



Robotic Process Automation (RPA): Technology Vendor State of the Market Report

Service Optimization Technologies (SOT)
Market Report: February 2017

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- Background, scope, and definitions
- Market size and buyer adoption
- Business case for RPA
- RPA technology vendor market landscape
- Future outlook

Background and scope of the research

Background of the research

Robotic Process Automation (RPA) has the potential to offer high value in terms of inorganic reduction in costs and quick implementation. Moreover, this value is realizable at low risk, as the integration is non-invasive and easily remediable. As a consequence, many enterprises and global service providers are investing in this arena. However, RPA is a burgeoning market with technologies that are still relatively unknown to many potential buyers in terms of solution features, deployment models, supporting frameworks, and commercial aspects. The technologies are also evolving with an expanding feature set and increasing richness of functionality.

In this study we investigate the state of the RPA technology vendor market. We focus on:

- Market size and growth
- Buyer adoption by geography, size, industry, and business function/process
- Value propositions, key challenges, adoption approach, and key learnings from early adopters
- RPA technology vendor landscape

Scope of study

- Only robotic tools that are sold on license, and irrespective of any ongoing business or IT process outsourcing services, were considered for this report. These include software that can be deployed and run by the clients in-house or those that require professional services for deployment, as well as ongoing services that are part of a hosted offering

This report is based on three key sources of proprietary information

1

Proprietary database of 10 RPA technology vendors

- The database tracks the following capability elements for each vendor:
 - Automation creation features
 - Automation management features
 - Input/output options available
 - Implementation options
 - Support in terms of consulting, implementation, and training
 - Offered commercial model(s)
 - Buyer coverage in terms of industry, geography, and buyer size
 - Company performance in terms of revenue and clients

2

Demonstrations and interactions with technology vendors and other industry stakeholders

- Detailed demos and interviews with RPA technology vendors for a comprehensive view of the solutions
- Interviews with technology vendors' reference clients
- Executive-level discussions with technology vendors as well as BPS providers that cover:
 - Current state of the market
 - Opportunities and challenges
 - Expected direction of movement in the industry
 - Vendor / service provider vision and roadmap
- Executive-level discussions with industry enablers / specialist technology integrators to get the buyer perspective and also to reaffirm the findings from other sources
- On-site as well as conference meetings with SDA technology buyers to understand:
 - Business case
 - Apprehensions & challenges
 - Approach
 - Outcomes
 - Future direction

3

The proprietary database of RPA capabilities of eight major BPS providers complements the research

- The database tracks the following capability elements for each service provider:
 - RPA historical and projected adoption trends
 - Support in terms of consulting, implementation, and training
 - Offered commercial model(s)
 - Buyer coverage in terms of industry, geography, and buyer size
 - Key processes covered in terms of RPA deployment

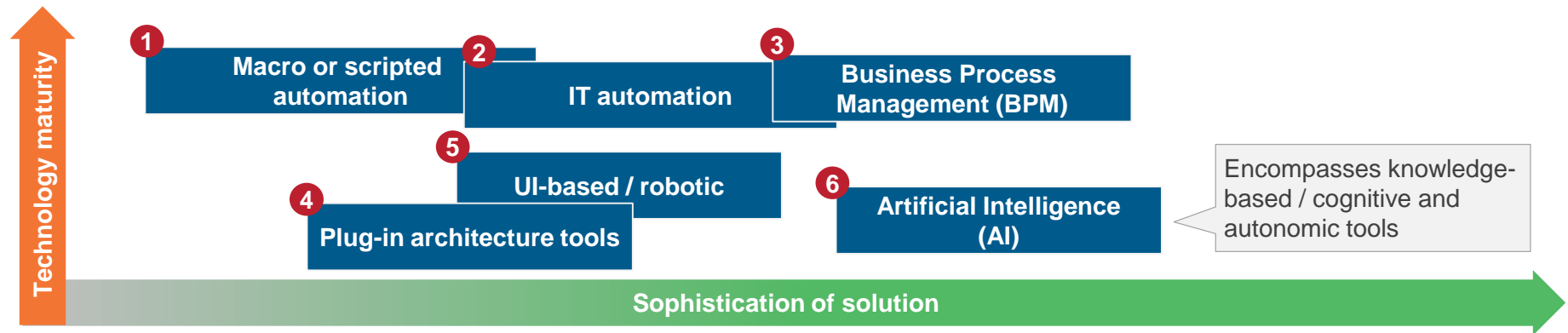
Technology vendors who participated in the study



