



Cloud Computing: An enabler in Modern Labour Market

by Sarfaraz G. Muhammad and Meysam Salimi

Modern day labour market is influenced by different factors, mainly by ambitious investment in latest machinery, office automation software systems and computer-based solutions. Utilization of computer has benefited the employment market on vast scale, depending on the requirements of a particular business, its size and financial capabilities, and the intention to use. Furthermore, unparalleled technologies, such as cloud computing and smart technologies has directly affected demand for modern day labour. Nowadays, the utility model of cloud computing made it more popular and a favourite choice for the institutes to free up their internal resources and also reduce the number of administrative staff needed to maintain it. With certain kinds of offerings, institutes operating at small scales are also benefitting, which was almost impossible only a decade ago. Given that, the successful utilization of cloud computing remains a topic of extra ordinary importance among the scholars, experts, interested groups and several other institutions, and is defined in different ways according to their particular understanding and usage. But cloud is best defined by National institutes of standard and technology (NIST)[see e.g: S. Ghulam, J. Schubert, G. Tamm, and V. Stantchev, “Integrating Smart Items and Cloud Computing in Healthcare Scenarios,” 2014]:

“Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service providers interaction”.

During the time of its emergence, cloud computing was primarily used by educational institutions[see e.g: N. Sultan, “Making use of cloud computing for healthcare provision: Opportunities and challenges,” Int. J. Inf. Manag., vol. 34, no. 2, pp. 177–184, 2014], but with the passage of time, cloud turned into a necessity for entities operating at different scales. The induction of cloud computing triggered a need for the institutions to reduce their fixed cost invested on infrastructure. This attracts the institution to invest and switch to the cloud computing while saving the cost, and on the other hand allowing opportunities for service providers to enter to the market while providing more opportunities for competition and job creation [see e.g: F. Etro, “The economic impact of cloud computing on business creation, employment and output in Europe,” Rev. Bus. Econ., vol. 54, no. 2, pp. 179–208, 2009]. At the European level, different studies indicate that cloud computing will produce around 1 million job and new business opportunities in coming next few years. However, which countries and sectors see the most benefits depends in part on policy.

Cloud computing has the potential to be economically transformative. By giving everyone from individuals to enterprises access to expensive computing power, software, data storage and analysis and other similar services, cloud computing could dramatically improves the productivity and open horizons for new kinds of businesses.

But will the cloud live up to its potential? So far, measuring the economic impact of cloud computing has been a major challenge. Without the means to assess the likely effects of this new way of using information technology, we cannot really know the scale of any likely transformation, or even whether the aggregate effect on trade and labour markets will be positive or negative.

There have been many industry reports, opinion surveys and even government-sponsored studies about the transition to cloud services, but so far very few rigorous analysts have addressed the problem. As a result, some of the key economic features of cloud computing have not been given enough consideration. For example, the opportunity to move from capital expenditure to operating expenditure has considerable implications for accounting and investment practices, taxation, and the practices used to manage assets. The shift of work within firms from systems maintenance to higher-level tasks has implications for the labour market both in terms of displaced employees and skills demands. And the opportunity to exploit services worldwide to achieve low prices poses serious challenges to current data protection laws and practices.

Federico Etro conducted a significant study on the economy of cloud computing. His approach is to interpret the utility of cloud services for a large number of sectors in Europe. He considers cloud computing as a general-purpose technology while estimating its possible impact on industry structure, labour markets and productivity. However, his top-down approach structures the problem in a valuable way, but prevents users from detailed analysis of cloud computing on specific jobs, tasks and investment trends. While on the contrary, another approach is to take the problems from the bottom up, which means what areas are directly influenced by the cloud, what jobs are affected and how many other jobs opportunities are produced.

The first dynamic model, which shows the details of the impact of cloud computing in major industrial and service sectors was constructed by researchers of London School of Economics (LSE) in 2012. In their approach of bottom-up model, they detailed into consideration that how the economic effects differs between countries and sectors. Further it demonstrates that how market trends and legal constraints could possibly influence cloud usage. Their model further explains the microeconomic characteristics of cloud computing when effectively implemented improves the companies output while enhancing business development and will become more practical in the near future. The model also confirms that even with its minimal impact, the employment outcomes are likely to be positive, creating more jobs than are destroyed and accelerating the creation of new businesses. Nevertheless, the findings also indicates that the economic impacts of cloud computing depends on region and sector. Further it also indicates that the IT sector mainly enjoys the fruits of cloud computing.

Given that, other considerable factors are growth rate and the policies for a certain environment where sectors generally operate in. In Germany, between 2010 and 2014 cloud-related jobs in the smartphone service sector reached more than double, but they grew by just one-third in the relatively static aerospace industry. Concerning the policies, two main areas of energy and the legislative environment governing data handling are of extreme importance. Possession and handling of data of cloud computing, can directly impact the job creation.

An important question for Europe is whether companies in the US will disproportionately enjoy the economic benefits of the cloud. According to the latter (LSE) model, the growth in cloud jobs in the US need not be at the expense of European companies—as long as Europe can become more attractive than it currently is for public cloud investment.


To sum up, the impact of cloud computing in Europe will ultimately depend on how service providers, governments and managers adapt. European cloud services providers need to offer

competitive prices and guarantee safe and reliable technology. Governments need to ensure an appropriate legal environment, procurement practices and energy prices. It will also depend on the willingness of managers to adopt the new practices necessary to exploit the technical and economic advantages of cloud computing.

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