# Nine likely scenarios arising from the growing use of robots

Too many executives have chosen to displace workers rather than think through how technology and humans can work together symbiotically, a set of choices Shoshana Zuboff describes as the automate or informate dilemma. In practice, automation can be deployed by either "automating", "informating", or both. In light of advances in automation, Tom Davenport and Julia Kirby have suggested a nuanced approach to job design. Managers and knowledge workers themselves may come to see robots and automation as a way of augmenting human skills, with the 'smart machines' operating as collaborators in solving business problems and delivering service. We also see the future of operations as less pre-determined than many think.The big takeaway from our work so far is that automation will increasingly create workgroups comprising both human and robotic workers, and each will be assigned tasks for which they are ideally suited.

Robotic Process Automation (RPA), the automation of service tasks that were previously performed by humans, is just one technology that is changing the future of operations. Cognitive intelligence tools, like IBM's Watson, are other soon-to-be game changers. In the near future, knowledge workers in the middle of a task could request a multi-tasking robotic co-worker to help — a robot on request. Contrary to today's worst fears, robotics could facilitate the rise, not the demise, of the knowledge worker. But much depends on the imaginations of managers expanding as rapidly as their automation toolkits.
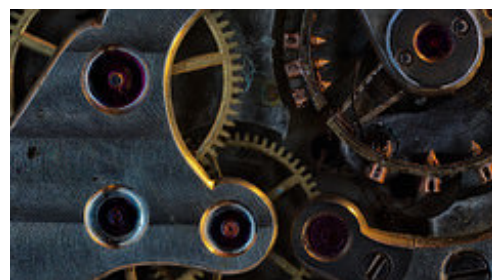
The macroeconomic implications of RPA are difficult to assess because the world does not sit still. But if clients are using robots for low-level tasks, fewer people will be needed for those jobs. What new job categories may emerge is a very interesting question. We are aware of Carr's 2014 book on the dangers of the changes in the nature of work that we may build into how we adopt these technologies. In *Lights in The Tunnel* and *Rise of the Robots*, Martin Ford writes about the drastic job loss that will accompany automation. We suggest a more nuanced future, and are testing this in present research, and a follow-up next year.

Our working hypotheses are as follows.

On a horizon of 1 to 5 years, we anticipate a mixed scenario:

1. RPA will begin to seriously change the delivery of services, substituting technology for people, which will alter the economics of service delivery, causing labour to be less of a factor and making labour arbitrage, which allows companies to switch between international sources of labour, less important.

2. The domestic/re-shoring/in-house tides will rise, with the superior "ease of engagement" and the need for the remaining humans to be near the action to handle exceptions, complexity and new services. Re-shoring (bringing production back to the home country) will rise. This will make domestic production more advantageous vis-à-vis most forms of offshoring, whether outsourcing or captive (through a subsidiary of the company abroad).

3. We predict a backlash against the impacts of automation, especially in terms of threatening jobs — which will become a symbol for the workforce and economic health generally, in both domestic and offshore locations.

4. Domestic and offshore outsourcing will continue to grow globally at anything between 5% and 12% a year depending on the function or process outsourced. Leading providers will increasingly seek automation as a core capability for delivery of services. Advisory firms will shift capabilities from assisting clients with outsourcing decisions to optimizing service delivery that will increasingly rely on automation and may or may not involve external sourcing.

On a horizon of 5-10 years these factors will kick in and be game changing in impact:

5. Through automation, there will be much more in-house, domestic outsourcing and re-shoring of IT and business services. Automation will move from routine manual and cognitive tasks to non-routine manual and cognitive ones. Automation will breed further automation, as humans will no longer fit into the new systems and processes.

6. Through automation, providers competing against clients (in-house sourcing) and other providers (outsourcing) will use automation to reduce costs and improve process metrics – e.g., responsiveness, timeliness, quality, defect levels, ease of use.

7. Through automation, issues around socially responsible sourcing/outsourcing and work design will rise in importance and profile, raising internal issues of management ethos and external issues of reputation management in the marketplace.

8. There will be changes in client-supplier relations and types of contracting.

9. At the same time, automation will not stop the rise in offshore and domestic outsourcing, as there is still so much work that will be open to outsourced options. Providers will work hard at making these options attractive. We anticipate a continued growth in the global outsourcing markets for information technology and business processes.

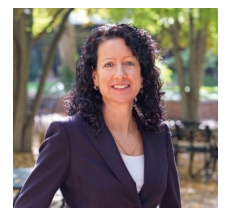This is Part II of the authors' two-part article on the future of automation. Click here for Part I.

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