HfS Blueprint Report

Intelligent Automation 2016

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Executive Summary

Introduction to and Scope of the HfS Blueprint Report: Intelligent Automation 2016

- Intelligent Automation (IA) is one of the most disruptive developments our industry is facing. The market development is still nascent, but we will see exponential growth set in within the next 12 months. However, the market communications about, and consequently the perception of, the progress of IA are blurred as the usual stakeholders that tend to educate and influence the market are on the sidelines. In particular, the supply side is anxious about the potential negative impact on profits. There is a lack of clarity about the best commercial models for dealing with the disruptive threat. Thus, market communications are dominated by automation tool providers with tiny marketing budgets and a vested interest.
- In line with the early market development, there is no commonly accepted understanding of IA or its key components, adding to the blurred perception. In HfS's view, the common denominator in all the innovative approaches is the decoupling of routine service delivery from labor arbitrage. At the same time, this denominator encapsulates the disruptive threat as many business models on the supply side are predicated on labor arbitrage.
- Against this background, the HfS Intelligent Automation Blueprint has three goals: to take stock of where the market is really at, to move the discussion beyond RPA (a narrow notion of a task automation and cost takeout) to a more holistic understanding of automation, and to understand how providers are driving IA across the boundaries of traditional business units to advance toward the As-a-Service Economy. Thus, the Blueprint is a challenging project for participants and for HfS. However, the strong over-subscription of this Blueprint is a strong endorsement for taking this approach. Suffice it to say, it is a learning exercise for all concerned.
- As we had strong demand for participation in the study, we tried to be transparent and fair by inviting the top 20 system integrators by revenue, the top 5 pure-play BPOs, the Big 4, and the 4 leading specialist automation consultancies. There is a lot activity beyond those players, which we will capture in our broader research coverage on Intelligent Automation.

The State of the Nation in Intelligent Automation (1)

- **Exponential growth is setting in below the radar:** Given the peculiarities of stakeholder management and marketing communications, the visibility of the market development in IA is blurred at best. Below the radar of the broader industry, exponential growth is starting to set in with broad-scale deployments and increasingly holistic automation approaches. Thus, the fundamental disruption of the decoupling of routine service delivery and labor arbitrage is about to challenge the dynamics of the broader industry.

- **Disruption is nigh**: This disruption is best summarized and encapsulated by two case studies: First, professional services firms, such as KPMG, are planning for and investing in the disruption of their core business, i.e., tax, accountancy, and advisory, which can hardly be described as being high on the technology affinity list. Second, banks, such as RBS in the UK, are about to launch robo advisors largely to reduce headcount. Thus, the disruption will happen not just in the long-term future or in back-office or offshore activities. Instead, the disruption will encompass the entirety of knowledge work.

- **Lack of definitions and common language**: Although HfS sees IA as the most disruptive transformation since the rise of offshoring, there is no commonly accepted understanding of IA or any of its key building blocks. However, the common denominator (and at the same time, the lever for disruption) is the de-coupling of service delivery from labor arbitrage. This lack of definition adds to the blurred perception and is fueling many misconceptions. Therefore, HfS uses the Intelligent Automation Continuum (see slide 12) to guide discussions with stakeholders. In addition, HfS is collaborating with a group of providers and advisors under the sponsorship of IEEE to advance the automation taxonomy. This will help to provide more clarity on the various automation approaches, but it will take considerable time for those suggestions to be adopted by the broader industry.

The State of the Nation in Intelligent Automation (2)

- **Heterogeneity in buyer maturity:** In line with the nascent market development, buyer maturity varies greatly. Although US and UK buyers are at the vanguard, as with most things sourcing, within geographic and vertical markets, the maturity and the levels of insights differ significantly. For example, many banks scale IA deployments, but the traction is not consistent across the sector. Thus, there are no simple answers to which vertical is leading in terms of traction. Broadly speaking, BSFI and Retail are ahead but within the limitations called out. Very few buyers have a deeper understanding of the broader notion of IA and the implications for service delivery. This gets exacerbated by the marginal contribution of sourcing and third-party advisors. Fundamentally, for many organizations, there is a chasm between their own sourcing journey and innovations presented by the supply side. Stronger alignment with process consulting and program management is critical to alleviate some of those concerns.

- **Focus should be on IA, not task automation**: A narrow focus on RPA (and often task automation) is missing the direction of travel for the broader notion of Intelligent Automation and the necessity of changing the mind set when advancing toward the As-a-Service Economy. There is neither a silver bullet nor a short cut today to overcome legacy and other issues. Organizations have to work toward orchestrating those innovative approaches as part of a service delivery strategy that goes beyond the organizational stovepipes and traditional business units. The starting point for the discussions needs to be the use cases irrespective of IT or business process–centric scenarios. Crucially, strategies have to put process owners back at center stage.

- **Ability to scale, service orchestration, and AI capabilities key differentiators:** Against this background, the leading service providers demonstrate an ability to scale deployments by focusing on service orchestration, often underpinned by standardization on platforms such as ServiceNow, which are being linked with orchestration engines, such as Automic and Cortex. Such approaches allow broad automation frameworks with the goal of integrating the plethora of IA tools in a plug-and-play modus. This goes far beyond RPA and Autonomics tools by expanding to broad cognitive and AI capabilities.

The State of the Nation in Intelligent Automation (3)

- **Broad AI capabilities are coming to the fore:** IBM's Watson is becoming ever more pervasive as IBM is starting to embrace the notion of an ecosystem. Although the market impact is far beyond Watson, HfS is seeing the emergence of the notion of Virtual Agents that are underpinned by broad automation capabilities. These agents range from the heavyweights Watson and Amelia to OpenSource avatars. At the same time, we are seeing traction of cognitive engines, such Celaton for integrating unstructured data or RAVN, as an example of vertically focused machine learning and Enterprise Search.

- **Data is the new currency**: The crucial (and at times missing) element is linking up IA with data sets on an industrial scale, in other words, this links IA to the capabilities of big data. However, the challenges are not just in terms of technical capabilities but providers getting access to clients' data. Beyond sensitivities and security concerns, some clients are demanding commercial contributions for enhancing providers' data models. At the same time, broad scale access to data sets will be a crucial differentiation for AI providers.

- **Indian service providers make the headlines, but don't lead**: Despite many headlines in the trade press and newspapers, Indian providers are not leading the space. Often, there is an overemphasis on technology aspects and individual tools while the process owners and decision-makers are out of sight. They should instead consider conveying the industrialization of service delivery, as well as integrating IA with consulting and program management, in particular, in the context of scaling out engagements and going beyond traditional organizational stovepipes. However, at the same time, providers like Wipro and Infosys are focusing on some of the implications of IA in financial earnings calls, presumably to demonstrate to financial stakeholders their ability to improve or ring-fence profitability.

The State of the Nation in Intelligent Automation (4)

- **Debate about the transformation of knowledge work urgently needed:** The common denominator for all flavors of IA is decoupling routine service delivery from labor arbitrage. Thus, HfS is forecasting a significant loss of jobs, although automation will create new jobs at the same time. Until 2020, we expect 9 million jobs will be lost globally. As generic activities, such as data entry, reconciliation, and compliance, are phased out, organizations need to prepare for this fundamental transformation of knowledge. The key here is look beyond scaremongering figures from reports from McKinsey and the World Economic Forum, and assess the fundamentally changing requirements for talent. The industry is largely ill prepared for this disruptive shift. Crucially, advisory engagements on these topics should be paid for work, not pre-sales engagement. Having said all that, the industry is largely in denial about most of those implications. Although the suggestion of human augmentation and amplification is a prudent way to think about the deployment of IA, we work in the sourcing industry. The whole rationale of our industry is about making activities and work redundant, whether through cost-cutting projects or outsourcing. As IA is all about transformation and change management, we need an open and transparent debate on the fundamental transformation of knowledge work.

Understanding the Intelligent Automation Ecosystem

Intelligent Automation: Background

- **RPA is dominating the discussions:** RPA is dominating (not necessarily for the right reasons) the discussion on IA. On the one hand, the suggestion that bots are accessing enterprise applications just like a user does has captured the imagination of stakeholders. On the other hand, RPA is often used as a placeholder for the broader notion of IA. As a distinct proposition, RPA should be confined to business process–centric scenarios with a focus on capabilities to extract data from heterogeneous systems, as well as to capture, schedule, and execute process steps in a drag-and-drop studio approach. As business processes are often badly designed and lack standardizations, RPA is often discussed in the context of task automation rather than end-to-end automation. Slide 10 provides a detailed definition of the key concepts of IA.

- **The scale is around Autonomics:** In contrast to RPA, Autonomics are typically applied in IT-centric scenarios. As IT processes are well defined through methodologies such as ITSM and ITIL, Autonomics deployments have a significant scale and reach. The core value proposition involves self-healing and self-remediating systems at scale. We are starting to see the convergence of IT and business process–centric scenarios, in particular with IPsoft's Amelia aiming to gain traction with business process owners.

- **Virtual Agents are coming to the fore:** HfS is seeing a lot of activity around the broader notion of Virtual Agents. A Virtual Agent encapsulates decoupling service delivery from labor arbitrage. IBM's Watson is starting to be deployed as a service agent, IPsoft's Amelia is gaining traction, as are OpenSource-based agents, underpinned by continuously expanding automation capabilities.

- **Service Orchestration is a necessity:** With increasing market maturity, we see service providers integrating and orchestrating broad IA capabilities. Examples are providers like Atos, Hexaware, and Tech Mahindra standardizing service delivery on ServiceNow, linking up orchestration engines like Automic or Cortex that then link up with the plethora of IA tools.

HfS Definition of Intelligent Automation Services

INTELLIGENT AUTOMATION VALUE CHAIN: spectrum of services supporting transformation service delivery. The scope of these services varies greatly between discrete automation projects and managed services contracts.

PLAN	IMPLEMENT	MANAGE	OPERATE	OPTIMIZE
• Advisory on RPA, Autonomics, Cognitive Computing, and AI • Workshops on IA vendor landscape and implications • Design thinking • Automation opportunity assessment • Business case development for automation deployment • Operating model evaluation • Automation roadmap • Compliance and risk assessment • Security implications • HR/talent management strategy • Governance policy • Rollout strategy	• Program management for process automation • Process automation and customization • Solution and technical design • Process recording, mapping, updating • Data extraction from heterogeneous systems • Leverage repository of pre-built components and utilities • Predictive analytics • Specialist development modules • Enterprise systems integration • Employee communications • Employee education • HR policy adherence and development	• Governance of automation and human environments • Maintenance of automated processes • Optimization of BPO contracts and SSC delivery • Upgrade support • IA help desk • Ongoing integration • Support and Maintenance • Testing and QA • New release and upgrade coordination • Training and certification • Acceptance testing • Change management • HR policy adherence and development	• Infrastructure management • Application management • IT help desk management • BPO • (Ro)Bot-as-a-Service • Real-time analytics • Identify any required changes in service delivery or process to account for changing business requirements, e.g., M&A, divestment, new investments in IT • Mandatory regulatory adjustment ramification management and resolution • API support	• New feature value identification and benefit analysis • Ongoing adds/upgrades, migrations, and consolidation • Integration of big data analytics and insights • Best practice understanding, documentation and end-user adoption, content creation, and curation • User community participation • Design Thinking/ continuous challenging of status quo and relevance of business outcomes

How HfS Defines the Building Blocks for Intelligent Automation

Robotic Process Automation describes a software development toolkit that allows non-engineers to quickly create software robots to automate rules-driven business processes.

For example, digitizing the process of collecting of unpaid invoices, which involves mimicking manual activities in the RPA software, the integration of electronic documents, and the generation of automated emails to ensure the whole collections. The process is run digitally and can be repeated in a high-throughput, high-intensity model.

Cognitive computing is the simulation of human thought processes in an Intelligent Automation process or set of processes. It involves self-learning systems that use data mining, pattern recognition, and natural language processing to mimic the way the human brain works, without continuous manual intervention.

For example, an insurance adjudication system assesses claims based on scanned documents and available data from similar claims and evaluates payment awards.

Autonomics refers to self-learning and self-remediating engines, where the system makes autonomous decisions, using high-level policies, constantly monitoring and optimizing its performance and automatically adapting to changing conditions and evolving business rules and dynamics. There is increasingly minimal human intervention.

For example, a virtual support agent continuously learns to handle queries and creates new rules/exceptions as products evolve and queries change.

Artificial Intelligence refers to intelligent automation systems that go beyond routine business and IT process activity to make decisions and orchestrate processes.

For example, an AI system manages a fleet of self-driving cars or drones to deliver goods to clients, manages aftermarket warranties, and continuously improves the supply chain.

Understanding the HfS Intelligent Automation Continuum

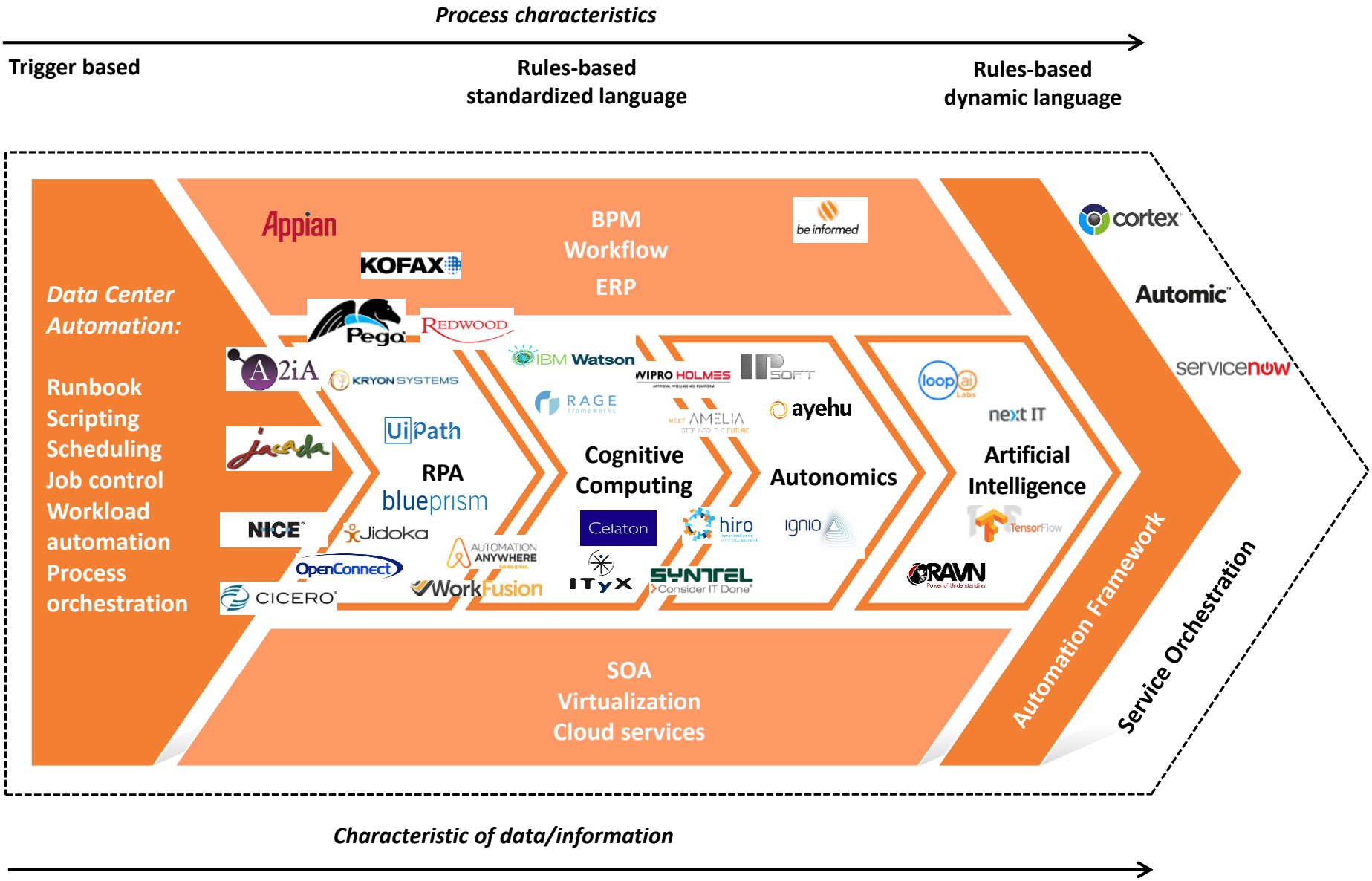
- **The IA Continuum is just the starting point for discussions:** Given the lack of understanding of the notion of IA and the plethora of approaches that have "automation" as part of their moniker, the IA Continuum is meant to provide stakeholders with a common reference point for discussions. Thus, the Continuum should not be over-interpreted for every little detail in the IA discussion. HfS continues to evolve the Continuum. The latest changes are the introduction of an Automation Framework and the notion of Service Orchestration cutting across the Continuum. With increasing maturation in the market, we see service providers building out much more holistic capabilities, aligned with the key research themes of this Blueprint.

- **Main assumptions of the IA Continuum:** The key thought process behind the IA Continuum is that all the approaches (traditional and innovative) overlap and are interdependent. Crucially, that applies not only to the innovations shown in the white chevrons in the middle but also to the traditional approach depicted on the left-hand side, such as runbook and scripting, as well as BPM and SOA. To scale deployments, broad integration capability is a necessity.

- **Direction of travel is along three dimensions:** The Continuum does not suggest that providers have to start with RPA in order to progress toward notions of AI. However, HfS suggests that the direction of travel is broadly along three dimensions: unsurprisingly toward unstructured data, less obviously toward less well-defined processes, and toward the broad bucket of Cognitive Computing and AI.

- **Avoid pigeonholing tool providers:** Technology and tool providers can take on multiple roles on the Continuum. Therefore, the positioning of a provider on the Continuum should be seen only as providing rough guidance for the competitive landscape. Good examples are Wipro's HOLMES and TCS's ignio platform that have capabilities across all four IA chevrons. Again, the positioning on the right of the Continuum is not necessarily meant to suggest increased value or scale.

The HfS Intelligent Automation Continuum



Key Highlights – State of the Intelligent Automation Market – Technologies (1)

- **Moving beyond RPA 1.0:** RPA tools are evolving from business process–centric scenarios. As business processes are largely badly designed and standardized, the scale of deployments is often limited, frequently on the sub-process level. For the wrong reasons, RPA remains the focal point for discussions on the broader notion of IA. At the same time, for some stakeholders, RPA and IA are interchangeable. However, the core value proposition of RPA is extracting data from heterogeneous sources and capturing, scheduling, and executing process steps in a drag-and-drop modus. Thus, the robots access enterprise application just like humans or agents. The leading technologies are Blue Prism, UiPath, and AutomationAnywhere while OpenSpan and NICE are crossing over from desktop automation.

