Robotic Process Automation (RPA): What Is It and What Does It Mean?

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Agenda:
1. Background
2. What is RPA?
3. State of the technology
4. Applying RPA holistically
5. Risk and IA implications
6. Bringing it to life

The better the question. The better the answer.
The better the world works.
There is currently a lot of hype in the market around Robotics Process Automation and its impact on back-office to call centre operations.

“Demand for RPA tools is growing quickly, at about 20 percent to 30 percent each quarter, according to Gartner.”

“A computer “robot”—basically software—automates these tasks...Robots are taking over corporate finance departments, performing work that often required whole teams of people.”

“Simply put, chatbots offer a superior customer experience, and businesses will quickly realize that if they don’t offer chatbots, their competitors will, and they will be at a serious disadvantage.”
The global RPA market is growing at an exponential rate

A$330m global RPA market in 2016\(^1\)

38 RPA product vendors globally\(^1\)

A$3.8bn global RPA market by 2021 and 4m robots doing office admin and sales tasks\(^1\)

57% anticipated CAGR in the global RPA market to 2022\(^2\)

Every 5 days EY starts a new RPA project globally

Sources:
1. Forrester Research 2017
2. MarketersMedia 2017
ERP and shared services concepts fuelled the emergence and growth of centralized finance and accounting, HR, procurement, and other business functions.

Offshore labor arbitrage and outsourcing has driven a new round of cost savings by lowering the human costs of performing the associated services.

Era of process transformation through automation, reducing workload and improving business efficiency.

The next wave cost savings is hence gathering pace, focused on replacing human effort with technology evolving from desktop automation to Robotic Process Automation (RPA) to the more evolved - cognitive automation and artificial intelligence.
What are the quantifiable benefits of RPA?

- A robot is 1/10th of the cost of an on-shore FTE & 1/3rd of an off-shore FTE
- An unattended automated solution that works 24/7, without complaint
- Double-digit reduction in error rates—robots never forget their training
- RPA works with the existing IT landscape
- Robots can be trained by existing business users
- Speed and accuracy of process execution improves significantly

What are the key features that define RPA?

- Robots are a virtual workforce controlled by the business
- Processes can be automated by business with limited IT knowledge
- They sit alongside existing infrastructure, which is governed & supported by IT
- No changes required to existing systems or processes
- Robots automate low value or repetitive tasks
- Processes are executed with a full audit log

How can RPA be integrated alongside a human workforce?

An effective deployment plays to both robotic and human strengths:

- Robots deliver repetitive, deterministic, high-volume tasks efficiently
- People build relationships, provide subjective judgement, deliver low-frequency and exception tasks, and manage change and improvement
Robots are not walking, talking auto-bots

Robots are...
- Computer coded software
- Programmes that replace humans performing repetitive rules-based tasks
- Cross-functional and cross-application macros

Robots are not...
- Walking, talking auto-bots
- Physically existing machines processing paper
- Artificial intelligence or voice recognition and reply software

**ACT**
- Scripting
- Macros
- VBA
- Attended
- Assistance focussed

**PERFORM**
- Large scale
- Unattended
- Broad application
- Rule-based
- Limited intelligence

Structured data as basis for repeatable actions
Capable of processing unstructured data

**THINK**
- Subjective decision making
- Contextual Interpretation
- Consistent reasoning
- Machine learning
- Cognitive capabilities
- Analytics driven

Cognitive abilities allow own decision making

What is RPA
What can robots do?

Technology enablers
1. Enterprise applications (automate)
2. Specialised software – BPM and workflow tools (optimise)
3. Robotic Process Automation territory (automate)
4. Scripting tools (automate)

People enablers
5. BPR – lean and six sigma (reduce, optimise, eliminate)

Choosing enablers – sample criteria
I. Strategic alignment (e.g. in-flight initiatives, existing capability)
II. Return on investment (ROI)
III. Customer centricity and impact
IV. Complexity to implement
V. Risk exposure

Functional/Business
- Does the process involve a high degree of manual interaction?
- Is the process based on defined business rules rather than human judgement?
- Does the process have decision points which can lead to multiple divergent paths?
- Is the process readily understandable and clearly defined?
- Does the process materially impact the customer experience?
- Can the process be performed by a single user?
- Is the process open to fraudulent activity?
- Does the process require system changes or elevated security access?

