



Put On Your Auditor Hat: Identifying Risks and Considerations for Bots in the Finance Function

Presentation at AGA Dallas Chapter's 2020 Virtual Spring PDT

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We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before.

We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society”.

Klaus Schwab
Founder and Executive Chairman,
World Economic Forum Geneva

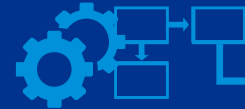


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A new era of jobs



Advancements and adoption of cloud computing



The digitization of massive amounts of data



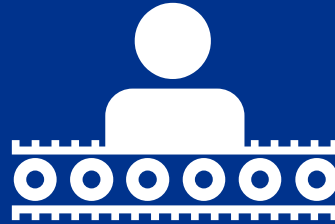
Advancements in analytics

Intelligent Automation encompasses many kinds of technologies that can observe, learn, and adapt to accomplish objectives – just like a human.



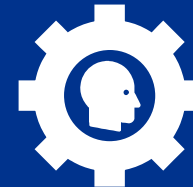
Basic Process Automation

Supervised or rules-based processing: Capable of recognizing complex patterns from disparate sources of data and forming probabilistic insights



Augmentation

Processing of unstructured data and base knowledge: Software that can work alongside humans to learn patterns and augment human expertise



Cognitive Automation

When combined with physical robots or software “automations,” full automation of complex tasks that typically involve human judgment is possible

Common Questions

How do I go about a large scale transformation?

Which emerging technologies should I make investments in?

How and when should we modernize our finance technology platform?

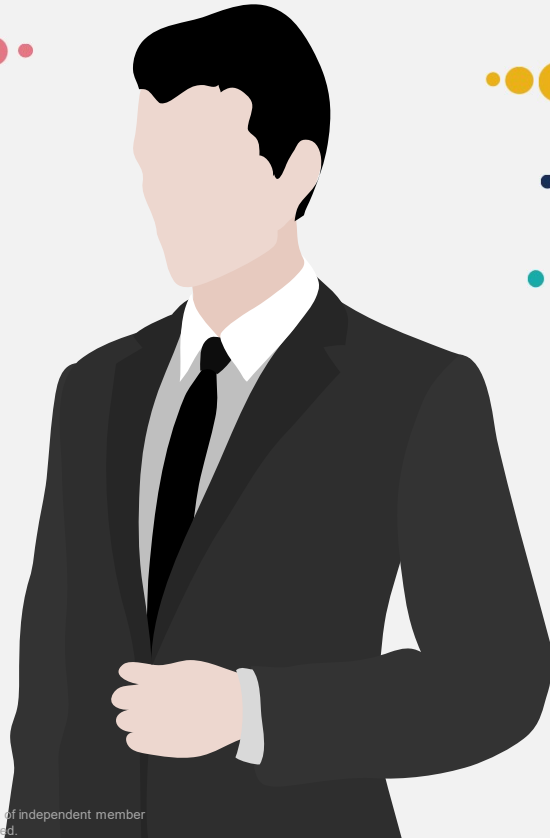
What are we doing today that we could transform tomorrow through technology?

How does our finance and technology strategy fit our mission objectives?

