Knowledge Capital PARTNERS

KEYS TO RPA SUCCESS

Part 5: The Path to Maturity

How Blue Prism Clients Gain Superior Long-Term Business Value

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With market adoption of Robotic Process Automation reaching levels that support rigorous quantitative measurement and analysis, Knowledge Capital Partners has developed proprietary research tools and assessment models with the goal of establishing evidence-based performance benchmarks to inform technology selection and deployment. This report summarizes the key RPA management practices that have produced superior results and value for Blue Prism customers as revealed in multiple quantitative surveys and live deployment analyses.

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Introduction

Leading organizations typically arrive at maturity after two years working with RPA. Have you? If you action the risk-mitigating, value-enhancing practices detailed in the previous four papers in this series[i], you will be on the optimal path to maturity. RPA adopters who implement 80% or more of the RPA action principles identified by our research gain superior, often unanticipated, business value. For every organization, two years represents a key checkpoint date for examining progress and making corrections.

Our research reveals the distribution of general RPA performance across economies and sectors. By 2019, some 20% of RPA user organizations were getting superior business value; 40% were gaining most of the value they anticipated; 25% were getting some value but less than they expected; and 15% were struggling[ii]. How to be among the leading 20% who get the greatest value? Some commentary

here. Firstly, getting the value you anticipate does not mean that you secure all the value you could have. Below we encourage the use of our total value of ownership (TVO) framework -- to identify all potential benefits, and ensure value is not left on the table. Secondly, about half those getting less value than expected, were in fact getting much less value, or at best, not anywhere near as fast as anticipated. Thirdly, these figures suggest that the lagging 40% of RPA users are experiencing serious challenges with both mastering the technology and managing it into business-effective operational use.

After two years the signs of sub-optimal RPA deployments will be all too obvious. Typical symptoms and events, which come in clusters rather than singly, include: automation momentum has stalled; champions leave; progress is held up by skills shortages; the software robots are under-utilized; reinvention and ensuing duplication occurs across "automation islands" within the organization; scaling proves problematic; integration issues occur as cognitive and other emerging technologies are introduced; and RPA fails to fit with data and digital strategy efforts located elsewhere in the organization. Unfortunately, this is not an exhaustive list. All these symptoms result from not implementing the practices delineated in this series. All come from choosing a flawed implementation path. All are preventable. The management actions outlined in the previous four papers will put an organization and its stakeholders on the right path to RPA maturity.

Our 2016-18 research established the principles for achieving ***operational excellence*** when developing and deploying RPA[iii]. But we found that the leading organizations in our research ***innovate continuously***, on all fronts, and not just in technology. Our first report, on Becoming Strategic, detailed seven contextual prerequisites for driving constant innovation. Our fourth report – on Change Management and Capability Development - highlighted how leading organizations pursue innovation by integrating the full range of people, process and technology resources. Here we establish emerging practices for building further on maturity and gaining sustainable, superior business value from RPA investments. We point to actions on governance, technology, and Total Value of Ownership in developing and progressing the wider automation/digital agenda.

Governance - Beyond The RPA Center of Excellence

Amongst leading organizations, the Center of Excellence (CoE) is the preferred governance mechanism for designing, developing, maintaining and operating RPA (see Report 3). Leading organizations establish the CoE early, typically housing it in business operations. A mature CoE has the attributes and capabilities depicted in Figure 1[iv].

