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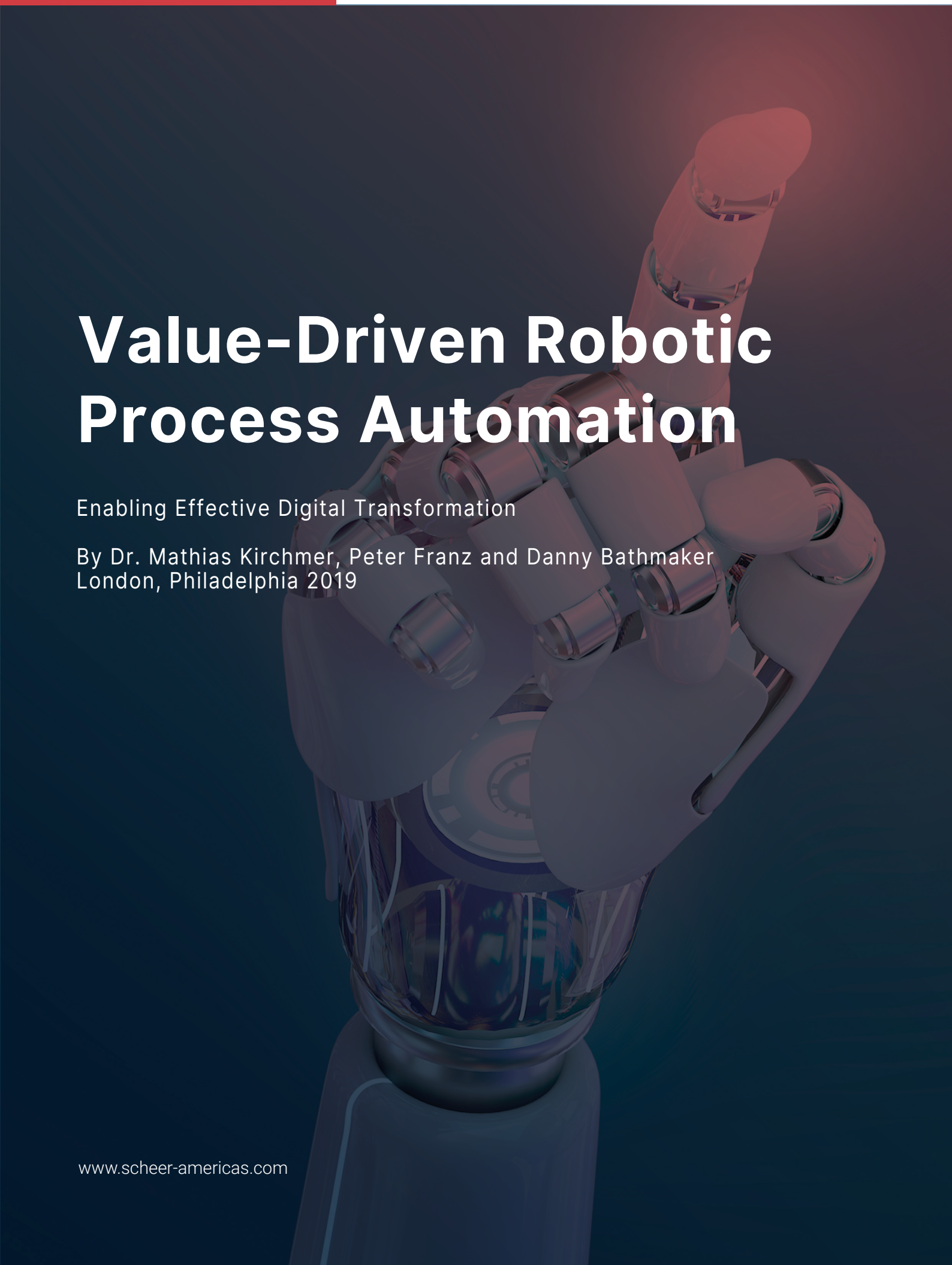

Value-Driven Robotic Process Automation

Enabling Effective Digital Transformation

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Value-driven robotic process automation (rpa) enabling effective digital transformation:

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Abstract

Digitalization has transformed the way organisations operate. New digital tools are available with increasing regularity – and many of them have the potential for a major impact. They enable the transformation of business processes to become more efficient, agile, meet compliance requirements, enhance customer experience or improve the general quality of deliverables. They may help achieve a level of process performance not previously envisaged. Robotic Process Automation (RPA) is one of those digital enablers which has been applied, or at least discussed in many organisations as practice reports and conference presentations show. This process technology is becoming a mainstream trend, relevant for many businesses. However, many organisations struggle to realize the full potential of RPA. According to newer statistics even 30-50% of RPA initiatives fail completely. This is partly attributable to the fact that vendors and journalists are constantly hyping its capabilities to the point where it becomes like the proverbial hammer, to which every problem looks like a nail. The paper discusses opportunities and challenges of applying RPA as process improvement approach. The approach of Valuedriven Robotic Process Automation addresses the challenges and realized the identified opportunities. It proposes an approach that helps to focus on the right sub-processes to automate, improve those business processes considering the end-to-end process context and sustain the results through appropriate governance and hybrid workforce management. Agile principles are combined with the required focus and direction. Valuedriven RPA is a part of a discipline of process-led digital transformation management, leveraging the capabilities of Business Process Management (BPM) to realize the full value of digital initiatives, fast and at minimal risk.

Keywords:
Artificial Intelligence, BPM, Business Process Management, Change Management, Digitalization, Digital Transformation, Intelligent Automation, Intelligent Process Automation, Process Design, Process Governance, Process Improvement, Process Modelling, RPA Discovery, Robotic Process Automation, RPA, RPA Tools, Smart Process Automation, Targeting Value, Value Realization.

1. Introduction

Most organisations have started digital transformation initiatives or at least plan for them (Kirchmer, Franz, Lotterer, Antonucci, Laengle 2016). New digital tools are available with increasing regularity – and many of them have the potential for a major business impact. They enable the transformation of business processes to become more efficient, agile, meet compliance requirements, enhance customer experience or improve the general quality of deliverables. They may help achieve a level of process performance not seen before. Robotic Process Automation (RPA) is one of those digital enablers which has been applied or at least discussed in many organisations as practice reports and conference presentations show (Scheer 2018) (Accenture, 2017) (McKinsey, 2017). This process technology is about to become a mainstream trend relevant for many businesses.

However, many organisations don't realize the full potential of RPA. According to newer statistics as many as 30-50% of RPA initiatives fail completely (Cantara, 2015) (Kirchmer, 2017a). The approach of Value-driven RPA addresses this challenge. It proposes an approach that helps to focus on the right sub-processes to automate through RPA, improve those business processes considering the end-to-end process context and sustain the results through appropriate governance and hybrid workforce management (Kirchmer, Franz, 2017b). Value-driven RPA is a part of a discipline of process-led digital transformation management, leveraging the capabilities of Business Process Management (BPM) to realize the full value of digital initiatives, fast and at minimal risk (Franz, Kirchmer, 2012).

The article defines RPA and explains it significance. Then it introduces an approach for Valuedriven RPA, combining academic findings and practical project experience. The conclusion shows a possible way forward and highlights related research opportunities.

This paper was first published BMSD 2019 conference Proceedings (Kirchmer, Franz, 2019) and is a further revision of this paper.

2. Operationalizing Business Strategy as Basis for Prioritization

In order to prioritize processes aBased on a definition and some background on RPA, its current use and expected value is discussed. This leads to the identification of key challenges of current approaches to implementation and roll-out of RPA.nd projects based on a business strategy, it is necessary to operationalize the strategy so that specific information is available to drive the prioritization approach. This is done using a value-driver tree approach.

2.1 Defining a Value-Driver Tree

Robots have been used in manufacturing environments for a long time (Scheer, 2018). Whole manufacturing lines have been automated using robots to execute manufacturing steps, handle parts or transport them to then next production unit. RPA transfers this automation approach into the administrative and management work of an organisation.