- **Autonomics provide scale and reach:** Evolving from IT-centric scenarios, in particular, help desk, Autonomics deployments have significant scale as processes tend to be standardized through ITSM and ITIL. The core value proposition is self-learning and self-remediation, thus providing a much higher level of sophistication than RPA tools. Leading technologies include IPsoft's IPcenter and Arago's Hiro, while TCS's and Wipro's proprietary platforms (ignio and HOLMES) are starting to gain traction. Conceptually, the boundaries between Autonomics and Cognitive Computing are blurred. The latter are typically used for IBM's Watson and IPsoft's Amelia that have the capability to directly interact with agents.

- **Service Orchestration is coming to the fore:** With increasing market maturation, the emphasis on market communication is changing from suggestions for turn-key solutions that are non-invasive to the need for transformation. The latter is related to integration with traditional automation tools and with broader concepts such as BPM or cloud services (see the Continuum on slide 12). At the same time, we see an endeavor to move to the notion of automation frameworks that evolve toward the notion of plug-and-play of automation tools depending on use cases. As part of these developments, orchestration engines, such as Automic (largely app centric) and Cortex (more infrastructure centric), are gaining prominence.

Key Highlights – State of the Intelligent Automation Market – Technologies (2)

- **Virtual Agents integrate broad automation capabilities:** The biggest shift in the development of IA is the emergence of virtual agents that are underpinned by broad automation capabilities. Examples include the broad capabilities of IBM's Watson and IPsoft's Amelia, as well as OpenSource-based avatars. Virtual agents encapsulate the common denominator of IA: decoupling routine service delivery from labor arbitrage. In our view, the broadest and, thus far, most compelling buildout is Accenture's myWizard. It comprises a broad set of building blocks that can be leveraged in a similar way as PaaS platforms such as IBM's Bluemix that allows clients to build applications in a plug-and-play studio approach without the need for comprehensive coding. The myWizard platform has enhanced those building blocks by virtual agents that interact with developers and service desk agents. Examples of use cases are the Intelligent Data Scientist and the Virtual Scrum Master solutions.

- **Test Automation is lagging in development:** Testing services are lagging the development of the broader IT market, and test automation is no different. "Test automation" typically has connotations of test case automation and automatic provisioning of test environments. Although Cognitive Computing should be central to predictive maintenance and testing, very few customers have started PoCs around it. Thus, Accenture's myWizard should be seen more as the vanguard of innovation rather than a reference point for broader traction. Its Virtual Testing Savant provides advice to human testers on a wide range of judgement-based tasks, such as test planning, test coverage, prioritization, and even staffing. It provides test artifacts for reuse and solutions based on past fixes, helping testers spend less time preparing and fixing and more time fine-tuning applications to improve business performance.

- **Convergence of tools and scenarios:** HfS is seeing a convergence in the technical capabilities of RPA, Autonomics, and Cognitive Computing tool sets. RPA tool providers are building out analytical and cognitive capabilities, while Watson and Amelia are being driven into business process–centric scenarios. This reinforces HfS's contention to assess IA along a Continuum. With more scale integration through automation, frameworks will supersede a misplaced emphasis on individual tools.

Intelligent Automation in 2016 —
The Market and Service Provider View (1)

- **A nascent market:** The market for IA is still nascent, but we are seeing signs that exponential growth is about to set in. The reference points for our assessment are the increasing scale in the deployments, the increased maturity in our discussions with stakeholders, the acceleration in building out IA capabilities by service providers, and the shift in emphasis from tools to transformation. In terms of building out capabilities, the reference points, in particular, are the move toward service orchestration and automation frameworks.

- **Pace of innovation:** The acceleration in pace by service providers in building IA capabilities is breathtaking. We are seeing providers like Tech Mahindra and HCL that were lagging in the development now leapfrogging their peers by leveraging insights from the early deployments. All leading providers have built CoEs and are starting to build dedicated automation organizations. Focal points for innovation are Artificial Intelligence and the integration of industrial-scale unstructured data.

- **Lack of differentiation**: Only the runaway leaders in our Blueprint, Accenture and IBM, have achieved a marked differentiation. The other featured providers differ more in nuances with use cases offering ways to gain a clearer profile. With that in mind, another way of reading the Blueprint grid is that the featured providers are the vanguard of innovation while smaller or regional providers are often struggling to get a seat at the table for the larger automation projects.

- **Innovators dilemma:** Automation juggernauts, such as CA and BMC, are absent from the IA discussions, but below the radar, they are screening the market for M&A opportunities. It is a classic case of "innovators' dilemma" as they are ring-fencing their traditional licensing revenues while assessing when to make the jump into the new era. At the same time, ISVs with capabilities adjacent to IA are likely to push for M&As, as we have seen already in the case of Pega and OpenSpan.

Intelligent Automation in 2016 —
The Market and Service Provider View (2)

- **Many tool providers will be absorbed by M&As:** The example of Pega acquiring OpenSpan is a blueprint for what is likely to happen to most tool providers. Most will be absorbed largely by ISVs. This could significantly change the cost of licensing those tools, and organizations should have contingency plans. Another scenario is private equity companies building out a portfolio of automation assets.

- **Managing the business case**: Decoupling service delivery from labor arbitrage will disrupt the market significantly. Many Tier 2 and 3 providers will struggle to make this transition. However, we don't have enough reference points for the best commercial constructs for IA. Suggestions for outcome-based models and gain/share have to be backed up with proof points. At the same time, TCS, Wipro, Infosys, and, to a lesser degree, HCL are building out broad-scale proprietary engines, presumably to optimize the business case. However, proprietary platforms require more investments in marketing in order to demonstrate capabilities that tend to get pigeonholed around third-party tools. Disruption will be exacerbated by providers, like EXL, that state they are willing to cannibalize revenue streams by embracing automation to gain and retain client relationships and expand the scope over time.

Buyers Face Challenges in Intelligent Automation Adoption (1)

- **Look beyond task automation:** The marketing noise is largely around RPA and implicitly notions of task automation. Therefore, it can be challenging to get a sense of the bigger picture. However, as one provider aptly put it: "Automation success starts with good design, efficient processes, and data curation." Crucially, what is the future state and how do organizations get on the path toward the As-a-Service Economy? Consequently, providers need to expand their efforts in pre-sales and consulting. Again, providers need to step up and demonstrate their ability to innovate given the lack of proactive innovation mentioned in our interviews.

- **Automation is a journey:** Automation is not a quick fix; it is a journey. It takes preparation to find the right candidates and can be done effectively only by taking support from the people who are involved in the business or IT operations. Projects should start with advisory and process consulting.

- **War for talent:** IA strategies require a unique talent set with the right mix of technical knowledge and business acumen. Scarcity of this talent is currently the biggest factor limiting the speed of execution. Undertake strategic reviews of your talent.

- **Finding a common language:** As IA is not defined, stakeholders are struggling with blurred perceptions in the marketplace. Many tools and approaches use the automation moniker. Many stakeholders fail to understand the nuanced differences, equally the differences compared with more traditional automation approaches. Thus, in negotiations, you need to pay attention and clarify requirements and statements of work.

Buyers Face Challenges in Intelligent Automation Adoption (2)

- **Crossing the chasm**: A major challenge is to convince and align client stakeholders. In the words of one executive: “People don’t believe, people don’t trust. A lot of people are talking about automation, but few really understand it.” Therefore, the market urgently needs reference cases that demonstrates the achievements of successful deployments. In particular, insights into change management strategies are critical to safeguard the rollout of projects. Cultural change is an important aspect of implementing automation solutions, as it often involves skill upgrades, role changes, and people movement.

- **Data curation is critical:** Applying Cognitive and machine learning solutions to IA requires access to large amounts of relevant data to build reliable models. Data can be pertinent to IT operations (e.g., for ITSM-related data, SOPs, RCAs), business processes (call records, support transcripts, product information), and publicly accessible data. Thus, there is a need for quality and quantity of the data, and associated compliance considerations are often under-estimated by clients when they consider AI-based automation solutions.

Spotlight Pure-Play BPOs

- **Pure-play BPOs included in this report: Xerox, Genpact, Sutherland, EXL**
- **Strong propensity for machine learning:** Invariably, pure-play BPOs approach IA from business process–centric scenarios. However, in terms of the scale of RPA deployments, these providers are lagging the more IT-centric system integrators as their sales teams are used to selling FTEs and labor arbitrage. Thus, we see many activities around machine learning as the logical extension of more traditional contracts.
- **Differentiation between front- and back-office services**: Front-office projects are currently only scratching the surface of IA. Most initiatives involve desktop automation and machine learning. Most buyers have an overriding focus on cost and commoditization. On the back-office side, we see only a gingerly expansion beyond RPA.
- **Genpact is leading the pack:** Genpact is decidedly leading the pack. Not only has the company formalized strategy partnerships with the likes of AutomationAnywhere, UiPath, and Automic, but Genpact is also embracing IA holistically.
- **Xerox has to demonstrate benchmarks:** With its proprietary approach, Xerox has to demonstrate that its capabilities are as efficient and scalable as those of its peers. In particular, Xerox must show that the expansion to machine learning is moving beyond traditional efficiency tools.
- **Sutherland is leveraging Design Thinking:** Sutherland is leveraging Design Thinking while building out a Virtual Agent program. Having been an early educator and thought leader on RPA, the company is now largely working out of the limelight.
- **EXL is playing the challenger playbook**: Although the company is early on its IA journey, clients stated that EXL is willing to cannibalize its revenue stream for a potential expansion of scope and for new clients and is willing to work on guaranteed outcomes. Therefore, we expect EXL to advance its position over the next 12 months.

Spotlight The Big 4

- **Big 4 providers included in this report: KPMG, EY**
- **Strength in deep client relationships and process consulting:** The Big 4 have been late to IA but are starting to accelerate. Often, competencies are on the individual partner level rather than on the institutional level. Most are expanding from RPA capabilities toward more holistic IA capabilities. As with everything else in consulting, the core strength lies in deep client relationships. Broad process consulting capabilities provide differentiation, especially with system integrators.
- **KPMG and Deloitte strong on thought leadership:** KPMG and Deloitte are the forefront of educating the market on the implications of IA from a broader sourcing and process consulting perspective. EY and PWC are slightly behind in terms of building out capabilities and have a strong emphasis on RPA rather than on the broader notion of IA.
- **Sourcing advisory not always aligned with delivery capabilities:** Across the market, sourcing advisors are not seen as proactively bringing deals or being decisive in making tool selections, but clients acknowledge that their level of knowledge is starting to broaden. However, more fundamentally, most sourcing advisors are not aligned with broader IA delivery capabilities. Although the independence of sourcing advisory services is essential, a blurred perception of the boundaries between sourcing advisory services and broader automation advisory services remains. However, broadly speaking, sourcing advisory and IA delivery capabilities are largely separate offerings with modest levels of synergy.
- **KPMG case study encapsulates level of disruption:** KPMG is planning for and investing in the disruption of its core business through the ascent of robo advisors and robo accountants. This is the level of disruption facing the industry but also explains why KPMG has to build out the broadest IA capabilities among the Big 4. However, it also highlights that the buildout of capabilities is advancing fast toward holistic notions of IA. This case study also demonstrates that the timeline for the maturity of and disruption through IA is not 5 or 10 years out but is looming large on the horizon.

Spotlight Specialist Consultancies/Automation Pure Plays

- **Pure-play automation providers included in this report: Symphony Ventures, Virtual Operations, GenFour, thoughtonomy**

- **Specialist consultancies are the pioneers and educators:** Consultancies, such as GenFour, Virtual Operations, Symphony, and thoughtonomy, are the vanguard on IA. Their value proposition is less about the depth of tools and offerings and more about the knowledge to make IA projects work. In many cases, they have helped the leading service providers to build out their capabilities. Cognizant poached the Virtual Operations U.S. team. Furthermore, they continue to educate the market despite tiny marketing budgets, as the large service providers remain coy.

- **Understanding their position on the Blueprint grid:** These consultancies have fewer than 50 employees, which means their positioning on the Blueprint grid can be misleading. Suffice it to say, on this scale it is difficult to compete with the large system integrators. However, these consultancies should be considered for advisory and implementation. In individual projects, their execution is on par with that of the leading service providers.

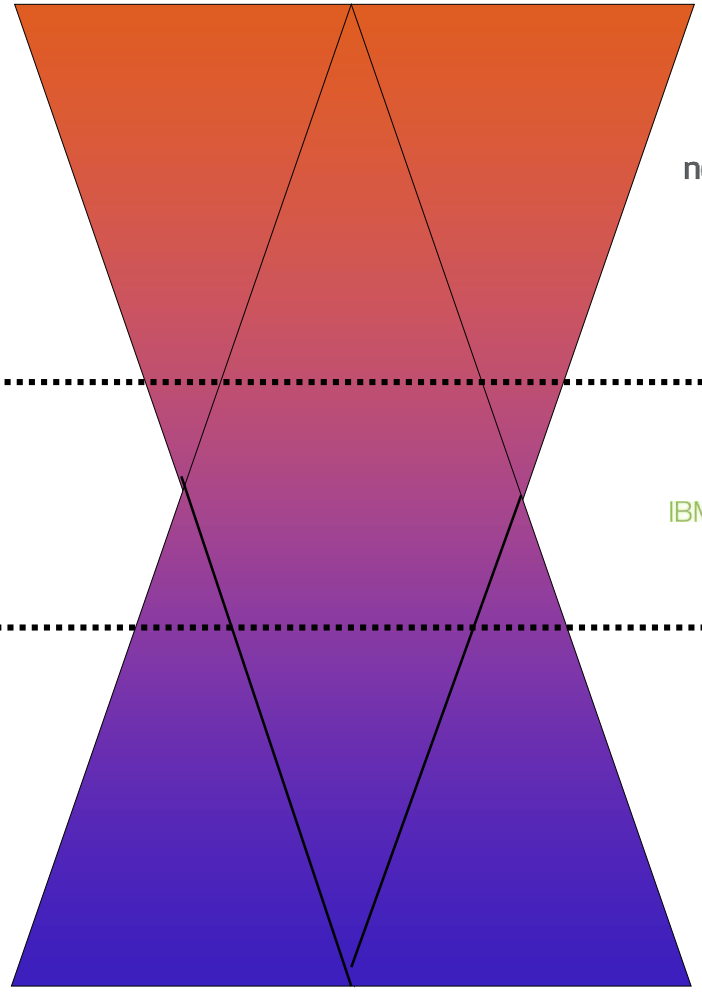
- **Born out of RPA:** All of these consultancies have a history in RPA as strong Blue Prism partners. Thus, the relevant use cases are more in business process–centric scenarios. However, all have evolved their capabilities. In particular, Symphony is starting to build out AI capabilities, while thoughtonomy is expanding into IT scenarios.

- **Symphony and Virtual Operations are leading the pack**: In terms of scale and depth of client relationships, Symphony and Virtual Operations are slightly ahead of GenFour and thoughtonomy, which emphasize more strongly their platforms. However, with the scarcity of proven IA capabilities, these providers boast a strong order book. If anything, in acknowledgement of their skill sets, clients often wish they "could clone them," or to put it slightly more negatively, some clients are concerned about scalability.

- **Thoughtonomy is driving crossover with IT scenarios:** Leveraging its founders' background as UK MD for IPsoft, thoughtonomy is starting to drive its platform into traditional IT scenarios. Examples include supporting application management and development for Atos and supporting help desk services for Computacenter.

Endgame for Service Delivery: Vertically infused data and insights?!

Insights, Data



Machine learning,
Neural networks,
Enterprise search,
Artificial intelligence
Analytics

Vertically infused insights and data

BPaaS, BPO as-a-stack, Industry platforms

Vertical Processes

Research Methodology

HfS Blueprint Scoring Percentage Breakdown

EXECUTION	100%
How the Service Provider Works With Clients To Integrate Automation into their Delivery Capabilities	16%
How the Service Provider Incorporates Customer Feedback and Collaboratively Engages	5%
How the Service Provider is Addressing the Transformation of Knowledge Work, Both Internally and Externally	15%
Actual Delivery of Services	26%
Scale and repeatability of deployments	17%
Flexibility of the Service Provider To Deliver End to End and Point Solutions	10%
How the Service Provider Works with Clients to Guarantee Outcomes	11%

INNOVATION	100%
Vision for and Investments in the Evolution of Intelligent Automation	25%
How the Service Provider Increases Value for Clients Over the Contract Life Cycle	7%
Tool and Platform Strategy for Intelligent Automation Delivery	20%
Solutions for Accessible and Actionable Data in Intelligent Automation	8%
Approach to Apply Intelligent Automation Across Organizational Boundaries and Traditional Business Units	13%
Availability of Testing Services (e.g. Testing CoEs etc.)	10%
Integration of Process and Organizational Consulting and Technology Capabilities	10%
Leverage of Design Thinking	7%

Execution Definitions

EXECUTION	How well does the service provider execute on its contractual agreement, and how well does the provider manage the client/provider relationship?
How the Service Provider Works with Clients to Integrate Automation into Their Delivery Capabilities	How engaged is the executive and management team in defining and managing the delivery of IA? Do providers help clients to understand the end goal of automation?
Incorporating Customer Feedback and Collaboratively Engage	How has the service provider taken feedback and incorporated it into the solution and delivery? How does the service provider maintain a collaborative engagement?
How the Service Provider Addresses the Transformation of Knowledge Work, Both Internally and Externally	Is the service provider addressing the impact on talent? How is the provider advising on and supporting the transformation of knowledge work? What is the impact on the service providers internally?
Delivering Actual Services	What are the clients' and the market's overall impression of the quality of service across the value chain from this service provider? How is IA helping clients to transform processes? What is the overall impact on client processes?
Scale and Repeatability of Deployments	How does the service provider address scaling deployments across clients' processes? Is the service provider seeking to move to repeatability of IA solutions and projects?
Flexibility to Deliver End-to-End and Point Solutions	When looking at a client's IA issues, can the service provider offer various solutions (point and end to end) to create a flexible and configurable (or customized) response?
How the Service Provider Works with Clients to Guarantee Outcomes	Is the service provider able to leverage IA as a conduit to move toward outcome-based models?