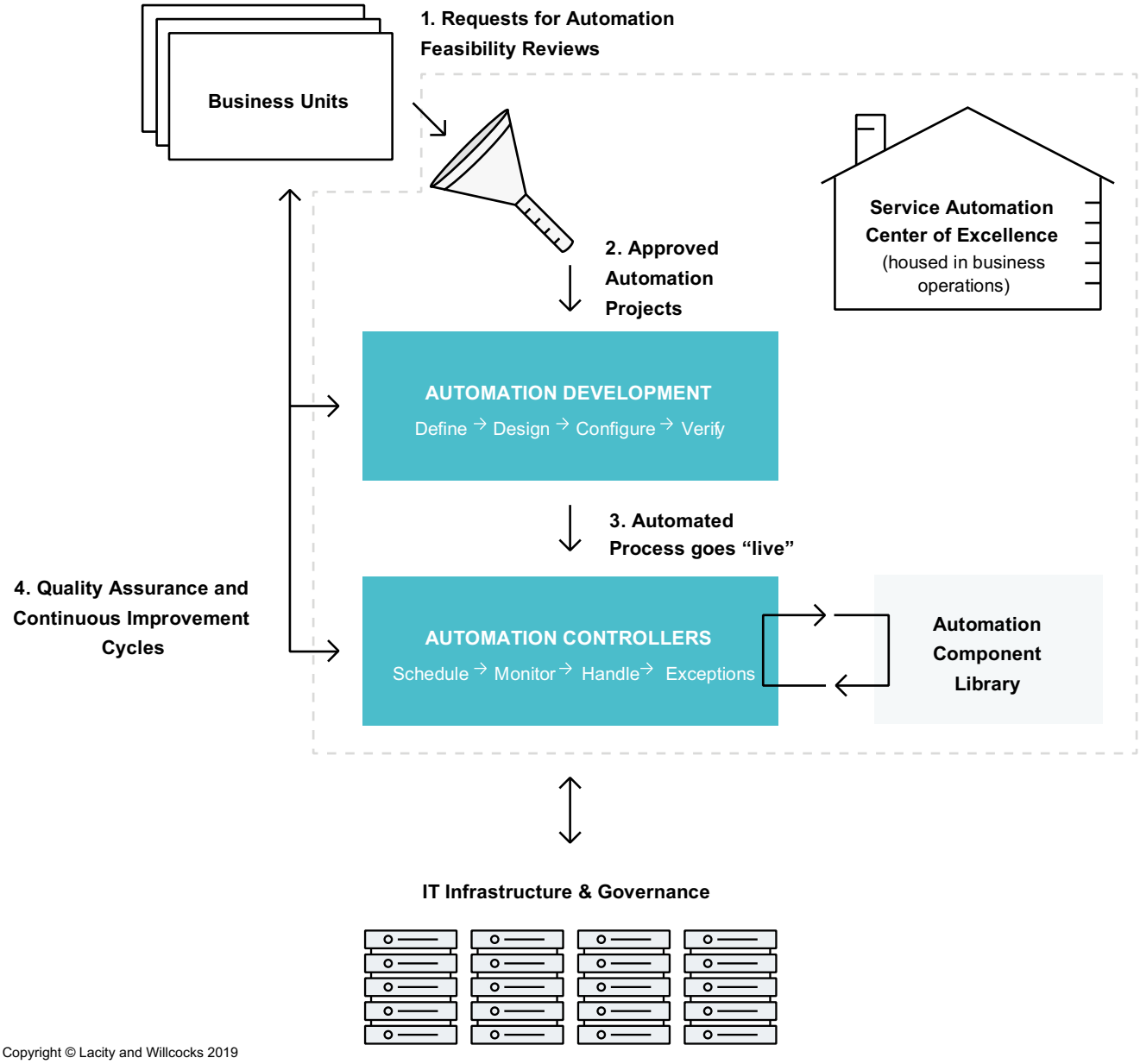

Figure 1 – Components of a Mature RPA Center of Excellence

Arriving at this governance structure involves moving through three stages: from initiation, through industrialization to institutionalization[v]. Blue Prism provides a robotic operating model (ROM) which includes detail on how to get there. Mature, scaled RPA users that have imbedded effective versions of the ROM model include npower (retail and business solutions), Shop Direct, Telefonica O2, Xchanging (now DXC Technology), Barclays Bank, and Bank of New York Mellon. But many clients are now looking to use RPA in harness with other emerging technologies. Digital Workforce, a leading RPA implementation consultancy in the Nordic region, for example, usefully provides a variant ROM for RPA delivery through the Cloud. This is a step-by-step process involving (1) establishing vision and strategy, (2) steering and prioritization, (3) managing the opportunity pipeline, (4) automation delivery, (5) maintenance and support, (6) getting organization and people right, and (7) establishing a technology platform based on virtualization, scalability, resilience, rapid provisioning of new capacity, and a transparent cost structure.[vi]

The CoE must also be appropriately staffed with skilled resources. Our mature RPA CoE model exhibits the staffing mix shown in Figure 2.

