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Economics of cloud services in rapidly growing economies: the case of Turkey

Blog Editor



During the Annual National Informatics Congress in Ankara (Bilisim 2012), Jonathan Liebenau presented the results of a study conducted by LSE Tech on the labour market and general economic effects of cloud computing for Turkey. The study is of particular interest for rapidly growing economies and developing countries that might wish to reflect on what the economic effects of new general purpose technologies might be. Given that those effects are closely linked to an array of public policies related to information and communication technologies, to education and skills development, to trade in services and information handling, etc., the lessons are wide-ranging.

There is a clear contrast between Western European nations and countries such as Turkey that is rapidly growing and that has a legacy of low levels of investment in information technology, and especially in IT services. In general, the [effects of cloud services](#) in countries with fewer delays introduced by long replacement cycles can mean more rapid uptake of cloud services. There are major stumbling blocks, however. The most significant is the paucity of managerial capabilities consonant with the information handling practices that cloud services allow. In other words, in countries where management is poorly educated or has too few skills to take advantage of what the new uses of cloud computing allow there will be low uptake. That is a reasonable response as firms assess whether it is feasible to make the transformation in organizational practices necessary to exploit the new opportunities.



The current situation of cloud computing in Turkey

Our analysis of the economic effects of cloud services in Turkey has focused on two exemplary sectors, one a mature but growing manufacturing industry (automobile) and the other a new, cloud-dependent area of business (smartphone services). The rate of growth of cloud services in these sectors compares favorably with similar sectors elsewhere; excellent GDP growth in Turkey enhances the economy's ability to exploit cloud advantages. Turkey is unusually well suited to benefit from cloud computing. It is a rapidly growing economy that has not had a great deal of sunk cost already invested in IT, especially among

small and medium sized enterprises.

Employment and other economic impacts are enhanced by significant multiplier effects, leading to jobs growth and quality improvements in business processes beyond direct job creation. There are many secondary implications of IT applications for business improvement such as access to international trade data sources and their growth in Turkey is important for this rapidly expanding and changing economy. New technologies in general and IT services in particular are growing rapidly and becoming pervasive in the Turkish economy.

Our forecast on trends in the Turkish cloud economy

The rate of growth in cloud-related jobs depends on factors such as structure and rate of growth of particular sectors and national policy environment. Data center construction, direct staffing and jobs created in the ICT hardware sector supplying data centers explain most short term net gains in IT jobs. Cloud computing will form the basis for a rapid expansion and high-start-up rate among SMEs services, exemplified by smartphone services. Managerial skills will need to keep up to exploit opportunities in order to achieve our estimated increase of direct, indirect, and induced cloud IT employment in the automobile industry (from 10,000 in 2011 to 12,000 by 2014) and the smartphone service sector (from 1,000 in 2011 to 3,240 employees in 2014). Productivity gains from cloud computing will enable the redeployment of skilled employees and managers to more strategic and revenue-enhancing activities at both enterprises and SMEs.

There is little real risk of net unemployment caused by investing in the cloud and we can see that a fast-growing sector (smartphone services) will create more cloud-related jobs than a mature sector (automotive). If Turkey can become more attractive than it currently is for public cloud investment, then the proportion of skilled cloud jobs created in the US will not be at the expense of Turkish firms. As firms shift from proprietary application servers towards virtualization and cloud computing, related skills will be in demand among employers. New direct hires and up-skilling for public cloud enablement result in higher-than-average salaries, as we estimate that managers for IT facilities and IT core administration are in the higher salary bracket of \$70k-120k in the US and TL110k-140k in Turkey.

Looking forward and globally

The lessons from Turkey suggest that the specifics of productivity and employment effects will vary by country and by sector. Countries that have poor telecommunication infrastructure will not see rapid take-up, especially in far-flung companies and among SMEs. Those that have trade restrictions, such as Turkey's requirement that certain categories of data cannot leave the country, especially that used by the financial services sector, will constrain the opportunities to utilize world-leading suppliers and best prices internationally. Such restrictions may have the consequence of boosting domestic businesses supplying cloud services, especially in running data centres, but that may come at the cost of some competitive disadvantage.

Note: this presentation was based on the report written by Liebenau, Jonathan and Kärrberg, Patrik and Grous, Alexander and Castro, Daniel (2012), "Modelling the cloud: employment effects in two exemplary sectors in Turkey", London School of Economics and Political Science, LSE Enterprise. Download the full report [here](#).

See also a related post: [Economics of the cloud and employment effects in two exemplary sectors in the USA, the UK, Germany and Italy](#)

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Dr Jonathan Liebenau is a Reader in Technology Management, LSE. He specializes in fundamental concepts of information, and the problems and prospects of ICT in economic development. Previously worked in academic administration, technology policy, and the economic history of science-based industry, all positions in which he has emphasised the use of information in organizations. He is the author or editor of a dozen books and over 70 other major publications. He has provided consultancy services to leading companies and strategic government agencies, including Dell, BT, IBM, Microsoft, TCS, Nortel, EDS, Lloyd Thompson, and in the UK Government, the Office of Science and Innovation, the Department of Trade and Industry and the Home Office.

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