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How Robotic Process Automation and Artificial Intelligence Will Change Outsourcing

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The Age of Disruption

HOW EMERGING TECHNOLOGIES AND CYBERSECURITY ARE TRANSFORMING SOURCING



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What are RPA and AI?

How are they being used today?

What new capabilities will RPA and AI enable?

What is the trend for RPA and AI adoption?

What effect will RPA and AI have on labor requirements?

What effect will RPA and AI have on outsourcing?

What do RPA and AI mean for your sourcing contracts?

Robotic Process Automation (RPA):

- The application of technology that enables computer software to partially or fully automate human activities which are manual, repetitive and rule-based
- RPA gives a company the ability to map out a business process that is definable, repeatable and rules-based and assign a software “robot” to manage the execution of that process

WHAT IS RPA?

Common Applications of RPA:

- RPA software often works at the “presentation layer” (the user interface) of computer systems and mimics a human user
- Because RPA can sit on top of a company’s IT infrastructure, a company can implement the technology without altering existing infrastructure and systems
- RPA depends on structured data, though the data can come from various different systems
- Back-office clerical processes of the type sent offshore tend to be simple and transactional in nature, requiring little (if any) analysis or subjective judgment, and are good starting points for RPA

Robotic Process Automation (RPA)

– Illustration 1

1. A team of 11 bank employees was assigned to manually review on a daily basis 2,500 high-risk customer accounts to determine whether or not payments should be processed or returned.
2. It took up to 8 hours for these 11 employees to finish the task.
3. The work is now performed by 20 software robots, while the employees are freed to do higher-value work.



Robotic Process Automation (RPA)

– Illustration 2

1. A construction engineering business produces and sends over 500 invoices per month to customers, each requiring up to hundreds of pages of supporting data from a dozen different systems.
2. Each invoice previously took up to 5 hours to produce.
3. The work was converted to software robots and now takes only 11 minutes per invoice, with millions of dollars in savings.



WHAT IS AI?

- **Artificial Intelligence (AI)** also called Smart Process Automation (SPA) is intelligent software with machine-learning capabilities
 - Unlike RPA, which must be programmed to perform a task, AI can train itself or be trained to automate more complex and subjective work through pattern recognition
 - Unlike RPA, which requires a human expert to hard code a script or workflow into a system, AI can process natural language and unstructured data
 - Unlike RPA, AI responds to a change in the environment, adapts and learns the new way



- **Artificial Intelligence (AI) capabilities:**
 - **First, capturing information**, which can be done through:
 - **Vision recognition** (e.g., recognizing a face or photo),
 - **Sound recognition** (e.g., transcribing spoken words),
 - **Search** (e.g., extracting data from unstructured or semi-structured documents), or
 - **Data analysis** (e.g., identifying clusters of behaviors in customer data).

Each of these turns data into information and are the most mature application of AI in business today.

- **Artificial Intelligence (AI) capabilities – continued:**
 - **Second, turning that information into something useful through:**
 - **Natural language processing** (e.g., extracting meaningful data from an email),
 - **Reasoning** (e.g., should I act based on the information given), or
 - **Prediction** (e.g., predicting buying behavior based on past purchases)
 - **Third, understanding why something is happening.**
 - This capability feeds off the first two categories described above.
 - This is the least advanced area of AI and is not yet relevant to business applications, but will have a huge impact once it matures.

What IS AI?

- **Machine Learning**

- With “machine learning,” programmers don’t encode computers with instructions. They *train* AI systems.
- Demis Hassabis, the leader of Google’s DeepMind AI team says “[training AI systems is] almost like an art form to get the best out of these systems. . . . There’s only a few hundred people in the world who can do that really well.”

- **Black box**

- “With machine learning, the engineer never knows precisely how the computer accomplishes its tasks. The neural network’s operations are largely opaque and inscrutable. In other words, it is a black box.”

-- *The Rise of AI – The End of Code*, by Jason Katz, *Wired Magazine*, May 2016

Examples of Existing RPA and AI Products

- **IPSoft, Inc., and Rage Frameworks Inc. in the US, and Blue Prism in the UK,** are established platforms already in use
 - IPSoft describes its product **Amelia** as follows: “[It] can digest an oil-well centrifugal pump manual in 31 seconds – and give instructions for repairs – and do the job of a call-center operator, a mortgage or insurance agent, even a medical assistant, with virtually no human help. Fluent in 21 languages, Amelia understands implied, not just stated, meanings, and improves performance by hearing humans deal with questions it can’t yet answer.”
- **Atos SE** has been using RPA to automate IT tasks in customer legacy infrastructure tasks in functions such as ticket management, incident management and server load balancing, which were previously done by humans.



