Rethinking retail:
Artificial Intelligence and Robotic Process Automation

Viable options to upgrade the
Belgian retail industry to the next level

THE RETAIL ACADEMY

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A study by PwC Belgium and Gondola Group

Executive summary

The retail and consumer goods industry faces considerable challenges, threatened by a demand for personalisation, an unoptimised business process constrained by human error and an inability to fully anticipate customer demands. These problems leave consumers unfulfilled in the search for an experience that reflects their continually developing desires.

Then you have technology, which presents both a challenge and the key solution to facing these challenges. With the ever-growing speed of innovation it has become increasingly important to constantly remain up to date with the latest possibilities for upgrading your company. The Retail Academy and PwC have identified two key technologies that will be essential to taking your business to the next level, these being **Artificial Intelligence (AI)** and **Robotic Process Automation (RPA).**

In this white paper we demonstrate **viable possibilities that are applicable today** for both technologies, specifically in the retail and consumer goods industry. For AI we highlight various cases of how AI has been applied and explain the technology behind each case in the simplest way possible. The topics covered are **automated checkout, sales forecasting**, how to **optimise your energy usage, churn rate minimisation, online search recommendation** and **IoT in-store analysis.**

With regards to RPA we take a look at 3 fields, these being **tax**, **HR** and **finance**. We look at where RPA can be applied in each department and delve deeper into a specific case study for each category.
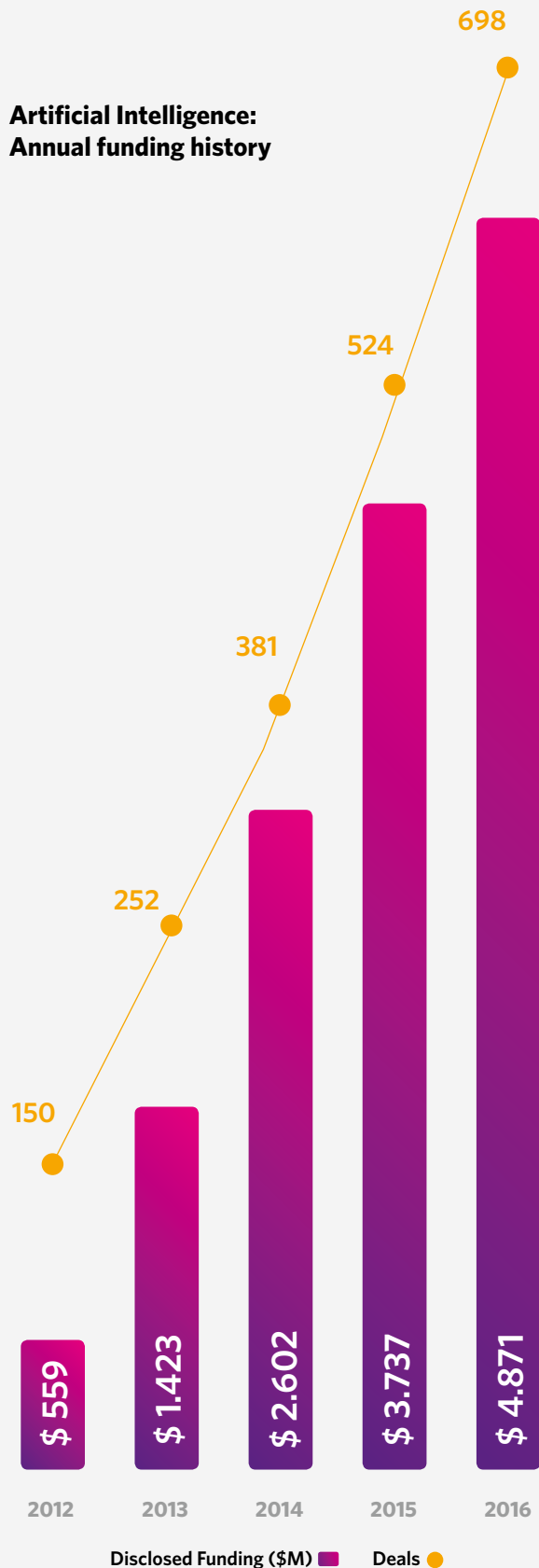
Introduction

