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LEADERSHIP

The 3 Ways Work Can Be Automated

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We are at an interesting tipping point regarding how and where work gets done. As business leaders and managers, we have become increasingly capable of engaging a workforce that is some combination of virtual and on site, part time and full time, permanent and contingent. But just when we've sorted out preferred management routines, there is an entirely new landscape emerging with technology options central to the work and possibly your business model: work automation. How, when, and where should leaders be thinking about applying the various automation technologies to their businesses?

There are currently three technological enablers of work automation: robotic process automation, cognitive automation, and social robotics. Each technology fits a different kind of work and has different implications depending on the work to be done, as described in the chart below.

Which Automation Technology Is Right for Your Business?

	ROBOTIC PROCESS AUTOMATION	COGNITIVE AUTOMATION	SOCIAL ROBOTICS
Task type	• High volume • Low complexity • Routine	• Complex • Exploratory • Nonroutine • Decision-supporting	• Mixed routine and nonroutine • Collaborative
Operational mode	• Instruction-based • Likely to be further enhanced with machine learning	• Machine learning • Deep nets • Hybrid AI • Needs data and human trainers to learn	• Learning from human interaction and data
Application scope	• Wide • Can automate tasks of business processes	• Focused • Targeted to specific data sets • Tasked to deliver specific outputs (no artificial general intelligence yet)	• Wide • Can leverage human productivity across a spectrum of activities and expertise
Disruption in job definition	• Low to Medium	• High	• Medium to High
Product offerings	• Maturing • Off-the-shelf	• Emerging • Some ready to use (e.g., image/speech recognition)	• Maturing • Off-the-shelf
Cost to implement and maintain	• Low	• High	• Medium/High
Time to implement	• Weeks	• Months	• Months
Return on investment	• High • Can fit the current operational and business models • Can reduce need for some offshoring	• High • Potential to transform operational and business models	• High • Can significantly enhance productivity and efficiency

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The simplest and most mature so far is robotic process automation. It can be used to automate high-volume, low-complexity, and routine tasks. It is particularly effective in automating the so-called “swivel chair” tasks, where data needs to be transferred from one software system to another. These tasks are traditionally done by humans. For example, they may involve taking inputs from emails or spreadsheets, processing the information by applying certain rules, and then entering the output into some other business systems, such as an ERP or a CRM. Creating a virtual workforce of software robots can help companies streamline operational processes as well as increase the quality and cost-effectiveness of shared services.

Nevertheless, most of the current excitement around work automation stems from systems that can replace humans in nonroutine, complex, creative, and often exploratory tasks — in other words, systems that can automate human cognition, or cognitive automation. Developments in machine learning, powered by scalable computing resources in the cloud and heavy investment in exceptional human talent by the large players in the IT industry, are making computers capable of recognizing patterns and understanding meaning in big data in a cunningly human-like way. This "recognition intelligence" is showcased in systems for voice recognition, voice-to-text, natural language understanding, image understanding, and a host of other applications that are increasingly becoming available to consumers and companies.

Companies can use these cognitive automation technologies in three ways. First, they can further automate, or completely reengineer, their business processes. Take, for example, the car insurance industry. Instead of having human agents visit cars to assess the damage, an app used by the car policy owner and powered with image recognition intelligence could process photos of the car damage, assess the degree of the damage, estimate and classify the size of the claim, and pass the information for final approval to a human, thereby significantly simplifying the claims process in terms of both time and cost. Cognitive automation like Google Glass can transform the work of a flight attendant, for example. The ability of such technology to enable traditional jobs to be disaggregated and to supplement or replace routine activities presents opportunities in efficiency, effectiveness, and impact.

The second area of opportunity with cognitive automation is for companies to develop new products and services. In the previous example, the intelligent app could be part of a new offering to car insurance clients, perhaps with added features such as a chatbot that could provide additional, on-demand advice about insurance to the policy owner.

Finally, cognitive automation can be used to gain new insights into big data. When it comes to transforming a company's strategy around the future of work, talent analytics combined with machine learning can be a very powerful tool for analysis and prediction.

Another area that is rapidly evolving is social robotics. Unlike their predecessors, this new generation of robots is not bolted on an assembly line; they are mobile and move around in our everyday world. They can be drones that fly or swim, anthropoid robots that walk, or swarm robots that roll on wheels. They are programmable and can adapt to new tasks. This new generation of social robotics can automate routine as well as nonroutine tasks. Freed from the assembly line, the social robots can collaborate with humans in a variety of applications that were unthinkable a few years ago.

A good example is the Kiva robots that Amazon has been using to increase the efficiency of its order fulfillment process. Instead of walking the aisles to find the right packages, humans now stand on platforms while an army of social robots brings the right package to them at the right time. By reengineering the process using robots, Amazon did not replace the human workers but rather made them more productive in the same way the aforementioned app allows human adjustors to take on more cases by focusing on the "higher value added" activities while the app takes on the more routine aspects of the job.

Amazon's employees now take 15 minutes to fulfill some orders instead of 90 minutes, an increase of 20% in efficiency; the small size of the robots also allowed Amazon to increase the size of ist inventory by 50%. Management oversees the entire fulfillment process, including the work interactions between robots and humans.

As the half-life of skills continues to shrink, the growing premium on reskilling is causing many organizations to rethink the risks associated with full-time employment in order to reduce the risk of obsolescence. The different variations of work-task automation, like the ones here, can deliver viable solutions to all of the above concerns. Selecting the right technology for automating work tasks and improving performance is therefore critical for business, as is the alignment of the selected technology with a comprehensive strategy for the future of work.

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Anjan Bhattacharjee 7 months ago

This post from 'Willis Towers Watson' is trying to play down the serious effects AI/Machine learning, beyond human intervention of assisted Robotic Process automation[Stage 1]. It is well known that "Productivity" is going down in last 10 years with more automation of higher order of Robotics[Stage 2]. The Economic reasons for lower Productivity and consequential "lower Profits" of Corporations are due to "mass loss of jobs" by every automation replacing human beings.
This large scale unemployment or underemployment[Temps] lead to "wage squeeze" since mid '70s. With the rise of automation and loss of Bargaining power resulted stagnant wages and purchasing power. 60% population of bottom part of the Pyramid, the Bulk Consumers, affording less and less consumption leading to demand squeeze for corporates against capacity available. Resources Productivity is calculated based on product/services sold[or demanded]. for clarity on Outsourcing this is done at the lower end to increase Margins from high productivity at lower cost outsource suppliers. Outsourcing is a business necessity not an indication of incapability. Most high end Automation using AI, Capital costs versus productivity gains do not give economic justification. Even Most Interest cost on investment are not realized not to speak of amortization costs of Technology capital costs. In their eagerness to sell more automation the Technology companies are cutting the brunch of the tree that they are sitting on. The Moor's Law is going to stagnate/saturate hopefully
by 2020 and grievous danger for employment collapse is anticipated for Technology workers.

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