Technical
- Does the process involve interaction with at least two different applications?
- Does the process require data stored offline (i.e., paper based documentation?)
- Does the process require users to log in and out of applications?
- Is the process supported by a current online channel but is not automated internally?
- Does the process transfer data between processes/sub-processes/applications?
- Could the process throw out exceptions which would need to be reviewed by a human?

What is RPA
There are four generations of Robotics which can be applied across the enterprise.

1st Generation
‘Attended Robotics’
- Optimizes existing manual and fragmented processes for agents
- Reduction in low-value add manual processing by workforce - but still need agents

Typical corporate-wide savings ~ up to 5%

2nd Generation
‘Unattended Robotics with digital enablers’
- Removes need for agent input. OCR reduces or eliminates need for manual intervention due to using paper documents
- Drives a significant increase in process speed and cost reduction

Typical corporate-wide savings 10%-15%

3rd Generation
‘Self service & automation’
- Customers self-serve via mobile, web, IVR, speech recognition
- Robots fulfill the request with no human intervention
- Robots update customers with progress, slashing query volumes

Typical corporate-wide savings ~ 25%

4th Generation
‘Cognitive Robotics’
- Combination of robotics with analytics and Artificial intelligence
- Cognitive robot using Machine learning or statistical modelling to continuously optimise action

Most Financial Services organisations are moving to Generation 2 or 3

Typical corporate-wide savings ~ 40%+

What is the state of the technology

Intelligent Automation Continuum

Acting (Rules driven)  Performing / Analysing (Semi cognitive)  Thinking (True cognitive / learning)
EY’s Digital Operations approach is based on our recognition that one size does not fit all. We have found that taking a holistic view of operations processes is fundamental in determining which processes are best suited to RPA.

- RPA is most effective when combined with process changes and business process management capabilities.
- Automation opportunities can be further supplemented by improving productivity to drive sustainable cost reductions, as well as focusing on productivity initiatives that embed a new sustainable way of working.
There are unique people challenges with RPA that require an all of organisation response

Successful change will always remain human focused
- Supporting individuals to manage ‘automation anxiety’ or uncertainty of how their role fits in a future digital world
- Designing and embedding new behaviours and ways of working
- Designing and applying an inclusive and intelligent change management model and deployment process

Transform your teams with robotics
- Design new team structures, competencies and operating rhythms to best leverage an automated environment
- Develop support and training for your leaders to manage robotic and human, virtual and physical teams

Prepare the organisation
- How does the organisation, its people, culture, structures and models need to evolve to realise the benefit from and best integrate the technology
- The current pace of change is faster than we have ever seen before and there isn’t time to manage change ‘the old way’
RPA introduces a new working environment and associated risks: Roles of the three lines of defence in RPA

First line
Managing Risk in the Business

- Develop and implement the RPA strategy
- Measure and monitor RPA performance
- Implement internal control and risk management framework

Second line
Oversight of Risk Management by the Business

- Design and deploy the overall risk management framework across the organisation, aligned with RPA
- Monitor adherence of the business to RPA-aligned risk framework policies and procedures
- Ensure that the RPA program is managed within the agreed risk appetite

Third line
Independent Assurance

- Independently assess effectiveness of design and operation of the RPA-aligned risk management framework
- Carry out testing of key controls

Industry Trends

1st Line of Defence
- Identification of roles and responsibilities to execute the RPA program, including risk management
- Communication on front line roles and expectations, as well as the importance of risk management
- Enhancing risk inventories through the development of process, risk and control libraries as processes are considered and automated