RPA tools, so called "Bots", are software programs that operate on the user interface of other computer systems in the way a human would do (Wikipedia, 2018). These tools differ from traditional software by working at the user interface level, replicating the exact actions a human user would take, they basically recognize and read fields on a screen of an application software, modify the content if necessary and enter it into other fields of the same or different software. All of that happens based on predefined rules (Harmon, 2017). This means the Bots execute business process steps using the appropriate application software. In addition, they influence the business process directly by driving a specific process flow, for example, a business process that enables the automated handling of standard situations and the work on exceptions through humans, increasing work efficiency by automating the human workforce with a digital workforce, allowing the humans to provide more valuable engagement in improving customer service and ensuring compliance with controls and regulations. The definition of RPA is summarized in Figure 1 on the next page.

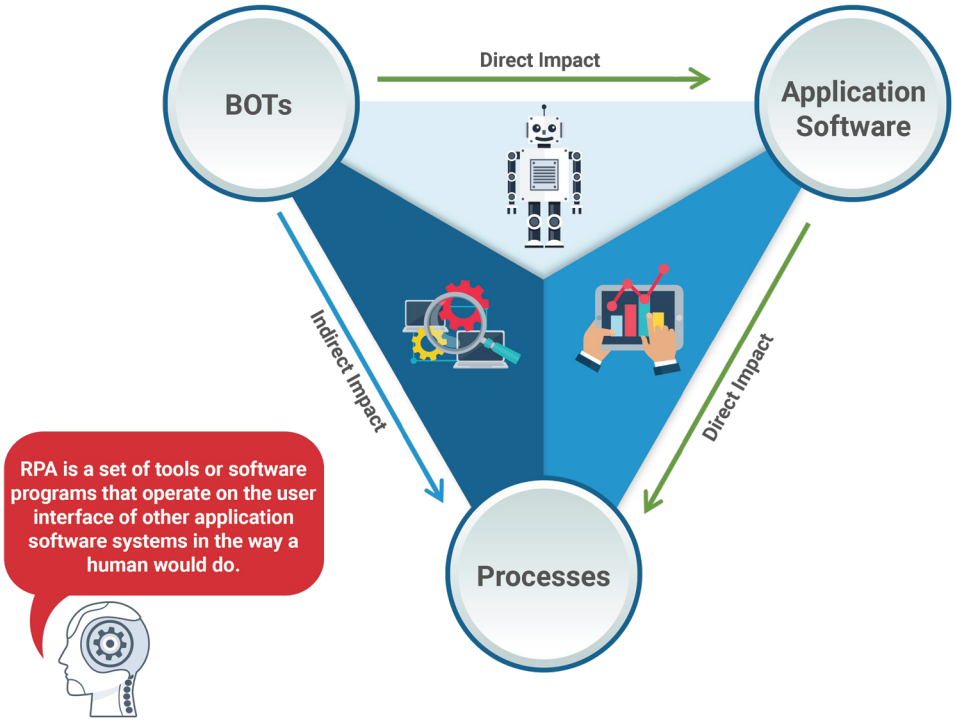

Figure 1: Definition of Robotic Process Automation (RPA)

The integration of artificial intelligence (AI) and cognitive automation components into the RPA tools makes them even more powerful since RPA starts handling unplanned situations and deals with unstructured data. Also, the handling of verbal information is possible using "Chatbots" in an RPA environment (Scheer, 2018). The combination of the RPA with AI is often referred to as Intelligent Process Automation (IPA) or Smart Process Automation (SPA), as part of intelligent automation in general.

Just like industry robots automate manufacturing and asse bly steps, RPA robots automate the human work with data and information. This is the extension of the first automation phase of business activities through traditional software, such as Enterprise Resource Planning (ERP) systems and the following automation of the workflow through integrated Business Process Management Systems (BPMS). It is estimated that over 50% of current human interaction with those systems can be automated through RPA resulting in significant performance increases (Scheer, 2018) (Mori, K, Burnett, 2017). All this can be achieved with relatively moderate investments which makes RPA even more attractive for organisations. It has become a core component of many digital business transformation initiatives.

2.2 Current Status of RPA Utilization and Value

RPA offers significant opportunities to improve business process performance. This has been proven in various business process areas in thousands of organisations (see, for example, Davison, Magana, Holbrook, 2018). The check of vendor invoices, handling of routine insurance claims, or the processing of loan applications are just a few examples where RPA has been used successfully. In general, non-value-added working steps, such as entering data from one application into another or extracting and re-entering spreadsheets, are automated, freeing up related human workforce for higher qualified activities, leading to cost reductions and shorter cycle times. These effects are combined with other benefits like the reduction or even elimination of errors entering data, enforcing of complance rules, or easily scaling data processing capacity "on demand".

A bank, for example, reduced the onboarding time from 16 days to 9 minutes. A marketing services company achieved 97% accuracy of product categorization and reduced manual effort by up to 80% for selected processes. An international software company reduced 67% of their headcount in their invoice processing through RPA while achieving 20% less help desk inquiries through more accurate results (Modi, K, Burnett, 2017).

RPA can also add value in the technical field of software integration. Without the availability of RPA, in a heterogeneous systems environment, applications are either connected by system interfaces or by humans. The tools effectively mirror the human activity and can read the data produced by one application and enter it into another one, achieving an integration effect without developing costly interfaces or changing existing software. This leads to efficiency effects in the information technology department and provides business users the required integration to enhance process performance.

In the meantime, RPA solutions are offered by a continuously growing number of vendors. The Gartner Group, for example, mentions 15 vendors in their RPA market guide (Tornbohm, 2016) or HFS examines in a recent research report 10 selected vendors (Fersht, Gupta, 2018). RPA software is often offered at an aggressive price, basic entrance versions even for free. Also, implementation costs are relatively inexpensive.

2.3 Levels of Automation

Levels of automation can be complex to understand, as very few organisations if any have reached a level of automation where computers have complete control of tasks. Organisations who have started to implement RPA within their business have already experienced a positive impact regardless of the level of automation. A report published by Everest Group (2017), shown in figure 2, suggests that the level of automation can be spilt into four distinct categories as outlined below:

PA 1.0: The objective of the first category is to improve the workers productivity with the help of automated tools. The robot does not perform the tasks but assists the human workforce with their effort. At a very basic level, a calculator will not perform complex analysis but can be used to accelerate addition, subtraction or multiplication within a process.

RPA 2.0: In this category, RPA is deployed to carry out end-to-end tasks. The robot is no longer helping the human workforce but replacing it. However, the objective is far from straight forward and the human workforce still has a key role to play in supporting the deployment and scale of the new digital workforce. At this stage organisations will have a centralized robot management system in place, with the re-trained human workforce analysing robot performance and orchestrating scheduling and queuing.

RPA 3.0: By the time an organisation is operating in this category, end-to-end tasks will be fully automated, and the human workforce will be focusing their efforts on exception handling. As processes age, new exceptions occur which require resolution. In this instance the task of resolving the exception falls to the human workforce. This is often referred to as "human-in-the-loop". However, over time the digital workforce will start to learn by studying patterns and recalling how the exception was previously resolved. At this stage in an organisation's journey they will have a Cloud / SaaS (VMs) & on-premises deployment. Features will include, advanced analytics and workflows, auto-scaling, dynamic load balancing and context

awareness.

RPA 4.0: The final category sees RPA integrated with AI technologies such as Machine Learning, voice recognition, computer vision, text analytics, natural language processing and natural language generation. These enhanced capabilities provide the organisation with a whole series of digital interactions, for example; object connectivity on the screen, voice and visual interfaces, processing of unstructured data, predictive and prescriptive analytics, automation of tasks that involve cognitive decision making and diagnostics that enable your robots to self-manage and self-heal. At this stage, the objective for the human workforce is to increase the scope of automaton and simplify the development and management of the digital workforce.