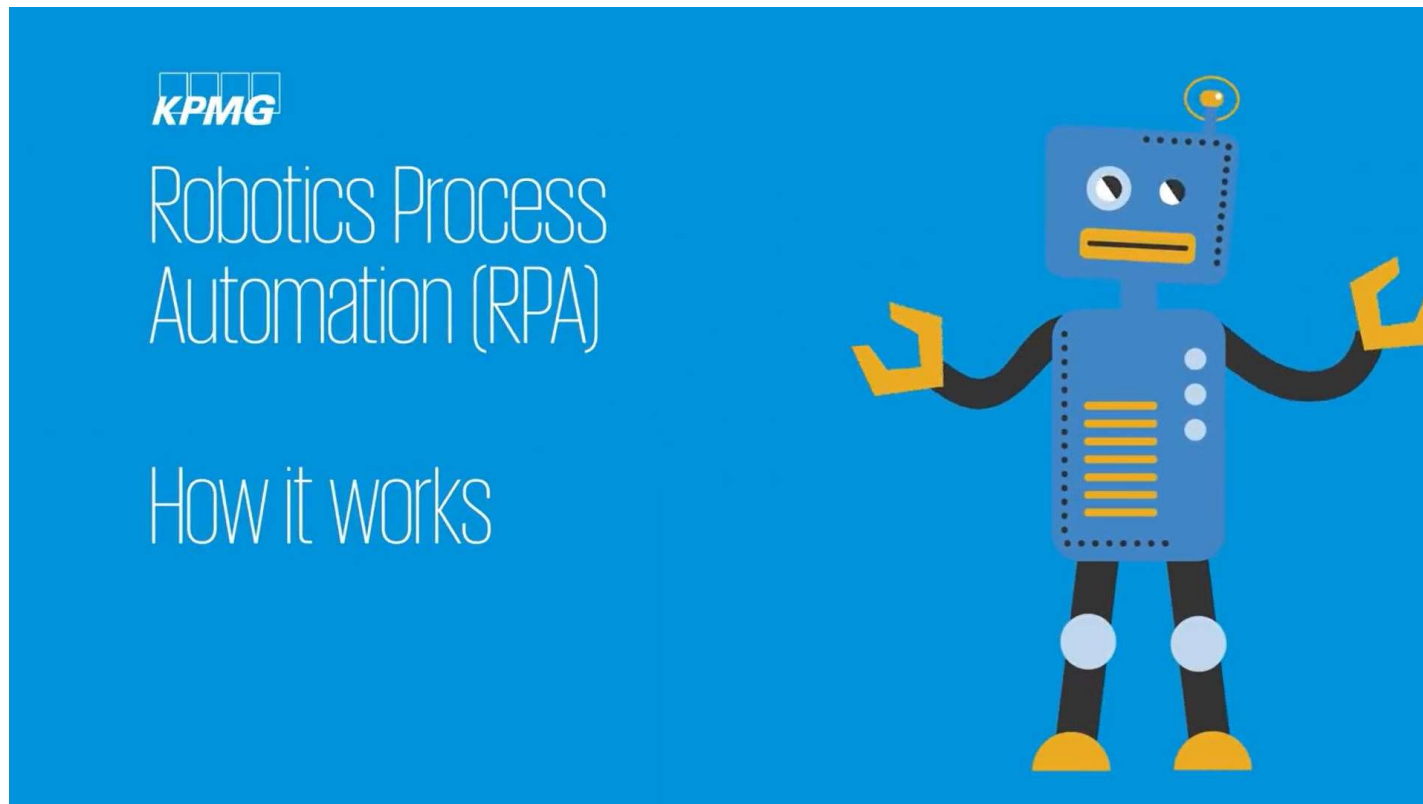
What are the benefits of a technology transformation?

How and when do we take advantage of disruptive technologies?

What have other organizations done in the technology space that are similar to my situation?