blueprism

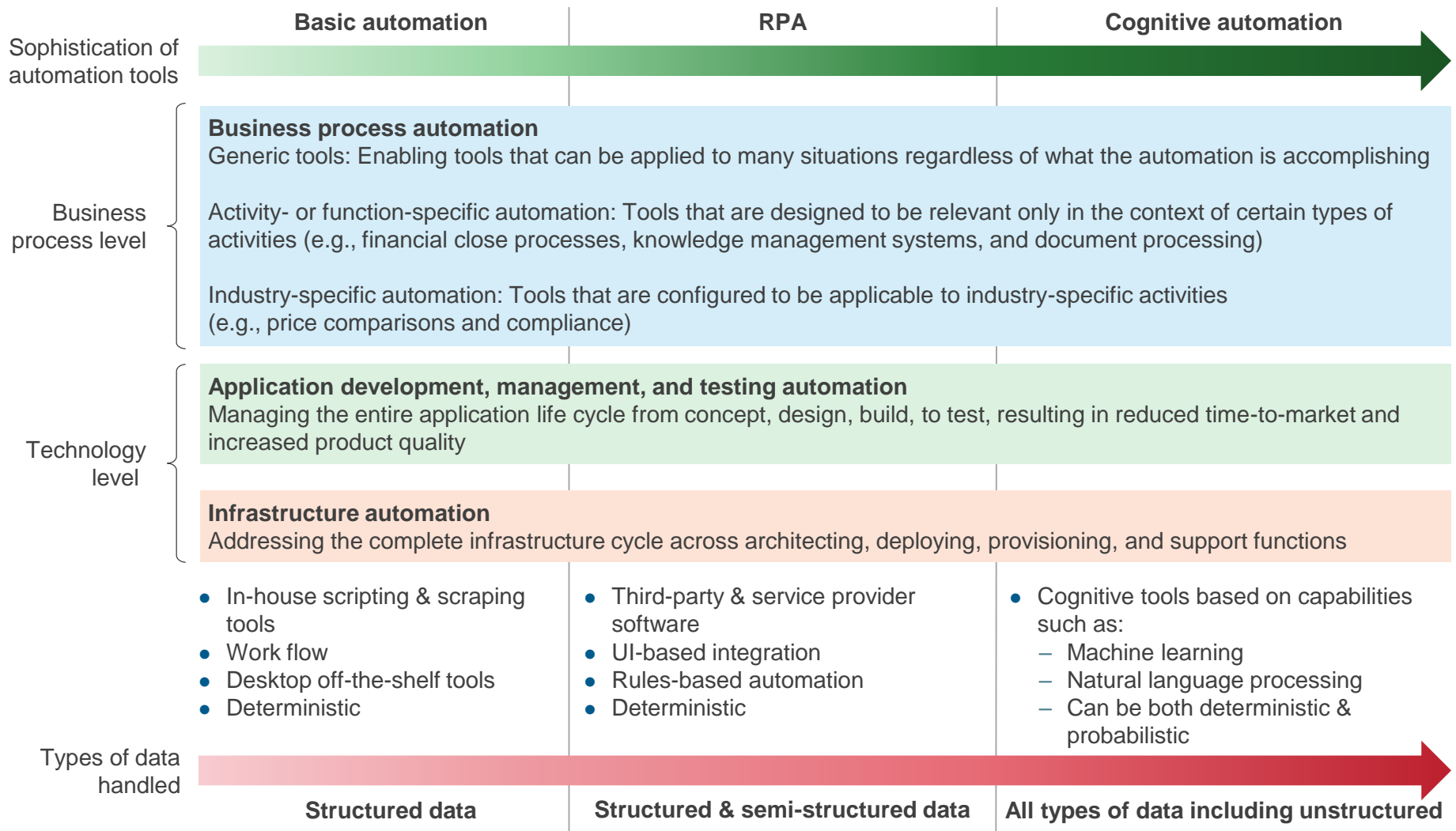


The most common automation technologies can be segmented into six basic areas

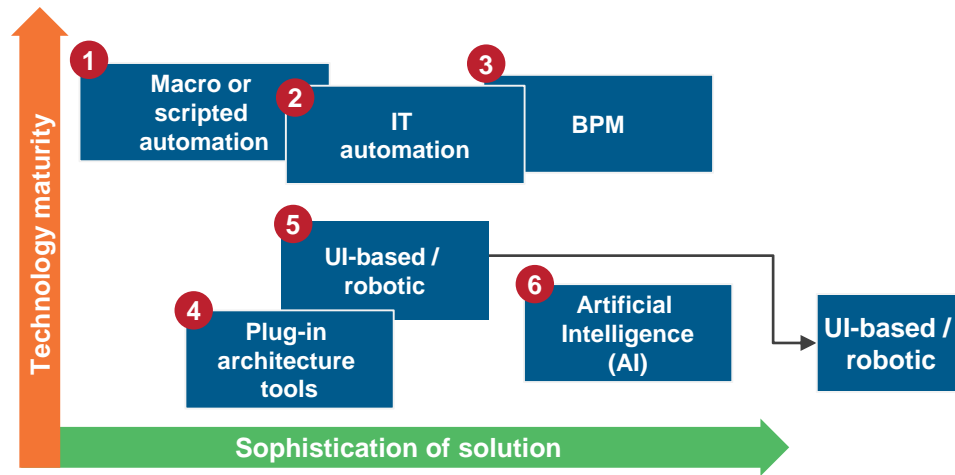


	Maturity	Scope of effectiveness	Limitations
Macro or scripted automation	Very high	Specific tasks	Typically used for tactical deployments. Can be difficult to maintain over long periods of time
IT automation	High	Number of areas including software application life cycle and service provisioning	Less effective in application production and run book environments
BPM	Very high	Large scale deployments involving enterprise-level transformation	Can be tactical or strategic with the ability to deal with scale. Can become too complex or costly
Plug-in architecture tools	High	Situations requiring deployment centrally and at scale to many desktops	Not suitable for situations where non-invasive integration of automation tools are needed
UI-based / robotic	Medium & evolving	Repetitive transactional, administrative, and rules-based tasks	Often deployed tactically or in combination with BPM tools
Artificial intelligence	Low & evolving	Number of areas, particularly document or content-heavy processes or IT Service Management (ITSM)	Robustness and resilience to change needs to be demonstrated in large scale operations; AI technologies have to learn from experience to find ways of handling unexpected scenarios

Everest Group's Service Delivery Automation (SDA) architecture | Automation technology can be applied to the whole process stack



In this report, we focus on the RPA segment of the technologies



Business process automation

Generic tools: Enabling tools that can be applied to many situations regardless of what the automation is accomplishing.

Activity- or function-specific automation: Tools that are designed to be relevant only in the context of certain types of activities (e.g., financial close processes, knowledge management systems, and document processing).

Industry-specific automation: Tools that are configured to be applicable to industry-specific activities (e.g., price comparisons and compliance).

Application development, management, and testing automation

Managing the entire application life cycle from concept, design, build, to test, resulting in reduced time-to-market and increased product quality

Infrastructure automation

Addressing the complete infrastructure cycle across architecting, deploying, provisioning, and support functions

Scope of the report

- The report primarily focuses on the market for robotic types of technologies specified above, including a few software products that also offer artificial intelligence-enabled automation with generic use cases for any rules-based process, be it for business or IT
- The report focuses on the market for software applications that are provided by independent software vendors under license with or without professional services

Areas out of scope of the report

- Automation, not considered in this report, includes bespoke coding of macros/scripts, plug-in architecture tools, and BPM (one, three, and four in the above diagram)