Figure 2 – Roles in the Mature RPA Center of Excellence

However, as noted earlier, we are finding that mature RPA users are looking to move beyond **operational excellence** to **continuous innovation.** Grappling to embrace newer technologies and deliver on ever-changing business demands, leading mature users are also tasked with fitting into and supporting the firm's broader digitalization agenda. This requires upgrading the ***Center of Excellence*** to become what we call a ***Center of Enablement.***

One approach is to expand and uplift the existing CoE mission, supported by additional skills and resources. Another practice would be to bring several different centers together – e.g. R&D, innovation, digital, RPA, cognitive – and co-locate, integrate and scale their efforts. In practice the specific structure adopted is less important initially than introducing the extra capabilities needed for continuous innovation. Our prior work[vii] on deploying IT and cloud computing suggests the added innovation value of including five capabilities, wherever located, expressed as future-focused roles:

- **Innovation leader.** Business-focused, executive-level. Devising and engaging in organizational relationships and arrangements supporting innovation. Listening to emerging technologies and identifying where the business value might be, and aligning strategy, structure, process, technology and people required to migrate the organization to new sources of business value.

- **Technical architect.** Technology-focused. Future proofing the 3 to 5-year technology trajectory through architecture planning and design for an efficient, effective, enabling technology platform.

- **Relationship builder.** Business- and technology-focused. An integrating, operational role building understanding, trust and cooperation with business users, and identifying and helping delivery of valuable business innovations.

- **Supplier/partner developer.** Service-focused. Understanding and benchmarking the external market for automation technologies and services. Engaging with external parties and in-house service staff to release combined innovation potential in order to gain mutual business value.

- **Innovation monitor.** Value-focused. Developing and auditing metrics on efficiency, effectiveness, and enablement. Looking for continuous improvement and innovation. Reviewing progress, anticipating problems, driving out business value. Below we discuss the **Total Value of Ownership**
  (TVO) framework, specifically designed to help value and innovation monitoring.

Technology Optimization

Within this broader innovation agenda, leading organizations still find multiple opportunities to achieve **operational innovation** by optimizing and integrating their ever-developing RPA technologies with other intelligent software tools and services. Relationship builders can help in the identification process. As illustrations, four major strategies from our research are:

1. **Multi-skill the software robots.** This is a practice of a mature RPA user:

> *"A piece that I think is very attractive is the ability to use the robots on multiple tasks. From a robot, I just say, do the payroll run this morning and, in your downtime, go over and do this task in accounting that's at a different time of day and that is incredibly powerful.*"
> (Financial services executive)

In contrast to robots, the human workforce tends to be organized by and assigned to specific work units. Humans typically cannot be dynamically re-assigned to balance out demand fluctuations across units. A Blue Prism client told us:

> *"Multi-skilling. I'm amazed people don't do this… Get all robots on your virtual servers able to do any process. You can get them doing stuff when they've got no other work to do, and it doesn't cost you anything extra. It's an easy win that few follow."*

A surprising finding, looking across all RPA tools, is that even by 2019 very few CoEs fully utilize robots, even though robots can operate tirelessly 24x7x365. All too many organizations have the robots on 'idle time' (in a few cases as much as 16 hours a day!). As well, many processes are designed to have too much back and forth human input with all the latency and time penalties that introduces. Some Blue Prism clients operate robots with close to 100% utilization, but a more typical figure is between 50-70% utilization. This underlines the critical role that innovation monitoring can play. The amount of value leakage here is high, but rarely noticed or understood. Analyzing the value leakage can lead to operational innovations, such as running the process as fast as the

machine can run, eliminating idle time, sweating the robots, and minimizing the number of human interventions in the process.

2. **Reuse components to scale quickly and reduce development costs.** Blue Prism products are based on "object-oriented" robots whose tasks can be stored and reused in an automation component library. RPA with a component library capability means each task only has to be defined once and can be pulled from the library and applied to many different automations. Service automation productivity skyrockets as more reusable components are added to and taken from the library. Value capture becomes exponential rather than merely additive.

As one example, implementing RPA projects at a utility company took between 30 and 40 percent less time because of reusable components. The RPA provider account manager explained:

> "It's a self-fulfilling prophecy, the more processes you automate, the more objects you build in your robotic library, therefore, the more reuse you get, therefore, the assembly and delivery costs of those objects into new processes becomes more and more economic."

