of their existing digital infrastructure—their servers already installed in a rack may be combined with outsourced cloud solutions. Companies can then define a strategy for their transition towards the cloud at their own pace—gradually moving all or part of their loads outside the company, in one or several data centers (public or private cloud strategy), with maximal reversibility and reduced risk taking. Most importantly, the hybrid cloud provides the ability to shape the information system architecture in a highly customized way to address the specific needs of every company since it enables the combination and interconnection, not only between the company's internal and external resources, but also between different types of solutions (public, private cloud, dedicated servers), among various geographic zones. The possibilities this offers are therefore virtually endless. This is the vision OVH has: a fully hybrid cloud that enables inter-technology, inter-site and inter-data center interconnections, in dedicated or shared environments, through network solutions (dedicated and direct physical connections as well as virtual connections as a Service solutions).



The Web is still transforming

As for solutions designed for deploying web applications and sites, they too continue to move towards models that are inspired by the cloud. We went from an era of web hosting (when customers needed to be able to transfer web pages and sites to storage areas available online), to a time when customers demand performance and security, and, in recent months, to an age of increasingly business-oriented solutions. We are heading towards a customizable web. Users need components to get technical services based on their business requirements.

In that respect, two key trends are emerging.

On one hand, the least technophile users will tend to seek ready-to-use applications requiring as little specific technical skills as possible. Application development in a few clicks, content or online store management solutions, for instance, have become increasingly popular over the past few years. Users want fast and simple business tools.

On the other hand, web professionals including developers, designers, and web agencies increasingly need scalability, high availability, and security. They also want more specific services for mobile web browsing. Mobile browsing is bringing about changes on the Web. For most of us, the smartphone has become our main means of access to the Internet. The CMS solutions will have to take this into account and provide responsive web design regardless of the device.

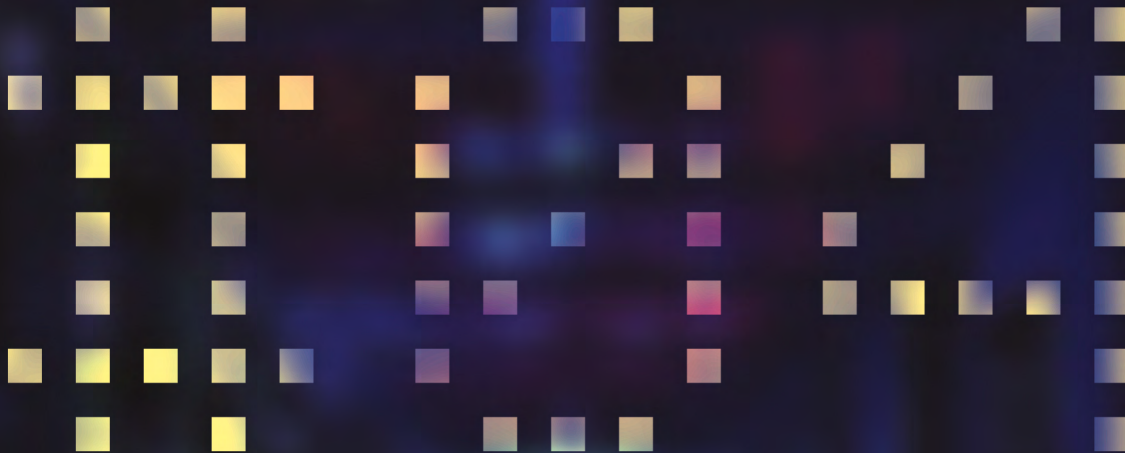


Towards the next generation of PaaS

Among the 3 types of cloud computing—SaaS (Software as a Service), PaaS (Platform as a Service), and IaaS (Infrastructure as a Service), the PaaS offers that are mainly aimed at developers were, until now, very hard to find, and widespread adoption had not really started on the market. Driven by the boom in applications, connected objects, and Software as a Service (SaaS), they should experience unprecedented growth this year.

The SaaS (software publishers, game publishers...) and connected hardware industries (the automobile sector, for instance), as well as thousands of startups rely on teams that include developers who seek to reduce the time to market for their products. To this end, developers need ready-to-use platforms that simplify the development of new solutions, and most importantly, spare them from managing (at least in the short term) the installation and maintenance of tedious services and systems (say goodbye to the database administration, Docker installation, or Linux administration). I code and I deploy.