These levels of automation do not need to be achieved in a step by step manner. The scalability of each level depends on the organisation's capability and the resources it has at its disposal to invest in its automation journey. Much of the initial hype about RPA has been related to RPA 1.0. The future potential is an order of magnitude larger as organisations address solutions in the later stages. Not all processes can be improved by applying full automation. Much will depend on a specific problem or opportunities the organisation faces. It is worth noting that the term RPA is sometimes used to broadly refer to a range of available technologies. RPA stage 1.0 would refer to the basic scripting available in traditional RPA tools. For RPA stage 4.0, a wider range of the tools would be required covering a range of other automation capabilities. This is shown in the automation ecosystem model in figure 3, depicting RPA as a satellite function, including other technologies such as; Artificial Intelligence (AI), Optical Character Recognition (OCR) and Robots as a Service (RaaS), also incorporating data analytics and the enablement and empowerment of people. This ecosystem is underpinned with BPM as the foundation of its core.

All this makes RPA look like a pragmatic and powerful solution, a big business opportunity. Valuedriven RPA has to realize those

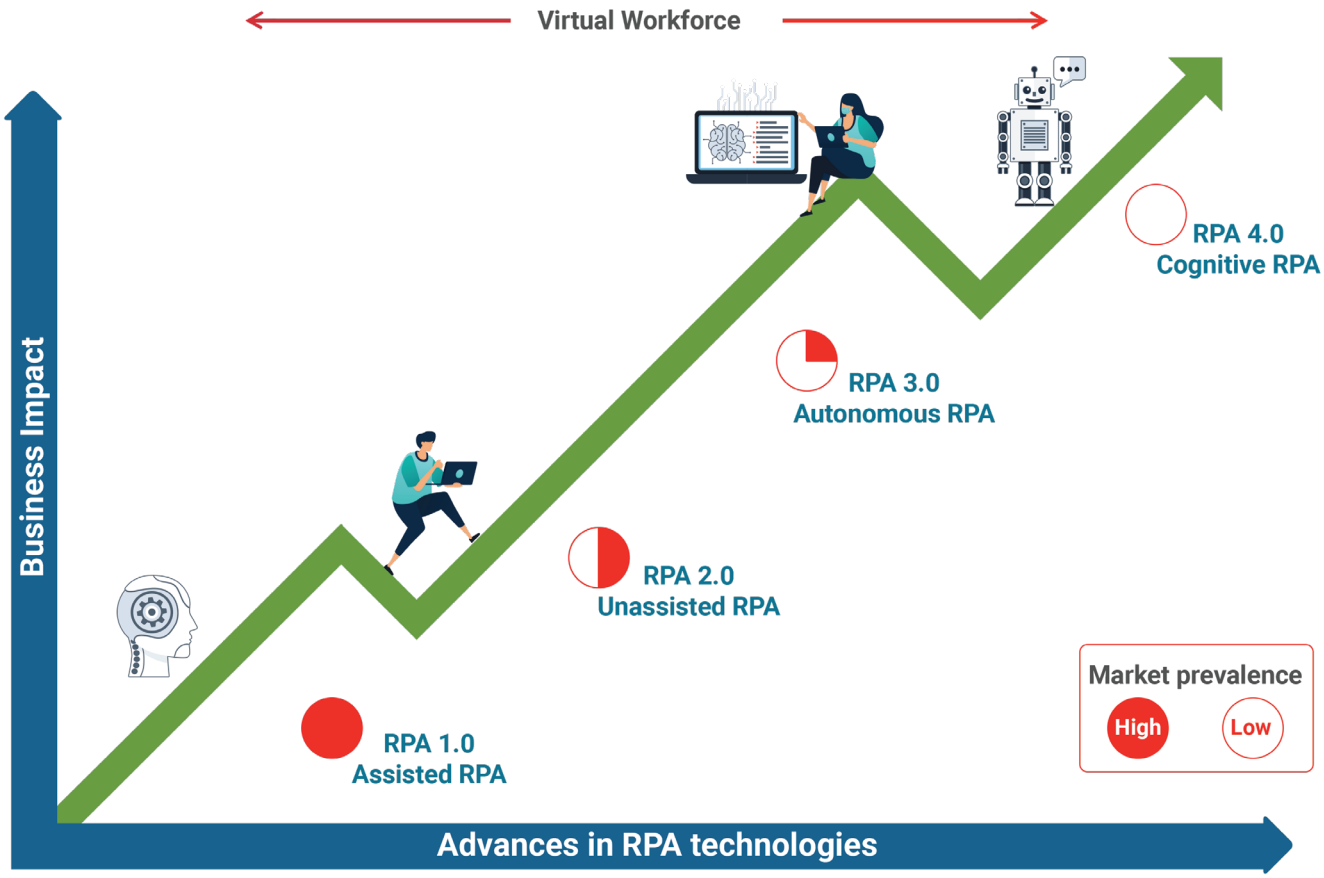

Figure 2 - Levels of Robotic Process Automation (Everest, 2017)

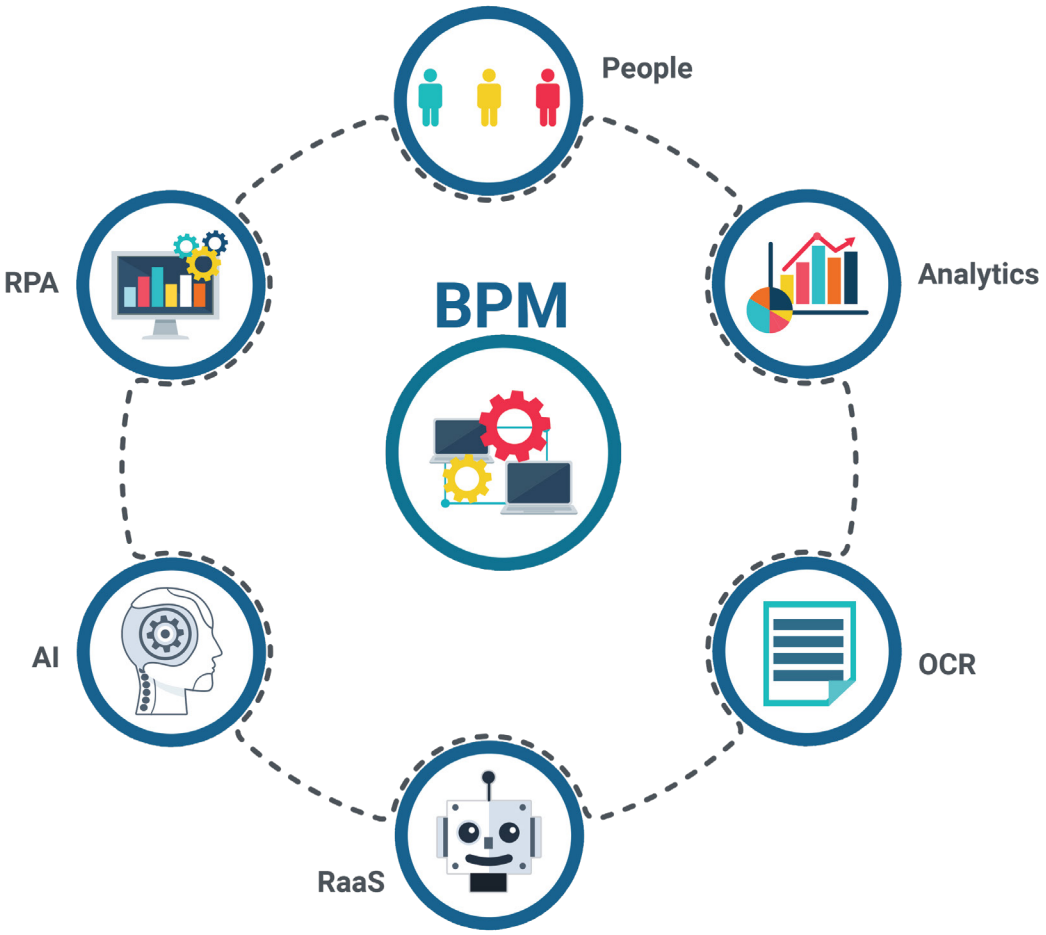

Figure 3 - Automation Ecosystem

2.3 Levels of Automation

The use of RPA can also have downsides. RPA creates risks, like basically every automation technology does (Kirchmer, 2017b). RPA helps to do routine work faster and at a higher quality, but it also can make mistakes faster and with certainty. There is no human check before executing an action. Humans apply intuition and experience even to routine tasks. Poor data quality or the insufficient definition of business rules can lead, for example, to the ordering of the wrong parts – fast and in big quantities. Or missed claim types can lead to significant rework in the claims handling, overcompensating the automation benefits. RPA requires detailed knowledge about the business process it is used in – otherwise expected performance improvements will not be rea lized.

