The School of Robotic Process Automation
Robotic Process Automation

Google Trends: Robotic Process Automation: (Worldwide)
What is Robotic Process Automation (RPA)?

- RPA is a collection of technologies that automate work by imitating human actions performed on the computer.
- Software operating (usually) on the GUI (Graphical User Interface) of other applications.
- RPA is about building so-called “bots”. Bots are able to repeat a given action scheme (algorithm).
- It has wider application than automation using desktop automation tools (VBA, scripting, MS Office, etc.).
- It is cheaper and faster than automating processes using "traditional" IT projects.
- RPA is similar to recording a macro in Excel, but it has much more possibilities, security and scalability.
What RPA isn’t?

• RPA is not a programming language
• In principle, non-developers should be able to create algorithms for their own bots
• It is not directly related to robots or robotics (but is often connected with term “virtual workforce”)
• RPA will not allow automation of all processes
  • Very high potential in the BPO sector (> 25%)
  • High potential in Shared Service Centers, operations and back-office (~ 10% -25%)
  • Low / medium potential in IT companies and digitized organizations (~ 5% -15%)
Sample movies

Automation Anywhere:
https://www.youtube.com/watch?v=EdHRjKUhtRs

UiPath:
https://www.youtube.com/watch?v=fjdLAqgwMKA

BluePrism:
https://www.youtube.com/watch?v=xybnfQDVQJg
## Characteristics of RPA

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>RPA mimics human user – same actions &amp; mouse clicks</td>
<td>RPA mimics user actions and mouse clicks in the same way as a human.</td>
</tr>
<tr>
<td>Quick implementation without changing back-end systems</td>
<td>RPA can be implemented quickly without altering existing systems.</td>
</tr>
<tr>
<td>No Need for having integration technology (ESB, BPM machine etc.)</td>
<td>RPA does not require integration technology for operation.</td>
</tr>
<tr>
<td>If implemented correctly: no-errors, 24/7, no vacation, high speed workers</td>
<td>If implemented correctly, RPA operates without errors, 24/7, and without vacation.</td>
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<tr>
<td>Robots can be up to 5x faster than human being</td>
<td>RPA can execute tasks five times faster than a human.</td>
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<tr>
<td>Robots can easily be replicated and scaled to meet peak or a typical workloads</td>
<td>RPA can be replicated and scaled to meet workload demands.</td>
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<tr>
<td>Using rule-engine for decisions (later also cognition)</td>
<td>Uses rule-engine for decision-making, which can evolve to cognition.</td>
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<tr>
<td>Concept of automating on end-to-end process</td>
<td>Focuses on automating entire processes, end-to-end.</td>
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<tr>
<td>Fragile to UI-Changes (depending on technology)</td>
<td>RPA is sensitive to changes in the user interface, depending on technology.</td>
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If not RPA, then what?

- Digitization of processes (electronic documents, web forms)
- Automation through the main IT systems (ERP, SAP, etc.)
- Workflow systems and Business Process Management (BPM)
- New applications, plug-ins, extensions, office suite (MS Office)
- Redesign, Lean, Six Sigma, etc.
Which tool to choose?

Source: The Forrester Wave™: Robotic Process Automation, Q2 2018
The 15 Providers That Matter Most And How They Stack Up
by Craig Le Clair June 26, 2018
Which tool to choose?

<table>
<thead>
<tr>
<th>HFS Ranking</th>
<th>Ability to execute</th>
<th>Innovation capability</th>
<th>Voice of the customer</th>
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<tbody>
<tr>
<td></td>
<td>Functionality</td>
<td>Integration and support</td>
<td>Security and compliance</td>
</tr>
<tr>
<td>#1</td>
<td>blueprism</td>
<td>UiPath</td>
<td>blueprism</td>
</tr>
<tr>
<td>#2</td>
<td>UiPath</td>
<td>blueprism</td>
<td>Thoughtonomy</td>
</tr>
<tr>
<td>#3</td>
<td>Automation Anywhere</td>
<td>Automation Anywhere</td>
<td>Pega</td>
</tr>
<tr>
<td>#4</td>
<td>Kofax</td>
<td>UiPath</td>
<td>blueprism</td>
</tr>
<tr>
<td>#5</td>
<td>WorkFusion</td>
<td>Pega</td>
<td>Automation Anywhere</td>
</tr>
</tbody>
</table>

