Businesses will increasingly use robots to deal with the explosion of data

The term "Robotic Process Automation" (RPA) connotes visions of physical robots wandering around offices doing the job of humans. However, the term really means automation of service tasks. Let's think of business processes such as transferring data from multiple input sources such as email and spreadsheets to systems of record like Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM). Here the term RPA most commonly refers to configuring software to do the job.

RPA is relatively easy to adopt, but to gain maximum applicability human beings have to fit it with IT architecture and infrastructure. If programmed, Robotic Process Automation operates as at least three full-time equivalent employees (FTEs) to high quality, without errors, multitasking and switching to other processes quickly. It requires strong internal capability to scale deployment and achieve continuous improvement.

The LSE Outsourcing Unit is conducting major research on RPA and is getting an ever clearer picture of the future of work more generally, in the face of the increasing use of robotics. We are observing actual cases of RPA deployment and the business results obtained by companies like npower, Xchanging, Gazprom, Leeds Building Society, and Telefonica/O2. Our new book, on the bigger picture of automation and the future of work, will be published in February, 2016.

In our RPA cases so far, there is little job loss, except through natural wastage, i.e., people leaving and not being replaced. The jobs in question are high volume, highly repetitive and not that suited to humans, who tend to make errors where robots do not. Robots are also able to work tirelessly and continuously. In Xchanging, a provider of business process services, the robots are welcomed as valuable team members. The team owns the process and asks for robots to do more of the work they do not want to do themselves.

Xchanging also has a high percentage of workers offshore. Automation will possibly lead to more work being on-shored, i.e., performed in the domestic market, without much attendant growth in job numbers. Another possibility is that, as is already happening, automation will be applied to jobs offshore where it makes economic sense to the organization.

In India, for example, many employees are aspirational and, education-wise, are unsuited to and do not prefer high volume transactional work of the type automation can replace. Additionally, labour costs for such Indian workers are rising. Regarding certain jobs, RPA becomes economically more attractive for organisations. Given the other benefits of automating, client and service provider organisations may well find RPA more attractive for jobs within the automatable band of high-volume transactions/low-complexity processes we have identified.

Here are several scenarios for jobs and the organisation of work going forward. It would be a mistake to assume a steady state, which many extrapolations are more or less based on. In fact many things are moving.

1. The data explosion means that organizations are dealing with an accelerating amount of data even if not growing themselves, for example in a stagnant or slow-growth marketplace. RPA is a part solution, amongst many others, to this inevitable data growth.

2. Will RPA replace offshoring? The predictions are that the offshoring market will continue to grow over the next 5-10 years, with or without RPA. More recent extrapolations suggest a slowing of growth, due to more work being re-shored (brought back to the domestic market) as a result of RPA.

3. RPA will have limits to its applicability. So far we have seen that it needs to be both set and overseen by humans who also need to make many judgement calls. There are jobs that surround RPA to make it function, and there also jobs that will be untouched by it, especially cognitive non-routine work.

4. Accelerating economic growth will see faster adoption of RPA, but will also see greater demand for labour for specific types of skills – there are always skill shortages announced in a range of areas, and these shortages increase in times of economic growth. Lack of economic growth could actually stifle the application of RPA, unless there are huge pressures on cost savings.

5. Our work is looking at an emergent usage, but automation through ICTs also has a thirty-year history. The interesting question is whether automation will continue with the existing pattern on job loss, or whether this technology, this time, will be transformative of the employment scene, with for example, 47% of some major professional jobs in danger in the USA over the next ten years.

This is Part I of two articles. In Part II, we will look at the impact on jobs, assuming that present trends in the automation of work accelerate, and suggest ten short-term and long-term trends that executives are going to need to address.

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