3. **Continually improve and expand existing automations.** Initially, organizations are advised to automate the most common paths in a process. For example, at a Blue Prism insurance client, RPA initially only processed 15 percent of the paths for a Payment Protection Insurance (PPI) process, with subsequent iterations capturing more and more exceptions. For processes that change frequently, like PPI rules, 80 percent automation may be the ceiling for RPA delivery. Another example:

> *"So, you're not going for the 100 percent automation, an all-singing, all-dancing solution. But you might go for a 30 percent first of all…an incremental approach allows you to manage your expectations and also makes sure that the foundations you're putting down in that system and for that process are robust and secure and actually work and deliver."* (Utility executive)

This utility then developed a mature demand management capability to identify processes worth automating. Within an end-to-end process, the company automated a range of sub-processes from as high as 100 percent automation to as low as two percent.

4. **Integrate tools to automate services end-to-end.** Cognitive technologies are now with us and being added to regularly. The tool kit at the moment is dominated by machine learning algorithms, visual processing and natural language processing, supported by impressive developments in computer power and memory. Because tools are suited for different tasks and infrastructure environments, integrating several automation tools can create a multiplier effect. Consider one service provider. Its client's customers submit invoices to an email mailbox, which gets loaded into the ERP work queue. In the past, a human had to do much of the checking to match each invoice line item with a legitimate Purchase Order (PO) number and line item. The service provider now sends the invoices to a cognitive automation provider that pulls the data from the invoices and populates a structured template that gets passed back to the service provider.

   One insurance company calls their OCR tools the "eyes of the robot", with OCR feeding directly into the RPA tool. Traditional OCR software is getting better at converting images to text with time, but it is still not 100 percent accurate. According to Cvision, a typical OCR accuracy rate is about 98 percent on a good quality image.[viii] One bank we researched uses a tool developed by re:infer to classify and analyze all incoming data. This can help identify improvements in data management, while acting as a feeder to other technologies such as customer relationship management, RPA automated processing, and management information systems.[ix]

   For RPA clients, integrating RPA with, and drawing upon emerging cognitive technologies has become the future-proofing task. Developers and service providers have been working on creating the necessary platforms. For example, Blue Prism now offers a platform for utilizing RPA together with cognitive products that add important capabilities to the digital workforce: knowledge and insight, learning, visual perception, problem solving, collaboration, and planning and sequencing.[x] Integration that provides high connectivity, ease of use and is easy to control has become the new game in town.

Monitoring Value and Innovation: The TVO Framework

A well-structured metrics regime can make an even good management much better -- more informed in real time, focused, in control, insightful, and so more able to seize opportunities. In practice, most

RPA clients reach for quite traditional FTE-based evaluation methods based on cost/benefit analysis and total cost of ownership (TCO). These tend to understate both costs and benefits, often quite drastically (see Reports 1, 2, and 4). While the mistakes made in both directions may net off, this only conceals mistakes and misguides action further.

In Figure 3 we map a more comprehensive way of arriving at an assessment of Total Cost of Ownership (TCO). The idea here is to establish every major activity and monitor the five resource costs associated with each activity across the RPA life-cycle. An understanding of full costs will guide investment strategically and galvanize commitment to gain substantial returns. For example, if managers knew the real initial cost of structuring data for use by cognitive tools, they would become much more committed to driving out value from tool adoption.