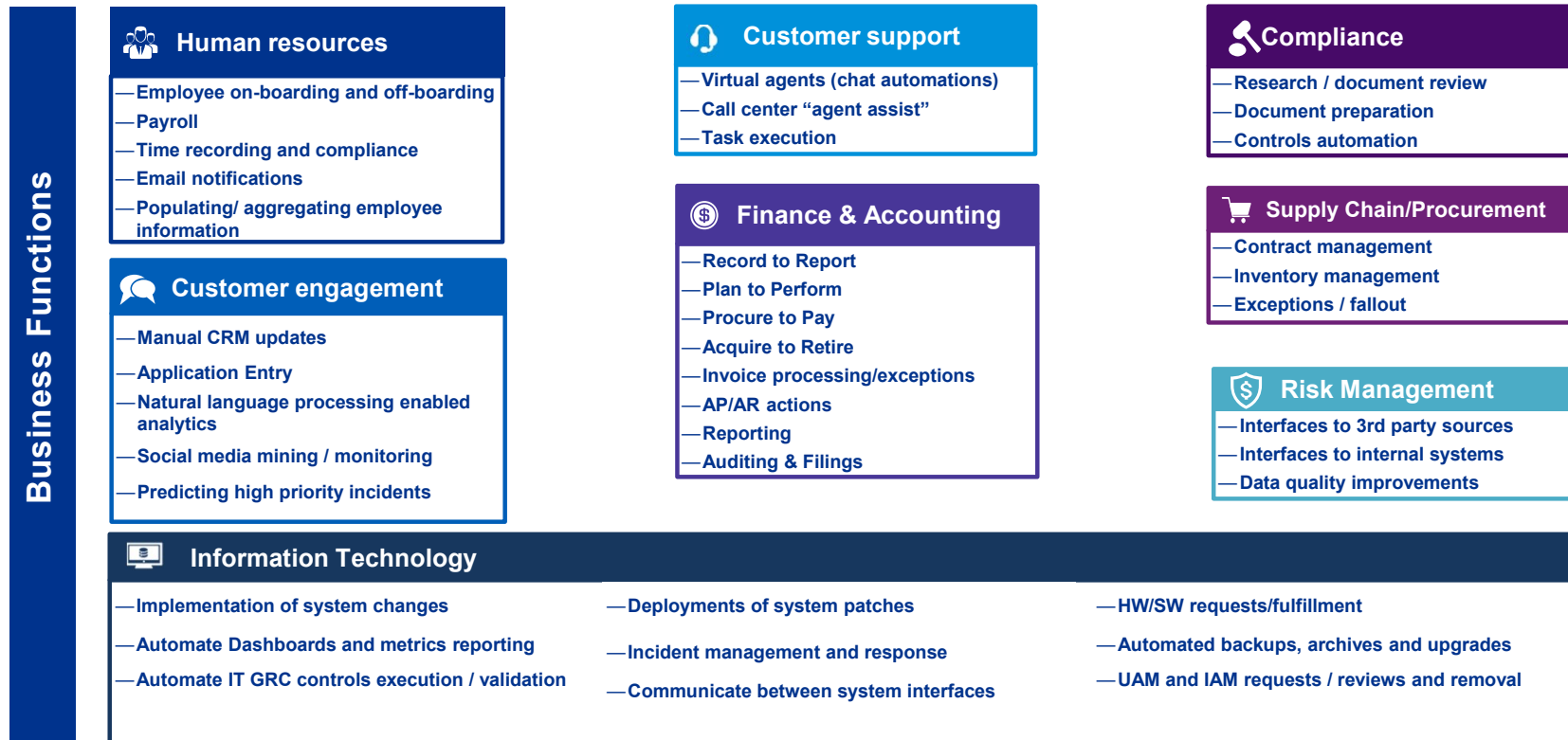
What does a fin-bot look like? (Video 1)



<https://www.youtube.com/watch?v=xW95yb6J1eU>

Intelligent automation in core processes

Core process areas are good to start with and can open the door to Intelligent Automation as well as opening the gateway to widespread cognitive applications.



Financial Management Heat Map

	Close & Reconcile Subsidiary Ledgers	General Ledger Close	Financial Consolidation	Month End Reporting	Finance & Accounting Governance			
Level 2 Process Group	1.0 Close & Reconcile Subsidiary Ledgers	2.0 General Ledger Close	3.0 Preliminary Financial Statements	4.0 Financial Consolidation	5.0 Month End Reporting	6.0 Technical Accounting	7.0 Manage Process	8.0 System Maintenance
Level 3 Process	1.1 CLOSE/CUT-OFF TRANSACTION PROCESSING	2.1 PROCESS JOURNAL ENTRIES	3.1 REVIEW TRIAL BALANCE	4.1 TRANSFER & RECONCILE G/L TO THE CONSOLIDATION SYSTEM	5.1 PREPARE CONSOLIDATED FINANCIAL STATEMENTS	6.1 PERFORM ACCOUNTING RESEARCH	7.1 DEVELOP CLOSE CALENDAR & MONITORING PROCESS	8.1 MAINTAIN SYSTEM INTERFACES
	1.2 CLOSE TRANSACTION SYSTEMS SUBSIDIARY LEDGERS	2.2 PROCESS ALLOCATIONS	3.2 REVIEW PRELIMINARY FINANCIAL STATEMENTS	4.2 PROCESS CURRENCY TRANSLATIONS	5.2 PREPARE & DISTRIBUTE MANAGEMENT REPORTING	6.2 SCAN EXTERNAL ENVIRONMENT AND ENGAGE STANDARDS SETTERS	7.2 DEVELOP CLOSE POLICIES, PROCEDURES, STANDARDS & TEMPLATES	8.2 MAINTAIN CHART OF ACCOUNTS
	1.3 TRANSFER SUB-LEDGER DATA TO GENERAL LEDGER	2.3 PROCESS LOCAL TAX CALCULATIONS AND JOURNAL ENTRIES	3.3 PROCESS MANAGEMENT & CORPORATE ADJUSTMENTS	4.3 PROCESS INTERCOMPANY ELIMINATIONS	5.3 EXECUTIVE AND EXTERNAL REPORTING	6.3 DEVELOP ACCOUNTING ISSUE IDENTIFICATION & MONITORING	7.3 DEVELOP & MAINTAIN INTERNAL CONTROLS	8.3 MANAGE BUSINESS RULES AND MASTER DATA
	1.4 RECONCILE SUB-LEDGERS TO GENERAL LEDGER	2.4 PERFORM RECONCILIATIONS	3.4 PERFORM FINANCIAL CLOSE ANALYSIS	4.4 PROCESS CONSOLIDATED ADJUSTMENTS	5.4 PREPARE NOTES TO THE FINANCIALS	6.4 DISCLOSURE MANAGEMENT	7.4 ISSUES TRACKING & RESOLUTION	8.4 PERFORM SYSTEM UPDATES
		3.5 CLOSE GENERAL LEDGER	4.5 RUN TAX CALCULATIONS AND PROCESS CONSOLIDATED TAX JOURNAL ENTRIES	5.5 PREPARE STATUTORY FILINGS AND SHAREHOLDER REPORTS		7.5 EXTERNAL AUDIT MANAGEMENT		
		3.6 PERFORM FINANCIAL CLOSE FORECAST	4.6 CLOSE CORPORATE CONSOLIDATION LEDGER	5.6 PREPARE & DISTRIBUTE REGULATORY REPORTS		7.6 EVALUATE & IMPLEMENT IMPROVEMENT OPPORTUNITIES		

