Who minds the robots?
Financial services and the need to control RPA risks

As RPA gains momentum, financial institutions need to implement a strong control framework to address potential risks.

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The heart of the matter

With robotic process automation (RPA) becoming a prominent topic of discussion, financial institutions are thinking of ways to integrate digital labor into operations. While swift results can be enticing, firms should identify relevant risks and ask the right questions before diving into implementation. By doing the initial legwork, firms can position themselves for success. Streamlined processes and effective controls can help pinpoint issues early and ensure a positive return on investment.

One May afternoon in 2010, a trillion dollars vanished from the market in 15 minutes. The episode gave us a new term—"flash crash"—describing an abrupt, dramatic fall in securities prices, often as the result of high speed automated trading. The volatility also led to Congressional hearings, a trader's arrest for "spoofing" trades, and new 'circuit breaker' controls to slow down systems in trouble. From markets to driverless cars, we rely more and more on automated systems. They're game changers—but without effective controls, they can cause trouble in a hurry.

Across the financial industry, firms are looking to digital labor to supplement human work. From the front office to operations, robotic and intelligent process automation (RPA and IPA) is helping financial institutions become more efficient and reduce costs. Used properly, the tools even address many problems that end-user computing applications have faced. But there are less obvious ramifications—both good and bad—too. RPA and IPA call for a new mindset when it comes to risks and controls, but this isn't always clear to firms as they eagerly embrace these new tools.

This is the latest in a series of papers on digital labor that we are publishing in response to our clients' growing interest in this emerging technology.

Our first—*Q&A: How can RPA and other digital labor help financial services firms?*—looked at how this new technology can streamline repeatable, logic-driven work. Reconciliation and such regulatory rule-driven functions as anti-money laundering screening and know-your-customer/onboarding processes are often suitable candidates for automation.[1]

In *From theory to practice: Onboarding digital labor in financial services*, we saw that financial firms too often rush in and solve the wrong problems in their quest for quick savings and fail to build the proper infrastructure to support their efforts.[2]

And in *Payback time: Improving ROI from digital labor in financial services*, we demonstrated how better returns flow from realistic expectations coupled with a strategic and consistent use of digital labor, rather than rushing in with a narrow implementation.[3]

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[1] PwC, "Q&A: How can RPA and other digital labor help financial institutions?" June 2016, accessed March 22, 2017, www.pwc.com/fsi.
[2] PwC, "From theory to practice: Onboarding digital labor in financial services," August 2016, accessed March 22, 2017, www.pwc.com/fsi.
[3] PwC, "Payback time: Improving ROI from digital labor in financial services," October 2016, accessed March 22, 2017, www.pwc.com/fsi.

In this paper, we explore the potential regulatory, financial, and reputational hazards posed by digital labor, highlight specific areas of concern, and suggest some controls to consider before you implement RPA broadly. Of course, there's no "one-size-fits-all" option when it comes to a risk and control program. Still, without proper governance, the benefits of digital labor can quickly vanish. Jenna Switchenko, a director in PwC's Risk Assurance practice, notes that "Getting it right from the start is far more effective and cost efficient than cobbling together a patchwork of policies and controls later on." Good controls don't just avoid problems. They make things better by enhancing transparency, reducing costs, driving consistency, and producing metrics that lead to continuous improvement.

An in-depth discussion

Risks and robots

Let's start by looking at what we mean by risks and controls. When you implement any new technology, it's easy to be enchanted by what it can do when working well. With effective controls, you can mitigate the risks of the new technology while protecting your investment.

The best way to do this is to think broadly about risk and oversight, starting by understanding the stakeholders involved. As shown in Figure 1 below, we see five risk categories that apply to RPA programs:

- **Executive**: Have the right people bought in? Does everyone agree on what needs to be done?

- **Technical**: How will you control the robot's access to your systems and data? How will you test the robots to make sure they function as intended?

- **Change management**: Who manages communication? How can you address potential resistance from workers?

- **Operational**: What controls exist to monitor performance? How will you stay compliant with relevant regulatory requirements?

- **Functional**: Who designs controls? Are there scalability limitations in RPA and core systems?

Obviously, these are high-level examples, and they're not intended to act as a checklist. We've identified many potential problem spots from minor to complex, and we've found plenty of ways to get more value out of RPA investments. When handled properly, they can often be addressed easily. But when they pop up in a crisis, they can sink a promising program.