The cloud may have been primarily launched with SaaS and IaaS offers, but it is now taking on a new dimension with the emergence of these development platforms that provide configured components (engines, APIs, run environments, data bases), packaged for a specific purpose, a specific trade. This second generation of PaaS will be business-oriented, with Fintech or eHealth-specific platform solutions, for instance. What about tomorrow? A third and even more advanced generation of PaaS should emerge, with platforms including Big Data as a Service or Artificial Intelligence as a Service, Weather Forecast as a Service, Financial trends as a Service...



Focus on mobile hosting

Among the second-generation PaaS, the “Mobile Backend as a Service” should especially benefit from the exponential growth in use of mobile and connected devices. PaaS providers will offer complete kits to professionals.

Consider the development of an application, for instance. To market an application in the shortest possible time and under relevant economic conditions, a developer will need SDK tools, containerization systems, compute instances, mobile databases, storage space, authentication and location systems, rich content solutions, a synchronization engine, data processing... all as a Service and available via an easy and documented API.

Thus, professionals will be able to create a complete back-end in just a few hours, whereas in the past, it took several weeks to prepare and configure before focusing on the core business.



The ever increasing efficiency of hardware

Acceleration also concerns hardware since all the new digital services and uses have a thing in common, their ever greater need for power and speed. We therefore expect to see machines with an ever increasing number of cores and more RAM, as well as technology that helps reduce the time required for the exchanges between components.

In this context, the standardization of data center-quality NVMe drives (versus the quality available for home PCs) makes sense, the connection via PCI express enables a 6-fold increase of the read/write data bandwidth compared with SATA-connected SSDs. This is the ideal response to meet the extreme performance requirements for critical databases, big data, etc.

The second key trend regarding hardware evolution is the search for increased flexibility, technology agility. FPGA has been around for some time, but its use should take on a new dimension this year. These programmable chips may be dedicated to a specific digital function (encryption, filtering, etc.), resulting in increased intelligence, efficiency, and performance.

Little Cloud lexicon

We invite you to have a look at the most frequently used terms and their most common meaning below.

INTERNAL CLOUD VS EXTERNAL CLOUD

As with all technological solutions, the cloud may be hosted in-house, on site of a company or organization (often called *on premises*). Or it can be outsourced to a third party, usually at a cloud services provider (*off premises*).

The key benefits of the external cloud:

- Cost reduction (CAPEX) and cost control (OPEX): no purchase of equipment (server or use license) but a monthly subscription and access.
- Time savings: no installation, nor equipment maintenance.

SERVICE MODELS

As per the recommendations issued by the National Institute of Standards and Technology (NIST) <http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf>

SaaS (Software as a Service)

The consumer uses the provider's applications and software running on a cloud infrastructure. These applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual applications capabilities, with the possible exception of user-specific application configuration settings.

PaaS (Platform as a Service)

The user is provided a cloud infrastructure, with a computing environment, designed for the deployment of consumer-created or acquired applications, created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud

infrastructure including network, servers, operating systems, storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

IaaS (Infrastructure as a Service)

The user is provided with servers, storage, network, and other fundamental computing resources where the user is able to deploy and run software, which can include operating systems and applications. The user does not manage or control the underlying hardware infrastructure, but has control over operating systems, storage and deployed applications; and possibly limited control of select networking components (e.g. host firewalls).

DEPLOYMENT MODELS

Private Cloud

The cloud infrastructure is provisioned for exclusive use by a single organization. It may be owned, managed, and operated by the organization or a third party. A private cloud may be handled internally by a company (*on premises*) or outsourced to a provider (*off premises*).

Public Cloud

The cloud infrastructure is provisioned for open use by users. It may be owned, managed, and operated by a business, academic, or government organization, or any combination of them. A public cloud exists on the premises of the cloud provider.

Hybrid Cloud

A composition of two or more distinct cloud infrastructures (private, public) that remain unique entities, but are bound together by standardized or proprietary technology that enables application portability.