Legend

■	Automation
■	Augmentation
■	Cognition



Where are fin-bots in use?

Defense Logistics Agency:

Planned to have deployed 75 bots by the end of FY 2019

Centers for Medicare and Medicaid Services:

Bot: One record in one minute with 95% accuracy
Legacy Process: One record in 65 minutes and less accurate

National Aeronautics and Space Administration:

Four bots deployed over funds distribution, invoicing, procurement requests, and human resources

Department of Housing and Urban Development:

Identified 50,000 to 60,000 work hours that will be converted to RPA

General Services Administration:

Used bots to reduce more than 13,000 hours of unnecessary or duplicative work

Bureau of the Fiscal Service:

One bot eliminated the need to process 300-plus reports in Excel

Key Criteria for Identifying RPA Opportunities

When determining automation suitability, the following criteria should be considered:

Robotic Process Automation Opportunities	
#	Question / Criteria
1	Is the process/task highly manual and repetitive ?
2	Is the process/task prone to errors or re-work ?
3	Does the process/task require "stare and compare" activities with multiple systems?
4	Does the process/task require "copy and paste" activities between multiple systems?
5	Does the process/task require "swivel-chair" navigation of multiple screens? (e.g., using several different systems to complete the process)
6	Does the process/task require searching, collating, researching and/or updating information ?
7	Can the process/task be disaggregated into unambiguous rules?
8	Is the technology/application environment relatively stable for the process in question?
9	Does the process involve judgment based decisions ?
10	Is there extensive internal company knowledge needed to process the transaction?

