



Think
about **IT**
differently

or how

Cloud Computing
can revitalise your company

Did you know?

1 000 billion devices (PC, tablets, smart-phones, soft-phones, etc) will soon be linked up to the Internet.

On average, for every **euro** spent on new IT resources (servers, middleware, storage, applications), **70c** is dedicated to maintenance of existing infrastructure.

33 % of the clients of a company who are informed of a computer security problem walk away because they no longer trust the company.

Each year **billions of euros of sales are lost** because of disrupted stock availability.

83 of the IT-managers expect major changes in infrastructure over the next **3 years.** *

*These figures are taken from surveys conducted by IBM.



It is time to look at IT from a different angle; to use IT differently.

Suppose it were to become a dynamic source of services and applications to:

- Optimise your budget by bringing down operating costs
- Provide innovative, high-quality services
- Reduce risks and improve the robustness of systems
- Respond more rapidly to users' requests under top safety and performance conditions

4 "Cloud Computing": a new model for access to IT resources

7 Cap to Cloud Computing

8 Put it into practice with IBM

11 Customers' testimonials

13 The IBM difference

14 The IBM Cloud Computing offer

“Cloud Computing”: a new model for access to IT resources

A new IT model, stimulated by Internet use, is being offered. Since the consumer buys products or services online, and gets what he ordered without worrying about what happens behind the scenes, you can have the “on-demand” IT resources users need. Without having to manage all the complexity of an infrastructure.

Resources suited to real needs

With Cloud Computing, IT resources are accessible automatically according to users’ actual needs at any given time.

Flexible and accessible via an internet or intranet interface, these resources are turned into services to suit the purposes of different areas of operations at your company: messaging and teamwork, customer relations, joined-up management, departmental applications, testing and product developments, operational continuity, etc. No matter where the data are located or to which server the user is connected, the power required will be available immediately.

Every precaution is taken to ensure the security of transactions and processes.

Cloud Computing is also a factor in innovation.

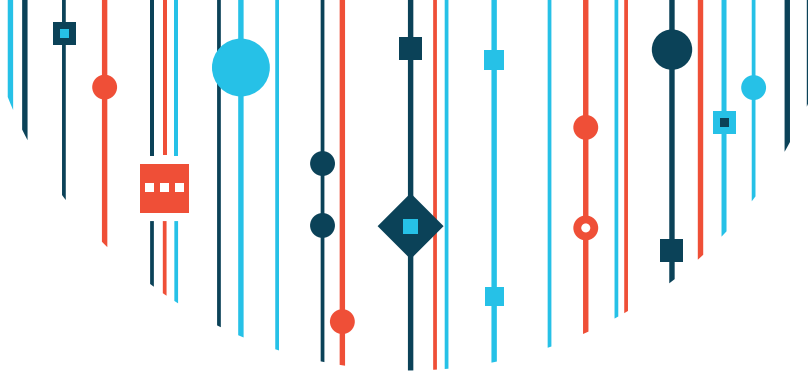
You know how difficult it is to scale IT infrastructure to back up a new project and to determine the return on investment. This problem is especially typical in the domain of storage. Our new model offers useful resources instantly, adjusted either upwards or downwards in order to offer the best possible service.

The benefits from the company’s point of view:

- The user accesses IT resources (servers, storage, software, applications, data) freely on demand.
- He decides at will what he needs and when he needs it. The resources will be there, ready for use!
- The company makes cost savings (no point buying new IT resources that are not normally needed) and achieves higher productivity (does away with unprofitable spending, availability of resources just when they are needed, better customer service).

Tangible benefits:

DOMAINS TO BE OPTIMISED	CONVENTIONAL ENVIRONMENT	← →	CLOUD COMPUTING ENVIRONMENT
	FROM		TO
Usage level of servers and storage	10-20 %		70-90 %
Service freely available	Non-existent		Unlimited
Provisioning time for IT resources	Weeks		Minutes
Change management	Months		Days/hours
Deployment	Weeks		Minutes
Invoicing	Fixed cost		Variable
Return on investment	Years		Months
Capital invested	Significant		Negligible



The concept

With Cloud Computing, a new generation of information technology has arrived.