- Excludes vertical tools such as price web scraping software for the travel industry
- Software that is available only within business processes or IT outsourcing contracts and not on a stand-alone basis

Key definition 1: SDA

SDA can encompass three different portions of the process:

Automation of inputs to a process:

- Contact management
- Content scraping from websites

Automation of the business process:

- Administering purchase orders and invoices
- Checking for unusual patterns in transactions
- Checking for consistency of data (format, quality, etc.)

Automation of outputs from the process:

- Outward contact management, e.g., e-mail confirmations
- Internal notifications
- Events generated to activate follow-on processes in other functions

Key definition 2: Robotic Process Automation (RPA) is a component of SDA

- It refers to a type of automation, which interacts with a computer-centric process through the User Interface (UI) / user objects of the software application supporting that process
- A robot is usually a runtime environment on which different processes/tasks (executables) can be run
- RPA can process structured and semi-structured data
- RPA is a deterministic solution, the outcome of which is always known

- Non-invasive – usually does not have to tie up at the Application Programming Interface (API) level
- Can handle rules-based repetitive tasks
- Incorporates exception management

The non-invasiveness is important in outsourcing, where service providers are usually not allowed to modify the client's IT systems.

Examples of use cases for RPA:

- Transaction processing
- Data entry in high-volume, repeatable, and computer-centric processes
- In-system upgrade scenarios where double and concurrent data entry is made into old and new systems during the period of change
- IT support such as password resets and database maintenance
- Reconciliation of data across systems

Key definition 3: Cognitive automation is a component of SDA

- A subset of SDA – cognitive, also referred to as smart or intelligent automation software, builds a process-related knowledge base and uses it in combination with a set of business rules and machine learning algorithms to automate processes
- Cognitive tools have been widely used in IT services and are increasingly finding their way into business processes
- They can work on both structured and unstructured data

- Cognitive tools have Natural Language Processing (NLP) and machine learning capabilities, which equip them to learn from experience and to expand their knowledge base
- Cognitive tools use business rules to automate processes, but can also use predictive tools to infer some operational decisions. This allows them to work out the correct way to deal with situations that might not match pre-compiled rules
- The ability to infer what to do can make the outcome of their work non-deterministic

Examples of use cases:

- Customer interactions
- In-bound document processing for contact centers
- Claims processing for the insurance sector
- Rewards processing for the telecom sector
- IT infrastructure management