Innovation has become more important than ever before. Back in 1958, the average tenure of companies on the S&P 500 was 61 years. By 2026 this time span is forecast to decrease to a mere 14 years. [1] In order to stay competitive, a company today must be on the lookout for all the newest technologies with which they are bombarded. You have to be able to create new experiences by delivering ultra-personalised content and should optimise convenience by excelling at your business processes. Two technologies reign supreme in helping you achieve these goals, namely **Artificial Intelligence (AI)** and **Robotic Process Automation (RPA).**

People have been wondering about the various possibilities that a synthetic form of intellect could bring for mankind for decades. Movies that directly speak to the imagination, such as 'The Matrix' in 1999 and Steven Spielberg's 'A.I. Artificial Intelligence' in 2001, have offered an insight into what this emerging technology might have in store for us. Although AI is often still thought of as a far-fetched dystopian future where robots take over the world [2], the status of the technology is far more advanced than

people seem to think. From Chatbots facilitating customer service to in-store robots such as Pepper guiding you to the products you are looking for, AI is already widely implemented through various practical applications. But this is merely the visible tip of the iceberg, and this white paper written by The Retail Academy and PwC puts forward a number of pragmatic options for upgrading the retail industry to the next level.

Prominent trend-watchers named AI as one of the most promising and potentially disruptive technological advances of the moment. [3] AI is without doubt here to stay and has witnessed an exponential speed of investment. Since 2012, tech giants such as Google, IBM and Apple have acquired over 200 companies using all kinds of AI applications, with some deals even valued at up to 1 billion USD. [4] Over the last 5 years, investment in AI has increased almost five-fold. The race for AI is on, and as the retail & consumer goods industry has all the requirements to integrate AI, the technology will move quickly; you cannot afford to get left behind.

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Artificial Intelligence:
Annual funding history

Year	Disclosed Funding ($M)	Deals
2012	$ 559	150
2013	$ 1.423	252
2014	$ 2.602	381
2015	$ 3.737	524
2016	$ 4.871	698

Disclosed Funding ($M)   Deals

Source: CB Insights, The state of Artificial Intelligence

AI has been estimated to boost global GDP by $15.7 trillion by 2030, which is more than the current output of China and India combined. [5] Of this increase, $6.6 trillion is calculated to come from growth in productivity, while $9.1 trillion will originate from consumption effects. For Northern Europe specifically, PwC forecasts the impact of AI to increase GDP by 9.9% ($1.8 trillion). [5] The potential impact of AI is undeniable. Even when questioning business executives around the world, 72% were convinced that AI would be the business asset of the future. [6]

The key to future success lies in constant innovation. To remain competitive it is essential to optimise your productivity by boosting execution speed, increasing efficiency, reducing costs and minimising human error. One technology that thrives on these elements is RPA, which will be the second technology discussed in this paper. PwC estimates that **up to 45% of all work activities can be automated** and that this automation would save $2 trillion in global workforce costs. [7] Both AI and RPA, and indeed the combination of both technologies, show great potential for helping retailers and producers to overcome the challenges they are currently facing.

'What are the current possibilities for using AI and RPA in retail?' is the question we will answer in this white paper. In this study we provide an overview of the practical and pragmatic applications that are feasible today. No near-future dreams, but actual cases showing how you can upgrade your business to the next level.

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How do you perceive AI and RPA?

Artificial Intelligence (AI) [5]

"AI is a collective term for computer systems that can sense their environment, think, learn and take action in response to what they're sensing and their objectives."


Robotic Process Automation (RPA) [8]

"RPA is a feature of intelligent process automation that describes logic-driven robots executing pre-programmed rules on mostly structured data. RPA takes productivity optimisation to the next level by redefining work and reassigning employees to execute higher-value activities. Process bots are capable of independently performing simple human-like functions such as interpreting, deciding, acting, and learning."