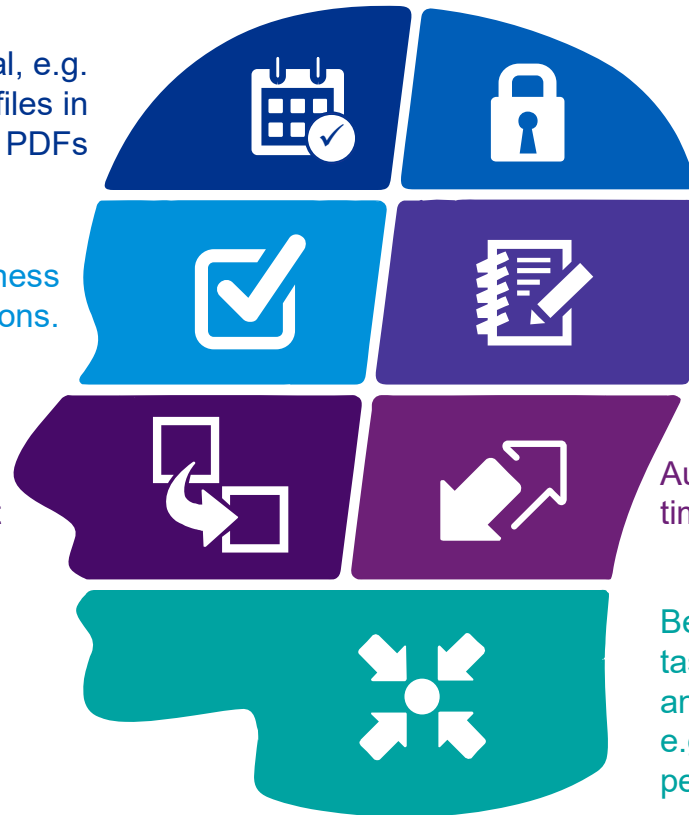


What activities are better candidates for basic automation?

Inputs files are natively digital, e.g. structured data csv files, excel files in defined formats, system generated PDFs

There are clearly defined business rules with limited or no exceptions.

Required outputs are flexible with respect to format



Input file are self-contained, i.e. they don't access to another systems or files

Required outputs are clearly defined with respect to content, e.g. a list or table

Automation would result in significant time savings, i.e. 100's vs. 10's of hours

Bear in mind that there may be multiple tasks that are substantially the same and could be automated as a group, e.g. the same system access test is performed for ten separate systems

What activities are not ideal candidates for basic automation?

The inputs are images, e.g. scanned documents or pictures.

The amount of time saved is limited, i.e. less than 80 hours.

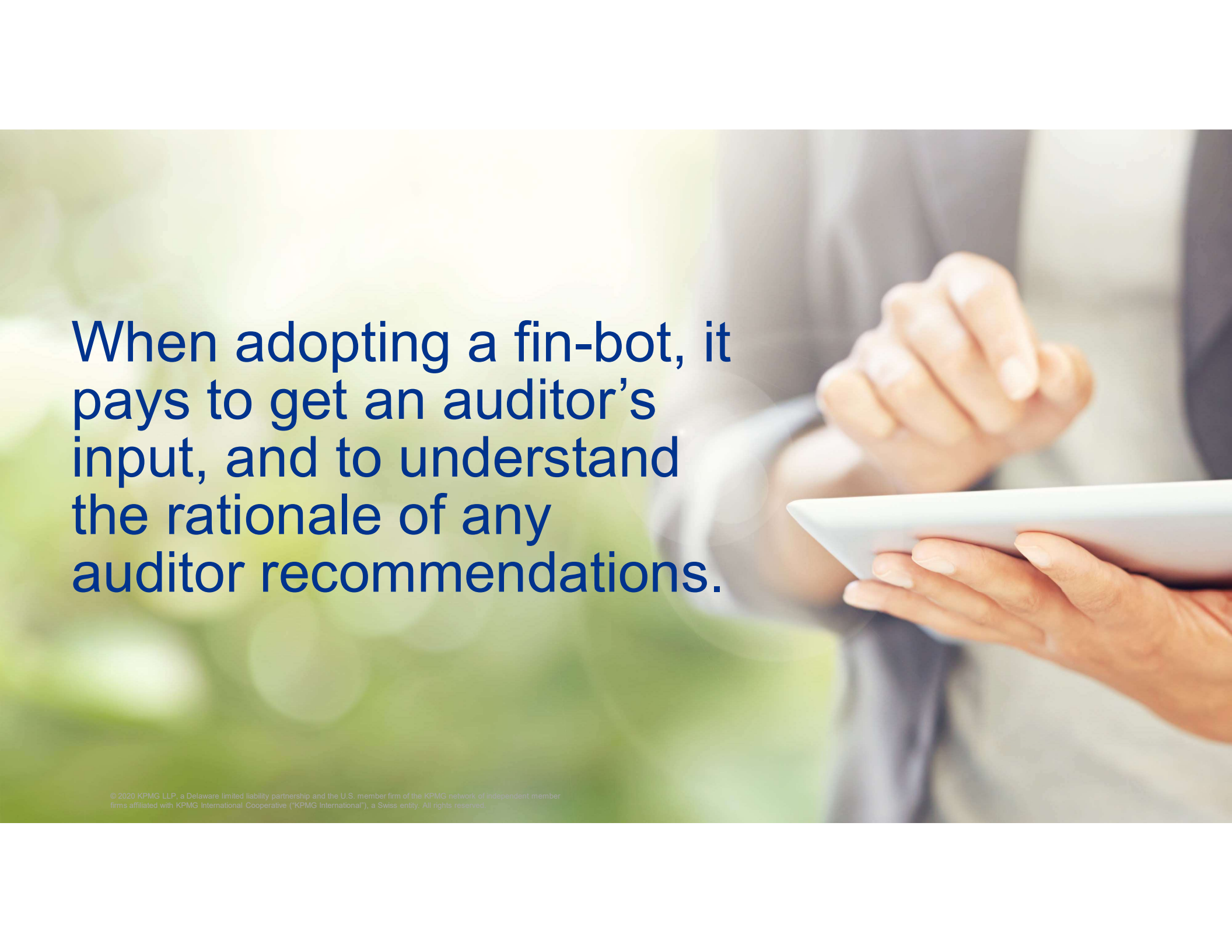
Performing the task requires access to systems outside of the provided data.