More intelligent, today's information technology is totally in tune with the expectations of users who, in our real-time society, demand immediate, secure access to information and the essential tools that are vital to their business activity. Working in a mobile situation, the multiplicity of equipment connected to information and Internet systems, the proliferation of data sources, new uses of the web (web 2.0, social networks, chats, blogs, etc), the growth of online shopping, are all putting IT managers under tremendous pressure. Conventional data centres, often partitioned and diffuse, cannot cope with these challenges.

The answer lies in Cloud Computing's responsiveness:

IT power is provided in the form of an on-demand service through private or public social networks, known as "clouds". By improving the intelligence of systems, this approach, which is founded on "service management" makes it possible to cope with the data explosion, while also reducing IT costs greatly – flexibly and properly secured.



The IT resource is provided via the intranet, within the company's firewall. Only in-house users will access it, plus any authorised partners.



Service is provided over the Internet. Web surfers access IT services with no knowledge or expertise in, or understanding of, the technological infrastructure on which they rely. The underlying infrastructure is transparent



Both types of cloud are combined. The Company implements rules on use, depending on the requirements of security, processes and its IT architecture.

Cloud Computing is already optimising many application domains

According to IBM experience, the Cloud Computing model is now bringing high added-value to the following areas of activity:



CONSULTING



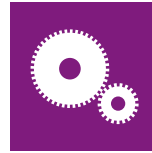
DATA



COLLABORATION



WORK STATIONS



DEVELOPMENT & TESTING



SERVERS



STORAGE



SECURITY



DEPARTMENTAL SERVICES

Global Questionnaire IBM Chief Information Officer 2009

A third of IT managers surveyed saw Cloud Computing as a solution of the future and intends to adopt it for three main reasons:

1



Reducing costs

You pay only for what you use. Savings on hardware and software licences are substantial. Operating and maintenance costs are lower.

2



Speed in supplying applications services

Users enjoy the latest technology and functionality. Enhancements and updates are simplified. Provisioning with new resources is swift, making it easy to adapt to meet the need.

3



Availability of infrastructure

Resources and IT services are always available. Their security is considered as being better safeguarded within the firm itself (notion of "private cloud").

Cap to Cloud Computing

The implementation process of the Cloud Computing model fits into the company's overall IT strategy. Irrespective of the deployment model you choose (private, public or hybrid cloud), it will go through the following three stages:

1.

Consolidation

- Less complex infrastructure
- Better control, fewer hardware resources
- Reduced operating expenses

2.


Virtualisation

- Elimination of fixed boundaries between IT resources
- Increased usage level of hardware components
- Reduced infrastructure costs
- Simplified deployment

3.

Standardisatie en automatisering

- Standardised services
- Shorter deployment cycles
- Greater adaptability
- Flexibility in providing services to users



Cloud Computing is good
for the environment

Like many IT managers, you'll be looking to reduce your energy bills. Because it focuses on controlling resources, Cloud Computing encourages good practice: virtualisation and sharing of infrastructure favour a global and ecological approach to the management of computer centres. Economies of scale, best usage of calculation and storage capacity, and consolidation of servers, help promote more intelligent IT which - what's more - enables companies to reduce their carbon footprint.

Put it into practice with IBM

In order to make the most of this infrastructure-management method, its implementation requires an all-embracing strategic vision, combined with a pragmatic, progressive approach. Successful and effective deployment calls for a dynamic infrastructure, optimised by including functions for the automated provisioning of resources, freely-available service and charging by use.

Deployment in 6 stages

IBM has already implemented many private, public and hybrid computer clouds, for customers and for their own needs.

Their expertise is made available to you in order to reduce your infrastructure costs, improve your operations to meet user demand and enhance the quality of the service you provide for them.

1. Work out a strategy and a road-map

The first stage entails setting your priorities and goals according to the degree of transformation of your IT infrastructure. For example: consolidation of data centres and servers, virtualisation, service management, dynamic provisioning

2. Select the domains that are to function in Cloud Computing mode

Some areas of activity are better suited to Cloud Computing than others. That is why it is essential to organise them properly. The choice will depend on various factors: the requirements in terms of hardware and software platform, complexity and criticality of departmental and security applications, also the sensitivity of data...