Total Value of Ownership: The KCP Three E's Framework

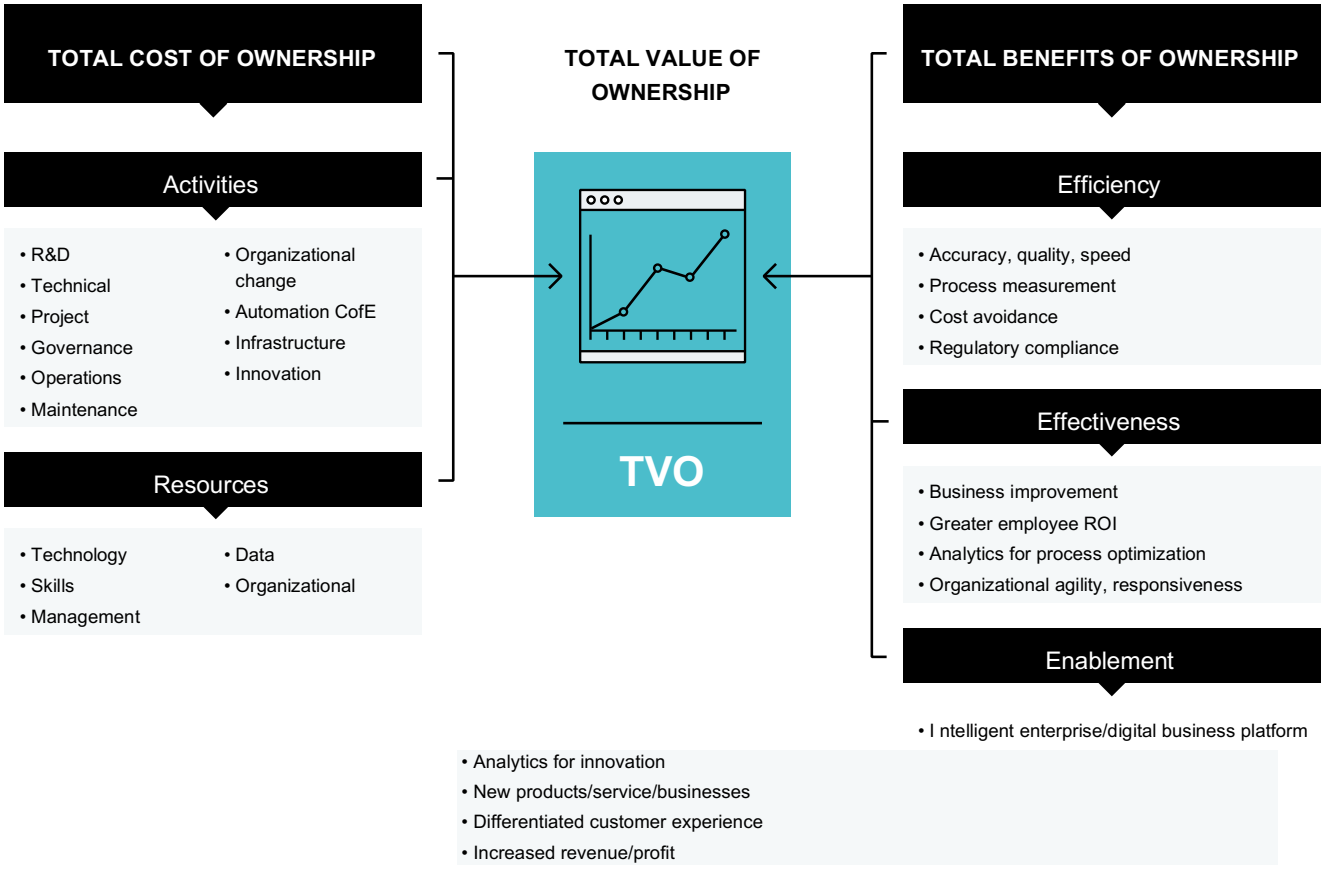

Figure 3 - Monitoring Operations and Innovation: The KCP Three E's Framework

In Figure 3 we also point to typical areas where RPA (and cognitive automation) value resides. The framework here suggests three headings under which to monitor and assess the performance improvements generated by automation enabled innovations: Efficiency, Effectiveness and Enablement. The Efficiency gains, mainly from labor substitution and augmentation, and better use of data, are quite well known though frequently not well documented. The Effectiveness gains can be quantified – for example business process improvements – but many are more difficult to isolate, let alone quantify, and some are quite 'soft' benefits gains (for example improved employee satisfaction levels).

But what has stopped many client organizations from behaving more strategically is the failure to identify early, or to be intentional in seizing, the potential Enablement gains from their automation

investments. Long-term this could be a potentially crippling omission, putting the organization at an ever-rising competitive disadvantage. Why so?

