

WHAT ARTIFICIAL INTELLIGENCE CAN DO FOR SERVICE PROCESSING



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Companies that have already been investigating robotic process automation over the past year or two will be aware that something new is on the horizon, vying for attention: Artificial Intelligence, or so-called Cognitive Computing, still as of yet relatively unknown and even less implemented, is nonetheless pushing its way onto service delivery agendas as a means of, if not leapfrogging, certainly scaling and leveraging RPA's base capability. But while RPA is close to getting into production internally, AI is still on the drafting table. Nevertheless, the combined opportunities presented by Cognitive, Machine Learning, and Artificial Intelligence herald an even bigger bang than robotics, given their possible impact on integrated decision making.

Artificial Intelligence, though a step beyond robotic processing, is certainly not dependent on the latter, nor even necessarily related, as many practitioners readily agree. For where RPA effectively automates rules-based processes, Artificial Intelligence leverages the capability of machine learning [the ability of computers to learn without being explicitly programmed] to incorporate unstructured data from outside the immediate business environment – and that packs a powerful punch.



Nevertheless, it is early day and many of the people currently assessing its use warn against reading too much into it, too quickly.

So, what characterizes an AI opportunity? How can we better understand the world of Artificial Intelligence by engaging innovative solutions like Cognitive Applications and Machine Learning? And what can we learn from enterprises who are already taking the first steps towards adopting AI?

What Characterizes an AI Opportunity?

Deutsche Post DHL is positioning itself at the early adopter stage of AI, and planning a pilot, this year, in an area that is well-suited to AI – customer query handling. Stefan Wenzel, Finance Project Manager at Deutsche Post DHL, has been dedicating a lot of time to Robotic Process Automation and Artificial Intelligence over the past two years, and sees both as the next era of back-office transformation.

The reason customer queries are a good fit, explains Stefan, is that this covers a fairly large segment, characterized by reading, understanding and logging customer queries; considering the context; and subsequently finding appropriate reason codes and extracting the required information to execute the relevant process steps.

“We quickly recognized that there is a sort of leveraged opportunity to scale up efficiencies here, and we want to get a head start on it,” Stefan explains.



While Deutsche Post’s early conversations with IBM Watson have been fruitful, Stefan and his colleague Marc Käpernick have since expanded the list of potential solution vendors to include more specialized providers. “We’re now looking at cognitive solutions around semantics and text specifically, as that is where we see the greatest AI benefit in customer query resolution for now,” Stefan explains. He plans to issue formal requests for information in February and start a pilot later this year. “We hope to identify future use cases based on the initial pilot results and potentially expand AI within our finance services”, he explains.

The benefits of Artificial Intelligence extend to structuring incoming unstructured data “normally coming from the outside” – and incorporating this into a decision-thread. It’s particularly appropriate, explains Stefan, for processes that are done frequently “but for which you don’t have specific guidelines.” Given sufficient training data, he explains, you can also leverage machine learning to provide cognitive solutions on historical data – for example in logged customer claims.

As a result, AI works well where you already have the required information – historical data – in the system. “It’s well-suited to situations where you are looking for a specific context and to extract data that is required for the subsequent process”, he says. “The data that is processed by an AI solution can be even further analyzed, such as recognizing the emotions of our customers based on their writing style, to hopefully gain additional valuable information to enhance our customer-facing processes over the long-term.”

[See also sidebar: Radical Change Driven by Corporate Infrastructure – and AI].

Feedback learning also comes into play, whereby you look for other sets of training data and incorporate them into the system to drive improved actions. “After a given period of time the machines have sufficient levels of confidence, based on statistical calculations, to take over,” says Stefan.

Opportunities for AI abound in any processing activity where decision-making is contingent on various data sets, whether structured or unstructured, internal or external. Sebastian Zeiss, VP of Automation & Department Development at Deutsche Telekom Technical Services, agrees that customer service, given its typical process characteristics, is a good starting point.