Innovation Definitions

INNOVATION	How well does the service provider innovate its offering(s) in response to market demand, client requirements, and its own vision for how the IA market will evolve?
Vision and Committed Investments for the Evolution of Intelligent Automation	What is the service provider's vision for the evolution of IA? Is there a clear strategy for delivering broader capabilities As-a-Service, and are identifiable investments in place to realize this strategy today? How are these new environments to be governed?
Approach to Increasing Value for Clients over the Contract Life Cycle	How does the service provider view a client's contract? Is there an active effort on the part of the service provider to create value year on year beyond the contract commitments?
Tool and Platform Strategy for Intelligent Automation Delivery	What is the role of tools and platforms in the service provider's offering strategy? Are the selected platforms developed in-house, or are they provided by third parties? Is there a demonstrable intent to maintain and enhance the in-house platforms?
Solutions for Accessible and Actionable Data in Intelligent Automation Services	How does the service provider work with clients to develop a comprehensive set of data and then, in turn, make the analysis of that data and the development of insights possible? Is the service provider allowed by clients to act upon the developed data to improve the effectiveness of overall service delivery? Does the service provider have a vision for integrating IA with actionable data?
Approach to Apply Intelligent Automation Across Organizational Boundaries and Traditional Business Units	How does the service provider address applying IA beyond the traditional business unit (infrastructure, apps, BPO, etc.)? Do the service providers address the convergence of IT and business process–centric scenarios?
Availability of Testing Services (e.g., Testing CoEs)	How does the service provider test these new environments? How does this approach differ from traditional testing approaches?
Integration of Process and Organizational Consulting and Technology Capabilities	How does the service provider combine capabilities in process and organizational consulting and support technology in the form to create innovative IA offerings?
Leverage of Design Thinking	How effectively does the service provider embed Design Thinking methodologies in its IA engagements to define, prioritize, and execute against business outcomes of IA initiatives?

Research Methodology

Data Summary

- The data for this Blueprint was collected in Q2/3 2016, covering services buyers, service providers, and advisors/influencers of Intelligent Automation.
- Invitations were sent to the top 20 system integrators by revenue, top 5 pure-play BPOs, the Big 4, and the 4 leading specialist consultants.
- This report builds on the research of HfS's Intelligent Automation practice. Thus, the insights and findings go beyond the RFI process.

This Report Is Based On:

- **Tales from the Trenches:** Interviews were conducted with buyers who have evaluated service providers and experienced their services. Some were supplied by service providers, but many interviews were conducted by HfS Executive Council members and participants in our extensive market research.
- **Sell-Side Executive Briefings:** Structured discussions with service providers were intended to collect data necessary to evaluate their innovation, execution and market share, and deal counts.
- **Publicly Available Information:** Financial data, website information, presentations given by senior executives, and other marketing collateral were evaluated.

Participating Service Providers

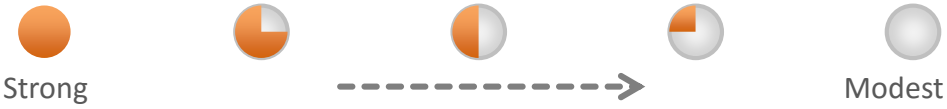
Intelligent Automation in the As-a-Service Economy

Intelligent Automation Is Supporting Realizing the Eight Ideals of the As-a-Service Economy

LEGACY OUTSOURCING	Intelligent Simplification	AS-A-SERVICE ECONOMY
Legacy technology investments that limit agility and create masses of exceptions addressed through adding internal and external FTEs	1. Write Off Legacy	Using platform-based solutions, DevOps, and API ecosystems for more agile, less exception-oriented systems
Resolving problems by looking first at the process as the source of the solution	2. Design Thinking	Understanding the business context to reimagine processes aligned with meeting client needs
Focusing governance staff on managing to the letter of the contract and the decimal points of service levels	3. Brokers of Capability	Orienting governance to source expertise from all available sources, both internally and externally, to address capability gaps
Evaluating relationships on baselines of cost, effort, and labor	4. Collaborative Engagement	Ensuring relationships are contracted to drive sustained expertise and defined outcomes
Operating fragmented processes across multiple technologies with significant manual interventions	5. Intelligent Automation	Using of automation and cognitive computing to blend analytics, talent, and technology
Performing ad-hoc analysis on unstructured data with little integration or business context	6. Actionable and Accessible Data	Applying analytics models, techniques, and insights from big data in real-time
Responding with post-event fixes; little focus on end-to-end process value chains	7. Holistic Security	Proactively managing digital data across service chain of people, systems, and processes
Undertaking complex, painful technology transitions to reach steady state	8. Plug-and-Play Digital Business Services	Plugging into “ready to go” business-outcome-focused people, process, and technology solutions with security measures

Impact on the Other Ideals of the As-a-Service Economy

IDEAL	AS-A-SERVICE IDEAL DEFINITION	Impact	Comments
Write Off Legacy	Using platform-based solutions, DevOps, and API ecosystems for more agile, less exception-oriented systems		IA is all about making legacy work or integrating it into innovation. RPA is all about fudging legacy processes without embarking on process re-engineering.
Design Thinking	Understanding the business context to reimagine processes aligned with meeting client needs		Design Thinking offers the opportunity to reimagine processes. However, thus far, we have seen very few examples of practical application. The more providers build out consulting capabilities, the more we expect that to change significantly.
Brokers of Capability	Orienting governance to source expertise from all available sources, both internally and externally, to address capability gaps		Largely no direct impact. However, the notion of plug-and-play IA could enhance the ability to manage and integrate resources.
Collaborative Engagement	Ensuring relationships are contracted to drive sustained expertise and defined outcomes		Varies greatly depending on buyer and provider maturity. Suffice it to say, higher-level process automation could enhance interacting in an ecosystem. Data curation and process consulting are critical at the project start.
Accessible and Actionable Data	Applying analytics models, techniques, and insights from big data in real-time		The leading providers are working toward integrating broad and disparate sets of data on an industrial level into IA.
Holistic Security	Proactively managing digital data across the service chain of people, systems, and processes		Taking the robot out of the human and the human out of the process chain will enhance security in service delivery. However, this is dependent on effective governance processes.
Plug-and-Play Digital Business Services	Plugging into "ready to go" business-outcome-focused people, process, and technology solutions with security measures		Having an industrialized service delivery backbone provides the platform to accelerate toward plug-and-play services.



Service Provider Grid

Guide to the Blueprint Grid

To distinguish service providers that show competitive differentiation in a particular line of delivery with progress in realizing the As-a-Service Economy of business-outcome-oriented, on-demand talent and technology services, HfS awards these providers the As-a-Service Winner's Circle designation.

	EXECUTION	INNOVATION
As-a-Service Winner's Circle shows excellence recognized by clients in the Eight Ideals in execution and innovation	Collaborative relationships with clients, services executed with a combination of talent and technology as appropriate, and flexible arrangements	Articulates vision and a "new way of thinking," has recognizable investments in future capabilities and strong client feedback, and is driving new insights and models
High Performers demonstrate strong capabilities but lack an innovative vision or momentum in execution against the vision	Execute some of the following areas with excellence: worthwhile relationships with clients, services executed with "green lights," and flexibility when meeting clients' needs	Typically, describe a vision and plans to invest in future capabilities and partnerships for As-a-Service and illustrate an ability to leverage digital technologies and/or develop new insights with clients
High Potentials demonstrate vision and strategy but have yet to gain momentum in executing the strategy and vision	Early results and proof points from examples in new service areas or innovative service models but lack scale, broad impact, and momentum in the capability under review	Well-plotted strategy and thought leadership, showcased use of newer technologies and/or roadmap, and talent development plans
Execution Powerhouses demonstrate solid, reliable execution, but have yet to show significant innovation or vision	Evidence of operational excellence; however, still more of a directive engagement between a service provider and its clients	Less evident vision and investment in future-oriented capability, such as skills development, "intelligent operations," or digital technologies

Background Information for the Blueprint Ranking

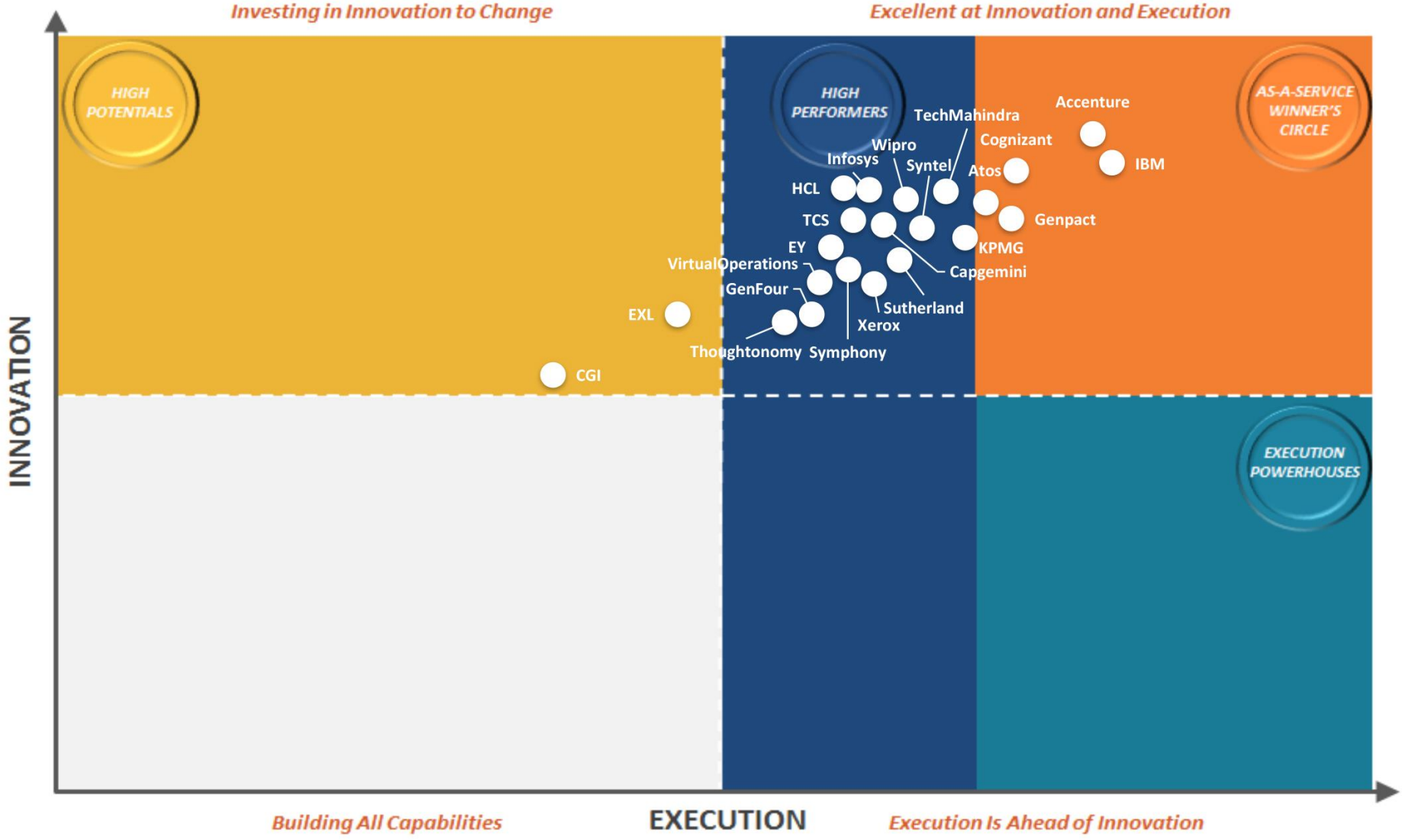
- **Look for relevant clusters:** Assessing IA across system integrators, pure-play BPOs, the Big 4, and specialist consultants is not an easy undertaking as they have different value propositions and focus areas. With that in mind, when reading the Blueprint grid, one should bear this in mind and look for clusters of comparable providers.

- **Keep in mind the weightings:** The highest ratings for the Blueprint grid are actual services, the vision, and the tool and platform strategies. Thus, scale and a holistic strategy beyond organizational stovepipes are key. Invariably, global system integrators have an implicit advantage. For instance, pure-play BPOs and specialist consultants could offer strong value for process-centric requirements and advisory services.

- **Align providers to your requirements:** When drawing up provider lists for RFIs or other activities, we recommend focusing on specific use cases and not simply looking at the overall positioning. In particular, we recommend differentiating between IT and business process–centric scenarios. Partnerships and proprietary IP provide guidance for specific capabilities.

- **Capabilities are expanding fast:** IA capabilities are changing with an astounding pace. Therefore, rankings might need to be adjusted over time. By the same token, we expect new providers to come to the forefront. When doing an assessment, we suggest you discuss with HfS any changes and developments.

HfS Blueprint Grid: Intelligent Automation



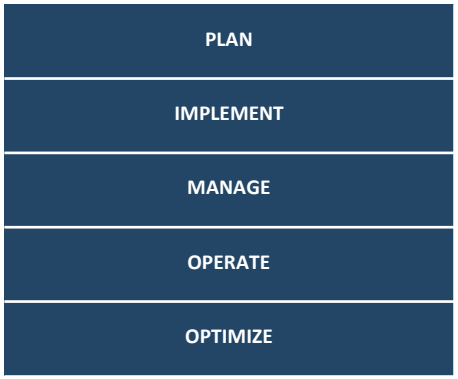
Service Provider Profiles

HfS Intelligent Automation Value Chain: Key to Profiles

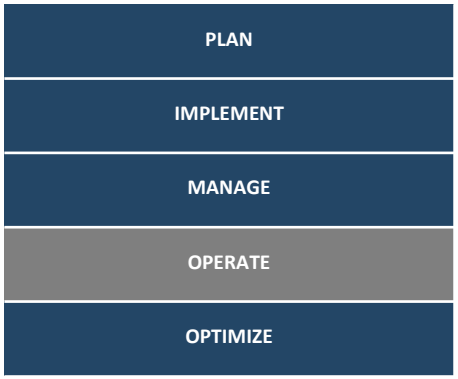
- Value Chain coverage is indicated by blue shading. Grey shading indicates that the service provider does not offer these services.

For Example:

Full Value Chain offered



Operate not offered



- Each profile also includes an “Operations” box where we list service provider statistics.
- “N/A” indicates that the service provider does not have this service today. In many cases, the service provider may have these certification applications in progress.

Major Service Provider Dynamics: Highlights

EXECUTION

IBM is the leading provider in execution as it is pragmatically scaling out selected core technologies (Blue Prism, IPcenter, Watson).

- **Actual Services:** Combines the scale and reach of the IA practices with feedback from clients about the quality of the delivery and the ability of the account teams to provide innovation underpinned these scores. Clients interviewed for this Blueprint were especially positive about **IBM, Accenture, Cognizant,** and **Atos.**
- **Scale and repeatability of deployments:** This category is about moving toward automation on an industrial scale, thus moving beyond more task automation–oriented RPA projects. Clients referenced **IBM, Accenture,** and **Atos** in particular.
- **Works with clients to integrate IA into their delivery capabilities:** Despite the nascent state of the ecosystem, the leading providers are investing strongly in industrializing IA delivery. Clients called out specifically include **IBM**, **Accenture**, **Cognizant,** and **KPMG**.
- **Addressing the transformation of knowledge work**: Although a large part of the industry are in denial about the implications, **KPMG** is investing for the disruption of its core business, and **Genpact** is blending IA into its Lean Digital narrative.

INNOVATION

Accenture is the leading provider in innovation-based predominantly on the plug-and-play notion of its AI Engine and the broad cognitive capabilities of its myWizard platform.

- **Vision for and investments in the evolution of IA:** Across the board, clients were encouraging providers to be more proactive about innovation and help them to get a better sense of the "future state" of their processes. **Accenture, Cognizant, HCL,** and **Tech Mahindra** stand out for their vision for the evolution of service delivery.
- **Tool and platform strategy:** The leading providers demonstrated practical experiences of integrating a plethora of IA tools and aligning them to specific use cases. **Accenture, HCL, Cognizant,** and **Tech Mahindra** impressed in terms of depth and breadth.
- **Approach to apply IA across organizational boundaries: Accenture** has folded IT and operations and built out an IA extraction layer with its AI Engine thus moving beyond traditional stovepipes. **IBM** has created synergies between its GBS and GTS units while driving a holistic IA strategy based on Watson-based Virtual Agents.

Accenture

Winner's Circle

Global system integrator pushing the envelope on innovation through embedding analytics in automation and expanding vertical solutions

accenture

Blueprint Leading Highlights

- Vision for and investments in the evolution of IA
- Approach to apply IA across organizational boundaries
- Integration of process and organizational consulting
- Actual delivery of services
- Flexibility to provide end-to-end and point solutions

PLAN
IMPLEMENT
MANAGE
OPERATE
OPTIMIZE

Strengths

- **Holistic automation strategy:** Accenture stands out through investments in a holistic automation strategy. The reference point is the Accenture Intelligent Automation Platform integrates Business Workflow Management, Delivery Management, Intelligent Automation, and Analytics and Insights, with a neutral ERP interface at the core. This is further enhanced by the Accenture AI Engine that provides an architecture abstraction layer for interacting with various Autonomics services, such as natural language processing (NLP) and machine learning.
- **Analytics is strategically embedded in IA:** Accenture Digital has more than 13,000 professionals dedicated to integrated analytics, essential for converting the data driven by Intelligent Automation into actionable insights and business outcomes; Accenture Labs further harnesses and integrates artificial intelligence, machine learning, and predictive analytics into delivery.
- **Integrated vertical offerings:** Accenture is driving IA end-to-end and point solutions into industry offerings. Examples include Claims Adjudication Advisor and Lease Abstraction Advisor that combine a virtual agent with broad cognitive capabilities.
- **Strong collaboration with ecosystem partners:** Accenture is leading the industry by building out dedicated IA practices. IBM Watson and IPsoft Amelia are examples that are being ramped up aggressively. The strategic lever in the ecosystem is the AI Engine that allows a plug-and-play integration of disparate IA assets.

Challenges

- **Proprietary IP:** Accenture doesn't have its own proprietary "Cognitive Automation Platform," such as ignio, Mana, HOLMES, or Watson. Although Accenture's technology-agnostic approach is largely seen as one of its unique strengths, clients that prefer the integrated platform approach may prefer to work with other service providers. Accenture may want to review whether it needs to develop its own Cognitive Automation platform in the future if not having one becomes a disadvantage.
- **Change and stakeholder management:** Some RPA clients would like to see more proactive support for engaging with stakeholders on change management, especially in the context of managing IT implications. The project teams did not cover those implications or have the appropriate skill sets to do so.