Examples of RPA and AI Products *(continued)*

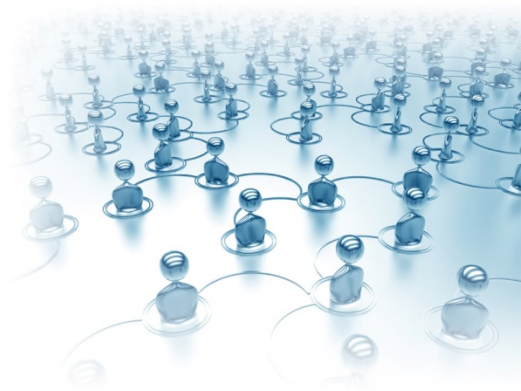
- **Oracle Policy Automation Cloud Service** is described as RPA software that reads business rules and policies written in natural language and then, based on those rules and policies, decides what questions to ask the customer, performs eligibility checks and produces a decision report.
- **Ross**, touted by its provider as “the world’s first artificially intelligent lawyer” built on IBM’s Watson. Designed to understand language, postulate hypotheses when asked questions, research, and then generate responses (along with references and citations) to back up its conclusions. Also monitors law around the clock to notify you of new court decisions that could affect your case.

New Capabilities with RPA and AI

- **Increasing security.** A software robot could be used to execute a process as directed, without inappropriate data collection, fraudulent intervention or deviation from prescribed process.
 - E.g., could be particularly useful with the most sensitive data such as personal pensions and administrative affairs of armed forces personnel, or financial services where having a person access multiple systems could increase the risk of fraud
- **Promoting self-service.**
 - A principal barrier to the adoption of self-service is often technological
 - Robotic process automation could be used to provide a means of deploying new self-service solutions where robots simply mimic the behavior of humans to perform backend transcription or processing activities

New Capabilities with RPA and AI *(continued)*

- **Promoting use of big data.** RPA software could be used to collect and organize inconsistent data from among disparate systems to make it usable by AI for big data analytics.
- **Helping legacy systems work with cloud-based systems.** For example, RPA software could be used to enable automated ordering and provisioning of services through a cloud interface that is translated to work with more traditional systems.
- **Overcome Geographic Hurdles.** This could create new business opportunities for clients that have political or regulatory impediments to offshoring their IT functions or business processes. It could also reduce the need to relocate operations to take advantage of labor arbitrage.



Projections for RPA and AI

- **The technology that exists today is still relatively immature.** Once source estimates that it can replicate the basic transactional tasks impacting around 20%-40% of processes. This percentage will increase as the technology develops at an accelerating rate.
- **Pace of adoption of RPA is accelerating.** A recent *CIO Journal* article noted that the market is expected to jump from \$183 million in 2013 to \$4.98 billion by 2020.
- **Trained robots can reduce costs by up to 50%,** according to the Institute for Robotic Process Automation (<http://www.irpanetwork.com/benefits-of-rpa/>).



Effect of RPA and AI on Labor Requirements

- **The last decade was about securing cheaper labor.** The coming decade will be about replacing cheaper labor with RPA and AI.
- **One software robot could replace multiple employees.** In one case study, 10 software robots replaced 20 human FTEs. The observation was that software robots accurately follow steps whereas humans, on the other hand, typically make 10 errors during a 100-step process.
- **Additional software robots can be deployed with relatively low marginal cost.** Consequently, software robots could be an effective means of scaling throughput at a fixed and known level of service and quality, by comparison to marginal labor costs. *Unless* the license fees make the marginal costs higher for the customer.
- **RPA will redefine a lot of roles and require new skills and training.** Training or recruitment of appropriately skilled personnel have to be factored in in evaluating RPA solutions.

Effect On Outsourcing

- **Limits of labor arbitrage.** While service providers previously relied on lower offshore salaries for savings, increased demand for labor has increased the costs of offshore outsourcers (and reduced labor arbitrage opportunities). But customers want to see continued savings.
- **RPA and IA threaten the traditional model of many traditional outsourcing providers.** Many large global outsourcing providers built their business model around employing more people. The BPO sector globally is currently worth over \$300bn. In India alone, more than three million people are employed in BPO work, and about one million in the Philippines.
- **Outsourcing firms are responding by building up RPA and AI capabilities.** For example, Cognizant acquired Trizetto; Wipro has created an AI platform called Holmes; TCS is working on an AI platform called Ignio; and Infosys has announced a major investment in automated capabilities.