The fact that processes typically involve automatically replying to emails; answering easy queries; supporting call center agents by listening into their calls and providing additional information; and improving IVR functions to actually have a dialog with a customer – all make AI an interesting proposition for Sebastian’s team.

In fact, any customer interaction could be an opportunity, he says: “We are focusing on interactions with a clear scope and a clear set of possible outcomes, as we need to be able to pre-model the process.”

Radical Change Driven by Corporate Infrastructure – and AI

Many of the companies that are today evaluating how to take advantage of the new wave of artificial intelligence are as traditionally bricks-and-mortar as they come. And yet they are recognizing the potential of AI-driven solutions to grow new service offerings – and reinvent part of their operations – for the digital age. Frankly, there may be little choice. While traditional products and services will remain in demand (we hope), significant growth opportunities are developing in brand new spaces. To ensure their slice of the pie, savvy organizations are leveraging technology evangelists to take a leading role in driving automation across world-wide operations.

These opportunities are available today thanks to the shape-shifting potential of new artificial intelligence capabilities. Organizations that have recognized this value are already transitioning from traditional “IT” to “Service Oriented Enterprise” – but the fact nevertheless remains that most companies are not yet industrialized when it comes to their IT department. What is becoming clear, however, is that, today, technology needs to be part of the service proposition and its delivery.

Criteria to Selecting AI Vendors

For each organization evaluating AI vendors, the requirements and decisions will depend on a number of factors, including:

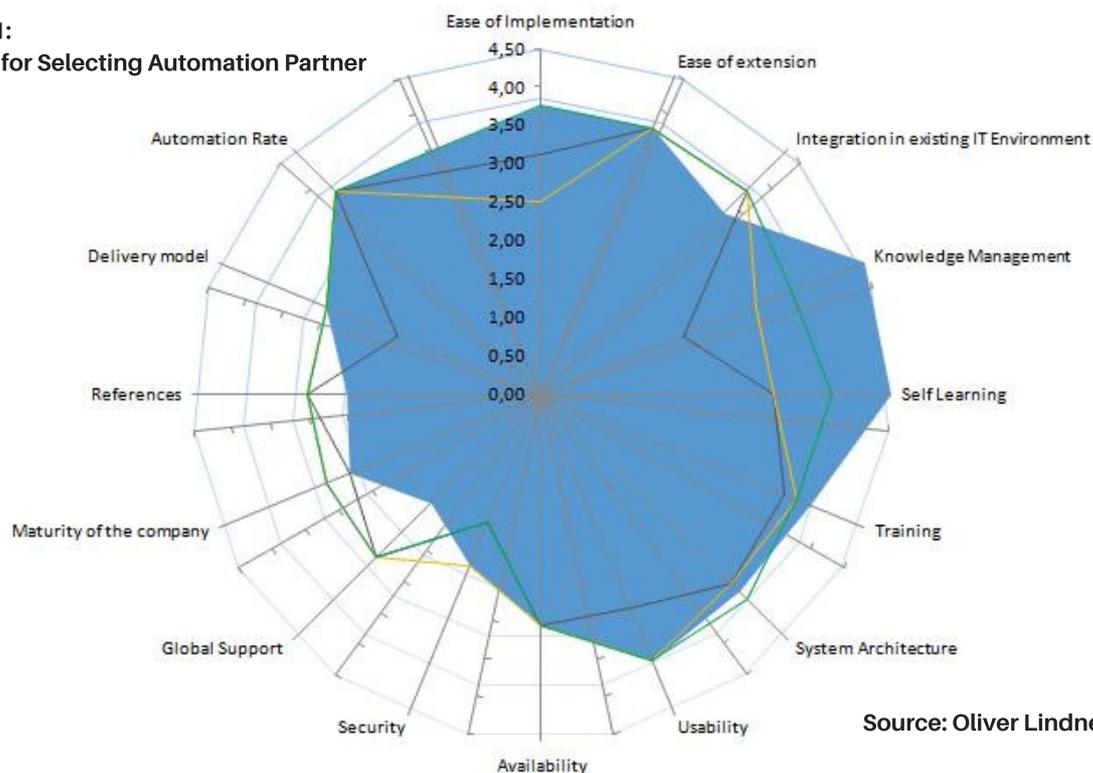
- fit for an identified first use case
- requirement for covering different languages
- complexity of system integration into existing IT environment
- preference for on premise, in cloud, or via managed service/digital outsourcing
- need to build internal knowledge around AI