RPA Missed the Mark
The CIO of a major financial firm, at the 2018 Process Excellence Conference in Orlando, described how they stopped the use of over 1000 bots due to significant issues. Processes had changed faster than expected so that related bots did not operate properly, creating huge amounts of exceptions that people had to handle. This significantly negated the initial workforce reduction. In other processes the elimination of individual bottlenecks created issues in downstream processes, resulting again in additional work efforts.

The use of RPA may also just cover symptoms without correcting the real reasons for issues. RPA was, for example, used for the automated reconciliation of account differences in an investment bank. However, in the mid and long-term it would be much more beneficial to correct the up-stream issues leading to those differences. In this situation, RPA has become an obstacle to real progress. It is a transformation that brings change but not the full possible improvement.

While one of the benefits of RPA is lauded as being efficiency, the reduction of time for specific working steps does not automatically lead to a workforce headcount reduction. Saving a few hours for different roles may lead to more time for the related people, however, they are still required to do the remaining work. In an insurance company this led to a situation that RPA was perceived as not creating any benefits at all. Real cost reduction, should this be the objective, requires a systematic re-structuring of roles and appropriate workforce management, including human and digital workforce.

RPA vendors stress that their tools are easy to implement and use – also for a businessperson. This may be right for simple straight-forward applications. However, to achieve full potential of sophisticated larger RPA environments some expert know how is required for implementation and ongoing adjustment (Harmon, 2017). For a robot to be reliable in an enterprise context, it can be necessary to provide for anticipated exception conditions. This exception processing is often developed using coding and is difficult to do by the average business user, this should be part of the process management capabilities of the organisation. Failing that, RPA expectations may not be met at all or at least not be met fully. A basic business process management discipline should be in place or established to support RPA operations.

Combining RPA with artificial intelligence capabilities can also lead to challenges. For example, if Machine Learning (ML) is used to handle more complex process instances, such as the handling of specific claims, the results depend heavily on the available source data AI learns from. If the historical data, input into the ML algorithms, is of a low quality, resulting bad decisions and actions will be only executed faster. Artificial intelligence turns into artificial stupidity.

As shown diagrammatically in figure 4, new technologies, especially disruptive game-changers such as IPA, may be difficult to understand and integrate into organisational thought and action at scale. As demand for automation increases, multiple tools may be adopted across the organisation. Ungoverned adoption may result in costly maintenance or violation of compliance policies (Workfusion 2017, Intelligent Automation). All this makes RPA look like a pragmatic and powerful solution, a big business opportunity. Valuedriven RPA has to realize those opportunities systematically.

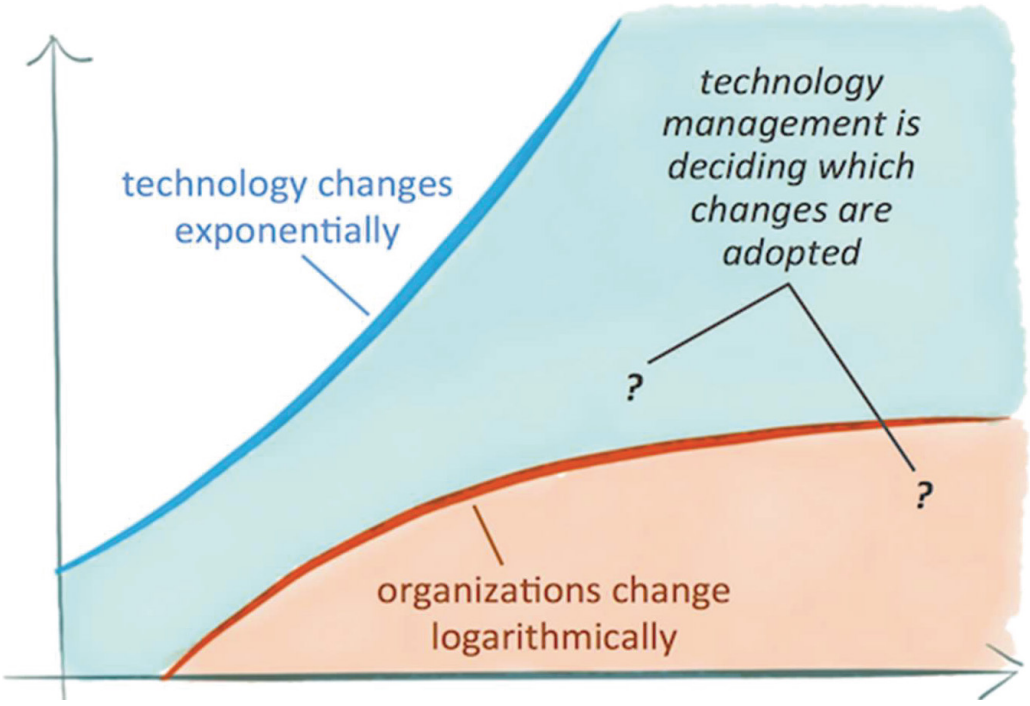

Figure 4 - Technology Adoption (Brinker, 2013)

The initial focus of most RPA implementations is on the technology. Having reviewed a number of RPA projects, it has been clear that success is much more dependent on a thorough understanding of the end-to-end business process, enhanced through the appropriate application of RPA technologies.

3. Focus RPA on the Right Processes

A company only competes through 15 – 20% of its business processes (Franz, Kirchmer, 2012). If some of those high impact processes have a low maturity level these are excellent targets for improvement initiatives. Here RPA can achieve the highest business impact. However, before deciding on an RPA implementation it has to be verified if this is indeed the right solution to address the weak points of those processes.

3.1 Identify the High Impact Business Processes

The impact of a business process depends on the strategy of an organisation. In order to identify high impact processes, we need to operationalize the strategy. This can be done through a valuedriver tree, breaking down the strategic direction into goals and those are linked to value-drivers. Value-drivers describe what an organisation has to get right to deliver on its strategy. Experience in has shown that 8-10 value-drivers can describe what it takes to make a strategy happen (Franz, Kirchmer, 2012). Figure 5 shows an example of such a value-driver tree, captured in an appropriate tool, here the BPM-D Application (Kirchmer, Franz, Gusain, 2018).

The value-drivers can then be linked to different processes of an organisation by defining the impact of each process on each value-driver. The weighted total impact of a process is basis for the identification of the high impact processes of an organisation. For those high impact processes, the maturity level is identified by comparing its performance to an industry average or other benchmarks. Result of this process segmentation is the identification of high impact low maturity processes (Franz, Kirchmer, 2017). An example of such a process impact assessment matrix is shown in figure 6, again using the BPM-D Application. High impacts are denoted using a colour code (red being the highest), and the process maturity is denoted by the blue line beneath, the capability gap is the grey line extending from the blue. A red process with a large grey line is a typical candidate for process improvement initiatives, in this example 6.2 Ensure Compliance seems to be the most likely candidate for improvement, though the potential for automation is not a given and must be analysed.