3. Choice of cloud-model

Once the relevant domains have been identified, it is time to choose the most appropriate cloud model. Public clouds are suitable for domains that display few risks and a potentially high return on investment on infrastructure, collaborative applications and support services.

Private clouds will be favoured for data warehousing, continuity of operations and special departmental applications. Test and product-development environments will function together perfectly.

4. Estimate the return on investment

This involves determining the savings made possible by implementing the Cloud Computing model, and achieving them.

5. Designing the Cloud Computing architecture

The final stage prior to implementation entails deciding the architecture upon which your cloud model will be based. It needs to give answers to three questions:

- Which services do you wish to supply or buy?
- How will you be managing and distributing them?
- How will users access those services?

6. Implementation of the strategy, road-map and Cloud Computing services

After preparing the infrastructure for this new model by virtualising and automating existing systems and adding capacity for service-management, select a pilot project. This will allow both you and your users to familiarise themselves with the concept, and then deploy it progressively at the company.

In brief

IBM will guide you through each step and adjust the approach to suit the maturity level of your IT infrastructure in relation to the Cloud Computing model.

If your infrastructure is not ready:

Prepare the existing infrastructure

- Virtualise and automate existing systems
- Add service-management and decide on a catalogue of services
- Standardise and automate services

If you are ready for start up:

Decide on a Cloud Computing strategy and road-map

- Settle on a strategic plan
- Assess the opportunities, types of cloud and the applications involved
- Select a pilot project

If you already know which application domain to transform:

Implement the Cloud Computing solution

- Choose a low-risk application type
- Choose the model of cloud depending on the importance of the data
- Measure the return on investment for expanding the model to other application domains



With Cloud Computing, you will achieve your goals as an IT manager.

You focus on added-value of information technologies.

Which means:

- Applications and product-development and test environments are made available more quickly.
- You can offer new services at no extra cost.
- Facilitates communication anywhere, any time.
- Greatly improves the standard of service, makes better use of facilities.
- Reduces operating costs.
- Makes high availability a feature of the infrastructure.
- Maximises return on investment.
- You enjoy a more adaptable, flexible, robust and secure infrastructure.
- Reduces the energy impact of the infrastructure.



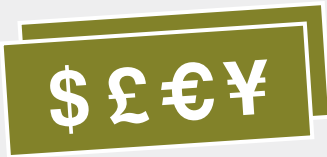
And provide practical answers to departmental managers.

A few operational examples:

- Provide real-time information on road traffic conditions so that everyone can minimise travelling times. Time is money...
- Ensuring traceability of meat products from abattoir to consumer, in order to anticipate any potential problem rapidly.
- Make medical information available immediately in order to provide best care to patients.
- Optimise the management of drinking water.
- Improve logistics in order to reduce or even eliminate stock shortages.

Customers' testimonials

Here are a few selected examples of strategic projects put into practice with the help of IBM. A bank, an education group and an international company illustrate the relevance of the Cloud Computing model.



Nedbank

Solution implemented

IBM CloudBurst for Test and Development

The company: Nedbank is one of the largest banks in South Africa.

The challenge: The bank wished to offer new services to its users more rapidly, backed up by automated processes.

However, the IT infrastructure failed adequately to meet the needs of product-developers and delivery times became excessive.

The solution: IBM deployed a ready-made solution in private cloud mode, combining hardware, software and services, to meet the development and testing needs of new applications. The solution comprised a user portal, control middleware software and virtualised infrastructure.

The benefits:

- Quickly provided a secure product-development and testing environment at any location worldwide.
- Improved access to resources, anywhere, any time.
- Gave the infrastructure the necessary flexibility to adapt to peak periods of activity and fluctuations in demand for IT resources.



Pike County Schools

Solution implemented:

IBM Smart Business Desktop Cloud

The company: Pike County Schools (PCS) is an education group from Kentucky (USA) which has 10,000 pupils, 27 schools and 3,000 staff.

The challenge: PCS faced a dual challenge: providing its pupils, spread over all their establishments, with a high standard of technology, while also substantially reducing its budget.