2nd Line of Defence
- Reviewing, enhancing, and converging RPA risk identification and assessment methodologies
- Increasing coordination across risk programs and the RPA COE to eliminate role overlap and coverage areas
- Centralising testing activities
- Upgrading talent and competencies to address evolving RPA risk

3rd Line of Defence
- Early involvement in considering RPA opportunity and risk for the enterprise
- Building a deeper understanding of RPA and related skills and capabilities
- Establishing forward-looking approaches to independently assessing RPA risk
- Coordinating with other risk functions to enable consistency of RPA risk assessment
Key risks considerations at different stages of RPA deployment

1. Robotic session
   - RPA development and change management
   - Security
   - Monitoring and issues management
   - Processing integrity

2. Robotic platform
   - RPA integration and maintenance
   - Monitoring and issues management
   - Resiliency
   - Secure computing platform

3. RPA Program
   - Governance, risk and control
   - Benefits realisation
   - RPA vendor management

4. Enterprise Automation
   - RPA business case and value strategy
   - Corporate culture
   - Governance model
**1. Effective challenge of RPA program and Implementations**
Organisations need to make efforts to be involved in the RPA strategy, so they can be better prepared for impacts on risk assurance plans, and help guide the organisation through appropriate risk and control decisions.

**2. Process modifications**
There is the potential for new risks to be introduced through RPA program or implementations. Organisations should consider the effect of RPA on process controls, and reliability and accuracy of data.

**3. Impact to existing risk/audit strategy**
Executing an RPA challenge process will result in testing strategy modifications, affect availability and collection of audit evidence, and may require additional competencies to support assessments.
Top implementation opportunities – 3rd Line of Defense

1. **Data collection**
   Using robotics for authentication / data aggregation of disparate technology assets where configured data feeds or analytics do not exist.

2. **Automated testing of attributes against defined rules**
   Including automated testing of application, OS, server access terminations against HR termination data feeds.

3. **Configuration testing of application, OS, server against configuration standards**
   Such tests may also be applied to robot implementations/configuration.

4. **100% population testing**
   Moving beyond sample or risk/analytics-based testing strategies, to test 100% of populations where appropriate based on process or control risk.

5. **Continuous auditing enablement and reporting**
   Auditing processes more efficiently and at a higher throughput, to move closer to true “continuous auditing”.

05 Risk and IA Implications
Demonstration
Bringing it to life
We use Blackline as our reconciliation automation tool.
Takes automated feeds from our banks and our invoices ledger (Netsuite)
Performs the reconciliation of cash received to our invoices from our billing system
Unmatched cash transactions are highlighted to an operator who identifies the appropriate invoice transaction
Once identified the system learns the matching principle applied
Posts the newly matched transactions to the general ledger
Incident Management

- All incidents are recorded and managed in JIRA
- The workflow is automated so that once a particular action occurs then it flows to the next person or action
- Actions that come from the incidents are recorded and managed in JIRA – same rule with the workflow
- All of these are fed to a reporting tool and we then create dashboards for people to get visibility on the status of open incidents and actions

- This is great for Sev1 and Sev2 – but for lower severity how to get in front of the problem
- Logging and reporting on the operational problems (Sev 3) which we then do analysis of to see trends coming up before it becomes a Sev1 or Sev2
Development process

- Peer review and Green Build are the key controls (PRGB)
- Peer review is enforced at the repository level
  - Can’t push code must do a pull request
  - Can’t review your own pull request
  - If the code is updated after review then review is reset
  - Number of reviewers can be greater than 1
- Build tool checks repository settings before doing build tests
- Build tool runs build tests and will only build the artefact if the tests are green
- Build tool signs the artefact with a cryptographic signature
- Production environment will only run correctly signed artefacts
- Build templates, Operating System, Build tool configuration, Repository tool configuration – all subject to PRGB

- Everything after the peer review can be automated to go directly to production.
What’s a more likely scenario in ten years – your boss is a robot, or your next birthday party is on Mars?
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