RPA, AI/ML combined with BPM

Your powerful weapons for the automation battle
Let's start with the definitions

**Business Process Management (BPM)**
A business process management platform is a software solution that helps businesses to manage and automate business processes in order to improve productivity and corporate performance. It is considered a critical component of operational intelligence as it bridges the gap between IT and Business.

**Robotic Process Automation (RPA)**
RPA is a software or technology that replicates human actions, interacting within a computer environment to perform a variety of everyday work tasks. RPA uses screen scraping and other technologies to create specialised agents that can automate repetitive tasks.

**Artificial Intelligence-Machine Learning (AI/ML)**
Technologies that are ideal in complicated situations where huge data volumes are involved and humans need to take decisions. AI/ML-enabled systems are capable of performing complex tasks that require extensive human thinking and activities.

### Use Cases

**BPM**
- Expense Reporting
- Customer Requests and Service Orders
- Compliance Management

**RPA**
- Invoice Processing
- Payroll
- HR Information Processing

**AI/ML**
- Analytics and Reporting (AI)
- Decision-making (ML)
- Investment Predictions (ML)
The differences

**BPM**

**How it works**
- Skilled business people perform complex process modeling and execution based on BPMN 2.0 or flowchart diagrams and detailed business rules

**The Results**
- Standardisation, orchestration, execution and optimisation of end-to-end business processes

**RPA**

**How it works**
- A computer works as an agent that emulates and integrates the actions of a human, interacting within a platform to perform a variety of repetitive tasks

**The Results**
- Automation of administrative, rule-based and time-consuming repetitive tasks
- High employee productivity in value-added tasks and activities

**AI/ML**

**How it works**
- Algorithms, using historical process transactional data, are trained to optimise and automate existing processes

**The Results**
- Learn from historical data, human actions and experiences to enable end-to-end process automation
For more than 30 years, BPM has been a maturing technology. In the past, a BPMS was a standalone solution that required integrations with other systems as well as extensive Business and IT consulting and services. Today, the new breed of BPMS are embracing AI, RPA, Low-code as well as Data Analytics so less integrations are needed.

While the technology was being developed for some time ago, the emergence of the RPA term can be dated to the early 2000. RPA started as Assisted RPA, so automation was achieved with human intervention.

Currently RPA has evolved to the "Autonomous stage". It is built leveraging AI and related new technologies like Machine Learning, computer vision and more.

AI/ML is used in complicated situations where huge data volumes are involved and humans need to take decisions.

Enterprises transform the way they work leveraging cognitive automation.
The evolution of Digital Transformation

Most of the enterprises are here

Paper-based processes

ERP

BPM

RPA

AI/ML

Automation Levels

0%
10-20%
30-50%
70-80%
90%
Business Automation has become a top priority in the digital transformation strategy for almost all organisations.

Business Automation, powered by RPA, AI/ML and BPM, creates a new business environment of humans and machines working together.

Robots take the burden of the mundane workload and humans are free to perform more demanding work which requires critical thinking and emotional intelligence.
The new breed of digital automation platforms (DAPs), like Comidor, born of earlier business process management software, are now embracing AI, RPA, as well as Data Analytics to predict and manage change, risk and opportunity.

AI/ML and RPA combined with human-centric technologies, such as Enterprise Low-Code and Enterprise Architecture, revolutionise work, while at the same time enable business professionals to design better organisations and work faster and more effectively.

Users work more effectively and business leaders make better and faster decisions
The powerful automation tools integrated in one platform

- RPA Caller
- RPA Receiver
- Data Converter
- Document Creator
- Export Data & File Reader
- Sentiment Analysis (AI)
- Supportive ML
- Document Image Analyser (AI)
- Text Classification (AI)
BPM, RPA and AI/ML in a nutshell

Automation Level 1: BPM

The first stage includes the process modeling, a technique that is designed to understand and describe the process. It connects and improves the communication between the current and the future state of the process.

Example

This example of a purchase order process shows that a task is assigned to a user who is responsible for creating the order document to be sent to the vendor.
Automation Level 2: RPA

In the second stage of the automation, an RPA component is inserted in the workflow to automate the document creation, save valuable time from the employees, eliminate typography errors and increase productivity.