Relevant Acquisitions/Partnerships

Partnerships include:

- IBM Watson practice
- Nervana
- IPsoft, including Amelia Practice
- Saffron
- AutomationAnywhere
- Blue Prism
- Fusion
- Next IT

Key Clients

Accenture works with clients across industry sectors:

- WH Smith
- UK Department for Work and Pensions
- Italian government agency
- Oil and gas company
- Global law firm
- Large pulp and paper manufacturer
- Large casino company
- European telecommunications company
- Global technology company
- Global financial service company

Operations

Geographic footprint and scale of the Intelligent Automation practice

Accenture has established a cross-company Artificial Intelligence Governance Committee, as well as a Growth and Strategy Working Group, comprised of senior leaders from each of Accenture's five businesses.

The Artificial Intelligence Lab in Dublin promotes partnerships with start-ups, accelerators, and universities around the world.

The Accenture Analytics Data Science Center of Excellence (CoE) is comprised of nearly 100 highly specialized individuals possessing a unique skillset of deep domain expertise in advanced analytics and machine learning.

Technology Tools and Platforms

- **Accenture Intelligent Automation Platform** integrates four essential parts—Business Workflow Management, Delivery Management, Intelligent Automation, and Analytics and Insights, with a neutral ERP interface at the core, allowing seamless communication with external data sources and client systems.
- **Accenture AI Engine** provides an architecture abstraction layer for interacting with various Autonomics services, such as NLP and machine learning.
- **myWizard** augments human technologists with virtual agents powered by AI, armed with analytics capabilities and plugged directly into Accenture's other automation assets.
- **Accenture App Exchange:** This internal crowdsourcing platform houses more than 1,000 automation solutions.
- **CORD** methodology has been adopted to ensure a disciplined approach to rapid identification, deployment, and scaling of automation solutions.

HfS BLUEPRINT REPORTS

Atos

Winner's Circle

Global system integrator that is pushing the envelope by industrializing IA

Blueprint Leading Highlights
• Tool and platform strategy for IA • Actual delivery of services • Solutions for accessible and actionable data in IA • Approach to apply IA across organizational boundaries • Vision for and investments in IA
PLAN
IMPLEMENT
MANAGE
OPERATE
OPTIMIZE

Strengths

- **Focus on industrialization of service delivery:** Atos stands out by driving IA at the heart of its service delivery backbone. This includes linking business services and applications orchestration with infrastructure cloud provisioning. A crucial element in this strategy is integrating big data and operational analytics into the automation approach.
- **Holistic approach to IA:** Atos is driving a holistic IA strategy by integrating a broad set of IA tools, as well as leveraging RPA tools in application use cases. Furthermore, Atos is expanding the use cases to broad cognitive capabilities by deploying Autonomics to transfer knowledge into working procedures and knowledge item graphs. At the same time, use cases are expanded to front-office activities by piloting Virtual Agents.
- **Driving scale in deployments:** Atos is standardizing its service delivery on ServiceNow, not only for ITSM-centric activities but across all business functions. In line with its positioning, Atos was strongly emphasizing that the need to orchestrate the continuing complexity of legacy environments is not going away any time soon. Second, these orchestration capabilities are directly linked to Autonomics solutions from Arago and IPsoft, including piloting virtual agent technologies, such as IPsoft's Amelia platform to deliver service desk support to replace Level 1+ agents.
- **Play back of the practical experiences in deploying IA:** Another aspect that stood out in the discussions with Atos was the deep practical experience in evaluating and deploying IA tool sets. The thought process behind the deployments is among the strongest in the industry.

Challenges

- **Overarching thought leadership:** Although Atos's strength is industrializing delivery, HfS would encourage to build out narratives for the direction of travel of process innovation. This should be extended to a broader Future of Work theme leveraging Atos's strength in infrastructure and, in particular, workplace solutions.
- **Investments in marketing:** Atos is not yet seen as a significant player in the bigger buying decision on IA. Thus, investments in marketing are required to convey Atos's differentiating strategy.
- **Demonstrating the proof points**: As Atos is pushing the boundaries toward less well-developed and therefore documented use cases, such as application management, operational analytics as well as Virtual Agents, the company needs to demonstrate proof points, metrics, and insights from the early deployments.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- UiPath
- thoughtonomy
- ServiceNow
- IPsoft
- Arago
- Pega
- Cognicor
- Cantoche
- Nuance
- Worksoft
- ServiceTrace
- Google

Key Clients

Atos works with clients across industry sectors:

- Ministerial Department for Immigration, Security, Law and Order
- Retail post office company
- Government Healthcare Agency Scotland
- Producer of flavors and fragrances
- Financial Services in financing, leasing of car manufacturer
- Dutch telecommunications company
- Germany's largest engineering company in Europe
- Finnish multinational communications and information technology company
- German multinational automotive manufacturing company

Atos is currently implementing Automation and Robotics solutions for their own Service Delivery at more than 65 clients.

Operations

Geographic footprint and scale of the Intelligent Automation practice

Atos has established an Automation and Robotics Factory that delivers the RPAaaS as an Application Service. The factory operates closely with Atos Consulting and System Integration practices worldwide.

As part of the RPAaaS Client, specific RPA libraries are fully maintained by the factory. Continuous improvements to the RPAs are led by the client process owners who can manage changes transparently by automated workflows online with the Atos service team. Integration of other technology platforms like Arago, IPsoft, ServiceNow, and cognitive API extensions is fully supported.

Technology Tools and Platforms

- **Atos Hybrid RPAaaS Cloud Platform** offers clients a scalable RPA platform based on the latest back-office server and orchestrator technology from UiPath. The platform is fully managed and operated by Atos Automation and Robotics Factory 7x24 in Atos Cloud Infrastructure. Clients can hire small (e.g., single to large-scale) robot configuration as needed to right-size RPA technology investments to the best business outcome and strategy. Pilot RPA solutions can immediately switch into large-scale operation.
- **Atos Virtual Agent** is based on the LivingActor technology from Cantoche currently delivering to clients like Toshiba, EDF, Naxitis, etc. The agent is cloud based, operates in 6 European languages, and has an integrated Chat solution that includes live translation. Atos has integrated this virtual agent with the RPAaaS Cloud platform and offers a zero-touch transaction service.

Cognizant

Winner's Circle

Global system integrator with thought-leading automation incubator driving a broad set of differentiating capabilities

Cognizant

Blueprint Leading Highlights

- Tool and platform strategy
- Vision for and investment in the evolution of IA
- Flexibility to deliver end-to-end and point solutions
- Actual delivery of services
- Increases value for client over contract life cycle

PLAN

IMPLEMENT

MANAGE

OPERATE

OPTIMIZE

Strengths

- **Reference point for thought leadership:** Cognizant's automation team within the Emerging Business Accelerator (EBA) is at the vanguard of educating the market place on the implications of automation. This is further underpinned by the broader "Future of Work" stream. The robust thought leadership provides broad visibility among stakeholders.
- **Deep entrenchment with innovative tool providers:** Cognizant pursues a blend of proprietary and third-party tools. It has a structured approach to screen the innovation in IA. Cognizant's vendor-agnostic Smart Systems Alliance is an indicator of the firm's deep understanding of the competitive landscape. These partners are complemented by exhaustive proprietary tools, in particular HPA in healthcare from the TriZetto acquisition as well as Automatika.
- **Dedicated IA consulting services:** Cognizant's i4 consulting services are pre-configured and rapidly deployable for fast implementation and quicker ROI for leveraging the Intelligent Automation Platform, as well as the Smart Systems Alliance.
- **Integration into As-a-Service assets:** Smart Metering solution powered by IoT and built on the Pega platform or Broker Assistant chatbot to automate broker interactions are examples for the integration of IA into As-a-Service assets. Further underpinned by the EBA being part of Cognizant's Horizon Three next-generation business unit.
- **Deep entrenchment in Healthcare:** Cognizant's HPO platform extends RPA capabilities to AI and machine learning, while leveraging broader assets, such as TriZetto and vertical-specific BPaaS offerings.

Challenges

- **Moving toward holistic automation framework:** Although Cognizant has broad and differentiating IA assets, it still acts largely siloed by traditional business units. HfS recognizes that Cognizant is working toward a more holistic approach seeking to leverage commonalities between the various platforms and approaches.
- **Breaking down the thought leadership to specific use cases:** HfS would encourage Cognizant to extend its strong overarching thought leadership to build out more tangible specific use cases.
- **Embracing the capabilities around cognitive computing and AI:** Cognizant has a strong emphasis on the narrow notion of RPA and business process–centric scenarios. Although a strong differentiator in the early phase of market development, it should be complemented by more IT-centric scenarios and broader narrative around cognitive computing and AI.

Relevant Acquisitions/Partnerships

Cognizant has a broad set of partnerships, best referenced by its Smart Systems Alliance, including:

- AutomationAnywhere
- Arago
- Automic
- Ayehu
- Blue Prism
- Captricity
- Celaton
- Cicero
- Connotate
- IPsoft
- Narrative Science
- Nuance
- OpenSpan
- UiPath
- Wise.io
- WorkFusion

Key Clients

Cognizant works with clients across industry sectors:

Banking and Financial Services:
- US financial services company
- Global financial services company
- Global financial services company

Communications and Entertainment:
- Global publishing company
- US media company
- US published firm

Healthcare and Life Sciences:
- Global medical company
- Global medical device company
- Global pharmaceutical company

Retail and Consumer:
- US retail company
- Global sports brand

Operations

Geographic footprint and scale of the Intelligent Automation practice:
Intelligent Automation is a global organization that leverages Cognizant's operations in 35 countries and more than 100 delivery centers. Additionally, Intelligent Automation CoEs are located in Silicon Valley, Dallas, Nashville, New York, Phoenix, Amsterdam, Chennai, Bangalore, and Pune. Across the organization, the practice totals approximately 1,500 dedicated associates, including consultants, solution architects, business and process assessment analysts, developers, and support personnel. The global organization includes six Centers of Excellence:

- Automation Practice (EBA)
- Global Technology Office
- Business Process Services
- Application Services
- Infrastructure Services
- Quality Engineering (Testing)

Technology Tools and Platforms

- **Intelligent Automation Platform:** Vendor-neutral solution center to address performance, scalability, reliability, and availability problems.
- **HPA:** Serves as a flagship CoE for IA capabilities and execution (predominantly RPA capabilities).
- **Automatika:** An IA platform connecting knowledge-intensive activities automatically and creates a Digital Continuum in business processes.
- **ADPART:** Patented algorithm that automates the design of test cases, and by learning from past defects stored in defect libraries, it intelligently predicts the most vulnerable business processes.
- **EAZauto:** An IA platform that specifically focuses on the unique needs of Enterprise Applications and supports processes like Marketing, Sales, Service, Supply Chain, Finance, and Payroll. The EAZAuto platform hosts 40+ automation solutions (both cognitive and scripted) to significantly reduce time-to-value for a wide range of Enterprise applications, such as SAP, Oracle, Salesforce, Microsoft, Adobe, and Pega.

HfS BLUEPRINT REPORTS

Genpact

Winner's Circle

Global pure-play BPO provider blends design thinking with a strong analytics focus

GENPACT

Blueprint Leading Highlights
• Vision for and investments in the evolution of IA • Actual delivery of services • Scale and repeatability of deployments • Increases value for clients over contract life cycle • Solutions for accessible and actionable data in IA

PLAN
IMPLEMENT
MANAGE
OPERATE
OPTIMIZE

Strengths

Early mover on RPA: As an early mover on RPA and IA with publicly announced partnerships, including AutomationAnywhere and Automic, Genpact has managed to capture mindshare in the discussions on the evolution of IA. From the early days, Genpact has positioned "Rapid Automation" as a broad set of tools and approaches that enhance systems of engagement. Rather than emphasizing task automation and individual tools, Genpact consistently positioned IA as a transformational approach. Consequently, Genpact has expanded this approach to the broader notion of "Lean Digital" blending its heritage in Lean methodologies with the broad gamut of IA tools.

Strong in proactively providing innovation: Clients praise Genpact for consistently proposing innovation, including proactively. This includes a consistent approach to monitoring even for activities that are outside of scope.

Driving a holistic approach to IA: Genpact is pushing a holistic approach to IA but building out micro-services and machine learning on top of systems of engagement. This is further enhanced by leveraging NLP and Cognitive Computing, in particular for knowledge transformation process situations where Genpact needs to automate context-specific knowledge extraction from unstructured sources of information. Genpact is in the early stages of expanding this approach to virtual agents and virtual data scientists.

Integration of unstructured data: Genpact has invested heavily on analytics and big data with a dedicated research lab in Bangalore, India. They have developed a Data Engagement Platform using big data technologies, in order to be able to harness structured and unstructured data from multiple sources.

Challenges

- **Overarching thought leadership and vision:** While clients praised Genpact's proactiveness on innovation, they struggle with imagining the future state of their organizations and process. Thus, Genpact might want to expand their automation-centric thought leadership to support clients' transformation of knowledge work.
- **Put the process owner center stage**: While clients are positive on the quality of service delivery, some would encourage more transparency about the work done to their processes. However, more generally, they would encourage Genpact to translate technical requirements into a language that is understood by the business.
- **Demonstrate the proof points**: As Genpact is taking their clients on the journey toward unstructured data and even virtual agents, HfS would encourage the demonstration of insights and metrics from the early deployments.

Relevant Acquisitions/Partnerships

Acquisitions include:
- PNM Soft, leader in Dynamic Workflows
- Endeavour Technologies, leader in Mobility solutions

Partnerships include:

- Automation Anywhere
- Rage Frameworks
- Arria
- Systran
- Exilant
- Rosslyn Analytics
- OmPrompt
- WorkFusion

Key Clients

Genpact works with clients across industry sectors:

- Global leader in Healthcare
- Global packed foods leader
- Global pharma leader
- Global market research leader
- Global leader in logistics
- Global insurance leader
- Global brewery leader
- Global automotive parts leader

Operations

Geographic footprint and scale of the Intelligent Automation practice:

Genpact's overall delivery is 70+ centers across 18 countries. They are served by Genpact's 700+ IA FTEs comprised of Lean Digital professionals who drive IA practice for more than 600 clients.

The Lean Digital approach helps identify opportunities proactively (using RA Playbooks), do assessments (R Factor analysis) prior to coding, testing, and deploying. This approach drives scales, and defines accelerators like process optimizations or adjacent digital interventions (OCR, NLP), in addition to deploying RA.

Technology Tools and Platforms

- **Genpact's Systems of Engagement (SoE)** protects customers' IT investments, by bringing a layer of agility that institutionalizes knowledge from Genpact's patented SEP framework.
- **Akritiv** delivers F&A services and operational reporting and analytics.
- **Rapid Automation:** Genpact's expertise in RPA
- Intelligent Process Insight Engine (IPIE) is Genpact's proprietary framework that allows their customers to keep pace with innovation, helps them with democratization of analytics, and instrumenting for action.
- **Genpact Neural Intelligent Platform:** Applying Cognitive for customer support.
- **AI Reporting Solution:** Simplifying narratives and commentaries in complex reports.

HfS BLUEPRINT REPORTS

IBM

Winner's Circle

Leading global service provider driving automation at scale with differentiating assets around the Watson ecosystem

Blueprint Leading Highlights

- Actual delivery of services
- Works with clients to integrate IA into their delivery capabilities
- Solutions for accessible and actionable data in IA
- Scale and repeatability of deployments
- Approach to apply IA across organizational boundaries

PLAN

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Strengths

- **Holistic approach to automation:** Although IBM is driving different strategies in different business units, it always approaches automation holistically. Reference points are IBM's E.P.I.C. (Enterprise Process Innovation Continuum) methodology that is spanning desktop automation, RPA, Autonomics, and Cognitive Computing. Similarly, the enhancement of core automation platforms through Watson. Be it analyzing false alarms in Autonomics scenario or the virtual agent extension in vertical solutions.
- **Leading in Cognitive Computing:** The investments in the Watson ecosystem are IBM's strongest asset and differentiation. Opening up Watson to peers will drive more insights and will position IBM as the heart of As-a-Service strategies.
- **Driving scale through focus on core technologies:** IBM is focussing on three core technologies and driving them out at scale: Blue Prism in RPA, IPsoft in Autonomics, and Watson as a virtual agent and broader analytics scenarios. Some clients value IBM as a strategic partner that has demonstrated the robustness of automation without a single outage.
- **Expanding into vertical offerings:** IBM's Cognitive Business Solutions are increasingly extended into vertical solutions, such as health, retail, and telecom, leveraging Watson as a virtual agent.
- **Embracing Design Thinking:** IBM is applying its Design Thinking methodology to develop collaborative solutions, and many are conducted at their Austin, TX, design studios. With the help of design thinking facilitators, IBM is focusing on how agreed outcomes can be achieved by implementing automation.

Challenges

- **Managing and mitigating organizational complexity:** IBM size and wealth of assets have the flipside of organizational complexity. There is not yet a "centralized" strategy across the various business units. Consequently, IBM has to assure that its messages don't get diluted. Similarly, clients reference the siloed way IBM goes to market. An automation incubator could be a pragmatic move to mitigate some of these effects.
- **Clarity about the evolving Watson ecosystem:** Although undoubtedly IBM's strongest asset, responsibilities as well as messaging should be better defined and conveyed.
- **Mitigating lack of broad automation portfolio:** Although the strategy of focusing on core technologies in order to scale is sound, IBM has to address how it is responding to requirements for specific use case and capabilities, not least in terms of pricing flexibility.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- IPsoft
- AI Partnership with Amazon, Google, Facebook, Microsoft
- Promontory Financial Group for AI-based risk and compliance automation

Key Clients

IBM works with clients across industry sectors:

- Oriflame Cosmetics, Global beauty company
- Suntory, Japanese brewing and distilling company group
- Global banking client
- Global Fortune 500 security firm

Operations

Geographic footprint and scale of the Intelligent Automation practice

IBM has four major automation development factories, which it supplements with several regional franchises. They are focused on reusing components and enabling rapid prototyping associated with automation content: US (spread across the country), Brno, Czech Republic, Hortolandia, Brazil, and Bangalore, India.

IBM has hosting facilities for Dynamic Automation in each geographic region. It also has a dual site managed RPA service hosting global workload.

IBM operates development Centers of Excellence (COEs) in Bangalore, Delhi, Manila, Krakow, and Dalian.

IBM has a 2,000-consultant-strong Cognitive Business Consulting practice. IBM is investing heavily to capitalize on its position in Cognitive Business.