Market size and buyer adoption – summary

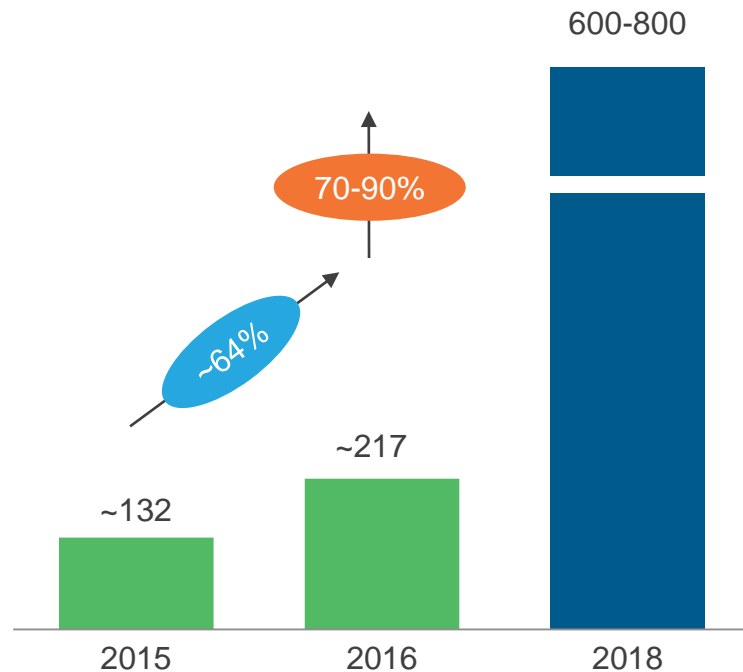
- The 2016 RPA technology vendor market was estimated at over US\$200 million, and has witnessed a growth of circa 64% over the last year
- The future growth is expected to be even more explosive due to the success of many initial proof of concept projects that are moving into larger scale and live operations. There is also increasing buyer confidence
- North America is the largest RPA market, followed by United Kingdom. Adoption in Asia Pacific is expected to accelerate with increasing adoption of RPA in Global In-house Centers (GICs) and business process outsourcing contracts
- Large organizations, which typically have the potential for large scale deployments, are at the forefront of RPA adoption
- High volume and transactional processes, especially in highly regulated industries, are ideal candidates for RPA. Consequently, RPA adoption is dominated by organizations in Banking and Financial Services Industry (BFSI), followed by telecom & media, and healthcare
- RPA technology vendors' product FTEs are almost evenly distributed across North America, Continental Europe, and India

The RPA technology vendor market has exhibited tremendous growth over the last year and is expected to further accelerate in the near future

RPA market size¹
US\$ million

XX

CAGR (2016-2018)



- The 2016 RPA technology vendor market was estimated to be at over US\$200 million. Due to a strong business case and growing demand for automating business processes, the RPA market has been showing remarkable growth. It witnessed a growth of circa 64% over the last year
- The growth in the near future is likely to be even more explosive because of the following reasons:
 - With pilots continuing to be successful, an increasing number of projects will be advanced into full scale deployments
 - Success of initial phase of deployments will lead to ramp-up, as well as drive rapid adoption in other areas within the organization
 - Success of the early adopters will inspire confidence among other buyers to adopt RPA more readily
 - With technology becoming more sophisticated, scalable, vertical- / process-specific, and able to deliver higher automation rates, adoption is expected to accelerate across all buyers sizes and industries

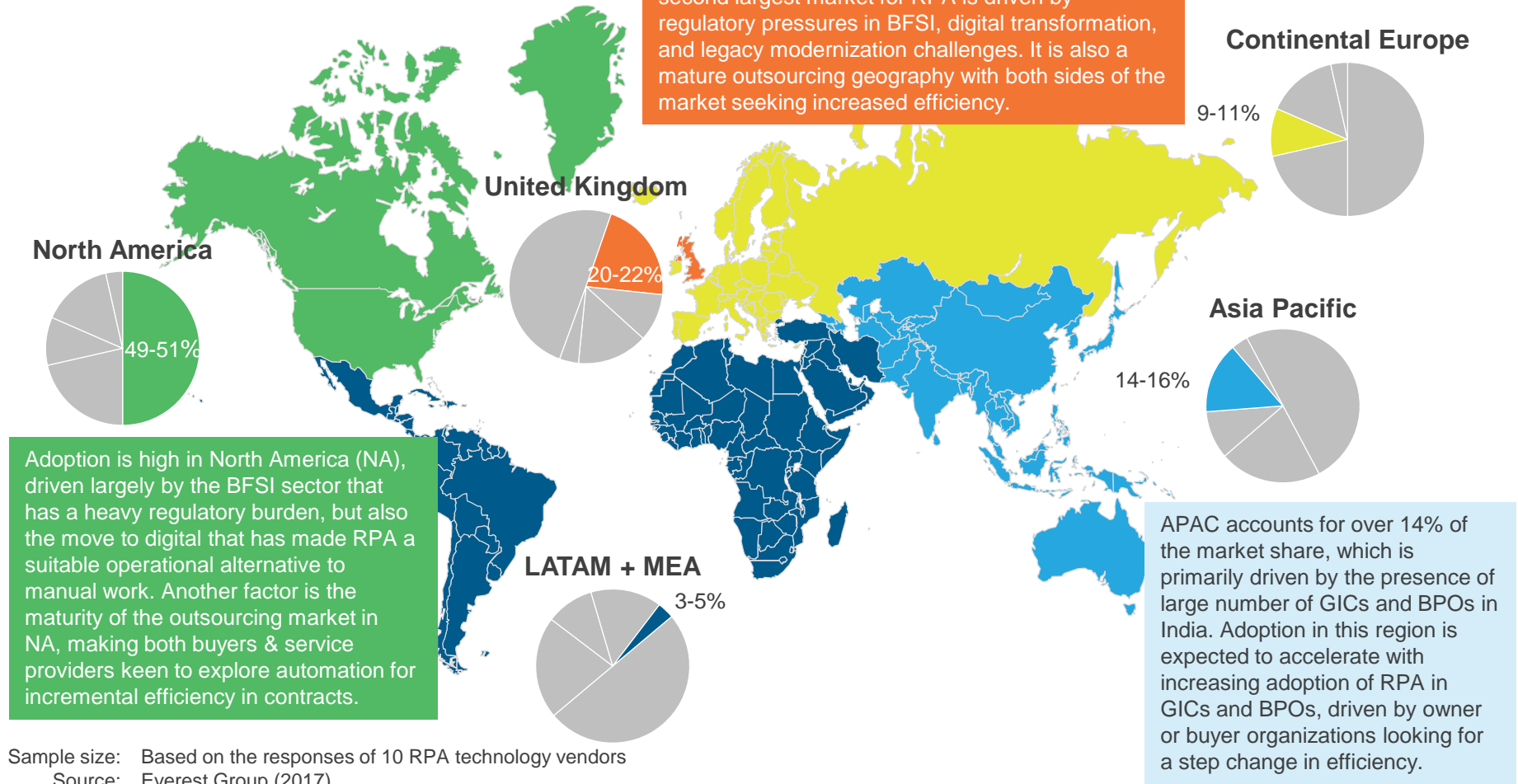
¹ RPA market is calculated based on the revenue that independent technology vendors have generated from RPA licenses as well as professional services. Does not include revenue generated by cognitive technology vendors, IT automation vendors, service providers, consultancy firms, or system integrators

