Chapter 83

Intercloud:
Delivering Innovative Cloud Services

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ABSTRACT

Cloud computing is considered the next step in the evolution of technological applications, services and products development, in the Future Internet and Internet of Things context. The permanent connection of users to the Internet has become widespread, so almost all available resources (data, software) can be placed on the Internet, shared between users - sometimes completely independently of others, and brought from the Internet to the user's computer on demand. The chapter highlights the benefits of using hybrid technology with a focus towards entrepreners and business innovators. Intercloud systems are built of heterogeneous services, offered by different providers of cloud computing. To emphasize the business opportunities offered by innovative Intercloud approaches, an architecture for the interconnection of cloud services offered by multiple cloud providers, with applications to e-health, is presented. The main concepts and business benefits of using Intercloud systems and an architecture for interconnecting cloud services from multiple cloud providers is described.

INTRODUCTION

Businesses bring value to a community. Entrepreneurs have a powerful impact on a local economy by creating innovations, employment and socio-economic benefits. Some of the key benefits entrepreneurs bring to an economy are (Kristos, 2014):

- Introducing innovations and inducing economic growth.
- Increased competition, thus improved performance and better quality of products.
- Positive employment effects in the short and long term.

Nevertheless, Kristos (Kristos, 2014) points out the negative effects on local economies:

- Negative employment effects in the medium term.
- Failure costs are sometimes paid by taxpayers (there is a substantial risk of failure associated with entrepreneurs and innovators).

Hugos and Hulitzk (2011) introduced the term of Cybernetic Economy to define the new industrial revolution - a service oriented economy, based on the Internet, mobile computing and digital media.

The Internet, with the associated applications and services, represents one of the fastest penetrating technology in the last century.

In Iancu and Iancu (2012) the vision of Future Internet is described as an all-inclusive range of computer networks combined into a global IT platform formed of seamless networks and networked smart things or objects. There are five concepts that need to be underlined: Internet of Things (IoT), Internet of People (IoP), Internet of Energy (IoE), Internet of Media (IoM), and Internet of Services (IoS).

By Internet of things (IoT) we understand an environment in which all information originating from different devices (computers, auto-vehicles, smart-phones, traffic lights and, any other thing that has a sensor) are accumulating and, applications (everything from Facebook social network to e-commerce platforms, from a fabrication system to traffic control system).

In brief, there is a need for data and a way to access them. Here, the Internet intervenes and interconnects the devices. Besides the two, there is a need for a system to work with the information, to process and analyze it. Usually, for this purpose software or automatic and, semi-automatic systems are created.

The Internet of things is referring to a wide array of devices that have incorporated short radius transmitters, used every day. Thus, a new way of communication between people and objects is created. The same concept describes a series of technologies used in Internet for the interaction between objects from the real world.

The advantages exposed by IoT technology are:

- The dynamic control of industry and day-to-day life.
- Improves the utilization ratio of the resources.
- Creates a closer relation between human and the environment.
- Flexible configuration.
- Universal transportation.

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