Artificial Intelligence is a buzzword widely used in different contexts. But do you know what it truly means? Are you aware of the possibilities of AI? When even international thought leaders such as Elon Musk (CEO of Tesla, SpaceX) and Mark Zuckerberg (CEO of Facebook) openly question the other's understanding of the matter, then you can rest assured that there is some confusion regarding the possibilities that this emerging technology represents. [9]

Darren Cunningham @dcunni — 25 Jul
Zuckerberg blasts @elonmusk warnings against artificial intelligence as 'pretty irresponsible'
bizjournals.com/sanjose/news/2… @svbizjournal #ai

Elon Musk @elonmusk
I've talked to Mark about this. His understanding of the subject is limited.
9:07 AM – Jul 25, 2017
1,339   9,972   36,925

Mark Zuckerberg denounced Elon Musk's alarmist view on AI (as Elon warns the public of the potential dangers of AI). Elon Musk replied by dismissing Mark's knowledge of AI as limited.
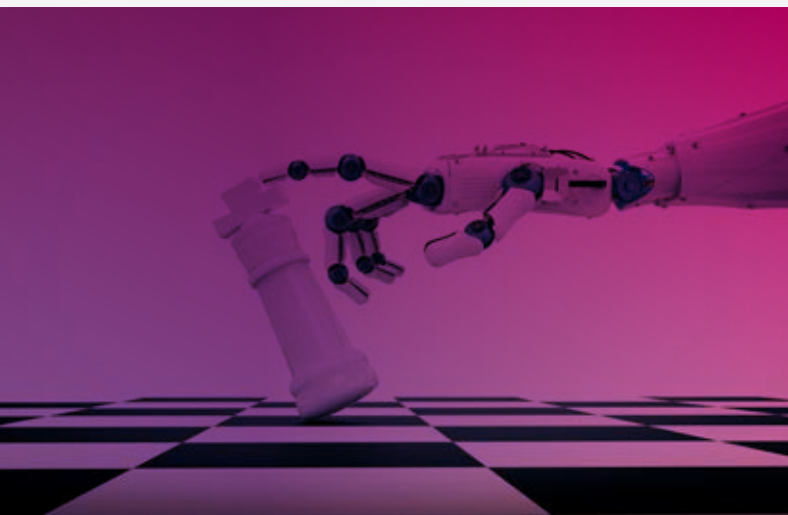
In order to identify the market perception of AI and RPA, The Retail Academy and PwC conducted their own research by asking decision-makers in the Belgian retail sector about how they valued both technologies.

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Familiarity with AI?

1.9 / 10

Unfamiliar ●——————————— Familiar

Familiarity with RPA?

3.5 / 10

Unfamiliar ———●————————— Familiar

Impact of involuntary human error?

6.9 / 10

No impact ———————————●—— Very high impact

Source: The Retail Academy, Your view on AI and RPA

Status of the belgian retail sector with regards to AI and RPA

When questioning respondents on their level of familiarity with AI, the vast majority revealed that they were not at all familiar with the technology. An average score of 1.9 out of 10 was given (1 being the lowest), with 95.8% of respondents indicating a score of 5 or lower. [10] Survey participants cited a lack of understanding of the possibilities that AI offered as being the main cause for their lack of familiarity. Other reasons included that it would be difficult to integrate AI into their business and the feeling that the technology was just not there yet.

Respondents were moderately more familiar with RPA, on the other hand, with the average level reaching a score of 3.5 out of 10. [10] Once again, the reason for a low score lay in the lack of knowledge of the various possibilities that RPA had to offer for their company. Other reasons included a lack of management commitment and difficulty integrating the technology into their business.

When asked how great they thought the impact of involuntary human error was on their business, however, an average score of 6.9 out of 10 was given. [10] Technologies such as AI and RPA are renowned for lowering the amount of human error throughout the business process and can help businesses to differentiate themselves in terms of efficiency.

In what fields are ai and rpa used today and in what fields will they be used tomorrow?

The few companies that were using AI indicated to be using the technology in the fields of risk analysis, data management and tax compliance. RPA, on the other hand, was mainly used in the fields of invoicing and accounting, but also stretched to fields such as data processing, supply and quality management.

It was believed that, in the future, AI would be used throughout the entire value chain. The greatest potential of AI in the retail sector, however, lies in personalised design, anticipating customer demand and inventory management. [5]

When asking about the potential impact of RPA in the following 10 years, an average score of 7.2 out of 10 was given, with the key value drivers being execution speed and increased volume. [10]

People might not realise it, but AI and RPA are here today. Business leaders and potential disruptors are planning various ways of implementing these game-changing technologies in the near future, and so should you.

"Retailers are looking to overcome human errors"

Artificial Intelligence and its applications

Advances in AI will impact all industries and business functions over the coming years. The ultimate commercial potential lies in being able to do things that have never been done before, rather than simply automating or accelerating existing capabilities.

