Future smart: Why robotics changes everything

What comes to mind when you hear the word "robot?" Maybe an image from pop culture, such as R2-D2 or, at the other end of the spectrum, Arnold Schwarzenegger in *The Terminator*? Perhaps giant yellow arms pivoting on an auto assembly line? Or even one of those package-delivery robots currently cruising the streets of San Francisco? In any event, you probably associate "robot" with some sort of physical entity, a substitute human made of metal, plastic, and plenty of electronic componentry: mobile, task-oriented, still somewhat exotic—and certainly expensive.

It may be time for CFOs to put aside such misperceptions, because the robots that are quickly and quietly becoming an integral part of the finance function bear no resemblance to those just described. Rather, they are arriving in the form of a technology termed "robotic process automation," aka "RPA," with the emphasis squarely on the "PA."

These robots exist as software and are designed to automate a wide range of processes that tend to be repetitive, labor-intensive, and rule-based. RPA has been described as "a spreadsheet macro on

steroids," but that's like comparing the cruise control function in cars to fully automated, driverless vehicles. Put simply, RPA replicates any mouse and/or keyboard actions a human would do across any applications on their PC. RPA can do everything from open email and attachments to collect social media statistics to follow if/then decisions and rules (see Figure 1, "What RPA can do"). In finance, that translates into everything from recording journal entries to reconciling general ledger accounts to auditing expense reports, to cite just a few common applications. ❯

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While RPA is simply software code—and fairly simple, inexpensive code at that—it is analogous to those giant yellow-armed robots deployed across factory floors in that it changes the calculus of outsourcing/insourcing decisions by automating labor-intensive tasks. Companies that have turned to business process outsourcing as a way to economically tackle a variety of finance needs may find that an increasing number of them can be handled by RPA.

Many, in fact, already are. This year the market for RPA products and services will reach $433 million, according to HFS Research, and may climb to $1.2 billion by 2021, a compound annual growth rate of 36%.[1] And in this issue of *CFO Insights*, we will take a look at the process of implementing RPA and the potential it has to help finance automate its way to higher performance.
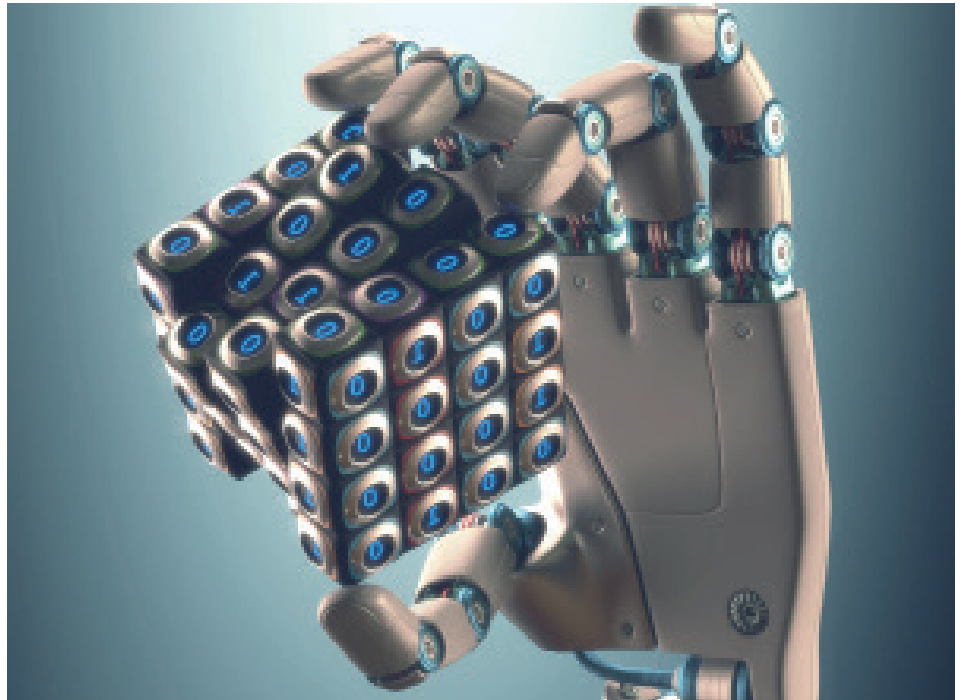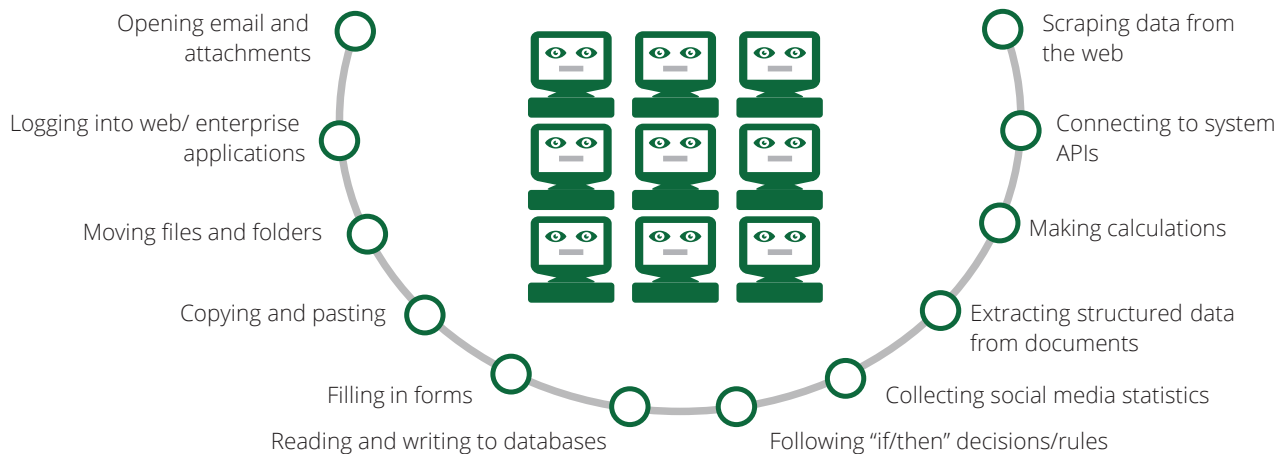
Demystifying RPA