There is no reason to assume that current RPA vendors are necessarily the best conduit to integrating AI capability, either. In the course of researching this article, only one company was mentioned to the writer as a good provider of both capabilities to date; and most practitioners consider that AI should be evaluated on its own merits, by specialized providers. Deutsche Telekom's Sebastian Zeiss points out the importance of easily "integrating into the corporate infrastructure without having to start a large-scale IT project that might take years."

On the other hand, practitioners like Oliver Lindner, who, in his role of Service Management Strategist, is currently verifying the potential of AI-based RPA at Continental IT, warns that it is misleading to think in terms of "seeking an AI vendor" or looking for products only. Instead, he emphasizes Continental IT's search for an automation partner in the company's quest to succeed with a digital strategy based on preparing for the future.

"We selected a partner that could bring certain Cognitive and AI-enabled solutions to us, to ensure we meet our goals," he explains. "But in terms of what we were looking for, certainly usability ... knowledge ... self-learning – all drove our decision-making criteria [see also Figure 1, below]."

Figure 1:
Criteria for Selecting Automation Partner



Source: Oliver Lindner Continental AG

Problems and Limitations

RPA is already a commodity business but Artificial Intelligence is still very new and there are not yet many adopters, so it's hard to find people with real experience who can support implementations. In addition, some of the current limitations for knowledge driven (Cognitive) automation solutions include insufficient budget to start the innovation, and a lack of knowledge that teams have about their own processes, systems and applications, explains Oliver.

“If you decide on a pure, data-driven machine learning system like Google Deep Mind, your amount of data and the related algorithm represent the limit, it seems. But most companies don't have the minimum of about 5 Petabyte of data required to start. Therefore, we are starting our Artificial Intelligence engagement, with knowledge-driven Robotic Process Automation (ARAGO HIRO). In parallel, we are testing a chat bot system based on IBM Watson, to support our internal service desk.

“Our next step is an AI-based RPA Strategy and an AI readiness Program, to be prepared for the future of AI at Continental, because every (business) process could be and will be automated in the future. But that is part of a AI-ready enterprise concept that we are working on.”

What is also slowing implementations is the fact that there are as of yet few experienced professionals in the market to lead a project such as this. “We are missing the people with experience to guide us through the process with confidence” explains Deutsche Post DHL's Stefan Wenzel. “The technology is ready but the marketplace is not yet at a perceptive enough stage. We are missing the capable people with experience to run these engagements.”

AI also represents an entirely different cost dimension – more than 10 times the RPA investment for a given project, according to Stefan – “So you need to be pretty sure that your pilot will provide significant leverage. If you're investing more than €1 million you want to make sure that you generate significant returns.”



Which Areas Provide Good Opportunities for AI?

While RPA is generally well-suited to rules-based, consequential processing, Artificial Intelligence open itself up to less rules-based, and therefore less limited opportunities. Some opportunities are listed below.

Marketing: SAP recently ran a shared services event in Barcelona in which it introduced the cognitive capabilities it is investing into it HR services, for example in CV matching. Simply consider: If you publish a job offer online right now you receive hundreds or thousands of CVs to sift through. Artificial Intelligence can be leveraged to automatically read and match solutions depending on key parameters. The more it processes CVs the more accurately the tool identifies the best fitting candidates.