Gains are shared by businesses, through improved efficiency, and by society, in terms of the ability to offer improved products and services (from personal assistants on mobile phones to healthcare diagnoses and even improved cyber security).

The Retail Academy and PwC believe the current level of excitement surrounding AI to be warranted - a view reinforced by high-volume surveys that we have commissioned. More than 60% of the 2,500 consumers and business decision-makers we surveyed in the US believed that AI could help provide solutions for many of the most important issues facing modern society, ranging from clean energy to the fight against cancer and disease. [5] In this segment we will take a look at how AI can help today to take the Belgian retail and consumer goods industry to the next level.

How to prepare for AI

The question that business decision-makers should ask themselves now is 'What should I think about and focus on to prepare for AI?"

In answer to this, there are four key questions that are worth reflecting upon when deciding how to move forward:

1 How vulnerable is your business model to AI disruption?

2 How soon will the change come? (and make no mistake - it will come)

3 Are there any game-changing openings within your market and, if so, how can you take advantage of these?

4 Do you have the right talent, data and technology to help understand and seize the opportunities AI presents?

How can you build trust and transparency into your AI platforms and applications? There are five key points worthy of reflection when it comes to evaluating a public organisation's strategy and way forward with regards to AI.

1 Identify the processes, products or services that would benefit from improved decision-making or from more efficient and personalised ways of interacting with clients.

2 Think big, but start small. Select a few of those processes and embark upon the iterative development of AI pilots. Before doing so, look at data quality and quantity. AI needs large data sets for learning and testing.

3 Think of the evaluation criteria; what is the desired outcome and how would you measure its success?

4 Bring the right talent on board to help you understand and execute AI. It is not only AI experts that you need, but also process experts and experts who can help you design the user experience.

5 Invest further in what worked and learn from what didn't. Don't be afraid of failure in your AI journey. Every step, whether successful or not, helps you learn and gain experience.

A study by PwC Belgium and Gondola Group

Cases:
Artificial
Intelligence

Automated Checkout

Case I

What?

Consumers can enter a store, pick up the goods they want and walk right out of the door, thus enabling them to go shopping without the hassle of having to wait in line to pay for the goods.

How does it work?

Automated checkout is made possible by machine learning algorithms, more specifically computer vision machine learning algorithms. Within the computer vision domain, computers are teaching themselves to identify patterns and products in images.

In most cases, the retailer decides to implement an accompanying application (with personalized QR codes) that consumers should use when entering a store. Consequently, the machine learning algorithms know which customer to charge afterwards, when he/she leaves the store. Thanks to camera footage & algorithms, the technology is able to recognise when an item is picked up and identify the particular item and when the consumer leaves the store with the item. Even if a consumer eventually decides to leave an item behind on a random shelf, the machine learning algorithms will be able to see and identify this action and remove this item from the customer's digital shopping cart.

Case?

Amazon introduced Amazon Go - a store based on automated checkout - in late 2016. The main goal of this store is to offer a unique experience where consumers don't have to waste time waiting in line for the cashier. A customer enters the store with the Amazon Go app, simply picks up their chosen products and walks out of the store without having to wait in line at the till (with a cashier).

Besides an improved shopping experience, the profit margins for larger retailers also increase by 30-55% using this technology, mainly through a reduction in the cost of employing cashiers. [11]

What is it?

Predicting your future sales based on big data analysis. An accurate sales forecast leads to stock optimisation, a significant reduction in food disposal and increased profitability.

How does it work?

Forecasting is based on a machine learning model. An intelligent agent sets up variables that influence the sales of a product, ranging from factors such as price and promotions all the way through to the effects of the weather. Over time, through big data analysis, the intelligent agent will be able to accurately estimate the impact that each influencing factor will have on sales, enabling you to foresee how your sales will perform.

Case?

About two-thirds (67%) of retailers see predicting demand as being one of the three biggest challenges faced by retail supply chains, according to RetailWire. [19]

Retail groups such as A.S. Watson apply this forecasting technique, which not only offers over 90% accuracy in forecasting sales but also helps optimise prices and manage promotions. PredictifAI claims to increase the availability of goods on shelves by up to 97%, leading to a 2-10% increase in sales. An accurate forecast enables the retailer to reduce the level of insurance inventory, resulting in a 40% increase in inventory turnover. [20]

Sales forecasting
Case II

Economic Benefits

PredictifAI has been tested in large retail chains and has shown high efficiency

up to	more than	up to
97%	**40%**	**2-10%**
Availability of goods on shelves increases up to 97%	Inventory turnover insceases up 40% due to accurate forecasting and the reduction of level of insurance inventory	On average sales increase up to 2-10% due to the ability to maintain constant inventory

ML Control Off

Optimising energy usage

Case III

What?