The output format constantly varies.

The location of inputs is variable or difficult to predict, i.e. non-specific language in a free-form e-mail, physical signatures, or non-standard contracts.

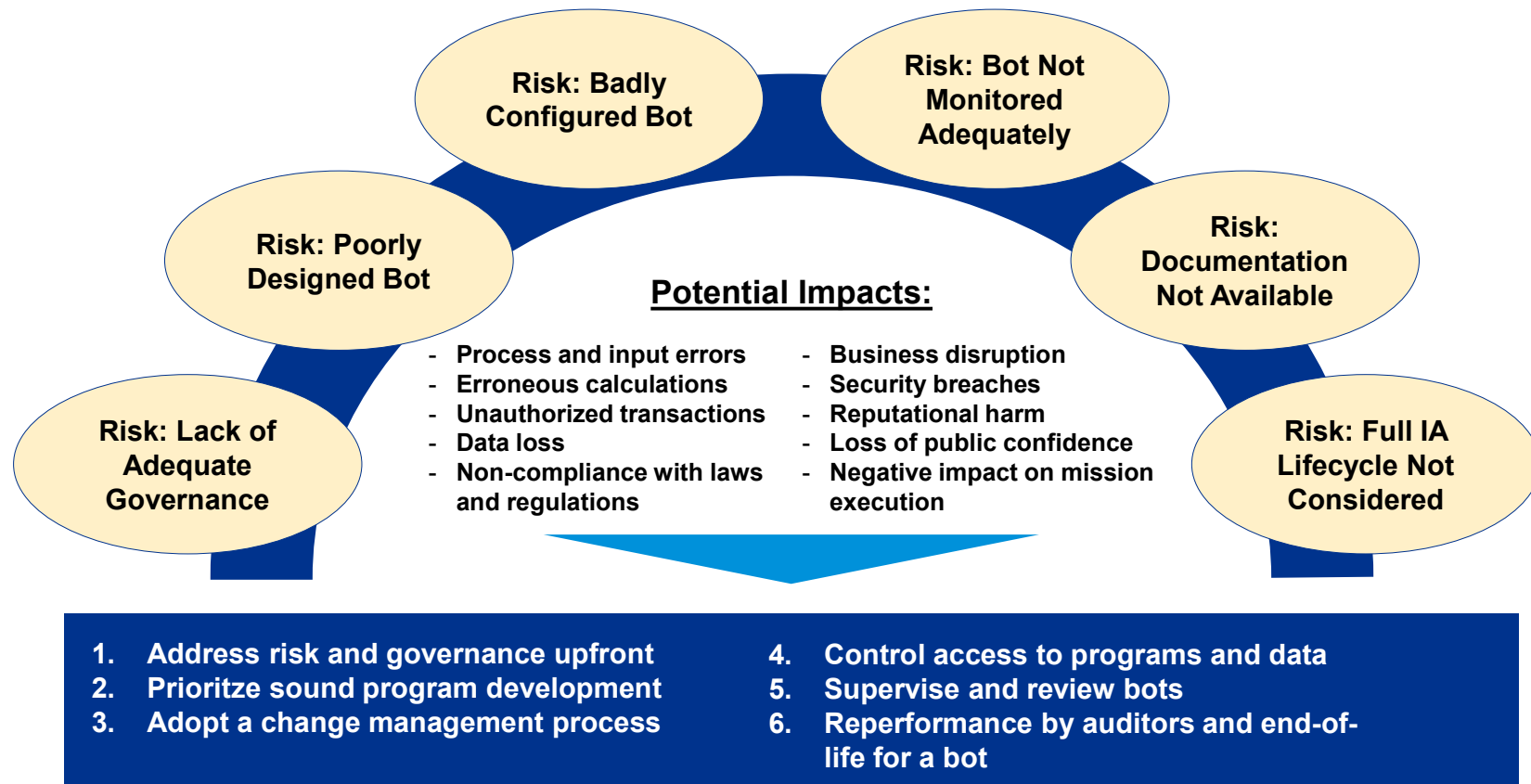
The business rules are complex, inconsistent, or require subject matter expertise.