Technology Tools and Platforms

- **Watson:** End-to-end cognitive solutions for procedural assistance, to provide insightful guidance to helpdesk resources, SAP coders, and end users, and well as to add intelligence to automated processes and tasks,
- **IBM Automation with Watson:** Is IBM's Cognitive Automation Delivery Platform. It uses an integration layer that ties problems within the IT ecosystem to automation in order to seamlessly resolve them. It uses Watson in the event of more non-deterministic issues and drives deep analytics into the data associated with running.
- **Dynamic Automation:** Collation, Reduction, Automated Remediation, Measurement and Analysis of Events, and Service Requests.
- **Broad set of testing accelerators,** including Watson Quality and Test Workbench, Cognitive Defect Analytics, and Model Driven Test Automation.
- **In addition to partner technologies,** proprietary automation enablers, such as IBM DataCap, IBM eForms, Watson Policy Manager, Watson APIs, and Analytics to drive business process automation.

Capgemini

High Performer

Global systems integrator accelerating journey by expanding strong BPO assets toward holistic automation capabilities

Blueprint Leading Highlights

- Solutions for accessible and actionable data in IA
- Tool and platform strategy for IA
- Availability of testing services
- Works with clients to integrate IA into their delivery capabilities
- Works with clients to guarantee outcomes

PLAN

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Strengths

- **Move toward holistic notion of Intelligent Automation:** The vision of a Digital Delivery Center is driving a holistic automation strategy. Capgemini is moving toward building out a comprehensive suite branded Automation Drive that is aiming to leverage the disparate automation skills, as well as four CoEs across the traditional business units. Emphasis is on an architectural framework that allows for a plug-and-play of automation tools. Capgemini envisions an expansion toward "automating the automation" through flavors of DevOps. Some clients appreciate the proactive approach to Autonomics.
- **Acceleration in BPO:** Capgemini is scaling out RPA in F&A BPO, predominantly leveraging UiPath and Celaton. Almost all contracts are suggest to have RPA tools. This is an example of the acceleration in the changing mind-set as well as capabilities
- **Expansion of RPA methodology:** Capgemini is leveraging the RPA methodology from its BPO unit and expanding it to the broader notion of Intelligent Automation. The goal is looking for hand-offs between the traditional siloes. Consequently, strong emphasis on change in mind-set that necessitates upskilling of traditional skill to broader automation and cognitive capabilities.
- **Investments in IA Academy:** Capgemini is developing a formalized approach to train and upskill staff so that they can move into consultancy and advisory, product selection, and proof-of-concept development, among other things. If successful, the Academy is likely to be extended to broader Analytics and Cognitive skills. The Academy is based on its own findings in particular during RPA rollouts. Talent is further improved by deploying IBM Watson to achieve better management of the resource bench, more accurate staffing, and anticipation of gaps, rotations, as well as the optimization of the "fresher" intake.

Challenges

- **Siloed organizational structure:** While working toward holistic automation, the organizational structure is still deeply siloed. Investments in IA in BPO and Application Management are not yet translating to Infrastructure and Testing. Consequently, some clients struggle with the organizational complexity. HfS would encourage Capgemini to blend Autonomics implications into automation strategy as well as the impact of cognitive computing in testing. Some clients also cited concerns about the resilience of deployments and the effectiveness of commercials.
- **Overarching thought leadership, vision:** While Capgemini is accelerating its journey toward holistic automation approaches, it is lacking thought leadership and narrative that helps clients envisioning the innovation journey and future state.
- **Guidance to clients on the transformation of knowledge work:** Similar to the overarching thought leadership, Capgemini should guide clients on the impact on their workforce. At times, the narrative is too technical and needs to brought to the level of the process owner.

Relevant Acquisitions/Partnerships

Partnerships include:

- Ayehu
- Automic
- Blue Prism
- Celaton
- IBM Watson
- IPsoft
- RAVN
- Tensorflow
- UiPath

Key Clients

Capgemini works with clients across industry sectors:

Business Services:
- Canadian energy provider
- Swiss global insurance company
- US office supply retailer

Application Services:
- US global communications provider
- US global beverage company
- US global entertainment company

Infrastructure Services:
- US federal state
- UK utility
- US global CPG company
- UK insurance provider

Operations

Geographic footprint and scale of the Intelligent Automation practice:

The 3,900 automation experts include only trained and certified dedicated automation experts within RPA/cognitive/AI capabilities.
In addition, Capgemini has a larger population of consultants who work with automation tools and methods as an integrated part of our deliveries to their clients but not as dedicated specialists in Automation.

Technology Tools and Platforms

- **Capgemini Automation Drive Suite:** A unified, open, and dynamic suite of automation tools, services, and expertise
  - **Framework:** monitor, industrialize, and orchestrate cognitive services
  - **Tools and IP:** combination of proprietary and third-party tools
  - **Services:** design, deploy, support
- **Cart:** Code remediation tool for SAP, Oracle
- **I-KON:** Incident–Knowledge Object–based Nanobot.
- **Smart Analytics:** Proactive predictive monitoring to preempt incident occurrence
- **Zoom Avant:** Ticket data analysis dashboard for analyzing application health.
- **SmartQA:** Self-learning test ecosystem with cognitive/analytics capabilities
- **Intelligent Test Automation Platform (ITAP)/ Autohub:** Test automation platform for DevOps.

EY

High Performer

Global professional services firm expanding IA journey from strong RPA capabilities to Cognitive and AI

Blueprint Leading Highlights

- Integration of process and organizational consulting
- Increases value of the contract life-cycle
- Works with clients to provide outcomes
- Vision for and investments in the evolution of IA

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Strengths

- **Leverage of process consulting capabilities:** EY's strength and differentiation lies in expansive process consulting capabilities and deep client relationships. This is reflected in a predominantly RPA centric IA strategy. Consequently, the emphasis is on building out business value capabilities and being a technology agnostic integrator. Strong skills around integrated business planning and designing process maps.
- **Internal use of RPA at scale:** EY is leveraging the insights and learnings from a large scale internal deployment of RPA with hundreds of robots. Equally EY is referencing more than 80 RPA project globally, making them one of the largest consultancies in that space. For some of its clients in the FS space, EY is rolling out complex, multi geography deployments. This is underpinned by a technology agnostic approach working with all the leading RPA tools providers as well as expanding RPA to unstructured scenarios around technologies such as Celaton.
- **Driving end-to-end process capabilities**: Leveraging it s broad process consulting capabilities, EY is staying away from lower level task automation and pure cost take out. EY is rather focusing on large clients with GBS and SSC setup, supporting them in complex multi geography rollouts.
- **Robust data centric vision of IA:** Even though EY is still early on the cognitive and AI journey, the vision to work toward automated insights. It can leverage its Analytics CoE on an industrial scale. However, EY needs to expand those capabilities and move towards an industrialized integration of analytics and Big Data capabilities in broader service delivery capabilities.

Challenges

- **Expanding RPA to broader notions of IA:** While EY has a sound data centric vision of IA and is building out a dedicated cognitive/AI Lab, it is still early on its journey to build out more holistic IA capabilities. HfS would encourage to evaluate an incubator function that is could help providing commonality such as an IA or cognitive platform or framework.
- **Drive use case specific narratives:** Even though EY is deploying RPA at scale, its go-to market is largely focussed on generic process consulting and more IA tool centric approaches. While EY has some industry specific offerings, HfS would encourage to build out more use case specific narrative focused on service delivery rather than leveraging a generic and top level thought-leadership
- **Lack of Autonomics capabilities**: EY has not expanded it offering to self-learning or self-remediating IT scenarios. Similarly, EY has not yet followed its peers in building out Virtual Agent capabilities, thus reinforcing an RPA centric strategy

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- UiPath
- AutomationAnywhere
- WorkFusion
- Celaton
- Pega
- Kofax
- Cognitive Scale
- IBM Watson

Key Clients

EY works with clients across industry sectors:

- Global insurance company
- UK financial services company
- Nordic financial services group
- European insurance company
- Global financial services company
- Global retail organization
- Global manufacturing company
- Global consumer goods company
- Nordic engineering group

Operations

Geographic footprint and scale of the Intelligent Automation practice

Smart Automation Network of Excellence

- About 450 trained resources globally
- About 60 certified developers
- Delivers approximately 100 projects across 20 countries
- RPA Centres-of-excellence in EMEIA (UK), USA (New York), AsiaPac (Sydney), India (Trivandrum)
- EY are the largest licensee of Blue Prism globally

Technology Tools and Platforms

- *EY believes they are the only RPA consultancy that it delivering real-time digital and robotics straight through processing (they suggest this is confirmed by Blue Prism and UiPath). This includes where robotics auto-generate and auto-fill claims or application forms from data across multiple legacy policy systems.*
- *Robotics doing searches and real-time ID&V challenge/response to identify a customers products across multiple legacy systems, creating a single customer view.*
- *Through opportunity assessment across FTSE100-scale companies EY shows to have digital and robotics, demonstrates 2-3x savings of RPA by itself.*

HfS BLUEPRINT REPORTS

GenFour

High Performer

Automation pure play leveraging first-mover advantage in RPA

genfour

Blueprint Leading Highlights
• Increases value for clients over contract life cycle • Works with clients to integrate IA into their delivery capabilities • Scale and repeatability of deployments

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Strengths

- **Broad recognition as pioneer in RPA:** Ever since RPA hit the headlines in 2012 GenFour has been at the forefront of educating the market on the implications of RPA and the broader notion of Intelligent Automation. Thus, it has first-mover advantage and the benefits that brings.
- **Focus on RPA:** GenFour considers itself as a pure play in IA. However, this notion of IA is largely around RPA. A large portion of their clients prefer GenFour to continue to maintain their automated processes (i.e., monitoring, reporting, hosting, fixing faults, and managing licenses) on their behalf. Although the process knowledge remains firmly with them, GenFour provides development expertise to ensure automated processes remain in working order, can be enhanced when opportunities are identified to do so, and there is a capacity on hand to develop new automation when required.
- **Expansion of RPA to unstructured data**: GenFour was one of the pioneers integrating Celaton with RPA tool sets. Thus, use cases can be expanded to issues such as complaints management or any use case where the information is unstructured.
- **Credibility of advisory services:** Like most pure-play automation plays, GenFour advises clients on the complexity of automation and how hard it is to scale bots. GenFour's largest client currently has 14 'live processes' built and supported from their service center, referencing the complexity of deployments.
- **Leverage of delivery center in Wales:** Through receiving government funding, GenFour was in a position to create a delivery center onshore but in a commercially viable framework.

Challenges

- **Breaking down the thought leadership to specific use cases:** GenFour is a thought leader in business process–specific issues, but it should expand on this by building more succinct use case–specific narratives. Similarly, clients struggle to envision the end goal for their processes. Thus, HfS would encourage GenFour to reinforce its position through broader thought leadership.
- **Maintaining position in maturing and consolidating market:** Although GenFour has a clear positioning around RPA, the market is expanding toward AI and Cognitive. GenFour contends that not many clients are asking for these capabilities yet, but HfS is seeing the market turning.
- **Scaling out, support of global clients:** Although GenFour has started to expand into the US, it has to demonstrate that it can support clients globally. As with all the pure plays, questions over size and the ability to mobilize team will linger.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- UiPath
- Celaton
- NICE
- eNate
- Viadex

Key Clients

GenFour works with clients across industry sectors:

- PWC (USA)
- McCormick
- Generarli
- Royal London
- JLT
- Direct Line Group
- Gala Coral
- National Grid
- Admiral Insurance
- Esure
- RAC (Royal Automobile Club)
- Co-op Bank
- Co-op Energy
- IFDS (International Financial Data Services)
- Discovery Channel
- Lloyds Bank

Operations

Geographic footprint and scale of the Intelligent Automation practice

43 FTEs (which, in combination with the RPA workforce, totals around 300 FTEs) in Genfour's Intelligent Operations Centre.

Locations cover North America, the United Kingdom and Ireland, Western Europe, and the Nordic countries.

Technology Tools and Platforms

- **Genfour Autonomic Platform** enables Genfour to manage the intelligent operations of their clients in real time, glean analytics from all client automation activity, and identify and redistribute dormant virtual workers. This platform offers a flexible, commercial arrangement based on utilized robotic hours, otherwise known as Automation-as-a-Service.
- **Genfour Autonomic Platform** is the interface between clients, automation software providers, and Genfour, and houses Genfour's IP, methodology, process maps, systems, templates, and knowledge archives.

HfS BLUEPRINT REPORTS

HCL

High Performer

Global system integrator with one of the broadest set of automation capabilities evolving around its DryICE framework

Blueprint Leading Highlights

- Flexibility to deliver end-to-end and point solutions
- Vision and Investment in the evolution of IA
- Tool and platform strategy for IA delivery
- Works with clients to guarantee outcomes

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Strengths

- **Broad set of automation capabilities:** HCL is comparatively late in launching its DryICE automation framework. Yet, the capabilities are among the broadest in the industry ranging from RPA to Autonomics to Test Automation. The challenge is to evolve these capabilities into a narrative resonant with process owners with specific use cases. HCL's ambition is to evolve DryICE toward scalable deployments that can be consumed in a plug-and-play style model. The complexity is indicated by 35+ technology components encompassing IA such as Cognitive Computing, Predictive Analytics, Deep Search, and NLP. The capabilities even include a physical robot (Melvin).
- **Flexibility to provide end-to-end and point solutions:** HCL has a strong emphasis on orchestration and integration of automation capabilities; this can be particularly seen on two levels: 25+ modular blocks of microservices/microapps that are the key lever to become "silo agnostic," and the Gold Blue Print (GBP) is the Process Ecosystem of HCL Best Practice processes, as well as the Service Xchange to drive broad service orchestration**.** Some clients praise HCL for adapting contract terms even if it means cannibalization of revenue streams.
- **Dedicated DryICE practice starting to take shape**: Although deployments or even PoCs are still small in numbers, the architectural setup of DryICE will allow HCL to scale quickly to go beyond organization silos. Critical will be to adapt go-to-market to this broader scale accordingly.
- **Leveraging strength in infrastructure**: HCL's strong entrenchment in infrastructure services and in particular in RIM provide a strong platform to extend client discussions to a broader IA context. Leveraging this advantage requires deeper investments in marketing and go-to-market as HCL is late to the IA discussions.

Challenges

- **Broader vision of direction travel for IA:** Clients need help in envisioning the innovation journey. This includes building out a specific narrative on service delivery rather than just emphasizing broader discussions such as digital transformation or "bi-modal IT."
- **Impact on transformation of knowledge work:** Such a narrative should include the impact on and the transformation of talent and knowledge work.
- **Investments in marketing:** HCL has been largely absent from the early IA discussion; thus, a strong marketing push is required to regain mindshare with stakeholders.
- **Expanding narrative beyond infra:** HCL's endeavors in RPA and test automation have been inconsistent and should be intrinsically aligned to the DryIce narrative.
- **Mitigating attrition:** Some clients would like HCL to pay more attention to attrition, especially for the L3 level activities.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- Arago
- IBM Watson
- AWS Alexa
- MoogSoft
- Splunk
- Docker
- ELK
- RedLambda
- Dynatrace
- AppDynamics

Key Clients

HCL works with clients across industry sectors:

- Deutsche Bank
- Aegon
- Merck
- DNB
- Cummins
- Novartis
- Vestas
- Pepsi
- Volvo
- Dr Pepper Snapple

Operations

Geographic footprint and scale of the Intelligent Automation practice:

HCL has 2200+ FTEs in the IA practice. They includes 200 dedicated engineers and scientists working on building, maintaining, and updating 40+ modules and 2000+ enterprise architects, solution engineers, and IT service delivery managers delivering the solutions across engagements.

The broad geographical splits are as follows: North America (56%), EMEA 31%), and Asia-Pacific (13%).

The DryICE team has 20+ dedicated application engineers who engage in solutioning and overseeing implementation of appropriate DryICE modules.

Technology Tools and Platforms

- **HCL DryIce framework:** Proprietary framework that leverages a reference architecture of process automation and process transformation.
- **iAutomate:** A recommendation for Artificial Intelligence for automated incident resolution with self-learning built in, leveraging RPA
- **Kelvin:** Expert system leverages global knowledge bases to increase productivity
- **Lucy:** Watson-powered virtual chat agent to reduce Level 0 support workforce
- **Optibot:** Workplace Automation to reduce service-desk calls
- **ToscanaBot:** RPA solution to reduce process cycle times
- **Melvin:** Self-service robot can automate physical tasks in workplaces.

Infosys

High Performer

Global system integrator with differentiation in unstructured data and knowledge management integration through the Mana platform

Blueprint Leading Highlights
• Tool and platform strategy for IA • Solutions for accessible and actionable data • Leverages Design Thinking • Approach to apply IA across organizational boundaries • Vision for and investments in the evolution of IA

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Strengths

- **Automation as firm-wide initiative:** Automation and AI are the central pillars in Infosys overall strategy. The cornerstone is the Infosys Mana platform, which is based on the AiKiDo framework and built around the design principles of knowledge engineering and machine learning. Although Mana is still evolving, the integration of data ingestion with the execution capabilities of platforms, such as AssistEdge, could offer Infosys a clear differentiation if it can demonstrate robust delivery.
- **Driving a holistic approach with data curation as starting point not by-product:** Mana for Knowledge - enables enterprises to capture, formalize and process knowledge and its representation in a ontology based structure. This allows for a holistic approach to IA, including the ability to broadly scale process mapping. Data curation is the starting point and centerpiece of Infosys's IA strategy. This is amplified by a machine learning and data scientist workbench.
- **Built out of industry- and function-specific solutions:** Infosys is starting to build out use case specific solution including Mana for Problem Management Analytics, Mana for Finance and Accounting and Mana for Real-time Business Process Monitoring.
- **Institutionalization of Design Thinking:** Design Thinking is integrated into the AiKiDo framework to bring innovation in agile format with iterative cycles of prototyping and rapid experimentation.
- **Expansion to IoT scenarios:** Sensors and monitors can integrate with software and hardware products and send real-time data to Mana.

Challenges

- **Inconsistency in messaging and stakeholder management:** Given that Infosys was a pioneer in IA with the first publicly announced IA partnership (with IPsoft) and that its CEO Vishal Sikka has declared automation and AI are central strategic pillars for Infosys, the messaging requires fine-tuning and broader investments in marketing.
- **Internal alignment**: The marketing and responsibilities between the EdgeVerve platform, Mana, and the broader AiKiDo strategy needs more consistency. Internal stakeholders appear not always aligned.
- **Dependability in capability development**: Infosys went from the pioneer in IA with the first publicly announced IA partnership with IPsoft, to working below the radar to evolving Mana. Consequently, there is a lack of clarity on third-party partnerships and proprietary capabilities. Significant investments in marketing are needed to demonstrate the new and enhanced value proposition to stakeholders.