An intelligent system tasked with monitoring and optimising energy consumption, enabling businesses to drastically reduce their energy consumption.

How does it work?

The technology used to optimise a business's energy consumption is known as reinforcement learning. Reinforcement learning stems from the machine learning domain and is actually a self-learning algorithm that learns by trial and error based on a reward and punishment system. The intelligent agent will learn to determine a successful strategy that leads to the greatest long-term reward. [12] In this case, for example, the intelligent agent will use the data received (from the various machines, temperature, etc.) and learn what is the optimal set of parameters (e.g. machine-, temperature settings) in order to optimise a business's energy consumption.

Case?

Energy usage in data centres is renowned for being a big problem for tech companies. Google used its AI division DeepMind to reduce its energy costs, claiming to reduce overall consumption by 15%, which is equivalent to the energy consumed by over 350,000 US households. [13]

But there is also significant room for improvement in big manufacturing, transportation and/or distribution environments in order to further reduce energy consumption.
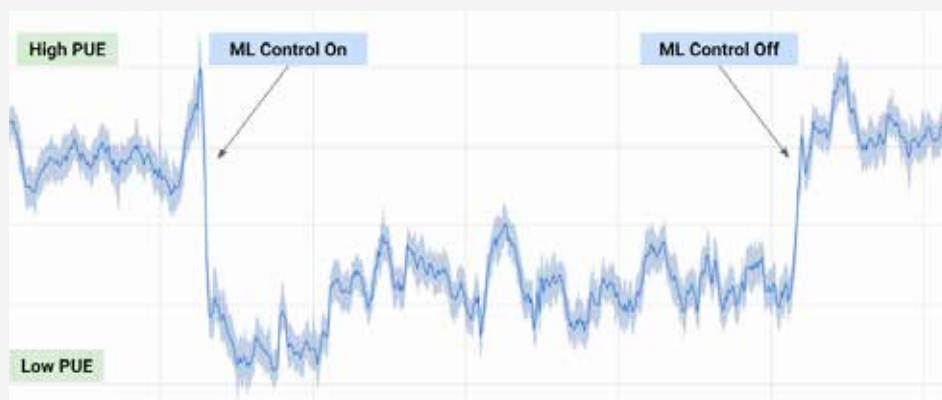
Churn rate minimisation

Case IV

What?

Keeping existing customers is five times cheaper than the cost of obtaining new ones, [14] which is why the aim with this technology is to minimise churn rate by identifying customers at high risk of abandoning a service and to identify the factors influencing a customer's decision.

How does it work?

Machine learning algorithms are applied to predict a customer's churn probability and help to find patterns in existing data associated with the predicted churn rate. Retailers can then use this knowledge to address their at-risk customers.

Case?

Churn minimisation lends itself perfectly to subscription services. In the telecommunications industry, for example, it is used to warn the operator when a subscriber is identified as being highly likely to cancel a subscription. You would, for example, get a warning such as 'There is an 85% chance that client X will no longer be a client within 3 months'. This knowledge allows you to react by offering a special initiative to convince the customer to remain subscribed to the service.

This concept is easily expandable to other retail segments since churn rate minimisation could also be applied to their customers, and especially those with loyalty cards.

Online search recommendation

Case V

What?

Online search recommendation is the act of predicting what a user is searching for. If you think about one of your most popular online platforms (such as YouTube, Facebook, Amazon, Coolblue, etc.), they will always try to predict which video, friend, product, etc. you are interested in and recommend it to you. Recommendation engines aim to narrow what could become a complex decision to just a few recommendations.

How does it work?

There are two major types of recommendation engines, namely content-based and collaborative filtering recommendation engines.

A content-based recommendation engine analyses the content of the product as well as the content of the customer/profile and matches the two. Collaborative filtering recommendation engines take the entire customer database into account and can consequently determine which type of customer is visiting their website.