As mentioned, RPA is a relatively simple and inexpensive software-based technology (a "fully loaded" robot may cost about one-third of what a globally sourced employee might cost[2]) that sits on top of other applications (at the user-interface level) requires no special hardware, and plays well in almost any IT environment. It is robotic in the sense that it does what people sitting at desks often do: enter keystrokes, mouse over to certain fields within an application, cut and paste, move data from one place to another, make queries and calculations, hit "send," etc.

To get a robot up and running, a "robot configurator" specifies in detail the instructions the robots will follow and publishes that script to a robot controller, a centralized repository that will assign the jobs to various robots and monitor their activities. The robots can reside on desktop computers or be virtualized, but either way they will interact directly with whatever business applications are needed to do their jobs. Business users typically resolve any exceptions or escalations that might occur as robots do the lion's share of the work.

Many vendors offer RPA software at this point, and over time its capabilities are likely to become embedded in core systems as relevant applications evolve, facilitating interoperability. But CFOs don't need to wait; even in its current form, RPA is already saving companies substantial amounts of time and money. In some instances, we have found that RPA is 15 times more efficient than humans and offers a 15% to 90% cost-reduction opportunity,[3] depending on the characteristics of the function to which it's being applied.

Figure 1. What RPA can do

- Opening email and attachments
- Logging into web/ enterprise applications
- Moving files and folders
- Copying and pasting
- Filling in forms
- Reading and writing to databases
- Following "if/then" decisions/rules
- Collecting social media statistics
- Extracting structured data from documents
- Making calculations
- Connecting to system APIs
- Scraping data from the web

Source: "Robotics & cognitive automation: General overview," Deloitte Development LLC, 2017

Not only can RPA save on full-time equivalents (FTEs), but it can also provide several other advantages. Because it can run 24/7, it can grind through time-sensitive reporting tasks that often require finance staff to log night and weekend hours in order to meet deadlines. And it is often more accurate, with some companies reporting the complete elimination of data re-entry and rekeying errors.[4] That reliability is bolstered by the creation of an audit trail that identifies any potential glitches. In fact, many organizations create a monitoring system that allows a finance staffer to "supervise" a team of robots in real time.

That may sound fanciful, but RPA differs from many other technology implementations in that it is not really about technology, but about redeploying human talent: let the robots do what they do so well, which can free up finance talent to address activities that are less rote and add more value. Within a shared services center, for example, using RPA to automate some tasks can enable staff to focus on delivering customer and market insights or develop new levels of service altogether.[5]

Making RPA happen

When it comes to leveraging robotic process automation, companies generally fall into one of two camps: those that have launched pilots and are now trying to scale the technology, and those that are at the early stages of exploring its possibilities.