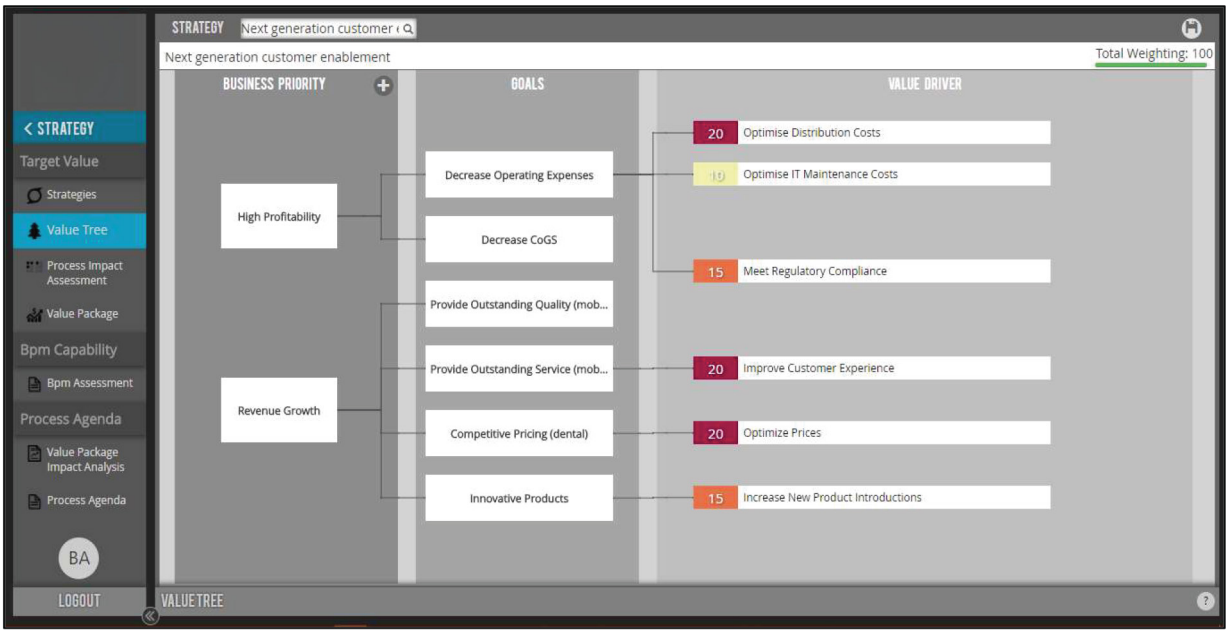

Figure 5 - Value-driver Tree in the BPM-D Application

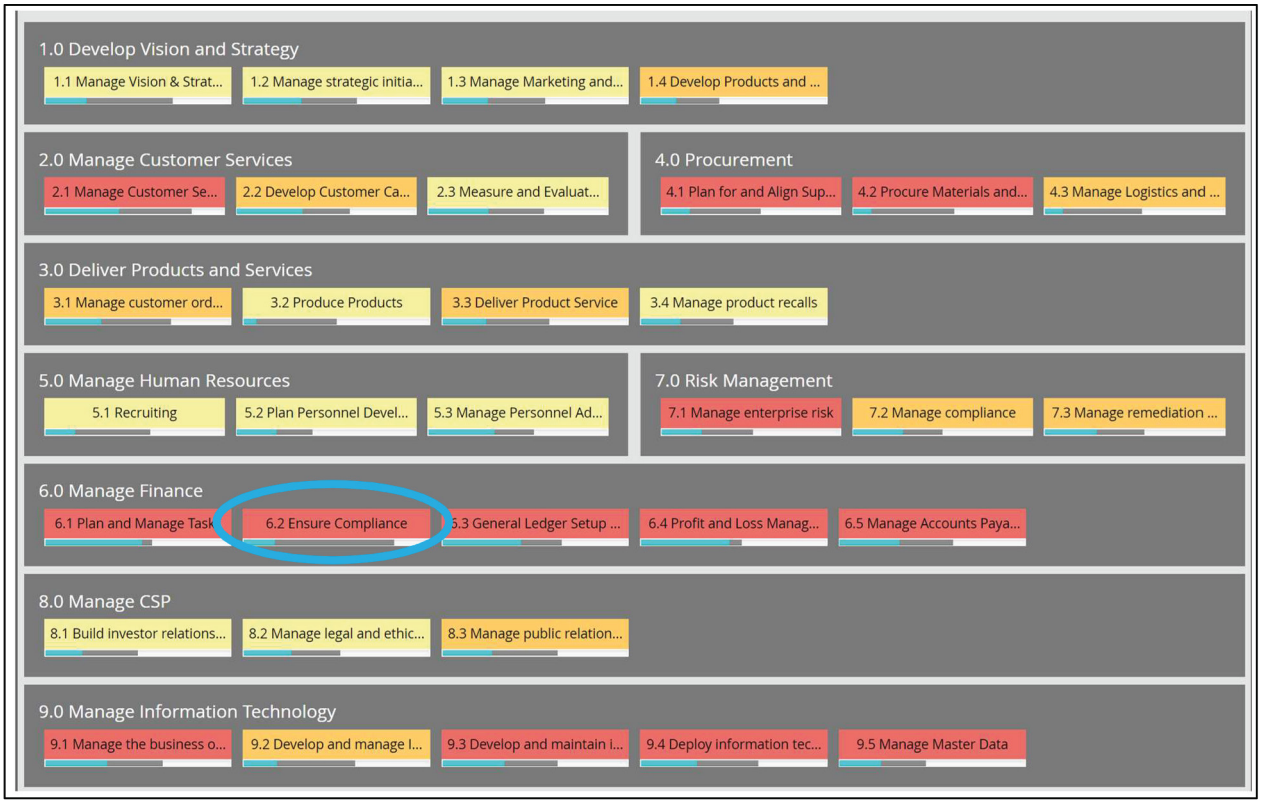

Figure 6 - Process Impact Assessment Matrix in the BPM-D Application

At least in a first phase, only high impact low maturity processes are examined to verify where RPA fits to improve the maturity level and with that the performance of the process in regard to the strategy. The focus on this process segment enables RPA initiatives to deliver best value. If RPA is not the right improvement solution, alternatives are identified.

3.2 Verify the RPA Technology Fit

RPA is best fit for repetitive transactional processes with a high transaction volume. This enables a simple straight forward use of RPA with little risk and high economy of scale. Automating exceptions, for example the handling of special high-risk claims, do in general not pay off since they may only happen a few times per year and may in each case require adjustments to the RPA bot.

A process benefitting from RPA requires digital input and output of data, for example the creation of a spreadsheets with customer data from one system that needs to be entered into another application. A business process with lots of manual analogue working steps benefits less from RPA. It is also helpful if the data to be handled is straight forward text or numeric data. Complex images are more difficult to deal with – although the continuing improvement of Optical Character Recognition (OCR) technologies can help here.

If several application systems that support a process are not integrated through APIs, this could be another opportunity for creating value through the use of RPA. RPA can provide the required integration. In this situation it is helpful if the technical system access is easy, for example it simplifies the RPA application if there is no need to address security software of cloud-based applications. In general, the change rate of the systems RPA has to access should be low to avoid frequent RPA configuration adjustments.

Some of the most important technical criteria, to verify the fit of RPA as an improvement approach, are summarized in figure 7.