The solution: IIBM Global Technology Services designed an environment of virtualised work-stations (a private education cloud) in order to use existing IT infrastructure more efficiently.

Pupils access applications using a web navigator or CD-Rom, making it possible to sidestep the usual work-station start-up routine.

The benefits:

- Reduced the investment by 64% compared with the cost of a conventional solution to replace the obsolete workstations.
- Increased the usage time of existing workstations while also accepting new systems and software.
- Allowed the same standard of teaching to every pupil, irrespective of the school or the availability of hardware.



Panasonic Corporation

Solution implemented:

IBM LotusLive

The company: Panasonic Corporation, a world leader in mass-market electronics, employs over 380,000 staff, spread over the group's 680 subsidiaries around the world.

The challenge: The Panasonic group used an assortment of collaboration solutions, depending on the region of the world. This lack of cohesiveness had two serious unwanted consequences: over security and the rising cost of message-management.

The solution: IBM offered an integrated global messaging solution and collaboration tools to support the firm in its strategy to transform and globalise its IT infrastructure. The solutions offered formed part of the LotusLive family (Notes, Sametime, Quickplace), using a hybrid private and public deployment model, hosted by IBM.

The benefits:

- Reduced the overall cost of ownership.
- Allowed immediate deployment of new collaboration services.
- Provided a platform with the latest technology, without any need for updating.
- Ensured reliability and high quality of messaging services throughout the world.

IBM's experience in Cloud Computing for its in-house needs.

As well as the many projects carried out for its customers, IBM puts the Cloud Computing model into practice at its own IT centres throughout the world.

IBM Blue Insight

Implements a private cloud, which provides IBM staff with all the applications and data they need to perform their duties, in the form of on-demand service.

IBM Cloud Sandbox

This in-house version of the "IBM Smart Business Development and Test on the IBM Cloud" offering provides users with free service access to virtual pre-configured IT product-development and database-management environments.

IBM Research Compute Cloud

With this free service access solution, IBM's researchers configure the calculation environments, which are vital for their projects, rapidly and easily.

IBM Learning Centers, Europe

This solution of the private in-house type, intended for use at IBM training centres in Europe, improved infrastructure utilisation rates by 80%.

IBM Computing on Demand

This service, offered in the form of a public cloud, enables in-house clients to use IBM's IT resources by the hour, week or year.

The IBM difference

IBM plays its part in enhancing the performance of IT infrastructure in thousands of projects around the world.

By virtue of the competence of its teams, the use of tried-and-tested methodology and solutions that are based firmly on reality, IBM is ideally placed to help get you started on the road to Cloud Computing.

- **A strategy based on usage**

(taken from the results of the worldwide survey conducted by IBM in July 2009 among 1090 DSIs) IBM offers a procedure designed depending the application domain that is most appropriate and best suited to the cloud model. It is accompanied by the best tools to draw up the road-map.

- **The choice of deployment model**

(private / public / hybrid) IBM is one of the few players in a position to offer all models of cloud, according to the criticality of the applications and maturity of the existing infrastructure, as well as providing support and guidance to companies in both adapting traditional infrastructure and in conversion to the Cloud Computing model.

- **A broad portfolio of offers**

Consultancy services to agree on a Cloud Computing strategy (eligibility, specialty alignment, return on investment, road-map) to implement a cloud solution: IBM now offers over 20 off-the-shelf solutions.

- **Excellence of service levels**

In the most critical technology domains:

- **Data security**

IBM has an offer covering all domains concerned with security (identity, data, applications, processes, infrastructure).

- **Availability and risk-management**

IBM's commitment to continuously-running operations is shown in a large investment and in the regular opening of data centres dedicated to Cloud Computing.

France is at the core of this strategy, with new locations in Paris, Montpellier, Lyon, Seclin.

- **IBM's legitimacy**

IBM – which will be celebrating its centenary in 2011 – has threefold competence: Software, Hardware and Services, as well as sound specialist expertise. IBM has a presence in 175 countries, and manages more data centres for its clients than any of its competitors.

18 centres for IBM Cloud

Computing around the world.

The **IBM Institute for Advanced Security** assists companies in making their projects and Cloud Computing strategies secure.

IBM manages **IT security** for over **3 700 companies**.