If your organization falls into that latter camp, one viable way to begin is with a prototype or pilot that will allow you to become familiar with RPA at a basic level. Begin by identifying tasks that lend themselves well to RPA. Often, this low-hanging fruit exists in a Center of Excellence or in an outsourcing arrangement and may include the following:

- Tasks that may have been outsourced, such as reconciliations, claims processing, returns management, inventory processing, desktop support, and network monitoring;
- Process automation tasks in the front office (sales order management, competitor price monitoring, customer engagement), middle office (trend tracking, report generation) and back office (data reconciliation, applications integration);

- Shared services tasks that typically entail multiple interactions with different systems, such as payroll, onboarding and benefits management in HR, and folder and file management, infrastructure/application monitoring, and user/directory and release management in IT.

To be manageable, an agile pilot program would begin with selecting three to five processes. As with most pilot efforts, it is advisable to make reasonably fast decisions regarding team composition, product selection, and the pilot process. With RPA, though, it's also important to invest time in understanding the value and limitations of whatever tools you decide to deploy, in order to ensure they are right for today's needs and, if applicable, have the ability to scale.

Another key consideration: determine how to engage the owners of a given process to give an RPA pilot a try, because they have the process knowledge that will be a key component in programming the robot—not to mention the business need that can prove the value of RPA.

Figure 2. Where automation may happen in finance

Almost half the roles in back office functions have the potential to be automated
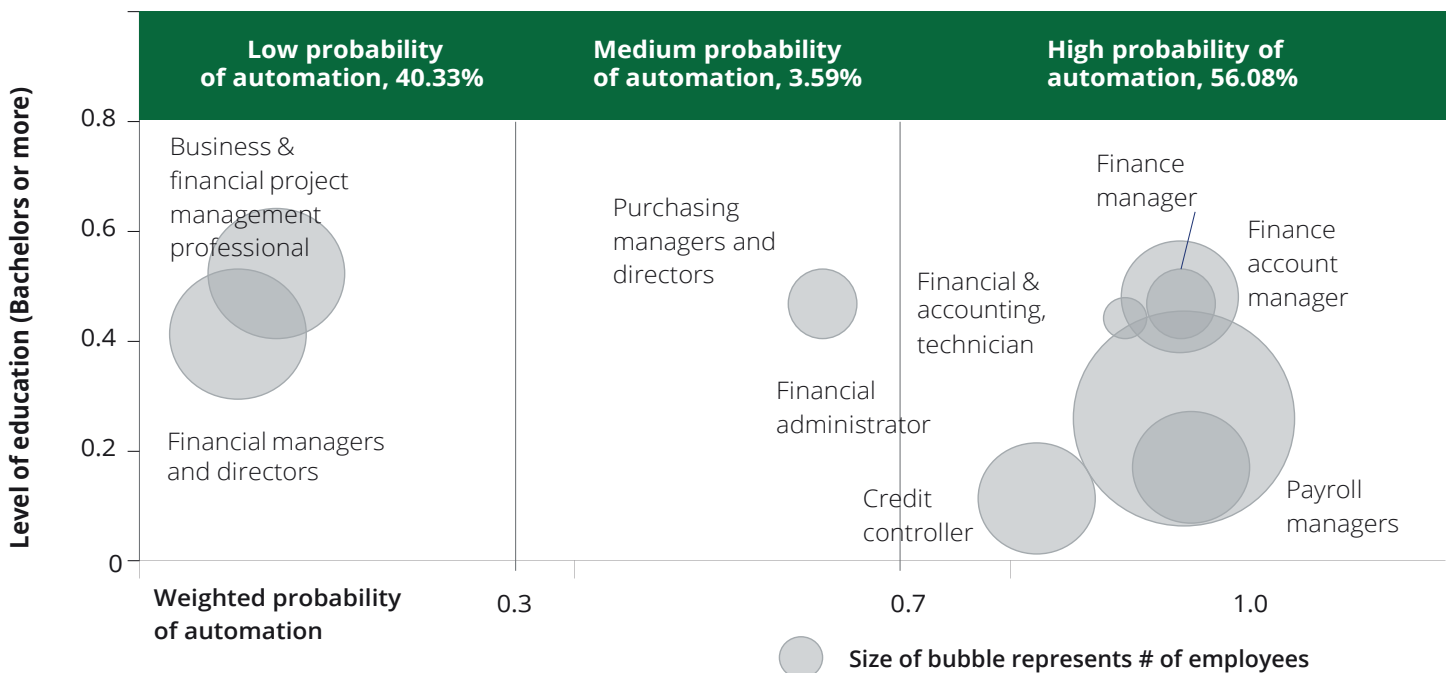
Source: "The robots are coming," Deloitte UK, 2015

Assuming a successful pilot, many organizations may want to determine how to scale the technology to meet additional needs and opportunities. In this regard, organizations can adopt something of a pay-as-you-go strategy, using the money saved from a first round of RPA to finance the next round, and so on. Aside from that, several core decisions need to be made.