Source: Everest Group (2017)

North America is the largest RPA market, followed by UK. Adoption in APAC is expected to accelerate with increasing acceptance of RPA in GICs and BPOs

RPA market size by buyer geography
Revenue in US\$ million

United Kingdom is where RPA began, with many of the initial high profile case studies based here. The second largest market for RPA is driven by regulatory pressures in BFSI, digital transformation, and legacy modernization challenges. It is also a mature outsourcing geography with both sides of the market seeking increased efficiency.



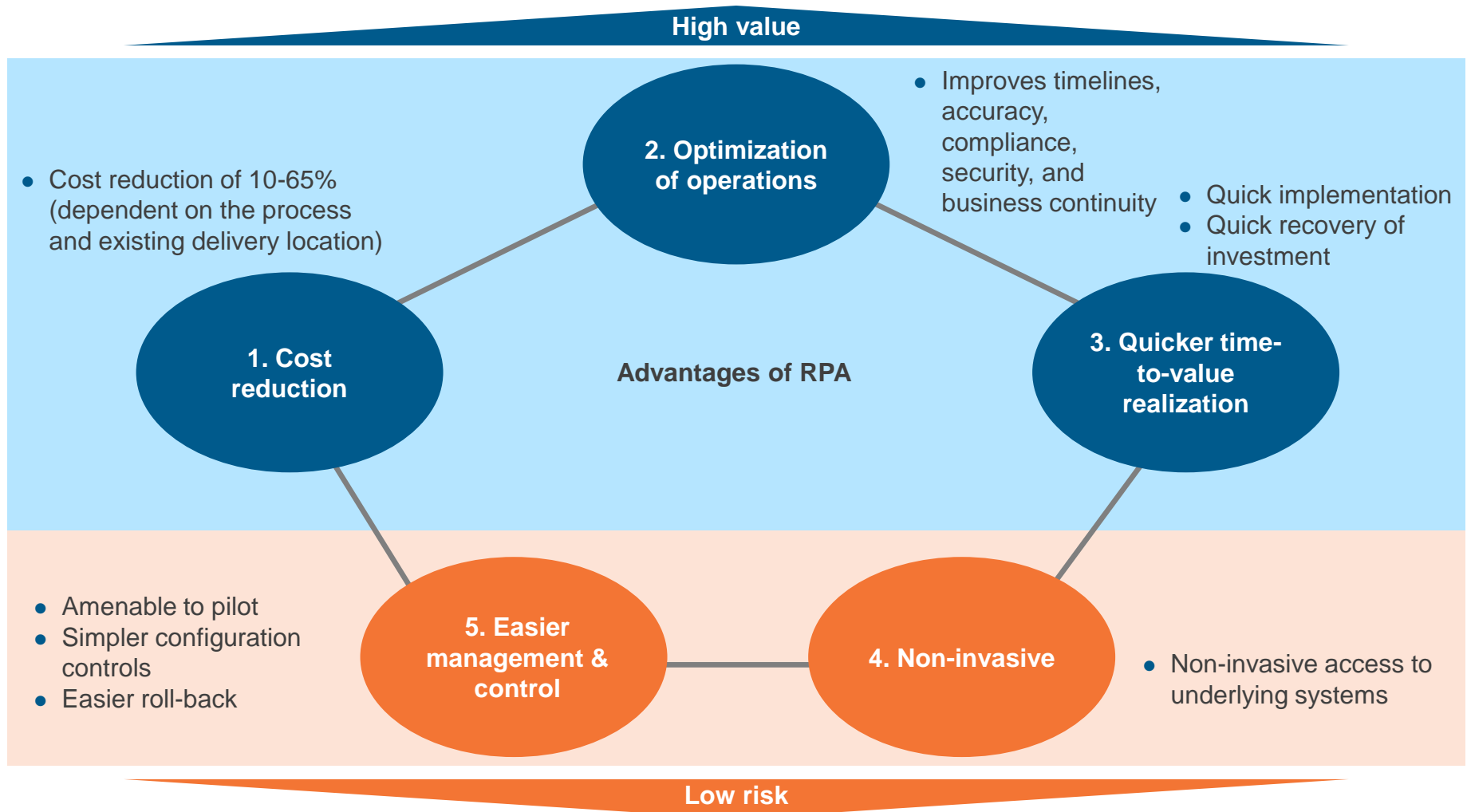
Sample size: Based on the responses of 10 RPA technology vendors
Source: Everest Group (2017)