Figure 1: Five categories of risk to consider when implementing an RPA program.
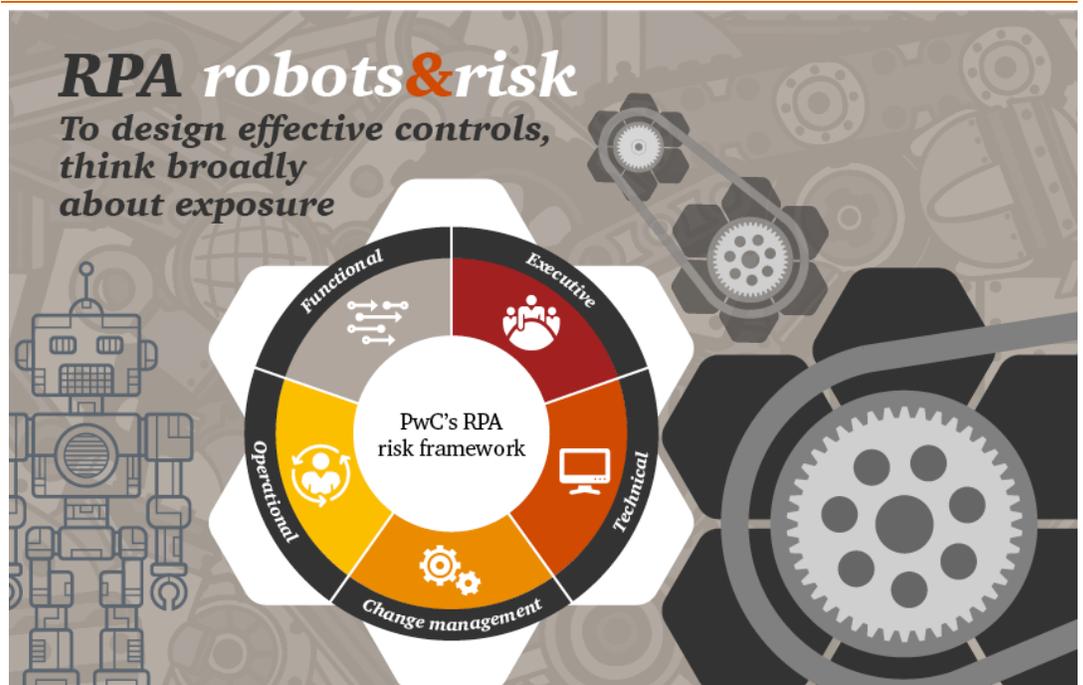
Digital labor: not just digital, not just labor

In our view, too many financial firms treat risk and control as an afterthought. They do so because they assume that RPA and IPA is just more software, and they know how to manage software. Typically, they leave it to digital labor systems integrators or Internal Audit, Risk Management, and Compliance. Unfortunately, there are issues either way. Someone with the right skills needs to be focused on the design and implementation of controls across the entire program. And, to be successful, it's important to build in controls as a formal work stream, right from the beginning.

Whose job is it, anyway?

For one thing, neither team may have the incentive nor the background to address the core issue. A tech firm is a whiz at installing software, not controls—and it may not have an incentive to even think about risk management. Likewise, an auditor may be well schooled in the complexities of traditional governance. But robotic

technology introduces new layers of digital risk that call for a different level of understanding and a new tool set.

Here's a simple example. Consider a robot processing financial reconciliations using data from an outside vendor. For weeks, the robot has been working without a glitch, pressing a big green "View now" button on the lower right of the screen, retrieving transaction details, and adding them to a spreadsheet. One day, without warning, the vendor's IT team makes a small change to the user experience. Now there's a smaller, blue button on the lower left of the screen, and it says "Show me!" The robot could be searching for the "missing" green button for days before someone notices the problem. It's totally foreseeable—but would the integrators have seen it coming?

Don't assume that someone else is focusing on risk and control. We typically don't see this as a priority in many RPA enterprise mobilization efforts, and that can lead to problems down the road. In RPA projects with our clients, we embed governance, risk management, and controls into our

Figure 2: Benefits of a robust RPA control framework.

Digital labor

Fix it before it's broken. A robust control framework to address risks can help you spot issues early and get the most value from your RPA investment.

approach to enterprise mobilization and deployment. As noted in Figure 2, when you bring this lens to a project plan, you often catch issues before they arise, and you can identify opportunities for improvement, too.

A little now, a lot later

There's another problem with handling risk and control later: it can be expensive to do so. Sometimes firms will have humans check the work of the robots as a control point. This is fine, up to a point. But the human infrastructure you need to check the work of three robots becomes overwhelming with 30 robots, and untenable at 300. If you treat controls as something to get around to later, you run some expensive risks, from retrofits to the loss of executive credibility.