The activity is evolving or unstable. New system implementations are on the horizon.



When adopting a fin-bot, it pays to get an auditor's input, and to understand the rationale of any auditor recommendations.

Fin-Bots: Risks, Impacts, and Steps to Consider



Address risk and governance up front:

- Are clear roles and responsibilities present?
- How strong is management's oversight?
- What automation policies and procedures are in place?
- Are the right stakeholders involved in the automation lifecycle?
- What risk assessment activities are in place?
- What key performance or risk indicators are used to monitor the fin-bots?





Prioritize sound program development:

- Is the platform subject to standard IT processes and policies?
- Does management have a formal system development lifecycle for the creation of fin-bots?
- How does the entity verify secure development and testing?
- Who has access to develop, build, and migrate bots into production?
- Who is responsible for evaluating and approving bots before they go live?
- Is there an official “authorization to operate” for each bot?

A small green seedling with several leaves is growing out of a crack in a piece of weathered, grey wood. The background is a blurred, textured surface of wood.

Adopt a change management process:

- Are script changes properly approved?
- Is access to the control room or orchestrator function restricted?
- Are changes in application production appropriately restricted and segregated from the development process?
- Are post-implementation reviews performed to verify if the fin-bot is operating as intended?



Control access to programs and data:

- Is access to shared accounts appropriately restricted?
- How is user access to the automation platform reviewed and approved?
- Is access of terminated or transferred users removed or modified in a timely manner?
- Is user access continually reviewed for the timely detection of misuse?



Supervise and review bots:

- Are all system application jobs (interfaces, batches, automated processing and data loads) monitored for exceptions?
- How are exceptions resolved?
- How is overall performance accuracy monitored?
- How does the organization respond to performance shortfalls?
- Are jobs not completed successfully communicated to stakeholders for follow up and resolution?
- Is logging enabled on the system?
- Is critical information backed up regularly and stored securely?
- Are business continuity plans in place?

Hypothetical Fin-Bot: Performance Accuracy Score



Re-performance by auditors and end-of-life of a bot:

- Are data management and documentation warehousing for bots available for re-performance by the auditor?
- What is the expected lifecycle of bot development and deployment?
- What are end-of-life considerations for a bot?



Many organizations take these steps to get started



“Size the Prize” – Evaluating processes by suitability for automation and effort to estimate overall benefit potential



Conduct a Proof-of-Concept – Demonstrating the technology effectiveness and validating performance



Define a Deployment Roadmap – Outlining steps to stand up an Intelligent Automation capability and begin to capture the benefits

Articles from KPMG's Government Institute

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Put on Your Auditor Hat to Help Avoid Turbulence on the Intelligent Automation Journey!

By Jorge Asef-Sargent, Andrew C. Lewis, Kirke E. Everson and Jeffrey C. Steinhoff

Not long ago, aside from certain military and intelligence agencies, relatively few federal organizations broadly used intelligent automation (IA). The pendulum is now swinging very rapidly. Program offices are harnessing IA to gain deeper insights into their data to support mission delivery. Citizen-facing government services are deploying chatbots² and other tools to more accurately and rapidly respond to inquiries and improve the citizen experience. And finance organizations are moving—some at breakneck speed—to robotic process automation (RPA) for routine, high-volume, repetitive tasks, such as account reconciliation, transaction processing, and financial reporting. Meanwhile, other cognitive solutions³ are on the drawing board awaiting development.