Business case for RPA – summary

- Drivers for RPA adoption are:
 - Cost reduction: It can yield cost reduction of 35-65% for onshore process operations and 10-30% in offshore delivery
 - Optimization of operations:
 - ◆ Enhances operational efficiency and productivity
 - ◆ Improves process timelines, accuracy, security, and continuity
 - ◆ Improves compliance through rule-based automations, which can enforce compliance requirements and always maintain audit trails
 - Return on Investment (RoI): It can take just 6-9 months to recover RPA investments
 - Non-invasive nature: It is largely non-invasive; does not require major IT architecture changes or deep integration with underlying systems
 - Easier management & control: UI-based automation creation options, along with dashboards for monitoring operations, make it convenient for running and managing the automations
- Cost saving due to RPA is dependent on the potential extent of automation, which varies by the function. The cost saving is driven by reduction in headcount, which results in a decrease in costs across all dimensions, with people cost being the largest contributor
- Buy-side organizations have been largely piloting RPA through tactical deployments, motivated by an urgent requirement vs. strategic vision. Consequently, organizations often follow a pilot or “proof of concept” approach in order to gain organizational buy-in, and learn how to utilize automation
- The primary barriers to successful adoption of RPA include concerns from their IT team, lack of knowledge about software robots, process stakeholder buy-in, and funding

Business case for RPA

The rapidly increasing adoption of RPA can be attributed to its potential for high value creation at a relatively low risk



Buy-side organizations have been largely piloting RPA through tactical deployments, motivated by an urgent requirement vs. strategic vision

Drivers for change

- More and more organizations are looking to automate repetitive tasks such as F&A processes
- The main driver is usually an urgent requirement such as processing a major backlog of orders generated by system or staffing problems, or by external factors (e.g., a flood leading to peak in insurance claims or a change in regulation/legislation)
- Deployments driven by such needs are, therefore, typically tactical in their vision and initial scope

Approach

- Organizations tend to start small and first build a Proof of Concept (PoC) or pilot automation
- Once successful, the PoC or the pilot is extended to full rollout
- Deployment is typically undertaken by business – not by IT
- Business architecture groups that bridge business and IT are ideally placed to build implementations
- These groups often become an automation Center of Excellence (CoE) (and may emerge from a process reengineering group, taking on additional scope of work)

Future direction

- As organizations become more experienced, tactical deployments will get replaced by more strategic ones
- GICs are likely to be a major adopter of automation, driven by the need to reduce costs as part of their strategy to remain competitive, and to avoid being replaced by or outsourced to service providers

Consequently, organizations often follow a pilot or “proof of concept” approach in order to gain organizational buy-in and learn how to utilize automation

Getting started

- Overcoming conceptual barriers to automation
- Selecting the right processes
- Choosing the right technology
- Developing the skills for automation

1. Getting started

2. Pilot / proof of concept

Trying it out

- Getting backing and funding for a pilot or Proof of Concept (PoC)
- Defining the scope of the pilot/PoC
- Benchmarking existing operations
- Managing stakeholder expectations
- Implementing the PoC

SDA deployment

Running automations

- Keeping automations working when changes to systems happen
- Maintaining rules
- Ensuring operations with governance and controls
- Ensuring continuity of operations
- Identifying other processes for new automations

4. Maintaining and increasing capabilities

3. Deployment

Moving to full scale rollout

- Acting on lessons learnt from the pilot/PoC
- Scaling up and initially running parallel with live operations, before going into production
- Continuous monitoring and ensuring resilience in automations
- Managing automation lifecycle
- Linking it to platform lifecycle

Although most organizations use an incremental approach to testing and applying RPA, a more strategic and holistic program would provide increased benefits.