Source: HFS Top 10 RPA Products 2018
Not every automation tool is RPA

- OCR software (but...we can integrate it easily with RPA)
- Scripts VBA, AutoHotkey
- Add-ins, plug-ins
- Workflow systems, BPMN
- Test automation software (Selenium, etc.)
Resources worth looking into:

- [https://blog.appliedai.com/robotic-process-automation-rpa-vendors-comparison/#rpa-tool-list](https://blog.appliedai.com/robotic-process-automation-rpa-vendors-comparison/#rpa-tool-list)
- [https://www.thehackettgroup.com/robotic-process-automation/](https://www.thehackettgroup.com/robotic-process-automation/)
Example process decision criteria

1. Lead time
2. Volume
3. Stacking up work / seasonality
4. Repeatability
5. Standardization level and number of exceptions
6. Are there criteria for making decisions?
7. The annoyance and monotony of the process
8. Scalability of the solution (the ability to copy automation to other processes)
9. Quality (i.e. problems with quality)
10. Use of paper or scans
11. Number of IT systems
12. Process criticality for business
13. Use of Citrix / VDI
14. Business case, ROI (total benefits VS total cost of creating and maintaining automation)
15. Risk related to the implementation of a given process
16. The issue of process documentation (undocumented process is harder to automate)
17. Interaction between people
18. Frequent changes in processes or systems
19. Are there any test systems?
20. Political and legal issues
21. Staff fluctuation
22. Bottlenecks in the process
Challenges in RPA deployment
Biggest challenges with RPA
1. Poor adoption in CEE

• Only **30% of organizations** are piloting or implementing RPA

• **Key barriers** identified during study:
  o High complexity and organization variability
  o Poor awareness of technology

• **Very low number** of productive robots

CIONET and Robonomika.pl, 03-04.2018
Surveyed 51 CIO / IT Directors in Poland
Biggest challenges with RPA

2. Lack of experienced developers

- 70% of RPA developers have 1-3 years of experience
- In Europe average annual salary for RPA developer with 3 years of experience is 58-78k USD
- 60% of RPA professionals notes at least 8% increase in their wages y/y

CoSourcing Salary Guide, 2018
KryonSystems Salary Report, 2017
RPA wages (kPLN nett)

Biggest challenges with RPA

3. Poor implementation – organizations aren’t agile

- 16 months building RPA IT infrastructure
- 12 months of waiting for procurement process to end
- 9 months of discussions about robot’s ID in HR system
- Withholding implementation after pilot
- Lack of strategy, goals and vision for RPA
How to fix it?
1. Implement critical components of RPA eco-system

- Vision, strategy, goals
- Team
- RPA Project Methodology (identification, assessment, design, development, testing, deployment, maintenance)
- IT RPA infrastructure
- Security (robot IDs, accounts & password management, etc.)
How to fix it?
2. Implement “automation flow”

Identify, analyze and assess
- Identify, analyze, assess and prioritize opportunities

Design, deliver and deploy
- IT projecta
- Process standardization / harmonization
- Process improvement
  - Robotic Process Automation
  - Desktop automation (VBA, add-ins, Access, Scripts)
  - Cognitive solutions (chatbots, machine learning, AI)

Monetize and stabilize
- Make sure savings are monetized, monitor situation
How to fix it?
3. Do it in right order

1. Standardize
2. Improve
3. Automate
Building RPA programme
RPA deployment path

PoC/Pilot
3m.

RPA team
3-12m.

IT infrastructure

Central CoE
12-24m.

Distributed / Hubrid CoE
>24m.