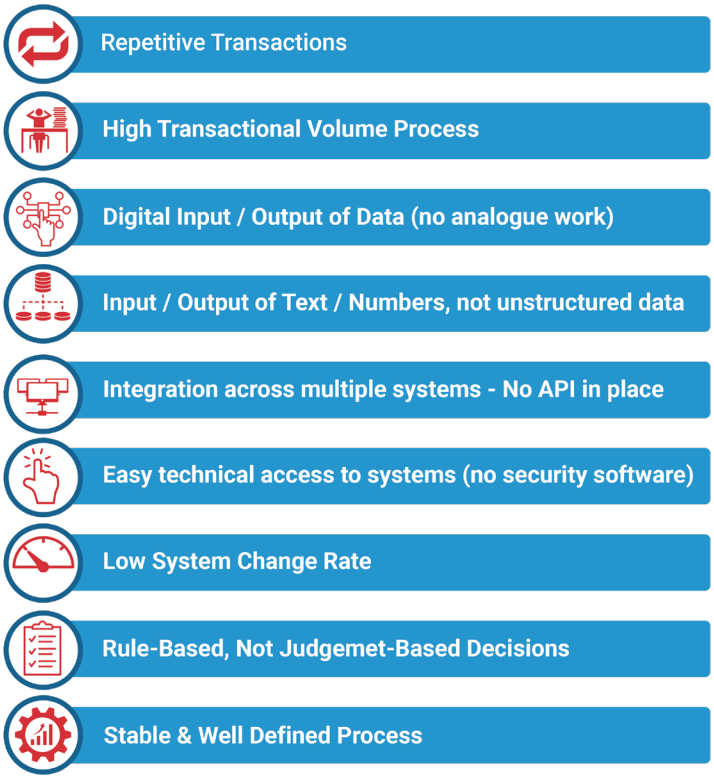

Figure 7 - Selected criteria to verify the fit of RPA as improvement approach

The decisions in RPA-enabled processes should be based on clearly defined rules that can be automated. Judgement-based decisions are much more difficult to handle through RPA. However, Artificial Intelligence (AI) capabilities can increasingly help here. Hence, this option must be checked on a case by case basis.

In general RPA is a good fit for stable, well defined processes with as few exceptions as possible. Frequently adjusting processes or even emerging processes normally require significant RPA management effort that may be prohibitive for its use.

If a high impact low maturity process is a candidate for RPA according to these technical criteria, it has to be determined now whether the RPA effects support the value-drivers related to these processes. Only if RPA improves the process in regard to these value-drivers is it worth launching an RPA implementation. The result is a set of processes suited for improvement through RPA deployments that can be used to define appropriate projects and project portfolios (Kirchmer, Franz, Gusain, 2018).

4. Improve Processes in the Appropriate Context Using RPA

In order to realize the full potential of RPA, and avoid the discussed issues, it is necessary to understand the process context in which RPA is used in detail and plan the implementation and roll out systematically. An agile approach to the RPA-based process design and system configuration enables fast value realization and helps to minimize risk.

4.1 Analyse As-Is Processes

Many RPA technology vendors and promoters suggest that the A focused process simulation is often helpful to properly understand the current execution effort, cycle times and major bottlenecks. This simulation can then be used to demonstrate the impact of using RPA to automate certain steps in the process, highlighting the overall impact on the process performance. The characteristics of processes suited for RPA, especially the degree of automation, simplify the data collection to enable a process simulation. The as-is process analysis is illustrated in figure 8. The analysis allows a simplification of the processes before transforming it using RPA as enabler. This simplifies RPA deployment and change management as well as the following value realization.Bots can be used without much analysis upfront. However, this reduces the business impact and can create many of the up and downstream challenges, as discussed before. As in any improvement initiative it is important to understand the current business process context to identify improvement opportunities and create a baseline for the expected value and the business cased based thereon. To avoid key challenges of RPA it is important to understae end-to-end process and the expected effects of RPA. Since RPA touches all dimensions of a process, they all need to be included in the analysis, using methods like BPMN 2.0 (Fisher, 2012): organisation (roles, departments, etc.), data, functions, process control flow, process deliverables and underlying technology (Scheer, 1998) (Kirchmer, 2017a) (Vivek, 2018). To realize the full potential of RPA, the analysis has to answer specifically questions like the following:

- Which roles can be eliminated or re-directed? This allows the calculation of efficiency effects, especially cost reduction but also potential quality improvements by avoiding mistakes.
- Which functions of remaining roles can be eliminated? This supports value identification in the same way discussed above.
- How is the cycle time effected? This provides information about increased agility, leading, for example, to better customer or supplier experience.

- Can the use of existing software systems be discontinued, or the development of complex system interfaces be avoided?

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RPA Delivers Results
A team at a local government service provider was found to be under resourced after modelling and simulating the as-is processes based on resource availability and cycle times. Budgets were tight and there was they needed to improve service without hiring additional headcount. BPM-D identified a number of potential automation interventions to be applied at various points in the process, with a clear business case for each. These interventions were commissioned and yielded immediate savings, with payback within 1 year, and an efficiency improvement of 25-30%.

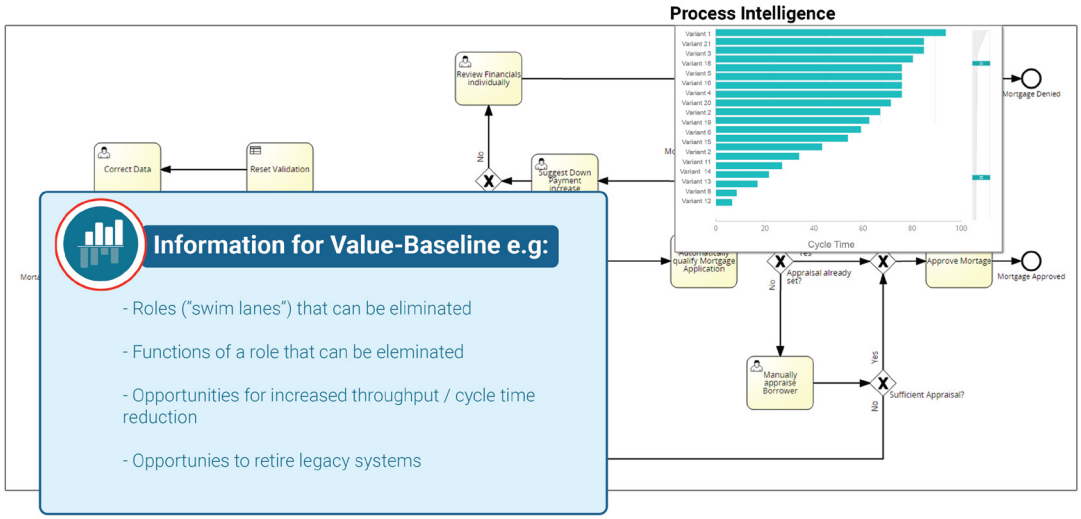

Figure 8 - Value-baseline through As-Is Process Analysis

4.2 Agile Process Design and RPA Development

The end-to-end vision of the to-be process is defined and guides the following detailed design and RPA realization activities. The detailed design of the RPA-based to-be processes and the RPA development or configuration are executed in an agile way, realizing the final to-be of a process in stages (Sutherland, Sutherland, 2014). This enables a fast value realization and minimizes risk since stop-go decisions can be included systematically in the design and deployment approach.

In most cases a first use of RPA automates the standard situations handled through a process, leaving the handling of exceptions to the human workforces. An example is the onboarding of mortgage applicants where only candidates with questionable financial background may have to be handled through an exception process. These manually handled processes components can then be automated in following stages – depending on the additional value expected. This "build" approach is explained in figure 9.