Relevant Acquisitions/Partnerships

Partnerships include:

- Hadoop
- Acatech
- Industrial Internet Consortium
- Stanford
- OpenAI
- Institute for Computational & Mathematical Engineering (ICME)

Key Clients

Infosys works with clients across industry sectors:

- ABN AMRO
- Syngenta
- Telstra
- JCI
- Leading Dutch state-owned bank
- Leading sports shoes, clothing, and accessories
- Leading insurance player
- Leading pharmaceutical major
- Leading oil and gas major
- Leading mining, metals, and petroleum company
- Leading financial services major
- Leading engines, filtration, and power generation major
- Leading clothing and accessories major
- Leading confectionery, food, and beverage major
- Leading telecom major

Operations

Geographic footprint and scale of the Intelligent Automation practice

The Intelligent Automation Platform and solution buildout is federated between the, CTO office, the Head of Platforms. And the Head - Product Management & Strategy.

There are more than 2000+ dedicated FTEs working in the IA practice. Their sales teams are shared across Mana. Every unit has been tasked to push platforms, with President level oversight on Mana .

The development side of the platform team leans on and leverages the domain knowledge of the delivery arm, to ensure that the real-world implementation specifics are taken into account as the platform and products are conceived and built.

Technology Tools and Platforms

- **Infosys Mana:** An open, knowledge-based AI platform leveraging machine learning that integrates and expands the former IA building blocks: Infosys Information Platform (IIP), Infosys Knowledge Platform (IKP), and Infosys Automation Platform (IAP).
- **IIP:** An open source data analytics
- **Infosys Information Platform** enables enterprises to capture, formalize, and process knowledge and its representation in a powerful ontology-based structure that allows for the reuse of knowledge as underlying physical or digital systems change.
- **Infosys Mana for RPA and Cognitive solutions (RPA is AssistEdge on IIP)** delivers an intuitive virtual agent, an integrated agent dashboard, and a seamless cross-channel collaboration solution that consists of three offerings: smart user environment, real-time expertise manager, and interactive self-care.

KPMG

High Performer

Global professional services firm with Cognitive Automation as a firm-wide strategic initiative with deep and focused investments

Blueprint Leading Highlights

- Integrates process and organizational consulting
- Approach to apply IA across organizational boundaries
- Works with clients to integrate IA into their delivery capabilities
- Vision for and investments in the evolution of IA

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Strengths

- **Anticipation of and investment in the disruption of knowledge work**: KPMG stands out as the provider that was the most transparent and reflective on the disruption coming from the transformation of knowledge work through the rise of Intelligent Automation. This is referenced by Cognitive Automation being a strategic growth initiative within KPMG with one of the most significant investment programs across the industry. This is based on KPMG's anticipation that IA will lead to disruption in its core accounting, tax, and advisory business. As these processes are not traditionally viewed as technology-centric, it should be seen a critical reference point for the impact of IA.
- **Working toward Cognitive Apps** and **KPMG as a Service:** Based on this fundamental assumption, KPMG is working toward a holistic notion of Cognitive Apps such as tax, accounting, and advisory underpinned by a Cognitive Platform.
- **Early adopter of Watson**: Broad deployment of IA tools, which is underpinned by IBM Watson, throughout the Advisory, Audit, and Tax service lines. These approaches utilize the data-based insights from KPMG's Lighthouse Data and Analytics CoE to improve solutions and turn data into insights into actionable knowledge.
- **Domain-led approach:** Offering are built on industry priorities, not technology. This allows for a strong focus on financial services, capital markets, banking, and healthcare.

Challenges

- **Managing the transition of the revenue model:** The negative side of anticipating this disruption is the potential negative impact on revenue models. Thus, it will be critical to ring-fence high-value fees. First-mover advantage might help to mitigate some of the effects.
- **Audit might curtail best-of-breed partnerships**: Almost unavoidable, any success on the audit side of the house, might curtail the ability to work with best of breed providers. A broad partner ecosystem is buffering some of these concerns.
- **Expand from advisory to broader delivery**: Although KPMG has made progress in the as-a-service market, HfS would encourage a scaling out of robust industrialized offerings. The early investments and experiences in cognitive computing lend themselves to business process–centric scenarios and use case.

Relevant Acquisitions/Partnerships

Partnerships include:

- Appian
- Arago
- Artificial Solutions
- Automation Anywhere
- Blue Prism
- IBM Watson
- IPsoft
- Microsoft
- OpenSpan
- Redwood
- WorkFusion

Key Clients

KPMG works with clients across industry sectors:

- Major financial services provider
- Major telecom provider
- Major financial services provider
- Major telecom provider
- Large healthcare provider
- Securities firm
- Leading call center provider

Operations

Geographic footprint and scale of the Intelligent Automation practice

KPMG has physical locations in major geographies: United States, UK, Germany, India, Australia, and China, and 2500+ professionals are globally delivered through the following structure:
Industry CoEs – Focused on business-centric solution development in IA Cognitive Automation Center of Excellence, centralized team of cognitive and AI software engineers and designers and solution architects
data science labs (Lighthouse) – Multiple global locations (houses data scientists, analytics platforms, and KPMG-supported technology stack)
Innovation Labs – Focused on collaborating with clients using Design Thinking methods and trained professional facilitators.
Consulting Service Groups – Practices with automation skill sets and training programs covering multiple consulting disciplines.

Technology Tools and Platforms

- **KPMG Intelligent Automation Platforms**
- **Athena:** Proprietary automation solution used for certain large scale regulatory compliance activities. Key intelligent technology features include supervised machine learning algorithms, NLP, and analytics. KPMG ingests large amounts of structured and unstructured data, text, graphics and prose to identify anomalies, contextual inconsistencies, and answer questions using probabilistic statistical modeling.
- **KPMG Regulatory Compliance platform:** Proprietary automated platform for financial regulatory compliance and reporting. Uses NLP and RPA and offers high-volume, rules-based processing. Offered as a managed service to more than 20 Financial Services institutions. Value proposition includes headcount reduction, speed, accuracy, and electronic audit trail.
- **Spectrum:** A KPMG technology entity that allows global leverage and collaboration and to comply with organizational, independence and regulatory nuances of a public accounting partnership.

Sutherland

High Performer

Global pure-play BPO, early pioneer in RPA evolving toward Cognitive and AI

SUTHERLAND GLOBAL SERVICES

Blueprint Leading Highlights
• Leverages Design Thinking • Solutions for accessible and actionable data in IA • Works with clients to guarantee outcomes • Vision for and investments in the evolution of IA

PLAN
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OPTIMIZE

Strengths

- **Pioneer in RPA:** Sutherland is one of the pioneers in RPA thus having gained significant mindshare. However, these early efforts were primarily focused on F&A. After its former RPA leadership set up a new business, Sutherland is redefining its IA strategy more around front-office and omni-channel capabilities.
- **Focus on data curation and knowledge:** Sutherland has a strong focus on data curation and machine learning to support the ability to predict and offer a best response to a customer inquiry based on analysis of historical data from either transactional enterprise systems, or external data stores. This is expanding by NLP to seek near perfect grammatical recognition of voice, text or even gesture input by the user.
- **Digital Assistant/Avatar program:** Sutherland is one of the very few providers with a dedicated Digital Assistant/Avatar program that was brought under Sutherland Labs in July 2016. It is integrated and aligned with "Design Thinking" program to accelerate innovation and time-to-market. Currently, there are 10 digital assistant and avatar experts in design, as well as deployment. Furthermore, a 25+ CoE engineering team in Chennai. According to Sutherland, demand for digital agents is driving demand for automation (via API or Robotics).
- **Embracing Design Thinking:** Sutherland is embracing Design Thinking to support clients that have a sense of the challenges but are not able to frame opportunities to approach them successfully. Through Design Thinking methodologies and benchmarking analysis, Sutherland is able to prioritize processes, metrics, and KPIs for success and develop pilot programs or implementation strategy.

Challenges

- **Regaining mindshare:** Sutherland needs to undertake efforts to regain the thought leadership it held in the early days of RPA. The Digital Assistant/Avatar program providers a platform to shift the emphasis more to front-office activities. HfS would encourage Sutherland to embracing the notion of the OneOffice thus linking up front- and back-office activities.
- **Investments in marketing and stakeholder management:** As the supply side is building out IA capabilities at an astounding pace, Sutherland needs to pivot it capabilities and ambition in this fast-evolving ecosystem. It needs to demonstrate the achievements of the early deployments but also give clients a sense of the future state of their processes, as well as guidance on the transformation of knowledge work.

Relevant Acquisitions/Partnerships

Partnerships include:

- UiPath
- True Image Interactive (GetAbby)
- Edge Technologies
- MongoDB
- jSonar
- One Network Enterprises (ONE)
- ANSWR

Key Clients

Sutherland works with clients across industry sectors:

- Top US mobility provider
- Online retailer
- Software company
- US healthcare alliance
- OEM hardware company
- US enterprise software company
- Global online transportation network company
- Multinational technology company
- Ecommerce company
- US technology company

Operations

Geographic footprint and scale of the Intelligent Automation practice:

Sutherland Global Services formed an Innovation and Transformation practice focused on Finance & Accounting automation in January of 2015, followed by the formation of the global RPA Center of Excellence in early 2016. In July 2016, Sutherland Global Services moved to the Digital Assistant/Avatar program under Sutherland Labs to integrate and align all its Intelligent Automation initiatives and programs with the "Design Thinking" program to accelerate innovation and time-to-market.

There are 30+ RPA experts in most customer regions and 10+ avatar/digital assistant experts.

Technology Tools and Platforms

- **SCAN:** Sutherland Customer Analytics Network (Core Collaboration Platform)
- **SCAN 1080:** Multi-Dimensional Analytics Platform
- **SCAN 360:** Intentional Omni-Channel Customer Engagement Platform
- **SCAN BLM/SCAN ONE:** Revenue Cycle and Supply Chain Management Platform
- **SCAN PCMH/SmartHealthConnect:** Healthcare Collaboration and Analytics Platform
- **SCAN IOT** – Cybersecurity Analytics Platform for Internet of Things
- **SmartLeap:** Intelligent Support Platform for PC/MAC
- **SmartLeap:** Mobile – Intelligent Support Platform for Smartphones (Android/IOS)
- **SmartLeap™ IOT:** Intelligent Support Platform for Internet of Things

HfS BLUEPRINT REPORTS

Symphony Ventures

High Performer

Leading specialist consultancy driving holistic approach toward multidisciplinary transformation

Symphony
Orchestrating the world's work

Blueprint Leading Highlights

- Vision for and investment in the evolution of IA
- Increases value for the client over the contract life cycle
- Integrates process and organizational consulting
- Works with clients to guarantee outcomes

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Strengths

- **Robust process methodology:** Symphony has developed its SAVO methodology that is driving change management, governance, and education in a holistic strategy for IA. Clients endorse the robustness of methodology and delivery. Symphony's vision is evolve to a multi-disciplinary transformation capability.
- **Expanding offering toward Robotic BPO:** Evolving from a more consultative approach, Symphony is extending its offerings towards notions of Robotic BPO to support human exception and expert processes, providing a shared object library as well as building out process apps as a service.
- **Technological capabilities of key personnel:** Some clients referred to the strong technical knowledge of Symphony's COO with the only limiting factor that "he can't be cloned." Strong endorsement for the Symphony's team stemming largely from their time as RPA leads at Sutherland.
- **Tool agnostic transformation:** Symphony does not work with a platform that is wedded to specific tools and technologies. This is aligned with its more consultative approach to IA.
- **Expanding to cognitive and AI:** Symphony is in the process of setting up an AI Innovation Lab. By leveraging tools, such as Celaton or RAVN, the capabilities are being driven more into unstructured data scenarios. Furthermore, Symphony is doing PoCs with Virtual Agents for HR processes.
- **Robust nearshore capabilities:** Clients cite the technical capabilities of Symphony's nearshore team in Poland as strong.

Challenges

- **Overarching thought leadership:** Organizations struggle imagining the direction of travel for their processes. HfS would encourage Symphony to leverage its Vision Workshops that ideate ideal future states of process into a broader thought leadership.
- **Scaling up and flexibility of personnel:** Clients acknowledge the strong technical capabilities, but there are concernd about bandwidth issues and the prioritization of resources that apply to all pure plays. This is of particular concern in view of Symphony's ambitions to aggressively scale up and compete with BPO providers.
- **Communication:** While Symphony is aiming to disrupt BPO providers, some clients call out communication problems that are common across global sourcing setups. At times, this gets exacerbated through the limited bandwidth of a start-up.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- Celaton
- Kryon Systems
- NICE
- RAVN
- UiPath

Key Clients

Symphony works with clients across industry sectors:

- World's largest services firm
- World's largest logistics firm
- Major US bank
- Several of the largest US healthcare firms
- Global entertainment studio
- Global auto-parts supplier
- 2nd largest police force
- Largest UK adult social care firm
- 2 of 3 top talent acquisition firms
- 2 of the Big 4 consultancies

Operations

Geographic footprint and scale of the Intelligent Automation practice

The total team consists of 57 FTEs of whom 23 FTEs are based at Symphony's Service Delivery Center in Krakow, and another 34 are US- and UK-based consultants, project managers and directors, who are involved on a day-to-day basis with clients.

Symphony has conducted projects for clients across the US, the UK, Europe, China, Latin America, and India.

Technology Tools and Platforms

- **Consulting:**
  - Vision Workshops – design thinking and senior consensus building
  - Future of Work Assessments – strategy development and RPA business case
  - Center of Excellence Design
- **Implementation**
  - Proof of Technologies
  - Proof of Concepts
  - Pilots and Scaling
- **Managed Services**
  - Monitoring
  - Maintenance
  - Support
  - R-BPO – alternative to third-party BPO offerings

HfS BLUEPRINT REPORTS

Syntel

High Performer

Challenger organization driving holistic approach to Intelligent Automation, aiming to disrupt the market

Blueprint Leading Highlights
• Tool and platform strategy for IA • Vision for and investments in the evolution of IA • Works with clients to integrate IA into their delivery capabilities • Scale and repeatability of deployments

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Strengths

- **Embedding Intelligent Automation in digital vision:** Syntel's SyntBot IA platform is embedded in their Managed Services strategy and driver broader Digital Transformation for clients. SyntBots stand out as an early example of a holistic IA platform. However, it has to demonstrate its expanding capabilities as the market is building out assets at an astounding pace.
- **Holistic platform approach:** Syntel's SyntBots automation platform is well aligned with HfS's notion of Intelligent Automation and thus provides an example of a holistic approach to process automation, from simple scripting up to automated DevOps and Autonomics. The fact that SyntBots leverages a library of industry-specific business cases, test data, business rules, and other components means it was designed to be inherently scalable, with these reusable libraries coming to bear at different points within the client enterprise.
- **Willingness to be a challenger:** Syntel is willing to commit to outcome-based SLAs, often domain led. Thus, Syntel is willing to take on a challenger position taking advantage of its comparatively low installed base. The includes committing to cost savings up front, for instance, where clients had maximized efficiencies and savings from labor arbitrage–based models.
- **Deep entrenchment with marquee clients:** With marquee clients, Syntel has achieved long-running, deep engagements in IA. This references the robustness and scale of the SyntBots platform. The strongest traction for SyntBots is on the DevOps side.

Challenges

- **Brand equity, access to stakeholders:** Although Syntel is willing to be a challenger, it should invest in initiatives to boost its brand equity to get broader access to stakeholder discussions.
- **Over arching thought leadership:** As with brand equity, HfS would encourage Syntel to build out narratives that help clients imagining the future of their processes. In particular, this should be extended to the notions of a virtual workforce.
- **Getting entrenched in RPA-led discussions:** Syntel is not part of the more RPA-centric discussions. In particular, as the RPA tools sets are also deployed in IT-centric scenarios, Syntel should broaden its go-to-market.
- **Scaling out:** The market development for IA is accelerating strongly. Thus, Syntel has to demonstrate expanded capabilities, such as Artificial Intelligence and Virtual Agents.

Relevant Acquisitions/Partnerships

Syntel pursues a proprietary approach to IA tools.

Key Clients

Syntel works with clients across industry sectors:

- Global financial services company
- Large investment company
- US business service company
- Global logistics company
- Large insurance company
- Large insurance company
- Large financial services company
- Large US insurance company
- Investment management company

Operations

Geographic footprint and scale of the Intelligent Automation practice:

SyntBots currently is enabled by approximately 300 associates on the platform build and 4,500+ SyntBots® Certified Professionals for the customer value design and implementation.

Syntel's Managed Services Organization (MSO) drives the development of SyntBots. The team closely works with different industry vertical experts to develop and maintain the industry-wise automation blueprint.

Technology Tools and Platforms

- **SyntBots for Process:** Includes Pattern Recognition, NLP Extraction, Automated Process Modelling, Vertical Jumpstart Library, Operational Analytics, Operator Recording, Direct Leverage for Regression Testing
- **SyntBots for DevOps:** includes Automated Testing, Environment Provisioning, Service Virtualization, Unit Test Scripts, Governance, Requirements
- **SyntBots for IT Operations:** Transition Recording, Ticket Analysis, Process Modelling, Pattern Recognition, Deep Connect, Granular Building Blocks to Learn, Governance
- **SyntBots for Modernization**: Inventory Analysis, Rule Extraction, Automated Migration, Application Uplift

TCS

High Performer

Leading global systems integrator with strong focus on proprietary platforms

TATA CONSULTANCY SERVICES

Blueprint Leading Highlights

- Availability of testing services
- Increases value for client over contract life cycle
- Vision for and investment in the evolution of IA
- Works with clients to guarantee outcomes
- Actual delivery of services

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Strengths

- **Focusing on value, not just top line:** Clients are pleased with the way TCS proactively suggests innovation and does not just try to reduce headcount. This is reinforced by perceptions of being a strategic partner who does not let clients down. Furthermore, TCS is seen by clients as very capable of working in a partner ecosystem while providing sound sector best practices.
- **Strong focus on proprietary IP**: As part of a product-led service model, TCS is focusing on proprietary IP. The neural network ignio is the flagship product that is being championed by its Digitate business units. The approach is largely based on OpenSource components; therefore, HfS hasn't come across suggestions of vendor lock-in.
- **Focal point ignio**: The focal point of TCS IA activities is the ignio neural network that is similar in term of capabilities to Arago's HIRO platform. The differentiation is that TCS is moving many point solutions on the ignio platform. This includes developing many new industry-specific solutions on ignio, with a focus on business operations.
- **Testing a "door opener":** Testing services are a door opener for new logo pursuits. TCS' 360 Degree Assurance is an early offering based on cognitive computing. TCS has the ambition to evolve it into self-healing adaptive Assurance ecosystem underpinned by machine learning and Artificial Intelligence. Use cases include real-time Assurance Analytics, test suite optimization that runs on natural language processing algorithms, adaptive neural networks (other than Ignio), and supervised learning.