For example, to build a business case, companies should determine what pain points can be alleviated by RPA, what metrics will be useful in assessing RPA's effectiveness, and what strategy will be used for redeploying existing resources once RPA is up and running. In addition, companies should also decide which operating and governance models most suit their needs: Should they own RPA capability long-term, or continue to partner with a third party? Is the right team in place to support the solution, and who will manage and monitor the robots as they carry out their duties? With so many vendors in this space, organizations should also determine which ones are best suited to their business needs, which sourcing options work best, and how various pricing models compare. Finally, it's also important that the people driving RPA efforts ensure that all stakeholders affected understand what RPA is, why it's being deployed, and how it will be rolled out.

The promise and the pitfalls
Regardless of whether a company is piloting RPA or beginning to scale it, odds are good that the tasks it's being applied to today are highly transactional, rules-based, and labor-intensive. But already some companies are combining RPA with other technologies to automate not only human actions but human judgment, and, eventually, intelligence.

By combining RPA with cognitive and artificial intelligence capabilities, natural language processing/generation, and other emerging technologies, companies can create toolsets that can tackle judgment-based processes, predictive decision-making, and more, to produce virtual customer assistants, conversational user interfaces, and many other advances.[6] Seen through that lens, RPA becomes a foundational technology for a digitally transformed enterprise that can evolve in lockstep with these quickly advancing technologies.

That's not to say that robots will do everything, of course. But as RPA and other technologies usher in an era of digital transformation, CFOs will have to think carefully about what (human) skills they will need to hire or train for. One advantage of RPA is that it can be configured by non-technical staff: any finance team member comfortable creating spreadsheet macros should be able to play a key role in making RPA happen.

As RPA proliferates and acquires additional capabilities, however, there will likely be a growing need to have finance staff focused on how to apply an expanding arsenal of digital capabilities to finance and broader business needs. Put another way, RPA is not a "one-and-done" technology implementation, but a capability that needs to be continuously managed. CFOs are already well aware that in an ever more dynamic business environment, success depends on continuously training, retraining and redeploying their human talent. The same holds true for the robots that can increasingly augment the work of the finance team: As companies acquire and divest businesses, move to new ERP or other large-scale IT systems, change their processes, or evolve in any number of ways, robots will likely require frequent reprogramming in order to deliver as much value as possible. They may never match the wit of C-3PO, but they seem bound to become indispensable members of the finance department.

For more information on robotics and the other digital technologies that are changing finance, visit Deloitte's repository on "CFOs and the digital transformation of finance."

RPA: Separating fact from friction
As with any emerging technology, RPA is often freighted with some common misconceptions. Here are four to consider:

You need an army of robots to make RPA worthwhile
In fact, one of the main attractions of RPA is the ability to automate the "long-tail" of low-volume or low-value processes that would not be economical to address via other means. That said, there is a minimum scale required to realize both the return on the upfront investment of establishing an automation capability and the ongoing overhead of running one. Vendors commonly specify a minimum number of licenses that must be purchased, but those minimums are usually not prohibitive. It is quite possible in today's market to see positive results with the deployment of a few robots.

Robots are infallible
While software robots may follow rules without deviation, don't need sleep or take vacations, and will not make typos, they are not perfect. Poor quality input data can cause exceptions, and while the ways in which robots recognize the elements of application user interfaces are quite robust they are not completely impervious to system changes, particularly when interacting with remote environments. In addition, robots have no "common sense," so if a flaw in your organization's robot management process allows an obvious error to creep into the instructions you've provided to your robots, they will still follow those instructions to the letter.

Robots will take our jobs
An assessment of organizations that have deployed automation suggests that the majority are focused on increasing the efficiency and effectiveness of their workforce rather than eliminating it, and the people relieved of routine tasks are refocused toward more valuable or rewarding activities. Over time, organizations could see lower turnover, higher morale, and increased internal innovation.

RPA will significantly reduce the importance of your IT department
RPA can be used to automate processes across business applications in a "noninvasive" manner, which can reduce reliance on IT for deployment. But while some subset of roles in IT may be reduced, others may increase. IT typically takes responsibility for systems infrastructure, security, resilience/recovery, and governance, and these functions are as important as ever. Therefore, IT should be involved in RPA deployments from the outset. In fact, in some organizations the IT function is the buyer of RPA solutions, as it looks for cost-effective means to better support and enhance the experience of its business partners.

*Excerpted from "Automate this: A business leader's guide to robotics and intelligent automation," Deloitte Consulting LLP, 2017; https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-sdt-process-automation.pdf.

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