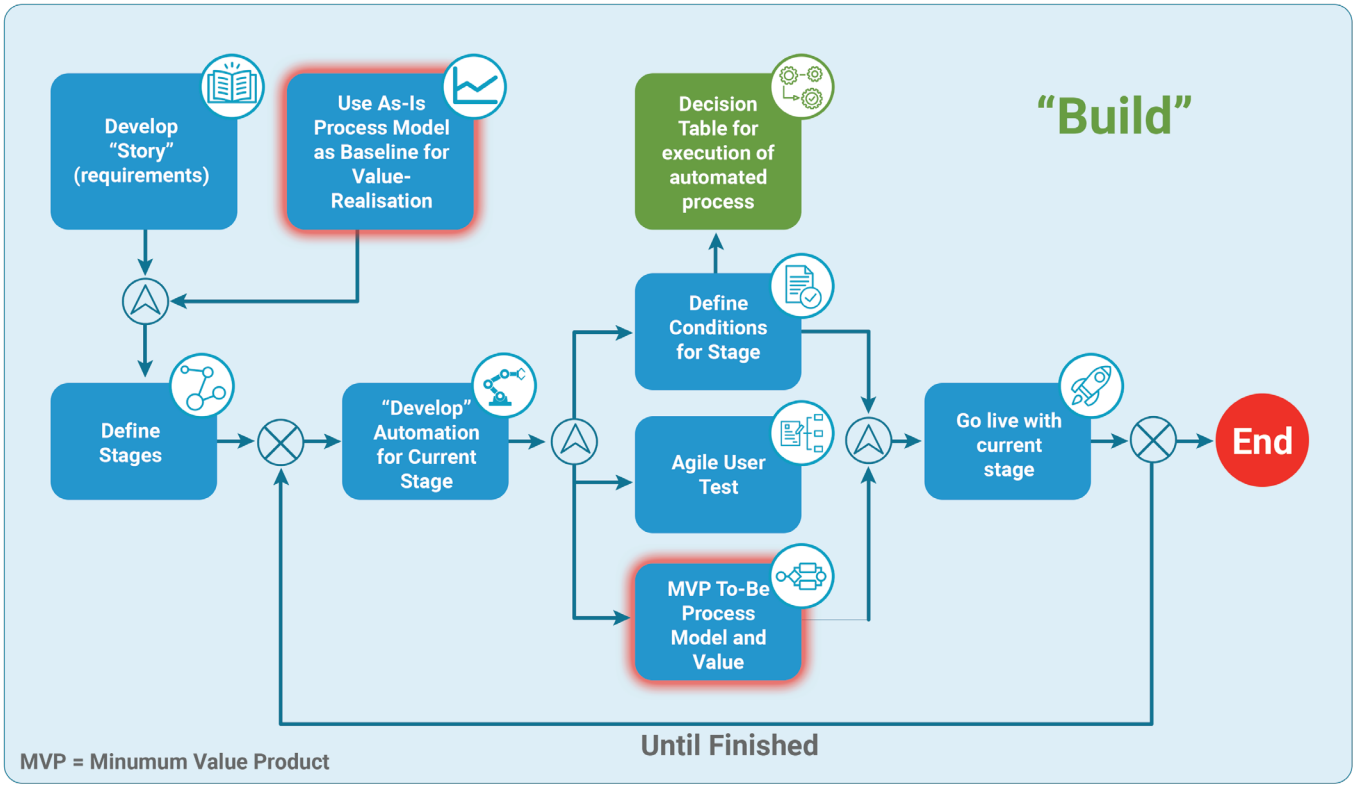

Figure 9 - Agile approach to build an RPA enabled process

The development of the RPA solution often requires a combination of different components, including other automation approaches such as Business Process Management Systems (BPMS), Artificial Intelligence (AI), Optical Character Recognition (OCR), Analytics and more. Hence, an appropriate solution architecture, supporting the process improvement objectives, is crucial for a successful RPA deployment.

It is important not to reduce the agile approach of building Minimum Viable Products (MVP) only to the RPA technology but to define for each MVP also the appropriate intermediate to-be process. This provides for the value to be defined per stage, sets the right expectations and enables an appropriate change management. Business and Information Technology (IT) departments get aligned. It can, for example, be identified, which roles can be eliminated in a specific stage and when existing legacy systems or APIs can be retired. The development of MVP process stages to manage the value-realization is illustrated in figure 10.

This approach enables a rapid value-realization while still working within the end-to-end process context, avoiding typical RPA challenges. The agile realization of different stages is aligned through the overall end-to-end process vision, defined for overall guidance.

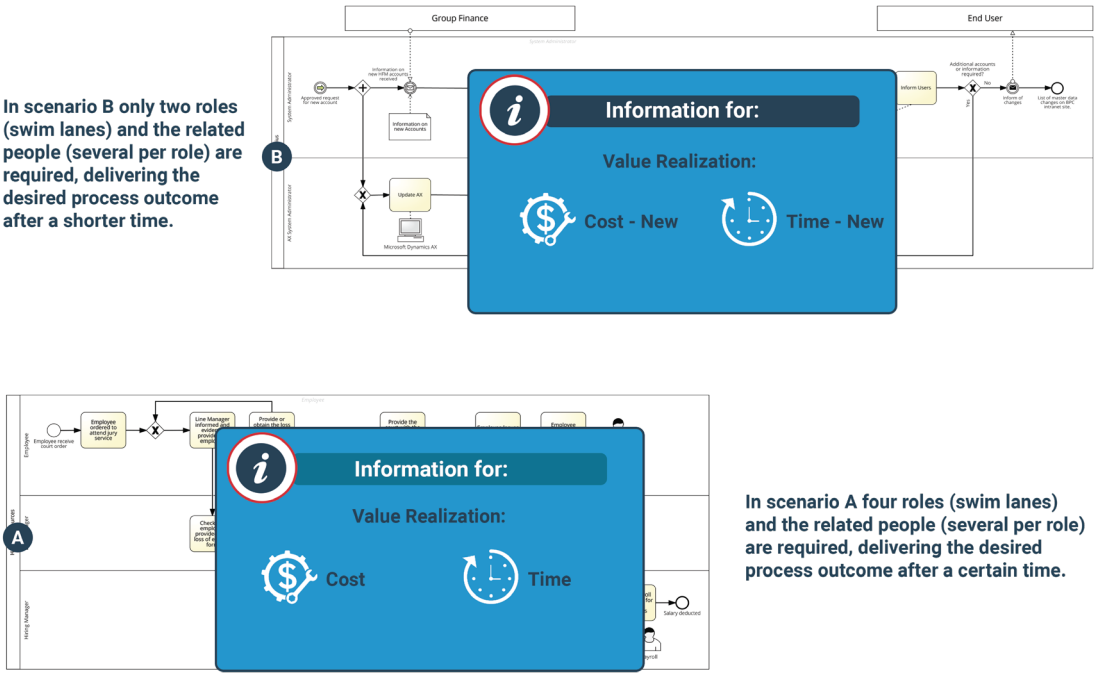

Figure 10 - Agile development of RPA-based to-be processes

An important component is the appropriate workforce management, enabling the value realization and ensuring the appropriate processing of exceptions. The handling of a hybrid workforce, including human and digital members, requires appropriate preparation: people need to have clear new roles and expectations and Bots need to be updated and adjusted systematically based on experiences in the ongoing business.

The creation of appropriate roles is often a pre-condition to free up people for other activities.

People change management, including information, communication and training, plays a key role (Kirchmer, 2017a). This aspect is often underestimated in RPA initiatives since the changing role of humans for exception handling, which in most cases leads to more demanding work, is not considered

4.3 Process-led RPA Deployment

The deployment and roll-out follows the same agile principles as the development. Each MVP process scenario is deployed while the existing processes are left to handle the excluded cases. For example, specific insurance claims or purchase requisitions of a manufacturing company, in place. The kind of process execution (using RPA or using the former as-is process) is defined based on a decision table reflecting the current development status of the RPA solution and the enabled processes.

Formal testing, as with any application, is still often a critical necessity to minimize business risk. However, in more and more RPA initiatives, this risk is at least partly mitigated through the immediate execution of the process through users. If issues occur, users can still switch back to the traditional process until the RPA configuration is adjusted. Innovation becomes part of the day-to-day business. This approach is explained in figure 11.