External vendors/consultants

Internal resources
Process of RPA deployment

- **RPA education**
  - Familiarization with the RPA technology
  - Familiarization with the benefits of process automation
  - Transition with the customer by use cases

- **POC or Pilot**
  - Platform installation
  - Choosing 2-3 processes for PoC (Proof of Concept)
  - Documenting processes and possibly redesigning them for automation
  - Automation of the process
  - Tests
  - Benefits estimation
  - Transfer to the production environment

- **Automation assessment**
  - Development of RPA strategy
  - Evaluation of "end-to-end" processes
  - Selecting key areas
  - Conducting an interview with process owners
  - Collecting key data
  - Conducting a process assessment to identify candidates for robotization
  - Preparation of a road map

- **Creation of Centre of Excellence**
  - Review of the current operating model
  - Determining of the CoE type (centralized, decentralized, hybrid)
  - Building a Centre of Excellence (demand, delivery model, change management, performance measurement)
  - Communication

- **Solutions building**
  - Managing the process automation request process
  - Automation of processes depending on priorities
  - Single process tests
  - Change management
  - Production implementation

- **Steady state and improvement**
  - Tracking and management of indicators
  - Documentation of "Lessons learned"
  - Identifying new automation possibilities
  - Looking out for new technologies
All the „boring” stuff you need to remember about:

1. Project methodology (waterfall VS agile)
2. Document templates, project lifecycle, roles definition
3. Creating a cloud environment
4. Maintenance of existing robots
5. Systematic monitoring of projects and savings
6. Documentation of the best development practices and standards
7. The system of identification, evaluation and prioritization of ideas for automation
8. Management of access rights and technical accounts
9. Incident management process
10. RPA’s security
Building the RPA Center of Excellence

6 key CoE building factors:
1. Vision, strategy, goals
2. Resources (budget, employees, management structure)
3. Methodology for running RPA projects (identification, analysis, prioritization, design, development, testing, implementation, maintenance)
4. IT infrastructure (servers, VDI, accesses and security)
5. Change management (RPA is a transformation program!)
6. Sales and development
Building your RPA team – main roles

• RPA developer (question: are programmers suitable for RPA developers?)
• Subject Matter Expert
• Process analyst
• RPA architect
• Tester
• Project Manager
Example deployment model

Discover
- Opportunity List with initial benefits
- Feasibility Study

Define
- Project Charter
- Business Requirements Document
- Full benefits calculation

Design
- Solution Design Document
- Process Design (AS IS & AFTER)
- Benefits review

Develop & Test
- Automation / Robot Test Cases, Scenarios & Data
- SIT Testing
- UAT Testing (Ops)
- Benefits review

Deploy
- Infrastructure
- Licenses
- Documentation (Ops & Technical)
- Training
- Move to production

Warranty & Control
- Benefit monetization
- Support model (with SLAs/TATs)
- Ticketing tool
- Performance monitoring in Command Center

Gate 1
Gate 2
Gate 3
Gate 4
Gate 5
What can go wrong?

• Lack of understanding in the organization of what RPA is
• No understanding of the benefits RPA can bring
• Problems with accesses and technical users
• No possibility to create a central server environment
• Incompatibility with existing policies
• Audit’s fears
• The initiative being blocked by IT or unions
• Ineffectivity in identification of processes automation candidates
Change management
How to create a panic among the employees?

Humans Need Not Apply

https://www.youtube.com/watch?v=7Pq-S557XQU
E. Kubler-Ross Change curve

DENIAL
RESISTANCE
EXPLORATION
ACCEPTANCE
Help people move to next stage

WE MUST
- inform
- show plans, deadlines
- accept resistance
- act!

WE CAN
- support
- help develop new skills
- show success
- empower and delegate

WE WANT TO
- accept negative emotions
- listen!
- encourage trying
- engage
- Help find positives
Manage change
– go through change faster and with less pain

DENIAL
RESISTANCE
EXPLORATION
ACCEPTANCE

CHANGE MANAGEMENT

OFFICE SAMURAI
Ppl go through change at a different pace
Managing cultural change – Welsch’s matrix

Culture fit (well) vs. Results (skill)

- POTENTIAL
- STAR
- BAD HIRE
- BAD APPLE
The competency triangle

- **Skill** (I can do it)
- **Knowledge** (I know how to do it)
- **Attitude** (I want to do it)

COACH

MENTOR

TRAINER
Next steps
„Thinking” bots?

- Machine Learning
- OCR (ABBYY, Google, Microsoft, KOFAX)
- WorkFusion
- API do silników A.I.
- Własne rozwiązania
- Open source