15 000 researchers, product developers and **experts** work in the field of IT security.

IBM has over **40 years experience** and practice in the robustness and security of IT, at the source of **3 000 patents**.



Offering recognised by the market: On 28 April 2010, IBM won the “Best of Interop Cloud Computing Award”, the only prize awarded in the Cloud Computing category. This prize was awarded for the “Smart Business Development and Test on the IBM Cloud” offering.

The IBM Cloud Computing offer

Catalogue of service offers corresponding to the nine most recommended application domains for cloud computing.



CONSULTING

Implementation strategy for a Cloud Computing procedure • Workshop to establish the opportunities for each application domain



DATA

Analyses of data and other analytical tasks • Data warehouse • Transactional databases



COLLABORATION

Conferencing tools: audio / video / Web • Joined-up communications • VoIP voice infrastructure



WORKSTATIONS

Office-automation utilities • Customer service / Help desk • Virtualisation of workstations



DEVELOPMENT & TESTING

Product-development environment • Test environment



SERVERS

Servers • Applications servers • Waves of applications data • Network capacity (data centres, Wide Area Network, etc.)



STORAGE

Storage • Data-archiving



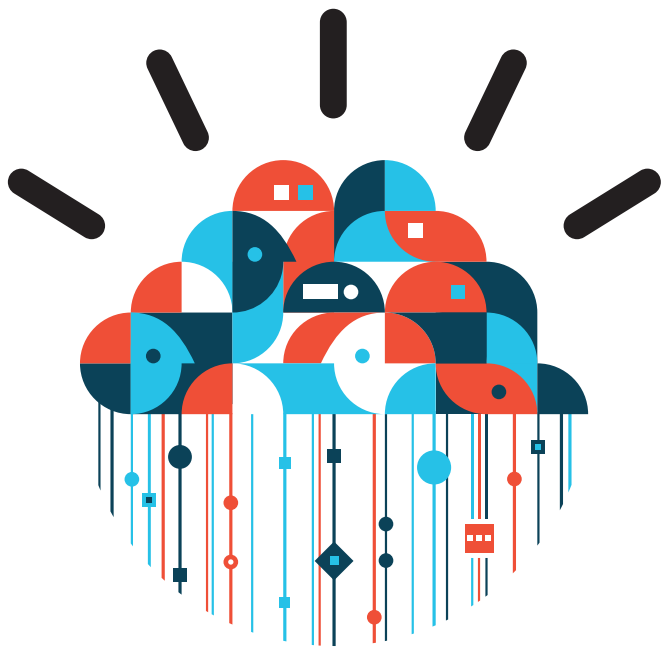
BACK-UP AND SECURITY

Continuity of operations • Restart after incidents • Data back-up • IT security



DEPARTMENTAL SERVICES

Customer Relations Management (CRM) and automation of the sales force • E-mail • Enterprise resource-planning applications (ERP) • Special departmental applications



Who are we?

IBM provides support and guidance in adapting and transforming corporate and governmental information systems.

Our detailed knowledge of our customers' specialties, particularly by virtue of the presence of our consultants and business engineers out in the field, plus our sound grasp of information technology, enable IBM to assist companies in implementing their strategies.

Companies are concerned with their future development, and with making that vital difference on markets that have become fiercely competitive.

IBM's areas of expertise:

- **Services** and **consultancy** on departmental solutions and IT infrastructure.
- **Design, manufacture** and **sales** of servers and sub-systems.
- **Design, development** and **marketing** of *middleware* software designed to produce the links between servers, their operating systems and applications.
- **Finance** for information systems.

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To find out more, visit:
[ibm.com/cloud](http://www.ibm.com/cloud)

Brochures and White Papers:

- Cloud Computing overview:
<http://www.ibm.com/ibm/cloud/>
- Defining a framework for cloud adoption:
<ftp://public.dhe.ibm.com/common/ssi/sa/wh/nl/ciw03067usen/CIW03067USEN.PDF>
- Dispelling the vapor around cloud computing:
<ftp://public.dhe.ibm.com/common/ssi/ecm/en/ciw03062usen/CIW03062USEN.PDF>
- Power your development and test environment with Cloud Computing:
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