The primary barriers to RPA adoption include lack of knowledge about software robots and their effectiveness in process delivery

Barriers to RPA adoption

Lack of skills and knowledge

- Lack of knowledge and skills within the organization about various types of automation technologies and what they can achieve

Concerns from IT team

- IT teams of buyer organizations are often apprehensive about data security and integrity of systems
- There are concerns around intrusion of RPA in the realm of IT

Process stakeholder buy-in

- Process stakeholders must also be brought onboard when adopting automation in their respective processes, as they are the ones who would be held responsible for process outcomes. This is another challenge, especially in large organizations

Funding

- Adopting RPA, especially for large scale deployments, requires substantial investments
- In addition to license costs, other expenses such as consulting, process mapping, development, implementation, and maintenance, which form a substantial component, need to be taken into account while analyzing the business case for RPA

Employment sensitivities

- Replacing staff with robots in some sectors, such as government, could become a political minefield in countries where there are high levels of unemployment and slowing down economies
- However, some adopters redeploy resources instead of significantly reducing headcount

Key learnings from early adopters

Organizational readiness

- Positive alignment is essential across all stakeholders – top management, process owners, and technology stakeholders
- Change management is an integral part of the RPA effort and must be a priority. It includes:
 - Upskilling and redeployment of FTEs involved in processes to be automated
 - IT strategy defining security and control measures in an automated process delivery environment

Process viability

- RPA is most effective among rule-based and well-defined processes
- An internal process audit to gauge viability of RPA solutions is a must before RPA implementation
- A phased approach to RPA, beginning with pilot projects, offers the most optimized deployment methodology
- Organizations must account for exceptions and manual decision-making

Managing expectations

- Not expecting automation to go beyond automating a process per se; process optimization and standardization can enhance the returns from automation, but the reverse is not true. Automating duplicated processes in multiple systems speeds up processing but does not address the need for system consolidation and process standardization

Proof of Value (PoV)

- Pilot-phase processes should be well-suited for RPA and should ideally showcase a high-impact tangible business benefit in a short time to promote RPA in the broader organization
- Organizations should look at pilots for establishing a PoV rather than a PoC. PoC proves the proposed solution works, while a PoV proves that it will work for that organization, and that the expected value to be realized is achievable and can be justified and measured

Build capability

- Buyers must also develop internal capabilities to manage and maintain the RPA environment
- Buyers need to develop a resilient approach to RPA deployment to overcome challenges around vendor acquisitions, effective implementation, and integration
- Putting in place a governance structure to clarify roles and responsibilities such as who owns the automated processes and how teams should work with software robots

Source: Everest Group (2017)

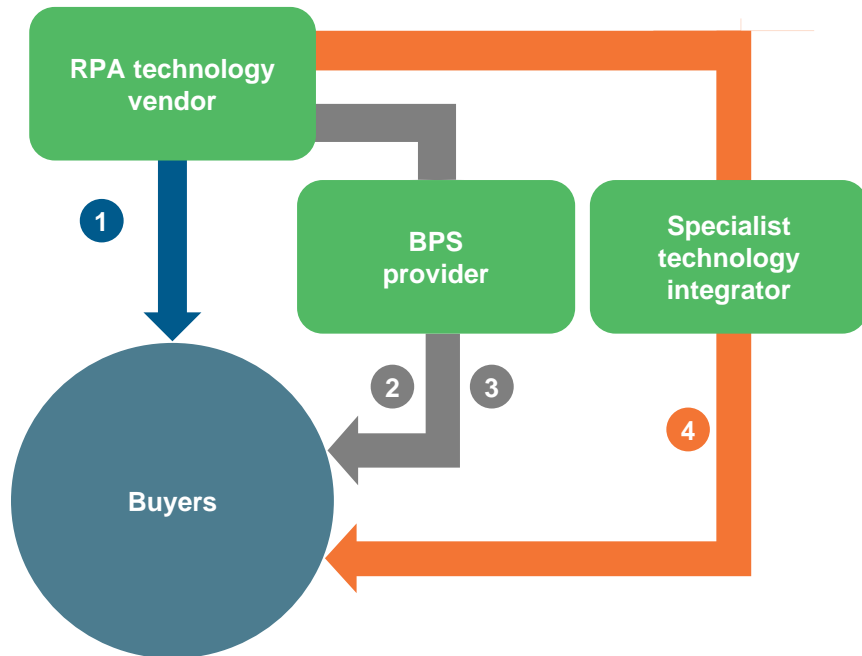
RPA technology vendor market landscape – summary

- Almost all the RPA technologies are adept in handling structured data. Some, such as Automation Anywhere and WorkFusion, have cognitive capabilities for handling unstructured content as well
- RPA technology vendors offer different solution models:
 - Desktop-based: RPA is hosted on the desktop of the user, like any other application software
 - Enterprise-oriented: Robots are typically hosted on a server that can operate in “lights-out” (unattended) mode
 - Mix of both: RPA solution is flexible enough to be deployed on desktop or at the enterprise level, depending upon client requirements
- Most of the solutions in the market have their origins attributable to inefficiencies in contact center operations, back-office tasks, data handling, etc. As a result, most of these tools have strong capabilities in handling such processes
- RPA technology vendors also leverage different channels to approach the market, such as:
 - Direct sale to the buyers
 - Joint development with BPS providers and offering the resulting solution to the buyers
 - License solution to BPS providers / technology integrators, who take the solution to the buyer
- There is a mix of commercial models among RPA technology vendors including license-based fees for their product and utility or usage style pricing