Our research into the economics of automation is still work in progress, but to date it suggests that the area of Enablement is where that the biggest long-term gains are to be had – from understanding and building RPA as a platform for further cognitive and AI development. Modelling by McKinsey Global Institute (2018) supports this working assumption[xii]. MGI suggests that by 2030 augmentation and substitution impacts of AI technologies will give a 14% boost beyond 2018 economic performance. But the boost from the impact of AI technologies[xiii] on product service innovation and extension will be nearly double these gains – at 24%. Three examples they give are expanding the firm portfolio, increasing channels, and developing new business models. In terms of global GDP, McKinsey estimates the innovation impact of AI technologies as potentially a 7% increase, representing $US 6 trillion, over 2018.

However, at the sectoral level there is also sobering news. More digitally intensive (and digitally savvy) sectors like hi-tech and telecommunications, with an 18% higher 'AI absorption' rate than say healthcare, are likely to experience 2.3 times the economic gains from RPA/cognitive/AI by 2010. And time matters as well. At the firm level, the message is that by investing early in RPA/cognitive/AI technologies the strong will get stronger through the resulting technical and business innovation, while those who adopt more slowly or narrowly, will increasingly fall behind. By 2010, according to McKinsey's modelling, frontrunner companies – early and broad adopters – could increase their net economic output by a stunning 122% over 2018 run rates, with followers gaining a much-lower 10%, while laggards would in fact lose an estimated 23% in economic value.

In all this, evaluation becomes more necessary, just at the point where it becomes harder to operationalize.

Thus, the critical need for a core capability in this area which we call innovation monitoring.

Conclusion: Beyond Mature

Building on our ongoing RPA research, we began research on cognitive automation (CA) adoptions in 2016. Interestingly, several of the companies launching CA also had an RPA CoE. However, the two automation initiatives — that is CA and RPA programs — were managed by different organizational

units. Whereas an RPA CoE was typically housed in business operations, the CA initiatives were typically owned by a centralized innovation or R&D group. The size of CA investments was significantly greater than RPA investments, and therefore required different levels of approval. Also, RPA was seen as "today's" tool that could be quickly deployed whereas the CA adoptions were more speculative and seen as "tomorrow's" tool. We think that it makes sense to integrate these initiatives going forward as organizations realize that both RPA and CA realms enable new business strategies; together they can complement and magnify value. In general, we foresee the rise of ***service automation Centers of Enablement*** as described above, to bring the full force of the service automation landscape under one centralized center. We think this center will report to a Chief Digital Strategy Officer or other C-suite executive. By early 2017, we saw early evidence of this prediction. By early 2019 we saw several financial service companies moving in this direction.

This will be an accelerating trend, in our view, because increasingly, organizations will create competitive advantage by connecting various technology innovations such as **S**ocial media, **M**obile technologies, **A**nalytics/Big Data, **C**loud services, **B**lockchains, **R**obotics, **A**utomation of knowledge work (like RPA and CA), the **I**nternet-of-Things, and **D**igital Fabrication (i.e., 3-D printing), which we call SMAC/BRAID, for service delivery. Organizations usually experiment with new technologies in innovation labs; however, getting vetted technologies out of digital labs and into production environments via Centers of
Enablement focused on rapid delivery, will become a competitive differentiator.

Research Base

This study draws upon detailed research into 70 RPA client adoption case studies in 2015-2018 period, with a review of a further 104 cases in that period. Much of this material can be accessed in Mary Lacity and Leslie Willcocks as Service Automation, Robots and The Future of Work (2016), Robotic Process Automation and Risk Mitigation: The Definitive Guide (2017), and Robotic Process and Cognitive Automation: The Next Phase (2018). All these books are published by SB Publishing, Stratford, and there are also multiple working papers available at roboticandcognitiveautomation.co.uk. We also draw upon three surveys specifically of Blue Prism clients. The first was carried out using McGuire client contacts. The second was carried out through Knowledge Capital Partners and gained client results consistent with the McGuire data. The client satisfaction results were published as Lacity, M. Hindle, J. Willcocks, L. and Khan, S. (2018) Robotic Process Automation: Benchmarking The Client Experience (KCP, London). The results on effective management practices are published for the first time in this report series along with data collected from clients surveyed at the Blue Prism World Events at New York and London in June 2018. For this series we are also carrying out additional client interviews to verify our findings and conclusions, and collect new data.