Example

The previous manual task is replaced with the Document Creator, a powerful RPA component that automates the purchase order document generation.
Automation Level 3: AI/ML

In the third stage of the automation, a Machine Learning model is implemented to assist the decision-making process.

Example

In the workflow, two Supportive ML components are added.

ML Component are used: to support the decision-making process of the Head of Finance and Supply Manager.

Why/How: The ML algorithm gathers historical data from previous decisions and suggests a new one that is evaluated by the responsible.

Result/Benefit: The approval/rejection decision process is fast and evidence-based. Credibility and human error elimination are achieved.
A purchase order is the official confirmation of an order. It is a document sent from a purchaser to a vendor that authorises a purchase. The business need was:

- the creation of an automated multi-level approval workflow
- real-time reporting with vital insights for every purchase order

The user fills in the details of the order. Afterwards, the order request is sent to the responsible for approval. If the order is approved, the Doc Creator, a Comidor RPA component automatically creates the document that will be sent to the vendor.
A pharmaceutical corporation needed to verify the contact details of pharmacies it conducts business with. The details included information on post codes, addresses, phone numbers, etc. The verification process, executed manually once a month, was a time-consuming process since the responsible employee had to verify information correctness for every pharmacy through Excel files and multiple websites, and update the company’s database, if necessary.

Implementing an RPA-enabled workflow, the verification process is now fully automated. The process starts by uploading an Excel file with the latest ERP contact information and an Excel file containing the latest correct contact info, downloaded from a central hub or acquired by email from an external source.

The engine checks one by one all the entries of the first file, and compares them to the second file.

If a contact is not found in the second file, the system tries to find the contact info in a list of websites depending on the customer type. If the contact is found, it fetches back the correct contact information.

The process produces three files: a file with contacts with matching information, a file with contacts with not matching information, and a file with contacts that were not found in both the Excel and relevant website.
3. Sales Order

A. The Case

The Sales Order is raised by the Sales team based on customer requests and then sent to the Production team to either produce or pick the goods. The Sales Order provides these teams with the required information to carry out their tasks without having to complete the lengthy paperwork.

B. The Solution

The Sales agent places the order in Comidor for approval. If the order is accepted, inventory stock check is performed by the Production department.

If there is no stock availability, a sub-process is triggered and assigned to the Production department.

Otherwise, the RPA agent places the order in a 3rd party system.
4. Supplier Evaluation

A. The Case

This process requires to check if a supplier is active. This check needs to be performed in ERP and send data into Comidor, where the process is orchestrated. The cross-check of orders and invoices in ERP and the data transfer to Comidor is time-consuming and causes huge delays.

B. The Solution

An RPA-enabled workflow is designed. More specifically:

- The employee adds the supplier details in Comidor.
- The RPA bot logs in the ERP and searches for the last transaction date. The date is fetched automatically in Comidor.
- If the transaction has occurred within the current year, employees proceed to the supplier evaluation.
AI/ML & RPA combined with BPM: Real business cases

5. Loan Requests

A. The Case

The main need was to manage all loan requests. Comidor’s ML model is used to assist with the decision-making process. It establishes patterns based on historical data and creates a decision on the creditworthiness of a borrower.

B. The Solution

A workflow with supportive ML functionality is designed. More specifically:

- The algorithm gathers the details for every borrower
- Based on the annual salary and the credit score, it indicates a decision
- The employee accepts or rejects the decision
6. Financial Reporting-Projects

A. The Case

The business need behind this process is to **automatically generate financial reports** by processing entries from **three different systems**. Before the RPA-enabled automation, financial managers had to manually enter, copy, and transcribe data into an Excel file for internal financial reporting purposes.

B. The Solution

An RPA-enabled workflow with two bots is designed. In this way, the reporting is performed accurately, quickly and at low cost. The following steps are involved:

- A Sikuli bot navigates through three different systems (SAP, HR System, Comidor Project Management) and gathers the necessary data (Expenses, Personnel Rates, Tasks)
- The Excel Processor bot processes all the data and generates the report in an Excel file
- The report is sent automatically to the financial managers via email