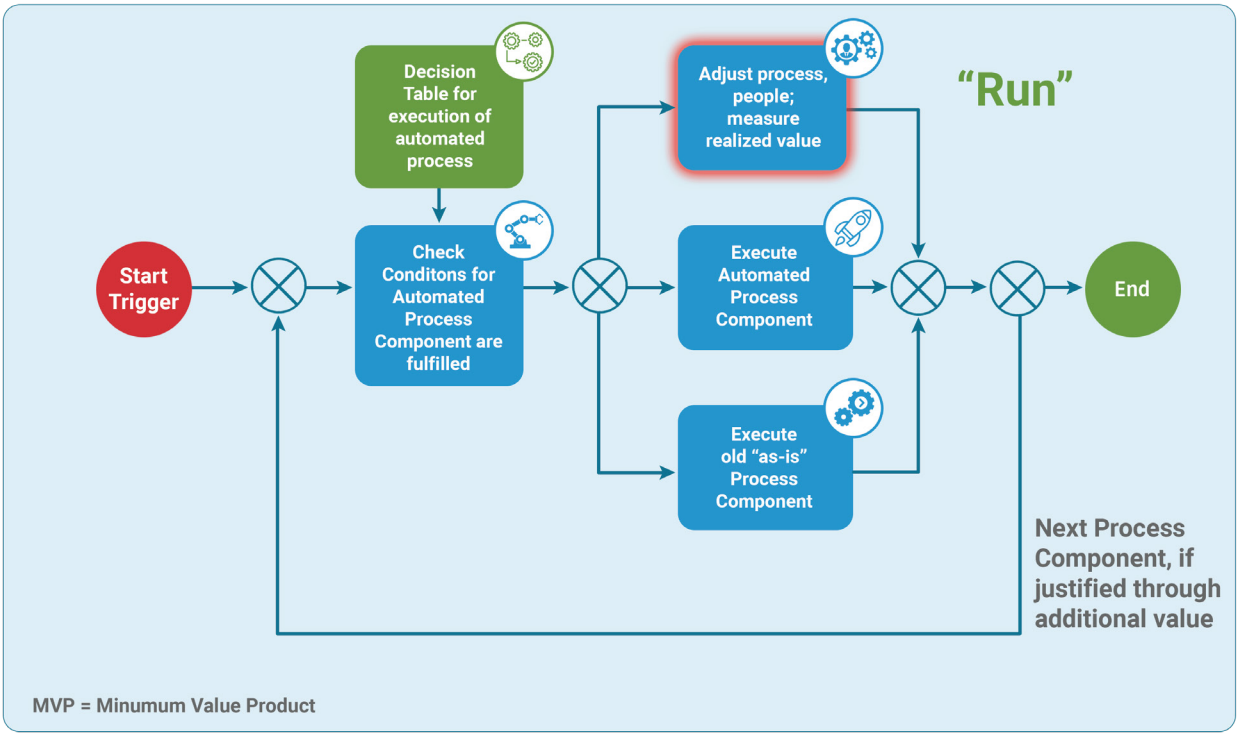

Figure 11 - Agile deployment of RPA-based processes

5. Sustain RPA Benefits and Results

Once an RPA enabled process is executed in the daily business, it is important to keep on managing the value realization and adjust the process as well as the enabling automation components. This management discipline is crucial for the overall success of the new process and the delivery of related benefits. Hence, an appropriate process governance is required. Figure 12 shows a high-level example of a process governance organisation.

This process governance plays a key role for digitally enabled processes. RPA, as well as other automation approaches, impact different departments and functional organisations. Hence, the decision on changes of the processes and underlying technology requires well defined governance processes and appropriate roles to realize the expected agility, sustainable cost reductions and other benefits (Kirchmer, 2018a).

Process governance is part of a larger business process management discipline (BPM-Discipline)that manages the digital transformation of an organisation towards value creation and aligns the different improvement initiatives (Kirchmer, 2015). This BPM-Discipline, executed through the process of process management, can be set up or expanded during RPA or other automation and improvement initiatives. It should be functional once the first business processes go live using new digital technologies and business practices.

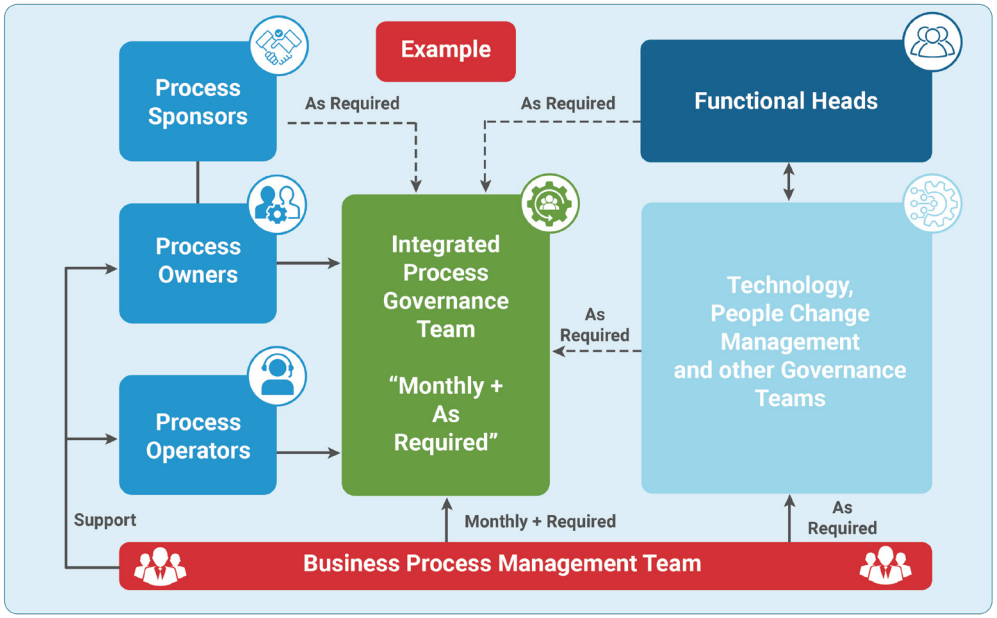

Figure 11 - Agile deployment of RPA-based processes

Value-driven RPA is about adding a new process improvement and transformation option to the toolset of the BPM-Discipline. This integrated approach and thinking makes RPA at the end successful.

6. Conclusion

The approach of Value-driven Robotic Process Automation (RPA), embedded in a larger BPMDiscipline and leveraging agile principles, brings significant advantages compared to an ad-hoc use of this automation technology as often promoted in the market:

- Fast and sustainable benefits from RPA initiatives
- Integrated incremental value-realization and management of return-on-investment (ROI)
- Realistic expectations regarding benefits from automation stages
- Minimize risk of not achieving return on a process automation initiative
- Users are involved incrementally, simplifying change management
- Saves formal testing time while keeping the automation quality up
- Innovation becomes part of daily business
- Drives alignment between business and IT
- Flexible application of the approach to ongoing initiatives

However, the presented approach for Value-driven RPA is still in an early development and rollout phase. Hence, it also creates a basis for further research and development opportunities, such as:

- Integration of RPA into larger automation architectures and appropriate extension of the approach, using AI, OCR, and other technologies
- Hybrid workforce definition management
- Process governance for digital processes and alignment with other governance areas, such as data governance or technology governance
- Use of RPA based process reference models

First practice experiences, at a number of organisations engaged by the authors, with Valuedriven RPA and its integra-

tion into a larger BPM-Discipline showed positive encouraging results. This clear view of the end-to-end business process combining attention to people and technology aspects, e.g. an integrated Centre of Excellence including Automation (RPA and other approaches), people change management, classical process improvement, etc. avoids RPA silo solutions and delivers real performance improvement. Value-driven RPA is another way the BPMDiscipline makes a difference and advances digital transformation to deliver real business outcomes (Kirchmer, 2018b). This process-led approach delivers fast results at minimal risk. It helps organisations to master another step of their digital transformation journey.

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ABOUT SCHEER AMERICAS

Scheer America excels as a leading authority in Value-driven Business Process Management. Leveraging our profound knowledge of process management, we empower organizations to attain swift and dependable outcomes. Our expertise lies in connecting business strategies with processes and improvement initiatives to precisely target and realize value, all while establishing a sustainable process management discipline. Through our comprehensive solutions, we enable effective process and data governance, implement process modeling, repositories, and process mining utilizing cutting-edge tools.

Scheer America provides invaluable assistance to organizations operating in diverse industries including Financial, Health, Manufacturing/Technology, Consumer Goods, and more, facilitating their journey towards optimal Process Performance and Digitalization. By establishing and implementing business process management capabilities, we facilitate rapid process improvement and transformation, effectively prepare for intelligent automation, develop stakeholder journey plans, and establish a robust process management discipline. Our consulting and education solutions offer the necessary guidance, ensuring the right organization, governance, and process management tools are in place, including modeling and mining software.

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