

Harvard Business Review
The Future of Operations

BUSINESS PROCESSES

What Knowledge Workers Stand to Gain from Automation

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JUNE 19, 2015



It is by now an obvious statement that companies compete on the strengths of their knowledge workers – [people who “think for a living”](#) by applying convergent, divergent, and creative thinking skills. Yet, more than 50 years after [Peter Drucker devised the term](#) knowledge worker, it is quite disappointing to peer inside the operations of any large organization and see how little of their time knowledge workers actually spend on higher-order thinking tasks. Largely to blame is the approach their companies have taken in applying office technologies. Faced with the choice, as author Shoshana Zuboff put it, to either [automate or informate](#), they have tended toward the former – transferring tasks from the hands of workers to machines, rather than endowing people with greater capacities and having them work symbiotically with technology.

One result is that workers must now spend substantial time dealing with [systemantics](#) – the quirks and shortcomings that are just as endemic to systems as their strengths. For example, it is a systemantic problem that the typical automated operations system (including Enterprise Resourcing Planning, Customer Relationship Management, e-commerce, and e-business solution systems) is unable to complete a whole process, end-to-end. For the technology to deliver value, knowledge workers must do pesky things like extract and move massive amounts of data from one system to another. Knowledge workers consistently tell us they want to be liberated from such highly-structured, routine, and dreary tasks to focus on more interesting work. Some are actually getting that wish, thanks to a new approach known as Robotic Process Automation (RPA).

When people first hear the term “Robotic Process Automation,” they might imagine shiny robots gliding around office buildings. In reality, this is just software that can be made to perform the kinds of administrative tasks that otherwise require stop-gap human handling – for example, transferring data from multiple input sources like email and spreadsheets to systems of record like ERP and CRM systems. Calling it robotic, however, emphasizes the utility of a machine that can stand in for a worker and handle disparate, discrete chores. (One “robot” equals one software license and, in general, one robot can perform structured tasks equivalent to two to five humans.).

The workplace adoption of RPA differs from classic business process automation in two important respects:

The developer hoping to automate a task does not need to have programming skills. Business operations people who have process and subject matter expertise but no programming experience can, with only a few weeks of training, start automating processes with RPA tools. If you are familiar with Microsoft's [Visio](#) product, you can envision RPA tools functioning in the same way, with users dragging, dropping, and linking icons that represent steps in a process. (One of us took the software training for [Blue Prism](#), one of the leading RPA providers, and was able to automate a process in less than two hours.)

RPA does not disturb underlying computer systems. This is “lightweight IT,” in that the robots access other computer systems the way humans do—through the user interface with a logon ID and password. No underlying systems programming logic is touched. (For IT readers: RPA accesses systems of record through the presentation layer.)

Given this ease of use and lightweight operation, adoption of RPA can originate inside business operations, and typically does, rather than being brought to the business by the IT department. And thus (because RPA projects do not require expensive IT skills), the threshold of processes worth automating is substantially lowered. Even where a particular tedious task is not being performed by a very large number of people, RPA can economically delegate the task to robots.

In [one case study](#) we saw UK mobile communications provider [Telefónica O2](#) deploy more than 160 robots to process between 400,000 and 500,000 transactions each month, yielding a three-year return on investment of over 650%. More astounding, Telefónica O2 reached this scale by training only four people. Another case study subject, a large UK-based utility, deployed more than 300 robots that process three million transactions per quarter, yielding an annual return on investment of 200 percent.

Here, two humans orchestrate 300 robots that perform the work of 600 people. In general, early adopters of RPA find that automation radically transforms operations, delivering much lower costs while improving service quality, increasing compliance (because everything the software does is logged), and decreasing delivery times.

This might sound like a recipe for headcount reduction, but in the cases we have studied, it hasn't been. People who worry about job losses to automation tend to overlook the unprecedented data explosion businesses are experiencing, now accelerating out of knowledge workers' control and demanding automation to deal with it. Indeed, most of the RPA adopters we have studied have gone so far as to promise their employees that automation would not result in layoffs. (To be sure, many have been able to avoid hiring new workers – and some companies have reduced their reliance on outsourcing to complete administrative tasks.)

Where such job assurances have been given, workers have not felt threatened by automation. They embrace the opportunity to take on more interesting work, and view the robots as teammates. For example, in our case study of [Xchanging](#), a provider of IT, business, and procurement services, the knowledge workers named the robots and even invited them to office parties.

Our favorite example is the robot (technically, the set of robots) they named “Poppy” — because the system went live on Remembrance Day in the UK, when it is traditional to wear poppies. For the knowledge workers at Xchanging, Poppy took over the laborious task of processing the structured premiums that come in from London's insurance brokers. She adds supporting documentation, checks for errors, kicks out exceptions, and adds validated information to the official market repository. Poppy hands over the exceptions to her human teammates for processing. They think of her as a “fresher” — the kind of newly-hired employee that has traditionally done the support work for the team — but an especially industrious one.

In another workgroup at Xchanging, a knowledge worker named her robot teammate “Henry” — but despite the male persona, she sees him as a kind of extension of herself. “He is programmed with 400 decisions, all from my brain,” she explained to us, “so he is part of my brain, and I’ve given him a bit of human character which works for me.”

For us, there is a big takeaway from the case research we have done. It indicates that, as cost barriers fall, workplaces will naturally gravitate toward teams of humans and robots working together to accomplish goals, each assigned the tasks for which they are ideally suited. RPA is one automation tool, but not the only one, that will help to bring about this future of operations. As cognitive intelligence tools like IBM’s Watson are adopted, those will be game changers, too. Combining these technologies, human knowledge workers might soon, in the midst of creative tasks, call on multi-tasking robotic coworkers to perform supporting work as needed — boosting their output even in novel processes with “robots-on-request.” In this way, contrary to today’s worst fears, robotics could facilitate the rise, not the demise, of the knowledge worker. Let’s hope the imaginations of their managers expand as rapidly as their automation toolkits.

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