There are two types of collaborative filtering, these being consumer-based and product-based. In consumer-based collaborative filtering, the tastes and preferences of many users will be recorded. Your profile will be linked with users sharing similar interests and recommendations will be given based on what similar profiles like. Product-based collaborative filtering develops an understanding of how products relate to one other, then analyses the products your shoppers interact with and personalises the catalogue to perfectly suit a visitor's tastes and preferences.
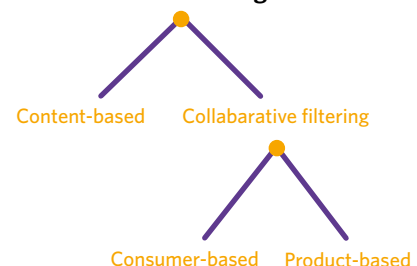
Case?

As new visitors to your site spend merely 151 seconds on average before venturing off back to the Internet again [15], you had better make sure that these highly valued seconds are spent efficiently.

Large, data-mature companies (such as Amazon, Coolblue, etc.) are combining content-based & collaborative filtering recommendation engines in order to create a very powerful recommendation engine. In more specific cases, we let the results speak for themselves. Everlast, known for providing boxing equipment, for example, managed to increase its conversion rate six-fold using this technology. UK-based B2B wholesaler Bestway, meanwhile, needed a way to manage searches over 20,000 SKUs and, using this technology, managed to achieve a 20% increase in the average order value. [14]

The search engine is not the only aspect that should be personalised, but your whole website. The landing page, the special offers, even the order of the categories - everything can and should be optimised to reflect a visitor's personal preferences.

Recommendation engines

Content-based   Collabarative filtering

Consumer-based   Product-based

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IoT instore analysis
Case VI

What?
IoT devices create a personalised experience by learning what types of consumers are in its proximity, or in this case, in the store.

How does it work?
This type of product incorporates three modules, namely data gathering, machine learning & consumer output (more marketing-based). From a data-gathering perspective, information is collected from IoT devices such as beacons and sensors, or through digital input such as RFid, Wi-Fi and mobile applications.

Consequently, machine learning algorithms predict what this customer likes and/or is looking for. Connected devices are then able to react based on machine learning output, enabling these devices to display personalised output. A connected television could, for example, start displaying advertisements for baby products after learning that there are a high number of young mothers in the vicinity.

Case?
Big retailers have already used IoT in-store analysis to capture customer interactions, both digital and physical. An intelligent network of digital touch-points was created within the shop and customers were then retargeted by connected digital screens based on known preferences (such as a wishlist, past purchases and in-store behaviour), leading to an 18% increase in purchases. [16]

Real-life targeting becomes available through the continuous geolocation of millions of smartphones, which can be accurately tracked up to 15 metres. [17] This information enables you to monitor the exact number of people who visit your store and gives you insights into their habits.

This technology is not limited to the activation of digital displays but also works by messaging wearables, retargeting through loyalty applications and even starting up coffee machines.

Robotic Process Automation and its applications

AI is not the only option when it comes to preparing your business for the day after tomorrow. If you are looking for a very cost-effective way that will have immediate impact, it might be better to turn your attentions to RPA. Employees stuck with highly repetitive, basic tasks can be freed up to focus on higher-value activities whilst also lowering the impact of human error. In this chapter, The Retail Academy and PwC take a look at those processes that are perfectly suited to RPA and later showcase some of the practical applications of RPA in various fields.

Which process criteria are best suited to RPA?

RPA is perfectly suited to processes that meet certain requirements, which can be divided into 6 different categories. Retail experts have assessed each category to see how well it applied to the Belgian retail and consumer goods industry. The Belgian sector achieved an average score of 85%, signalling RPA to be a good fit.

Characteristics	Less effective	← More effective →	More effective
Complexity	Complex		Straightforward
Decisions	Judgment		Rule based
Volume	Low		High
Maturity	Emerging		Mature
Business software used	Frequent changes		No changes
Data stucture	Unstructured		Structured

Source: PwC, RPA, Key facts

Is RPA fit for the Belgian Retail & Consumer Goods industry?

1. Complexity

Lots of tasks in the retail value chain are straightforward or can be reduced to straightforward sequential tasks.

★★★★★

2. Decision

A lot of decisions in the retail sector are rule-based, meaning that they do not require individual judgment or a case-by-case approach in order to deliver the same result. In other words, the same processes may lead to the same results.