Controls and end user computing

This isn't the first time that firms have experienced these issues. Many financial institutions have come to rely on end-user computing applications (EUCs) as a fundamental part of their business operations. While EUCs provide valuable tools, they don't offer many provisions for management control. RPA often circumvents these problems because the newer technology includes tools like audit logging and 'control rooms' that allow central support staff to monitor robot activity. If you've designed your RPA controls properly, you'll know exactly where each robot is, what it's allowed to do, and what it has done. This can be a challenge for EUCs even within a strong governance culture.
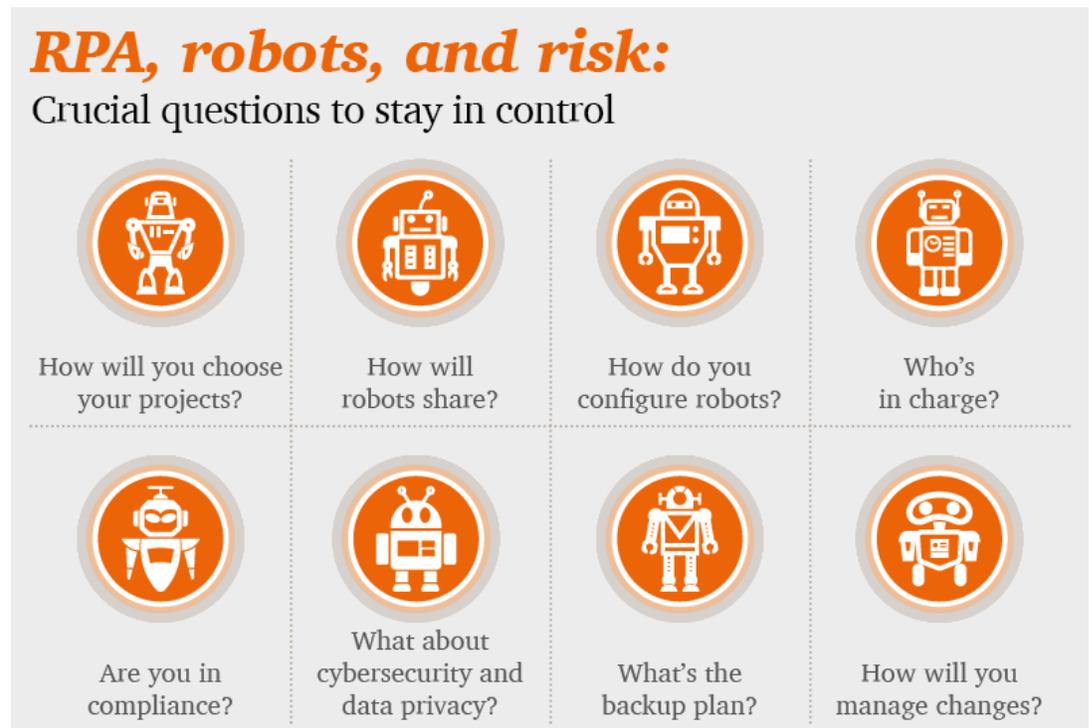
Our recommendations

Designing controls that work

When control functions aren't considered early in the RPA development cycle, small issues can grow big, as can remediation costs. So, developing effective policies and procedures before any enterprise-wide roll out increases your chances of success. But starting early is only one component in designing effective controls.

Kelley Mavros, a principal with Strategy&, suggests that stakeholders are the key. "Remember, one of the principal goals of a risk and control strategy is to establish trust and transparency. So, you need to understand which RPA risks really matter most in the broader environment for your financial institution, and design controls for each." When digital labor is involved, there are multiple stakeholders, internal and external, each with their own concerns. They all should be educated on what digital labor can do, and why. Someone who oversees cybersecurity will focus on one set of challenges, while the people who conduct quality assurance testing may have very different priorities. Regulators and the Internal Audit, Risk Management, and Compliance teams may be particularly interested in how you use RPA, especially when customer data or financial reporting is involved.

Figure 3: Questions to ask as firms design and implement RPA control structures.