Challenges

- **Investments in marketing:** Although clients point to robust delivery, the narrative on IA and TCS capabilities should be enhanced. The migration of point solutions on ignio has been barely conveyed. Similarly, the narrative around RPA is not fully aligned with stakeholder expectations. Similarly, TCS should invest in overarching thought leadership and a broader vision of what IA is meant to achieve. This could be expanded to notions of a virtual workforce.
- **Organizational issues:** Although TCS is conscious to overcome organizational stovepipes as part of IA rollouts, its Digitate business unit has to demonstrate how it aligns with service delivery. HfS is not convinced "services-as-software" and a product led services model are the best to way to position IA
- **Better planning of delivery teams:** Some clients are concerned about the frequent staff changes on projects. They would like to see better planning and improved communications. Communication in general appears to be an area in which TCS could improve.

Relevant Acquisitions/Partnerships

TCS focuses on proprietary tools. Although it uses some third-party tools pragmatically, no formalized partnerships have been concluded.

Key Clients

TCS works with clients across industry sectors:

- Citibank
- American Express
- ABN Nationwide Building Society
- Nielsen
- Cummins
- Marks & Spencer's
- Woolworths
- HP
- Hawaiian Airlines
- AGL Energy

Operations

Geographic footprint and scale of the Intelligent Automation practice

TCS approach to IA practice is driven by client, domain, and organization requirement. There are specialized units across organization which is set for specialized industry automation requirement (e.g., Engineering Automation practice or Mine Automation and Remote Operations Centre). The other type of automation practice includes RPA practice or TCS's Batch and Workload Automation Services that caters to broader automation service requirement.

Digitate is a TCS venture, and is modeled like a Silicon Valley start-up with more than 400 employees. Digitate targets Global Fortune 2000 enterprises with a dedicated sales force and professional services consultants in each of the target geographies.

Technology Tools and Platforms

- **Ignio:** TCS's Autonomics platform has the potential of two core capabilities native to the platform. The first was to manage business and IT operations autonomously, and the second was a powerful scenario planning, "what if" modeling capability to understand impacts on the IT and process environment over time. The first solution built on the platform is for "Enterprise IT operations."
- **Broad set of RPA components:** In association with their R&D lab, TCS has developed more than 70 robot components, such as an image parsing and processing program, a redaction tool, a sentiment analyzer, a neural search algorithm, and an event scheduler.
- **360 Degree Assurance:** Powered by AI, the TCS 360 Degree Assurance platform provides contextual and pragmatic inferences and insights into application quality. These insights are based on the systemic and transactional data acquired from Dev, QA, and Ops processes.

HfS BLUEPRINT REPORTS

Tech Mahindra

Leading global system integrator leapfrogging development with a holistic automation approach

High Performer

Blueprint Leading Highlights
• Tool and platform strategy for IA • Vision for and investments in the evolution of IA • Flexibility to provide end-to-end and point solutions for IA • Approach to apply IA across organizational boundaries

PLAN
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OPERATE
OPTIMIZE

Strengths

- **Holistic automation approach:** Tech Mahindra's AQT (Automation, Quality, Time), Automation Framework that consolidates automation platforms, practices, and tools underpins a holistic and tool-agnostic approach. Although proprietary tools are the preferred route, Tech Mahindra is pragmatic about using leading third-party tools. The framework leverages synergies across traditional organizational boundaries.
- **Driving service orchestration**: Underpinning their holistic approach is the strategy of standardizing delivery on ServiceNow, deploying Cortex as the orchestration engine, and then linking up to the plethora of IA. The orchestration capabilities are further enhanced by FixStream Meridian, a single pane of glass view for application and infrastructure operations.
- **Broad set of proprietary automation capabilities:** The IP is among the broadest in the industry. Tech Mahindra needs to demonstrate use cases and client examples for this to generate broader traction.
- **Set up for scale**: The broad IP, but also a change in the balanced scorecard for its executives stipulating percentages of automation projects, sets up Tech Mahindra well for scale although its projects are still in ramp-up mode.
- **Broad set of marquee clients:** Despite being comparatively late in automation, Tech Mahindra can reference marquee clients demonstrating the viability of its automation strategy.

Challenges

- **Overarching thought leadership and vision:** As Tech Mahindra is comparatively late in automation, it should build out an overarching thought leadership depicting the direction of travel for clients, as well as the transformation of knowledge work.
- **Getting access to stakeholders:**, Stakeholders tend to gravitate to providers with an earlier and bigger visibility. Thus, a combination of marketing and dedicated stakeholder management is required.
- **Overcoming perceptions of overexposure on telecoms:** The flip side of Tech Mahindra's strength in telecom and media is the lack of awareness of its broader capabilities in other verticals. IA provides an opportunity to mitigate those concerns
- **Expanding capabilities into virtual agents**: While Tech Mahindra is starting PoC with Amelia, HfS encourages and expects the logical evolution of its automation capabilities into Virtual Agents.

Relevant Acquisitions/Partnerships

Tech Mahindra has a broad set of partnerships, including:

- Blue Prism
- Automation Anywhere
- UiPath
- IPsoft
- Cortex
- ServiceNow
- IBM Watson

Key Clients

Tech Mahindra works with clients across industry sectors:

- More provider telecommunications services
- Global telecommunications provider
- Major UK telecom
- Major HR consulting firm
- Large US telecom
- Global aviation manufactures
- Global airline
- Leading telecommunications and media company
- UK mobile operator
- European IT and telecommunications retailer
- Global CPG major
- Canadian bank

Operations

Geographic footprint and scale of the Intelligent Automation practice

The IA Practice comprises of a team of 300 associates. 200 are centrally invested in the Center for Automation Technologies and another 100 from various competences and start-ups that Tech Mahindra is funding.

In addition, there are more than 250 dedicated Automation leads and Commandos who are part of the Integrated Business Groups (IBG) and Competency Delivery Groups (CDG) that help drive Automation initiatives in customer deliveries.

The Center for Automation Technologies (CAT) is responsible for the IA development across the organization.

Technology Tools and Platforms

- **Tech Mahindra SureSmart**, which is a collection of Automation Platforms and tools, promotes increased automation across all the horizontal service lines.
- **TACTiX**: AI platform providing capabilities to build cognitive applications. TACTiX uses natural language processing and machine learning techniques to analyze data from a variety of sources and provide actionable intelligence. This can be extended to industry solutions.
- **UNO**: RPA solutions for desktop unification, front- and back-office automation
- **CUBES**: Application, infrastructure, and network support and operations solutions with Intelligent automation. TechM Automation Blocks for IT Process automation
- **FixStream Meridian**: IT Operations Analytics (ITOA) Platform
- **Epselon**: Change analytics Platform for SAP and Oracle implementations, Upgrade, and AMS services
- **PRISM**: Predictive Analytics platform for various domains

thoughtonomy

High Performer

Leading pure play driving holistic approach toward multidisciplinary transformation

thoughtonomy™
your virtual workforce

Blueprint Leading Highlights

- Increases value for the client over contract life cycle
- Scale and repeatability of deployments
- Works with clients to integrate IA into their delivery capabilities
- Works with clients to guarantee outcomes

PLAN

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Strengths

- **Strong thought leadership:** As one of the pioneers in IA, thoughtonomy is perceived as one of the key thought leaders educating the market. Its leadership team is active and visible on the key automation events. Client appreciate the contributions to PoCs and business case development. Similarly, thoughtonomy is often used as a sounding board for automation initiatives.
- **Focus on Virtual Workforce platform**: Thoughtonomy recognized that one of the more critical barriers to delivering automation was the level of change required to implement new technologies into an existing enterprise estate. As a result, they selected RPA as the execution layer of the platform given the inherent capabilities to deliver non-disruptive automation by interacting with existing applications at the user interface. Blue Prism was chosen as the main technology to drive the buildout of the platform. On top of the execution layer, thoughtonomy has added functionalities including load balancing, dynamic self-scheduling, autoscaling, and Autonomics, as well as a customizable web-based portal.
- **Flexibility**: Clients are positive about the flexibility to move resources around, even in instances where clients were responsible for the bottleneck.
- **Broad set of marquee clients:** thoughtonomy stands out by having a broad number of marque clients. In particular, thoughtonomy has enabled fast followers on IA, such as Atos, CGI, and Fujitsu to ramp up their delivery structures.
- **Technology:** Although thoughtonomy is a strong Blue Prism partner, its platform includes a number of complementary technologies, an extensible architecture, and defined development roadmap to accommodate new and emerging functionality.

Challenges

- **Overarching thought leadership:** Although thoughtonomy is a strong thought leader on the specifics of RPA and business process–centric scenarios, HfS would encourage thoughtonomy to extend that effort to depict a broader vision to help clients with the future state of processes. In particular, thoughtonomy should expand on the notion of a virtual workforce as part of the broader transformation of knowledge work.
- **Expand platform to machine learning and cognitive computing:** As the market is accelerating in building out capabilities, HfS would like to see a stronger focus on machine learning and broader cognitive capabilities.
- **Scale and flexibility of resources:** Although clients are pleased with the commitment of thoughtonomy, there are concerns that any major new client win could lead to stretching of resources.

Relevant Acquisitions/Partnerships

Partnerships include:

- Blue Prism
- Microsoft
- Celaton

Go-to-market partnerships include:

- Atos
- CGI
- Fujitsu
- Unite BT
- L&T Infotech
- Meta-Byte UAE
- Business Systems

Key Clients

Thoughtonomy works with clients across industry sectors:

- Atos
- CGI
- Fujitsu
- Computacenter
- Southwark Borough Council
- FTSE 100 asset management firm
- Large global retail bank
- Big 4 consultancy
- Pensions provider
- Central government agency
- Utility provider
- International telecom

Operations

Geographic footprint and scale of the Intelligent Automation practice:

There are 31 FTEs predominantly in the UK and in Continental Europe.

The global SaaS platform and delivery model are available in more than 140 countries and are currently deployed on 4 continents.

Thoughtonomy is an international partner and reseller network.

Online and classroom training and enablement methodologies and resources develop the skills required to deliver, optimize, and manage the Virtual Workforce.

Technology Tools and Platforms

- **Virtual Workforce Platform:** The platform approach has allowed the incorporation of extended functionality, fully integrated and tested, and provided within a single license and support agreement. Current extensions include SMS and email messaging gateways, OCR and ICR agents, and inSTREAM cognitive processing from Celaton
- **Object library:** The object library is a collection of automated actions, tasks, components, and full processes that are made available to the thoughtonomy user community. Objects created and developed by thoughtonomy for interactions with standard applications, common tasks (such as address validation, data manipulation), and some full processes (such as resetting application passwords) are stored in a meta-tagged, searchable document repository.
- **Partner portal:** The thoughtonomy portal is available to all clients and partners and provides access to a management console and a broad set of operating dashboards and information helpful in building, deploying, and managing the Virtual Workforce.

HfS BLUEPRINT REPORTS

Virtual Operations

Leading pure play driving holistic approach to IA at scale

High Performer

Blueprint Leading Highlights	Strengths	Challenges
• Works with clients to guarantee outcomes • Trains clients in all aspects of Process Automation to build COE and delivery capabilities • Works with clients to integrate IA into their delivery capabilities • Increases value for clients of contract lifecycle • Integration of process and organization consulting capabilities **PLAN** **IMPLEMENT** **MANAGE** **OPERATE** **OPTIMIZE**	• **Pioneer of RPA:** Virtual Operations (VO) has been one of the pioneers of RPA and deserves credit for educating the market. After VO's US team had been poached by Cognizant, the emphasis shifted toward strategy and delivery rather than marketing. • **Delivering at scale:** VO is focused on large organizations and thus delivers at scale**.** VO typically adopts a 5, 50, 500 approach. Where 5 are pilot automations (which go into production post-testing), 50 is industrializing the automation programme, building the infrastructure, the CoE, introducing change management and governance disciplines, etc., and 500 processes is big bang scenario. Big bang without the prior stages is very high risk/almost impossible to achieve**.** • **Strong emphasis on empowering clients with IA:** VO focuses to build joint agility teams with their clients by leveraging their RPA Academy . For very large (Fortune 100) companies they start with 80% of the automation team being VO and this is reduced to ~10% within two years. VO do not look at automation projects simply to reduce FTE's nor do they seek to build end to end horizontal Automation Platforms (in their view this is ideological but low impact). Instead VO looks at Automation to solve business problems, (e.g., divestment, capital adequacy, inventory levels, container fill levels and speed of container movement, new services, competitive advantage, customer satisfaction, staff augmentation, standardization post acquisition, divestiture and acquisition and so on). • **Focus on process and organizational consulting**: VO always designs and builds a TOM (containing the Automation CoE) which best serves the clients' own delivery capabilities and requirements. They have recently developed a highly specialised training course to support RPA-enabled Process Transformation	• **Over arching thought leadership and vision:** While VO stands out due to its thought leadership on intelligent process and automation capabilities, and excels at preparing clients for strategic automation, VO could further build out narratives to help future clients in that respect and also expand on the notion of virtual workforce. • **Competition with management consultancies:** The Big 4 and other management consultancies are starting to gain traction on IA. At the same time the market is full of rumour that the Big 4 might acquires the pure plays. VO needs both, ring-fence its competitive advantage but also give clients clarity for longer and complex deployments. • **Scale and flexibility of resources:** While clients are pleased with the commitment , experience and service excellence of VO, there may be concerns that any major new client win could lead to stretching resources, although their leveraged training model has allowed them to scale quickly. Furthermore as the market evolves toward Cognitive and AI, VO will need to demonstrate more of their undoubted credentials.

Relevant Acquisitions/Partnerships	Key Clients	Operations	Technology Tools and Platforms
Partnerships include: • UiPath • Blue Prism • OpenSpan PEGA • AutomationAnywhere • RAVN, • 360 GlobalNet • 9lenses • Celaton	Virtual Operations works with clients across industry sectors. Most significantly: Financial Services • Global Insurance Co – Developed automation strategy, delivered methodology, trained client staff in assessments and IPA delivery • UK bank – Built capability for a strategic low-risk, high impact Automation Program FMCG • Fortune 50 FMCG company - Global strategy, training, delivery, change and transformation BPO • Global BPO provider - Close alliance to enhance their Intelligent Automation Service Offerings and support client deployment • Global High Tech provider – strategy, RPA program management, training, COE design Legal • Magic Circle Firm - Implementation of AI tool for invoice processing	**Geographic footprint and scale of the Intelligent Automation practice** • There are 27 employees and 5 associates (28 are client facing delivery personnel). • VO has one of the largest Blue Prism teams in the world. • VO has built a 24/7 follow the sun automation support and maintenance capability. Resources based in Manila, Americas and UK	• Industry Specific Solutions (e.g., know your client, supply chain transformation, money laundering, Capital Adequacy, Law firm CMS optimisation, billing optimisation) • End to end RPA Methodology for Strategy, Program Management, Delivery and COE Implementation • Opportunity Assessment Toolkit to identify and prioritise suitability of processes for automation • RPA and AI integration solutions • RPA Training Academy – runs monthly for assessors and developers

Wipro

High Performer

Global system integrator with holistic approach to IA focused on the HOLMES framework

Blueprint Leading Highlights

- Tool and platform strategy
- Leverage of Design Thinking
- Vision for and investment in the evolution of IA
- Actual delivery of services
- Works with clients to guarantee outcomes

PLAN

IMPLEMENT

MANAGE

OPERATE

OPTIMIZE

Strengths

- **Early-mover advantage:** HOLMES was one of the first broad IA frameworks in the market, thus achieving expansive mindshare. The specifics of its technology portfolio, including natural language processing, machine learning, knowledge virtualization, neural networks, semantics, and analytics, may be more aggressively promoted in the market.
- **Careful buildout of vertical use cases:** Wipro is carefully building capabilities around specific use cases in order to demonstrate robust delivery. An initial strong focus is on KYC and the broader BSFI vertical. Other use cases include Case Law Management, FACTA Tax Forms, and Contract Processing. However, the Bot Library contains an impressive array of assets across the entire IA Continuum. Examples are the Natural Interaction Bot, Cognitive Insights, and Code Generation Bot. Other innovations include a Classifier Bot deployed on AWS that can be integrated into ServiceNow.
- **Expanding generic Automation capabilities:** Demonstrating a holistic approach to IA, Wipro is building IA assets on top of more generic automation platforms, such as BASE, ServiceNXT, and FAST. This approach is expanded to more verticalized use cases.
- **Holistic approach to IA and RPA:** Wipro is championing a consultative approach to IA with a digitized assessment during RFPs leveraging its Insightix solution. Similarly, RPA is being championed through a broad Enterprise Operations Transformation framework.
- **Leverage of Design Thinking:** Wipro advocates joint discovery and development with customers in its new BOT Studio. This approach also focuses on external collaboration with start-ups.

Challenges

- **HOLMES is being undersold:** HOLMES was one of the first broad automation frameworks on the market. However, the marketing and go-to-market were underfunded and too cautious. The narratives don't reflect the deep capabilities, including neural networks and NLP, but Wipro is focusing on improvising this. More importantly, the expansive set of assets in the Bot Library are not well communicated. Too much emphasis has been placed on the KYC use case thus confining HOLMES largely to business process scenarios.
- **Clarify differences between and integration in broader automation assets**: Wipro is focusing on improvising this.
- **Guidance on applicability of innovation:** Although clients are pleased with the quality of Wipro's automation teams, they would encourage more guidance on the applicability of innovation aligned with customers' innovation journey.