Unlike artists and craftsmen, a lot of tasks are rule-based, or can be rule-based, freeing up human efforts and time and allowing them to be more useful in tasks that require individual judgment.

★★★★★

3. Volume

The Belgian retail industry is, like other retail industries, volume-based, and with over 120,000 SKUs our Belgian FMCG & retail landscape is dealing with huge amounts of products, offerings and transactions.

★★★★★

4. Maturity

The retail industry is a mature industry, meaning that the majority of processes are standardised and not prone to change. This is important in implementing RPA, as the bot would need reprogramming for every change in the process.

★★★★★

5. Business software used

The retail industry has already gone through major changes in terms of the business software used. In 2012, the Belgian retail industry saw a major transformation from purely physical retailing to an omni-channel model. There is a certain (although not complete) stability in terms of the software and interfaces used, but the bot would need to be reprogrammed for every change of software or interface.

★★★☆☆

6. Data structure

This is the most difficult aspect. Lots of retailers have no structured or central database. For the food industry, GS1 (global data synchronisation network) has implemented its product database but it is not yet a central tool. It will be important, when it comes to implementing RPA, to define a standard template for how data (Excel, pdf and Word files) needs to be structured in order for the bot to process it correctly.

★★☆☆☆

A study by PwC Belgium and Gondola Group

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Cases:
Robotic
Process
Automation

Tax
Case I

What can RPA be used for in terms of tax?

- Gathering and analysing high volumes of appropriate data
- Automated importing of financial tax workbooks
- Completing non-financial tax return line items and information fields
- Populating tax returns with financial data

1. Description of the problem

A consumer healthcare company with over 100 legal entities across different countries operated with various financial systems, trial balances and charts of accounts.

The company used income tax provision and compliance software for the year-end provision and tax return process. However, tax relies on manual spreadsheets for interim provision calculations that require a quick turnaround. Due to disparate financial systems and processes, gathering and reconciling data is a manual and time-consuming process.

2. Approach

The healthcare company engaged PwC to deploy RPA associated with the following provision processes:

1. Pulling raw financial information from ERP systems
2. Cleaning up and reconciling accounts (e.g. intercompany)
3. Organising data by legal entity versus management reporting
4. Analysing account changes (accrual book/ tax adjustments)
5. Flagging significant accounting differences for follow-up investigation

3. Results

- Accelerated income tax provision, reducing manual effort by 10-25%
- Efficient gathering and manipulation of financial information, creating legal entity accrual adjustments
- Improved accuracy due to increased visibility of accounts and significant impact
- Reduced staff time used to perform low-value work (data extraction and manipulation)

A study by PwC Belgium and Gondola Group

1. Description of the problem

An Australian mining company worked with a decentralised workload across multiple shared services around the world. The benefits of scale were lacklustre due to the decentralised workload and experienced employees were not keen on performing low-value, repetitive data entry tasks. The company was interested in seeing whether RPA had the potential to deliver a range of benefits and transformation opportunities across shared services.

2. Approach

1. The work carried out at various shared service centres was transferred to one shared service centre in Malaysia
2. Two HR processes, namely reimbursement and timesheet administration, were selected for automation
3. Automation bots were built to mimic the human activities required to complete the selected sub-processes

HR
Case II

What can RPA be used for in HR?

- Employee master data management
- Time and attendance management
- Payroll
- Benefits and personal administration management

3. Results

- Proof of concept completed in 12 days with minimal IT involvement
- A projected 50% potential reduction in headcount for the automated processes
- 60-70% improvement in efficiency
- The pilot itself provided savings of 240k AUD. Potential annual savings of around 3.4m AUD.

A study by PwC Belgium and Gondola Group

Finance

Case III

1. Description of the problem

A multinational hospitality company managing and franchising a broad portfolio of hotels and resorts wanted to reduce its manual workload and improve its activity reporting within its Finance and Accounting department.

What can RPA be used for in finance?

- AP/AR Invoice processing
- Automatic journal entry generation
- Account reconciliation
- Management reporting

2. Approach

1. **Identifying processes that could be automated, which included the following:**

   a. The manual process of inputting daily revenue from one application to an Excel spreadsheet, followed by entering this data into another application and reporting the same - relatively low in terms of complexity but a high-value task (in that there are a significant number of associated FTEs).

   b. Daily reporting - involves gathering cover information, inputting that into an application, obtaining the daily journal, putting that information into an Excel spreadsheet, creating the daily report and sending to an e-mail list.