A common uncertainty among those considering RPA is how auditors could or should be involved in an organization's IA journey. From the viewpoints of three auditors and a technologist with well-over a century of combined hands-on practical experience, we'll explore risk and governance issues critical to reducing turbulence along the IA journey of finance.

The Role of IA in Finance

Even the simplest bot helps finance become more strategic and innovative. Instead of staff moving transactions from one step to the next, bots, which can be developed fairly quickly and at relatively nominal cost, are able to work 24 hours a day, every day of the year, performing routine tasks at digital speed with increased accuracy and less expense. The London School of Economics and Political Science identified a 650–800% return on investment in robotic technology in three years for certain back-office tasks.⁴

To date, most government finance initiatives involve RPA, which is a good way to get started. By converting routine transaction processing from human to machine, finance staff are freed to support program and operational management of higher-value, mission-critical business issues through financial analysis, and predictive analytics, for instance. RPA is also a pathway to other highly sophisticated cognitive solutions, to be developed over time.

Some government IA initiatives, focused primarily on RPA, are already in place. Examples include:

- **The Defense Logistics Agency (DLA)** which provides more than \$37 billion in goods and services annually, is heavily transaction-based. RPA will streamline various finance operations and increase responsiveness to audit readiness requirements. DLA estimates the development of a bot will average

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The March of the Robots

By Jeffrey C. Steinhoff, CGFM, CPA, CFE, CGMA; Andrew C. Lewis, CGFM, CPA, CIPP/C, PMP; and Kirke E. Everson, CGFM, CISSP, CISA, PMP, CRISC, CGEIT

With one of the authors of this article's origins as a professional, neither in the field, nor in the office, were we here in sight, a little way adding machine was the standard, and accountants had to hand-processed transactions to accounting journals. When someone told you to copy something, it wasn't working; it was a language or using a typewriter. Accounting government financial information was performed at a level, given the limited technology available at the time, and computers, which were not used to process and store 100 percent labor-intensive. We've come so far, and where will the future take us? Today, we are in the thick of another quantum leap in our profession that will revolutionize the art of the possible. This article will discuss the movement toward robots, or "bots," operate like humans, and their already existing.

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The Next Frontier in Government Accountability: IMPACT REPORTING

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CFOS OF THE FUTURE: CHARTING A NEW COURSE THROUGH THE "SEVEN I'S"

By Laura A. Price, Andrew C. Lewis and Jeffrey C. Steinhoff

This year marks the 30th anniversary of the landmark Chief Financial Officers (CFO) Act of 1990. Since that monumental event, federal CFOs have moved far beyond the basic accounting, finance, control, reporting and compliance tasks that long represented the traditional "back office." Their reach has expanded into program and enterprise operations. They've shifted from largely preserving value, through activities such as financial risk management, finance, to creating value through innovative programs and solutions.¹

As the future of our profession advances in pace to unprecedented heights, our world is changing once more, if we but describe a general, interconnected, fluid, inclusive, and dynamic.

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Overwhelmed by data? Using and Protecting the "Right" Data

By Andrew C. Lewis, CGFM, CPA, CIPP/C, PMP; Jeffrey C. Steinhoff, CGFM, CPA, CFE, CGMA; and Viral Chawla, MBA, MS, P&MH, PMP

- Federal, state and local governments have access to incredible amounts of data to manage programs, improve operations, fight fraud, waste and abuse, and better serve citizens. Whether data is generated in-house or available externally, consider:
 - Data is exploding. In 2014, it was estimated that 90 percent of the world's data had been produced within the previous two years.¹
 - As much as 80 percent of data is unstructured. Today's ability to analyze unstructured data is a game-changer.
- The federal government operates 224 core data centers, with an additional 10,000 non-core data centers. Although efforts are underway to close approximately half of the non-core data centers, the amount of computing power and storage in the remaining centers is staggering.
 - Data.gov, the federal government's open government data repository, includes more than 50,000 data sets available for public analysis.² In just the last two years since June 2015, the number of data sets has tripled.³
- The federal government is projected to spend more than \$97 billion on information technology (IT) and IT-related projects in fiscal year 2017.⁴
 - Cost of data storage is estimated at \$24 per gigabyte of data. This can be an appreciable, yet unnoticed, hidden cost to an organization.
 - Governments and companies will spend more than \$203 billion by 2020, compared to \$130 billion in 2016, on managing, protecting, and analyzing available data.⁵

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Thank you!

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