What Do RPA and AI Mean for Your Sourcing Contracts?

- **Restructure Existing Contracts.**
 - Many service providers are already using RPA and AI to dramatically lower their costs without passing their savings onto customers. Contracts written years ago have no barriers to the provider's use of RPA and AI.
 - Customers need to be proactive in demanding to share in the benefits of these RPA and AI innovations that are already taking place
- **Include requests for RPA and AI capabilities your RFPs.**
 - Include RPA and AI capability as a criterion in your evaluation and selection of outsourcing service providers
 - You may be able to include an onshore-plus-automation solution as a supplement to, of substitute for, a purely offshore solution
 - Focusing on RPA and AI may lead to identifying new potential service providers.

What Do RPA and AI Mean for Your Sourcing Contracts?

- **Consider whether incorporating RPA and AI will involve Transformation**
 - Requires a transformation plan with corresponding commitments and incentives
- **Consider what contractual commitments to ask for on RPA and AI**
 - Do you ask for testing rights? Right to rely on outcomes? Right to see configurations or code (to the extent it exists)?
 - What service level measures will you use to account for new service delivery method and commitments for improvements in quality and efficiency?
- **Structure pricing to factor in productivity commitments for RPA and AI**
 - Require visibility to the use of RPA and AI solutions
 - Decide who chooses them and who pays for them
 - Build in cost-reduction commitments from the provider to take advantage of cost reductions available with RPA and AI capabilities

What Do RPA and AI Mean for Your Sourcing Contracts?

- **Consider outcome-based measures in place of FTE-based measures**
 - This is particularly useful where FTE count cease to be a reliable proxy for the amount of work done and can help remove the friction inherent in FTE-based pricing
 - Challenge is deciding what outcome measures to use
- **Analyze whether use of RPA and IA software affect compliance with the licenses for your other software**
 - For example, if you have a license for software (e.g., SAP) that is priced based on the number of users, how will the substitution of a software robot in place of humans be counted?
 - Are there limits on interfacing RPA or AI software with your other licensed software?
 - Could use of RPA and IA impair the IP indemnities under your licenses?

What Do RPA and AI Mean For Your Sourcing Contracts?

- **Re-think ownership and use rights for RPA and IA Solutions.**
 - RPA or IA solutions can create dependency and risk lock-in to that supplier
 - Include the ownership or use rights the customer will get at expiration of the services agreement to avoid this lock-in or unanticipated costs
 - Are scripts for RPA software useful without the base software?
 - Will your employees know enough about the RPA or AI software to make use of it?
 - Who owns what AI software learns as it gets smarter?
 - Can you separate out what AI software learns from the AI system (i.e., neural network “black box”)?



What Do RPA and AI Mean For Your Sourcing Contracts?

- **Provide for adaptation of RPA and AI solutions.** Include commitments to adapt RPA and AI solutions to changes in customer's platform.
 - If existing applications themselves are subject to change, will the software robots continue to work, or will the rules and workflows break as the application user interfaces change?
- **Consider hybrid customer/service provider solutions.** Because RPA and AI software are geographically agnostic, customers may retain responsibility for RPA and AI software and outsource the rest.
 - Requires balancing costs of licensing RPA and AI software and acquiring staff to configure and train software vs. leverage a service provider's leveraged capabilities
 - In some cases, a customer may want to host a service provider's RPA or AI software to avoid regulatory restrictions or privacy concerns. But this splits accountability for operational success of solution

Conclusions

- **Probable RPA and AI Trend.** RPA and AI are likely to have a major transformative effect on how companies operate and what services they buy, but we are still in a relatively early phase of that trend
- **Impact on Outsourcing.** The traditional outsourcing service delivery model is under threat, but many service providers appear to be responding by building or incorporating RPA and AI capabilities
- **Re-evaluate Existing Contracts.** Service providers are seeing dramatic reductions in their costs but existing customer contracts may not enable customers to share in those reductions, or may not provide any incentives for the service providers to reduce its FTE count
- **Re-tool New Contracts.** New sourcing contracts have to factor in commitments and incentives for service providers to leverage RPA and AI, and options that protect customers on exit from those contracts

QUESTIONS



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