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Notes

[i] See also the foundational research and complementary findings in Lacity, M. and Willcocks, L. (2018) Robotic and Cognitive Automation: The Next Phase (SB Publishing, Stratford) especially chapter 2. Also, Lacity, M. and Willcocks, L. (2016) A New Approach To Automating Services. MIT Sloan Management Review, 58, 1, 40-49; and Willcocks, L. and Lacity, M. (2016) Service Automation, Robots and The Future of Work (SB Publishing, Stratford).

[ii] Based on a review of 174 deployments ranging from two to eight years in length, and also the evidence from five surveys covering over 300 deployments.

[iii] See Willcocks and Lacity (2016) op. cit.; Lacity and Willcocks (2017) op cit.; and Lacity and Willcocks (2018) op cit.. Also, Hindle, J., Lacity, M. Willcocks, L. and Khan, S. (2017) Robotic Process Automation: Benchmarking the Client Experience. (Knowledge Capital Partners, London) [iv] A detailed practical and technical guide is provided by HFS Research and Symphony (2017) The RPA Bible: Advanced Topics. HFS and Symphony, Boston. In a vendor neutral way, this usefully covers the vital areas of architecture, usability, integration, exception handling, security, configuration and deployment features and vendor and support documentation. Quanton (2018) Robotic Process Automation: Preparation and Early Stage Planning. (Quanton, Auckland) also provides fresh insights and applies many of our findings to New Zealand clients.

[v] See Willcocks and Lacity, (2016) op. cit. page 124 for the RPA enterprise maturity model developed by HFS Research and Blue Prism and applied to Xchanging (now DXC Technology). Interestingly, this company as a BPO service provider has intimated that it may well rename is services as business process automation based on its core capability in this area (DXC technology blog: 'Why we renamed our BPO business, and why we might have to do it again soon' by Bob Law, Director of BPS Core Engineering, April 16, 2018, www.dxc.technology.com).

[vi] The Blue Prism model has seven elements – vision, organization, governance and pipeline, delivery methodology, service model, people and technology. Digital Workforce adapt this, partly to reflect Cloud delivery. See Digital Workforce (2018) Moving to an industrial RPA with the help of a robotic operating model. Downloaded from digitalworkforce.eu, January 8, 2019.

[vii] Willcocks, L. Venters, W. and Whitley, E. (2014) Moving To The Cloud Corporation. (Palgrave, London); Willcocks, L., Cullen, S. and Craig, A. (2012) The Outsourcing Enterprise: From cost management to collaborative innovation. (Palgrave, London); Willcocks, L., Oshri, I. and Kotlarsky, J. (2018) Dynamic Innovation In Outsourcing. (Palgrave, London) [viii] http://www.cvisiontech.com/library/ocr/accurate-ocr/ocr-accuracy-rates.html. OCR accuracy rates increase when the software is enhanced with a good supervised machine-learning algorithm. Advanced OCR tools (or OCR tools paired with a new CA tool) can further automate the extraction of data from images such as faxes, paper documents, and PDFs into structured digital formats. This means there will still be about 200 errors on a 10,000-word document (about 30 pages).

[ix] Discussed in detail in a forthcoming book Willcocks, L., Hindle, J, and Lacity, M. (2019) RPA, Cognitive and AI: From Foundations to Innovation (SB Publishing, Stratford).

[x] See Blue Prism (2018) Future Proof Your Digital Strategy. White paper, Blue Prism London [xi] Strategy here is taken to be a corporate cost, but could be assigned if isolatable and significant management time is spent on automation strategy. The framework is based on work by Willcocks and Lester on assessing Business IT investments generally – see Willcocks, L., Petherbridge, P. and Olson, N. (2003) Making IT Count: Strategy Delivery, Infrastructure. McGraw Hill, Maidenhead, chapter 5. [xii] McKinsey Global Institute (2018) Notes From The AI Frontier: Modeling the impact of AI on the world economy. MGI Discussion paper, September 2018

[xii i] Note the MGI here defines 5 key AI technologies: computer vision, natural language, virtual assistants, robotic process automation, and advanced machine learning. Interestingly strong AI ('using computers to replicate what minds can do' – Margaret Boden) is omitted, while Robotic Process Automation is included. This is probably a pragmatic reflection of how the term 'AI' was being widely, if loosely, used in the RPA/cognitive/AI market of 2018.