Relevant Acquisitions/Partnerships

Partnerships include:

- Kofax
- NICE
- AutomationAnywhere
- Blue Prism
- UiPath
- WorkFusion
- OpenSpan
- Vicarious

Key Clients

Wipro works with clients across industry sectors:

- Leading global financial services company
- Worldwide financial services major based in US
- Global consumer electronics major
- Leading European multinational financial services firm
- The largest personal bank in US
- Leading Australian telecom provider
- Leading British telecom provider
- Global leading construction firm
- Leading bank in continental Europe
- Leading Australian insurer
- UK-based energy major
- Leading Pharma company in Japan
- Global leading Media firm
- Leading British energy major

Operations

Geographic footprint and scale of the Intelligent Automation practice:

Hyper Automation team has 900+ FTEs spread across the Wipro HOLMES Platform team and the Automation Delivery team. The core team is based in Bangalore. Nearly 90% of the Hyper Automation team is offshore:

- 10% architects and data scientists
- 10% domain experts with expertise around industry specific technologies
- 20% developers who support engineering of various automation assets
- 10% delivery enablement team
- 5% change coaches
- 5% go-to-market customer solutions team
- 40% mixed team of developers, team leads, business analysts, architects, and managers focused on customizations and rollout

Technology Tools and Platforms

- **Bot Library** (Curated Bots): Standardized and productionized bots ready for rapid deployment to cater to pre-identified use cases. These bots from the Wipro HOLMES Bot Library require minimal customization, e.g., eKYC (validating customer information in banks), Classifier Bot (NLP-based ticket categorization, allocation, and resolution).
- **Bot Studio** (Co-created Bots): collaboration with customers on joint discovery and development of bots targeted at niche use cases. These are engineered in the HOLMES Bot Studio and over a period of time, enriches the HOLMES Bot Library (e.g., digitization of engineering drawings for a leading manufacturing organization).
- **Automation Marketplace**: Evolving vision for the future of automation delivery is to enable the customer to select and consume the bots from the WIPRO HOLMES Bot Library based on an industrialized consumption model.

Xerox

High Performer

Leading pure play BPO evolving IA from a rich history of productivity tools

Blueprint Leading Highlights
• Tool and platform strategy for IA delivery • Vision for and investments in the evolution of IA • Scale and repeatability of deployments • Actual delivery of services

PLAN
IMPLEMENT
MANAGE
OPERATE
OPTIMIZE

Strengths

- **Leverage of heritage and scale:** As one of the largest BPO providers globally, Xerox can leverage a wealth of client relationships. In particular Xerox has a strong traction in healthcare around the Medicaid program. On the flip side, however, Xerox has also much to lose from managing the transition from FTE based contracts to the automation led paradigm. Thus, being a fast follower is a prudent approach from commercial point of view. The divestment of its ITO business also allow Xerox to evaluate new ways of partnering with the leading system integrators.
- **Wealth and evolution of productivity tools:** For Xerox IA is an evolution of its vast set of productivity tools. Aligned with HfS notion of the IA Continuum these tools are being integrated with the emerging RPA capabilities. Thus, the Automation Server is a Business Process Manager (BPM) which orchestrates all of the software robots. Its business process workflow provides monitoring, reporting and real-time control all with a streamlined user-interface.
- **Strong leadership of innovation team:** Xerox has a strong innovation leadership that is seen among the thought leaders on the emerging notion of IA. Yet, the technical capabilities need to be demonstrated in broader stakeholder engagements.
- **In-house training:** Xerox has established a training academy for automation that serves and perpetuates the strategic vision of automation within Xerox. Comprehensive in-person and virtual training includes boot camps, videos, a training portal, support desk and mentoring.

Challenges

- **Demonstrate the proprietary capabilities:** As with all proprietary approaches, Xerox needs to demonstrate its IA capabilities against the leading third party tools that are used as reference points by external stakeholders. In general Xerox should evaluate investing more in marketing around its IA capabilities.
- **Not joined up with consulting and program management:** Some clients suggest that Xerox is not always fully joined up with broader consulting initiatives and program management. Thus, reinforcement of stakeholder management would mitigate some of those concerns.
- **Driving it across sales:** Some clients suggest that Xerox' IA strategy is not always fully understood or conveyed by its sales teams. As a result the go-to-market can come across as more tactical than strategic. The build out of the AAI might remedy some of these issues.

Relevant Acquisitions/Partnerships

Xerox pursues a proprietary IA strategy.

Key Clients

Xerox works with clients across industry sectors:

- Large Auto Manufacturer
- Large State Health Care Provider
- Insurance Cover Broker Group
- MTN South Africa
- European Digital Bank
- Large Shipping Company
- Global Technology Provider
- State Medicaid Provider
- Large Dental Insurance Group

Operations

Geographic footprint and scale of the Intelligent Automation practice:

Xerox has been providing Robotic Process Automation since 2008. Xerox formed the new Automation, Analytics and Innovation (AAI) Capability in January 2016

Xerox has More than 500 dedicated experienced professionals in development, testing, integration, implementation, PMO, maintenance and support for Intelligent Automation. They also leverage a team of several hundred more professionals throughout the organization for strategy, marketing and innovation.

Locations in Australia, UK, Guatemala, France, India, Ireland, New Zealand, Romania, South Africa, US

Technology Tools and Platforms

Xerox Automation Suite comprising of:

- ***Xerox Automation Server:*** *This Automation Server is a Business Process Manager (BPM) which orchestrates all of the software robots. Its powerful business process workflow provides monitoring, reporting and real-time control all with a streamlined user-interface*
- ***Xerox Automated Intelligence:*** *Xerox developed this general purpose software to mimic human actions by routing or processing data based on specific rules. The software works with any data source (i.e. emails, spreadsheets) and can be programmed to perform simple routines to complex processes.*
- ***Voice Assistant****: Automated voice assistance which recognizes complex, contextual and abstract vocal inquiries.*
- ***Machine Learning****: Cognitive learning platform that analyses data to develop the intelligence it needs to understand, diagnose and solve problems in real-time.*

CGI

High Potential

Global system integrator accelerating journey toward Intelligent Automation

CGI

Blueprint Leading Highlights

- Works with clients to guarantee outcomes
- Increases value over the contract life cycle
- Testing services available
- Integrates process and organizational consulting

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Strengths

- **CGI uses Thoughtonomy to provide a platform for robust delivery:** By implementing thoughtonomy's Virtual Workforce platform and leveraging their process expertise, CGI is gaining access to a proven delivery platform. The flipside, however, is limiting its ability to offer plug-and-play approaches for different use cases. At the same time, this allows for the deployment of RPA capabilities in AM-centric scenarios.
- **Move to Integrated Operations Center (IOC):** By blending and integrating infrastructure, application management, security, and network operation, CGI is aiming to provide scale and leverage of common IA building blocks, such as Mont'OO and iOOra (CGI proprietary). This provides a platform to move toward a more holistic IA buildout. An integration of BPS capabilities would give CGI an competitive advantage moving forward.
- **IPsoft/IPcenter deployment in the US operation provided available results and lessons learned**: The IPcenter CoE in the US provided a platform to push IA convergence scenarios, i.e., driving self-remediation into business process–centric scenarios and leveraging RPA capabilities in broader application management scenarios. CGI should evaluate expanding those capabilities to broader notions of Cognitive and AI.
- **Integration of IA in broader delivery capabilities:** CGI is integrating IA IP into its Unify360 suite, a secure hybrid IT management platform. Thus, it is moving IA to the heart of its delivery backbone. CGI is planning to develop more proprietary IA IP which will help to scale out services.

Challenges

- **Branding and narratives require rework:** As CGI is late to the IA journey, it needs to align more strongly with the mainstream narratives in the IA discussions. The branding is confusing and largely reduced to RPA and Autonomics scenarios. However, these scenarios lack specific use cases and clarity in argumentation. As the market is accelerating toward building out Cognitive and AI capabilities, CGI needs to adapt its narratives to those requirements.
- **Investments in marketing and stakeholder management**: As CGI is at the beginning of building out IA capabilities, it needs to invest in marketing and broader stakeholder management to gain a seat at the table for IA decision-making, in particular for new logo bids. Thus far, CGI has been absent from those discussions and it requires significant focus and investments. However, HCL and Tech Mahindra are examples of laggards leapfrogging the competition by learning from the insights from the early deployments and moving to holistic IA strategies.

Relevant Acquisitions/Partnerships

Partnerships include:

- UiPath
- Blue Prism
- thoughtonomy
- IPsoft
- Celaton
- Ayehu
- AutomationAnywhere
- IBM Watson

Key Clients

CGI works with clients across industry sectors:

- US federal agencies, e.g., GSA, DHS, EPA
- State Agencies, e.g., State of Michigan, State of Arizona
- Bell Canada
- Large utilities client in Canada
- SNC Lavalin
- HMTCS
- City of Edinburgh Council
- Legal Aid Authority

Operations

Geographic footprint and scale of the Intelligent Automation practice

The Transformation and Automation COE (India) has 250+ FTEs in the Platform and Solutions Group and 150+ FTEs in the Integrated Operations Center.

The US Automation and Tools Group (IPcenter COE) has 20+ FTEs.

The RPA Center of Expertise (Consultancy, Engineering and Hosting) in the UK and the Nordic countries has 25+ FTEs.

Technology Tools and Platforms

- **CGI Mont'OO:** Autonomic event correlation and diagnostic plus analytics
- **CGI iOOra:** combines robotic process (desktop) automation and service orchestration (Infrastructure Management + App Management + Business Process Management)
- **CGI TPM**: Prime portal interface, decision support, and operations control for the management tools platform used in the IT service automation framework
- **CGI One KM**: Knowledge-based platform that provides a suite of tools for incident diagnosis and maintaining a knowledge repository
- **CGI ICE Program:** Expanding digital transformation capabilities to Design Thinking

HfS BLUEPRINT REPORTS

EXL

High Potential

Global pure-play BPO provider, taking challenger positioning, blending Design Thinking with strong analytics and machine learning focus

Blueprint Leading Highlights

- Leverages design thinking
- Provides solutions for actionable and accessible data in IA
- Works with clients to guarantee outcomes
- Increases value for clients over the contract lifecycle

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Strengths

- **Challenger positioning:** EXL is still early in the journey of what they term Advanced Automation and Challenger positioning and in the journey of what they term Advanced Automation and Robotics (AA&R). However, the company sees automation as an opportunity to create new solutions to solve client challenges and is embracing the notion of revenue cannibalization with view of gaining more work from clients. For new logo pursuits, EXL is willing to take on risk where competitors are either cautious or where some of the tool providers demand high fees just got a PoC.
- **Move to consultative approach**: EXL sees opportunities to leverage data, advanced analytics, and process automation to offer innovative ways of doing business, not just RPA task automation and pure cost takeout. A key asset is its EXLerator Framework, which enables a consistent and repeatable methodology for evaluating end-to-end operations and developing customized roadmaps. In addition, it is offering digital consulting services, through the acquisition of Blue Slate. Their Digital BluePRINT leverages RPA, BPM , data, and analytics within EXL's Cognitive Corporation framework. In particular, the integration of RPA into BPM has yielded significant results.
- **Design Thinking**: EXL executives describe Design Thinking as in their DNA with a view to reimagine processes, and have integrated it in the EXLerator Framework 2.0.
- **Differentiation through Analytics**: Analytics is a strong differentiator for EXL. It is pushing domain-specific embedded analytics to transform real-time operational decision-making and management into advance customer relationships to more outcome-based models. However, EXL has yet to embrace a more industrialized way of operations service delivery where broader sets of often unstructured data are being integrated and blended with broader IA capabilities.

Challenges

- **Overarching thought leadership and vision:** Clients are positive and supportive about the way EXL is building out IA capabilities. However, they would encourage EXL to provide a vision of the end goal they should be working toward. Similarly, they would urge guidance on the broader impact on innovation, as well as talent.
- **Embracing cognitive computing:** Although EXL is early in its AA&R journey, its peers are ahead in building out broader AI and cognitive capabilities. This could be mitigated by providing thought leadership on these topics.
- **Impact of revenue model:** Although EXL is bold in embracing revenue cannibalization and outcome-based models, it has not yet demonstrated that it is not hurting the bottom line in the long term.
  Investments in marketing: EXL Is not yet seen as a major player in IA. Marketing and stakeholder engagement could help to mitigate those concerns and the above stated client feedback.

Relevant Acquisitions/Partnerships

Acquisitions include:
- Blue Slate (2014)
- LISS (2016)

Partnerships include:
- Appian
- Automation Anywhere
- Blue Prism
- Celaton
- Hyland
- Nuance
- Microsoft (Cognitive Framework)
- UiPath
- Open source technology frameworks in UI, ML, NLP, and analytics

Key Clients

EXL works with clients across industry sectors:

- Life insurance major
- Group health insurance provider
- Large US conglomerate
- Major utilities provider
- Large travel provider
- Leading online retail company

In addition, EXL Consulting has designed and implemented custom RPA and BPM integrations to optimize healthcare claims in healthcare payers' internal operations.

Operations

Geographic footprint and scale of the Intelligent Automation practice

EXL's AA&R initiative is driven directly by the CIO's office with executive sponsorship from the AA&R Steering Council represented by the CEO, COO, CFO, CTO, and CIO. AA&R CoE is headquartered in Noida with a global footprint. Around 100 FTEs are engaged in solutioning, development, and delivery of AA&R.

In addition, 50 FTEs from EXL Consulting are engaged in projects and solutioning using the Digital Blueprint framework to design and implement advanced automation in clients' business operations.

EXL Analytics' 2,100 data scientists utilize advanced analytics techniques, such as machine learning in analytics services and in the development of proprietary analytics applications.

Technology Tools and Platforms

Analytics products with machine learning:
- **Fraud Analytics solution**: Helps to score claims for propensity fraud, litigation, size of loss, etc., at the FNOL stage to reduce claims indemnity spend.
- **Smart Meter:** Insight generation for managing utilities consumption.
- **Hospital Readmission** predicts the likelihood of 3-day readmission for in-patient visits.

Digitally reimagined business processes:
- **Digitized Claims FNOL:** Digitized process incorporating mobility enabled frontend, embedded analytics for fraud detection and machine learning for exceptions processing.
- **Accounts Payable Exceptions Processing:** Invoice processing solution with embedded machine learning–based exception management and virtual assistants for assisting agents in assisted processing, leading to a faster payables cycle.

Market Wrap-Up and Recommendations

2016 Recommendations: Service Providers

- **Define and fund a holistic automation strategy:** In order to support clients' journeys toward the As-a-Service Economy, providers should accelerate a more holistic automation strategy. Leverage Design Thinking and broader process consulting to reimagine processes rather than using automation as a short-term fix.
- **Make data the centerpiece of your strategy**: An industrial-scale integration of often unstructured data and data curation should form the centerpiece of your strategies. Vertically relevant data will be the key for differentiation and value creation.
- **Be clear about the goals for automation:** Clients need help in imagining the end goal for automation initiatives. Devise communication strategies that go beyond generic "Future of Work" thought leadership by providing specific use cases and processes. Support clients through playing back insights and lessons learned from early deployments.
- **Train and incentivize your salesforce:** Sales is still often disconnected from automation projects. Similar to the early cloud days, Sales personnel need specific training and, even more importantly, an incentive system that encourages the adoption of IA. Build playbooks with elevator pitches for specific use cases. Training needs to be driven equally into the service delivery organization to help identify opportunities for automation.
- **Put the process owner back at center stage:** Especially in business process–centric scenarios, the process owner has to get back to center stage. RPA projects are all too often short-term task automation that might compromise the work of process owners. Facilitate stakeholder and change management on the client side to avoid disruption and antagonism.

2016 Recommendations: Buyers

- **Assess and invest in the transformation of knowledge work:** IA will fundamentally disrupt knowledge work. Generic activities, such as data entry, compliance, and reconciliation, will be largely reduced. At the same time, new skill sets in automation capabilities will be required, and a general shift toward more analytical activities will impact the cost base. Organizations need to adapt their strategies for talent accordingly and develop a clear roadmap.

- **Seek advisory services**: Given the nascent state of the market and thus the lack of broader insights from early deployments, organizations should leverage independent advisory services from management and specialist consultants to move toward realistic business cases. Plan for the M&A of key technologies, in terms of licensing costs and integration issues.

- **Start with use cases and data—not automation tools**: Resist the temptation of claims of cost savings and start with use cases and specific strategies for data curation. This is critical for scaling out projects. Value creation and differentiation will come from the intersection of automated, standardized service delivery and leverage of unstructured data through neural networks, deep learning, and AI.

- **Define and fund an innovation agenda:** Across the board, buyers were underwhelmed by the proactive guidance on innovation by their service providers. You should clarify, define, and fund innovation projects at the outset. Conversely, be realistic in your own expectations when negotiating with providers as the business case has to stack up.

About the Author

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Overview

- Tom Reuner is Research Vice President, Intelligent Automation at HfS. Tom is responsible for driving the HfS research agenda for Intelligent Automation across the whole gamut ranging from RPA to Autonomics to Cognitive Computing and Artificial Intelligence. A key element in Tom's responsibilities is guiding clients and stakeholders on the evolution of Intelligent Automation including the coverage of new players and approaches. Furthermore, he is driving the research on application testing and service management. A central theme for all of his research is the increasing linkages between technological evolution and evolution in the delivery of business processes.

Previous Experience

- Tom's deep understanding of the dynamics of this market comes from having held senior positions with Gartner, Ovum and KPMG Consulting in the UK and with IDC in Germany where his responsibilities ranged from research and consulting to business development. He has always been involved in advising clients on the formulation of strategies, guiding them through methodologies and analytical data and working with clients to develop impactful and actionable insights. Tom is frequently quoted in the leading business and national press, appeared on TV and is a regular presenter at conferences.

Education

- Tom has a PhD in History from the University of Göttingen in Germany.

About HfS Research

HfS Research is The Services Research Company™—the leading analyst authority and global community for business operations and IT services. The firm helps enterprises validate their global operating models with world-class research and peer networking.

HfS Research coined the term The As-a-Service Economy to illustrate the challenges and opportunities facing enterprises needing to re-architect their operations to thrive in an age of digital disruption, while grappling with an increasingly complex global business environment. HfS created the Eight Ideals of Being As-a-Service as a guiding framework to help service buyers and providers address these challenges and seize the initiative.

With specific focus on the digitization of business processes, intelligent automation and outsourcing, HfS has deep industry expertise in healthcare, life sciences, retail, manufacturing, energy, utilities, telecommunications and financial services. HfS uses its groundbreaking Blueprint Methodology™ to evaluate the ability of service and technology providers to innovate and execute the Eight Ideals.

HfS facilitates a thriving and dynamic global community of more than 100,000 active subscribers, which adds richness to its research. In addition, HfS holds several Service Leaders Summits every year, bringing together senior service buyers, providers and technology suppliers in an intimate forum to develop collective recommendations—for the industry and add depth to the firm's research publications and analyst offerings.

Now in its tenth year of publication, HfS Research's acclaimed blog Horses for Sources is the most widely read and trusted destination for unfettered collective insight, research and open debate about sourcing industry issues and developments. Horses for Sources and the HfS network of sites receive more than a million web visits a year.

HfS was named Analyst Firm of the Year for 2016, alongside Gartner and Forrester, by leading analyst observer InfluencerRelations.