Go-to-market approach

RPA technology vendors are following different collaboration models to take their solutions to the buyers

Types of market approach of RPA technology vendors



1

Direct sales approach by the RPA technology vendor

The RPA technology vendor manages the consulting, deployment, and maintenance by itself

2

Joint development approach of BPS provider and RPA technology vendor

The BPS provider and RPA technology vendor work together to create solutions that embed the vendor technology (mostly at the technology layer) into the wider BPS technology solution continuum of the service provider. This holistic solution is then offered to clients

3

Licensing arrangement between BPS provider and RPA technology vendor

The BPS provider enters into a licensing agreement with the RPA technology vendor. The service provider then either acts as the specialist technology integrator, or provides it as a part of its wider BPS technology solution

4

Licensing arrangement between specialist technology integrator and RPA technology vendor

The specialist integrator enters into a licensing agreement with the RPA technology vendor and provides consulting, implementation, and maintenance support

Source: Everest Group (2017)

Predictions for 2017-2019

1. RPA technologies will have increasing levels of intelligence

Adding cognitive features to RPA has been going on in different ways. At its simplest form, there is some degree of context awareness when robots are running. In the more advanced form, there is computer vision and natural language processing. More is to come, as RPA vendors either build or partner for AI

2. Partnerships will rise significantly

Our prediction from last year that there will be a significant increase in service provider and reseller partnerships has already come true, but the upward trend will continue. We will see more local partnerships, for example, to deliver automation professional services in countries and regions around the world including APAC

3. New pricing models are the new competitive frontier for RPA

The evolving market will see technology vendors compete on pricing models. This will see partnerships forming to offer very competitive outcome-focused pricing to counter offerings from service providers that provide their own RPA software and services

4. Verticalization will add another competitive dimension to the mix

Buoyed by new entrants to the market, verticalization will add to the competitive intensity in the market. Vendors will bring out libraries of automations for industry-specific processes to accelerate automation. Key to this will be their knowledge of those processes, and therefore we will see vendors hire or partner for industry expertise

5. The platform is the way ahead

RPA vendors are all aiming to turn their software application into platforms that allow new features to be added to them seamlessly. The successful ones will be able to combine their base platform with third-party technology to increase the depth and breadth of their software to satisfy a diverse set of client requirements

6. The continent awakes

We will see increasing adoption of RPA in hitherto laggard geographies such as Continental Europe and APAC. Adoption will be driven by economic uncertainty and competitive pressures with neighboring regions that have been quicker to adopt RPA. In India, GICs will lead adoption, in turn driven by their head offices in United Kingdom and North America

Additional SOT research references

The following documents are recommended for additional insight into the topic covered in this report. The recommended documents either provide additional details on the topic or complementary content that may be of interest

1. **Robotic Process Automation (RPA) - Technology Vendor Landscape with FIT Matrix Assessment – Technologies for Building a “Virtual Workforce”** ([EGR-2016-13-R-2030](#)); 2016. This report uses Everest Group’s proprietary FIT Matrix™ to assess and rate RPA technology vendors on the various dimensions of their market impact and vision & capabilities. It also includes Everest Group’s remarks on vendors, highlighting their key strengths & areas of development, as well as insights into advances in RPA technologies, operating models, capabilities of different platforms, and commercial models
2. **Business Case for Robotic Process Automation (RPA) in Global In-house Centers (GICs)** ([EGR-2016-2-R-1926](#)); 2016. The report assesses the business case for adoption of RPA in offshore GICs and the associated payback period. It also provides insights into various factors impacting the business case and the threshold limits for each of them in order to have a justifiable business case
3. **Service Delivery Automation (SDA) – Best Practice Guide to Establishing an SDA Center of Excellence** ([EGR-2016-13-R-1750](#)); 2016. This report provides a guide to setting up and expanding an SDA CoE. It is intended for organizations that are setting out to build a CoE, service providers looking to build CoEs for their clients, and SDA technology vendors seeking insights into the bigger CoE picture
4. **Robotic Process Automation (RPA) – Technology Vendor Profile Compendium** ([EGR-2016-13-R-2036](#)); 2016. This report provides detailed, comprehensive, and fact-based profiles of 10 key RPA technology vendors. Each four-page profile provides a detailed picture of the vendor’s solution scope, technology & deployment characteristics, scale of operations, as well as an assessment of the provider as part of Everest Group’s Features, Implementation, and impact (FIT) Matrix™. The report also analyzes key strengths and areas of improvement for the technology vendors from the perspective of their RPA solutions. Additional insights on the vendors, such as market presence, most prevalent use cases of their solutions, and the commercial models that they offer, have also been provided

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