Finance and Accounting: another example of a potential use case is invoicing, where data is still often received via email and the right GL accounts must be selected. This could be rules-based processing, but accounting guidelines are complex and it's not always easy to implement with RPA alone. If you can use AI to train the system to understand what you are doing, on the other hand, you can also leverage its power.

HR Services: consider the value, not just of HR concierge chatbots, but in addition the potential for AI systems to suggest opportunities or considerations based on an individual's career, preferences, or the experiences of other employees who have found themselves in a similar situation.

Customer Service: dealing with customer queries where AI integrates with historically logged data and unstructured market data to provide the foster solution to a customer (see also above).

Additional areas, according to Continental's Oliver Lindner, could include: Compliance & Security, Architecture Management & Service Design, Autonomous Driving & Industry 4.0 Areas, Software Development & Deployment (DevOps – Continuous Integration & Delivery); and Cloud Computing & Service Brokering.

What Skill Sets are in Demand?

Getting the right skillsets into your team will be key to making AI work for you. As far as Deutsche Post DHL's Stefan Wenzel is concerned, someone with an understanding of business processes plus IT knowledge – “ideally a good understanding of the capabilities and complexities of cognitive solutions” – would be a good fit.

However, it's not that important to have the technical understanding, he explains, “because we are not going to develop the solutions, we are just applying them for our particular cases – thus the most important thing is to know how to implement, run and maintain them.”

At Continental, Oliver Lindner agrees: “We are looking for roles like Automation Experts, Knowledge Experts, Data Analysts, Project Managers and internal Consultants,” he says. In addition, he explains, the skillsets required to win at the AI game will include:

- Process Management (incl. CMMi) – define & analyze processes
- Project Management (e.g. SCRUM / Prince2)
- Service Management (ITILV3 Expert)
- Automation Expertise
- Big Data & Analytics (understanding Data)
- Enterprise Architecture Management (incl. Service Architecture)
- Moderation, Selling, Evangelist
- Consulting & Coaching abilities (working with humans)
- Requirement Engineering Specialist

Summary

While the initial hysteria around Robotics is subsiding as enterprises recognize it for the software scripting opportunities that it represents, Artificial Intelligence has, to some extent, stepped in as the next – as of yet inconceivable – addition to the workplace. But given the groundwork laid by robotic processes automation, AI should, once it's better understood, be more readily welcomed. For those who have already investigated its potential, the enthusiasm for harnessing its capability is enormous. What's certain is that technology is changing faster than ever and spreading farther than ever into the corporate world. It's a race nobody can afford to fall behind in.

Growth through Automated Services

Automated services offer the ability to lead traditional enterprises into new directions by propelling them to redefine their own products. It's in the disruption to traditional systems where we will see more value-add going forward. Just consider the potential of offering micro-services that can be consumed by different target groups – both inside and outside the business. This approach is based on building something that delivers into the future, but it requires pushing old-school IT people into a new direction, so that they think outside the box.

The kind of ‘future’ referenced here depends on some fairly complex algorithms of the kind supplied by Chris Boos's team at Arago, for example, where the company tagline – Uncover Human Potential: Expert Taught Artificial Intelligence that Automates the Entire IT Stack – says it all.

Arago's technology is built on an AI-based smart automation called HIRO – Human Intelligence Robotically Optimized – which represents an entirely new way of operating. It's not like Google, which depends on masses of data (and which most companies don't have easy access to in any case). With HIRO, you start with the knowledge you have already amassed inhouse – in your people.

The algorithms are then based on two inputs: basic data and knowledge (driven by HIRO). The key thing to recognize is that most jobs are not sequential, which is what runbook automation is based on (Runbook operates under the ‘if... then ‘go to’ methodology, and assumes a certain level of standardization, which, according to leading disruptors, does not reflect the reality of modern enterprise decision-making). HIRO, on the other hand can operate outside standardization or sequential processing, and is dynamic – a key differentiator. If you introduce a change in one area, this change is reflected via a change swap file already embedded in the automation software.

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