RPA, robots, and risk:
Crucial questions to stay in control

| How will you choose your projects? | How will robots share? | How do you configure robots? | Who's in charge? |
| Are you in compliance? | What about cybersecurity and data privacy? | What's the backup plan? | How will you manage changes? |

As noted in Figure 3, here are some questions to consider as you prepare to design and implement your RPA control structures. The list isn't exhaustive, but it should illustrate the kinds of issues you may face:

- **How will you choose your projects?** Does management have a formal methodology to inventory, analyze, prioritize, and select projects where digital labor makes sense? If this doesn't seem significant, think again. As we've noted elsewhere, automating a bad process can destroy the return on your RPA investment.[4]

- **How will robots share?** RPA is 'lightweight' in that it doesn't require much centralized IT support. But you're likely to see better results if you set a formal protocol that spells out a shared approach to RPA across business units, supported by a clear communication process. Consistency simplifies and speeds up RPA production, especially when introducing new robots. It's also easier to design tools to monitor standardized operations. You don't have to be heavy-handed; business units should be able to find their own innovative uses. But with some simple control processes, you'll deploy processes more quickly and consistently.

- **How do you configure robots?** Will you follow legacy change management protocols? This may seem sound, but consider what this function entails: planning, gathering requirements, testing, getting formal approvals from multiple stakeholders (and a change advisory board), etc. This may not be agile enough for digital labor. Testing is part of the configuration process, too— so who will develop the robots' test plans? Testing is a well-defined discipline; will the user who creates tests know how to design user acceptance tests and regression test cases to sufficiently assess the changes? While

you may not need to create a formal testing lab, you should be sure that you've designed and conducted a comprehensive examination, documented the results, and made this information accessible to new team members. "It seems like it works" isn't good enough. Good testing programs can save money and reduce frustration by identifying and fixing potential problems before they occur.

- **Who's in charge?** Once the robots are at work, someone has to oversee operations: essentially, a "digital workforce manager." People in this role will need tools to monitor the capacity, availability, and performance of robots in production. They'll need to oversee logical security rights and take ownership for the robots' user IDs and passwords. They'll need to know how to respond if something breaks down in a production setting. (Is it the same kind of escalation process as when other technology fails? Will you have additional resources on call to help?) Finally, they'll need to troubleshoot for the long term. Just as in any complex system, there will be opportunities for improvement, and someone needs to own the role of analyzing failures and applying a fix to the root causes.

- **Are you in compliance?** Oversight structures aren't static because stakeholder concerns aren't static. Among other things, you should determine if these controls are in compliance with statutory, regulatory, and contractual requirements. This is especially true when the digital labor is processing cross-border transactions that can involve an entirely different set of rules and procedures, or transactions that are governed by regulatory bodies like FINRA or the SEC.

- **What about cybersecurity and data privacy?** Almost by default, robots access multiple systems, and each can be a potential vulnerability. Will the robots touch personally identifiable information? How might they be compromised? Given that many robots will be used to handle sensitive information, what vendor management provisions will you establish and maintain to verify how data might be accessed? These risks should be identified, built into any risk assessment, and plugged into enterprise-wide controls.

- **What's the backup plan?** How are you addressing the business continuity risk? Can you cope with the sudden departure of key personnel and the possible loss of institutional knowledge? If you have designed manual workarounds in the event of a robotic failure, are you prepared if the responsible humans leave? How do robots fit into the firm's broader resiliency plan?

- **Are you ready for change?** Does this automation affect financial reporting processes and Sarbanes-Oxley controls? If you're a service provider, how are you going to describe your RPA processes to clients? Do you issue a controls report (i.e. SOC 1)? How are you going to demonstrate the operating effectiveness of the robots?

Finally, "controls that work" rely on documenting compliance at every stage of planning and operation. Even if you've done all the work to establish an effective control system, you won't have established trust and transparency if you can't prove your work. This doesn't have to be an onerous, administrative process, but it can spell the difference between success and failure for new technology like RPA.

What this means for your business

One step back, two steps forward

It's the paradox of control: slowing down to add checks and balances can speed up a project in the long run. Kevin Kroen, a partner in PwC's Banking and Capital Markets Advisory practice, observes that "Behind every RPA program delay is a set of stakeholders asking: 'What would happen if…?'" What if the robots make private data public? What if they make financial commitments we can't honor? What if they affect mandatory reporting? What could go wrong here?

At the same time, you can also ask "What could go right?" When handled properly, effective controls programs offer many benefits. They can give the flexibility and appeal of EUCs without unwanted surprises. They offer transparency that helps you communicate effectively with regulators and stakeholders. They lead to consistency instead of workarounds. They make RPA stronger.

In hindsight, better controls might have prevented 2010's flash crash, and we take that lesson seriously. With good governance from the beginning, you are more likely to bypass problems. This lets you focus on efficiency, speed, transparency, and digital labor's many other benefits.

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