2. **Targeting processes for automation:**

   a. Inputting daily revenue into an Excel spreadsheet and entering the same into another application.

   b. Movement of account entries from expenses to allowances.

   c. Movement of cover information from one application to another.

3. Results

- 5FTEs were saved after automating these 3 processes with a 50-60% gain in efficiency
- The client could add more hotels/resorts to the existing workbook for the Accounting and Finance Dept.
- 50+ processes identified for the next phase of automation

Why is Robotic Process Automation so attractive?

1. Reduced operational costs
Employees will have time to work on value-adding activities

2. Multi-tasking
RPA can process many different tasks as long as they do not take place at the same time (e.g. producing a salary payroll and performing a cash reconciliation)

3. Robots never sleep
Many of today's digitally-enabled processes can be orchestrated to operate autonomously 24/7, driving real-time transactions

4. Allows for growth
Robots can respond to a growing workload with speed, agility and resilience

5. Improved quality & control
RPA reduces errors, produces detailed activity logs and enables programmable controls

6. Fast to implement
RPA works through the UI layer and avoids traditional process integration (e.g. IT resource investment, business requirement documents, significant development time, etc.)

Source: PwC, Digital Services

Road to intelligent automation

AI and RPA should not be regarded as two separate technologies since both can be used in combination. When AI is incorporated into RPA it is referred to as cognitive robotics, which enables the robot to identify patterns, process natural language and learn how to optimise its objectives over time.

PwC has estimated that up to 45% of all processes could be automated using RPA. [7] Cognitive robotics, however, would boost this automation by a further 33%, leaving only a small percentage of processes that actually required human interaction.

RPA could be considered to be an intermediate step towards your broader digitisation strategy. Basic aspects of AI, such as natural language processing and machine learning, can be implemented in RPA through cognitive intelligence, preparing your company step by step for widespread application of intelligent technologies over your entire value chain.

Start planning your future today

Imagine what your market will look like in 5 years' time. How can you ensure the future success of your company?

New technologies have the potential to fundamentally disrupt your industry, leaving behind players that are unable to adapt. It is vital to invest in new technologies in order to remain competitive. The opportunities that AI and RPA present for the retail and consumer goods industry are huge, and will often play a key role in dealing with the challenges that threaten the sector.

It is important, however, to correctly assess which technology offers the best fit and is the most effective for your company. PwC offers extensive international experience in assessing and implementing the newest technologies across sectors including the retail and consumer goods industry. In a world of constant innovation, technology is the key to future success.

A study by PwC Belgium and Gondola Group

Sources

[1]   Inc: Why half of the S&P 500 companies will be replaced in the next decade (2016)

[2]   Pega: What consumers really think about AI: a global study (2017)

[3]   PwC: Tech breakthroughs megatrend: how to prepare for its impact (2017)

[4]   CB Insights: The state of Artificial Intelligence (2017)

[5]   PwC: Sizing the prize, what's the real value of AI for your business and how can you capitalise (2017)

[6]   PwC: A revolutionary partnership: How AI is pushing man and machine closer together (2017)

[7]   PwC: Organize your future with robotic process automation (2016)

[8]   PwC: Robotic Process Automation, What Tax needs to know now (2017)

[9]   The Verge: Elon Musk dismisses Mark Zuckerberg's understanding of AI threat as 'limited' (2017)

[10]   The Retail Academy: Your view on Artificial Intelligence and Robot Process Automation (2017)

[11]   MarketWire: Standard Cognition launches first commercially available checkout-free AI shopping system (2017)

[12]   RetailWire: A.I.'s advancing role in fuelling the retail supply chain (2017)

[13]   PredictifAI: Case Forecasting

[14]   DeepMind: Deep reinforcement learning

[15]   The Verge: Google uses DeepMind to cut data centre energy bills (2016)

[16]   Cisco: Total Customer Value Is Likely 2x What You Think It Is (2016)

[17]   Kissmetrics: 8 important e-commerce stats

[18]   SLI systems : Case recommendation engine

[19]   Plexure : Case IoT instore analysis

[20]   Databerries : Case IoT instore analysis

[21]   PwC: Robotic Process Automation, Key facts (2016)

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