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Keys to successful IPA implementation

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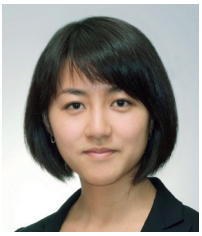
Executive Summary

Intelligent process automation (IPA) has emerged as a way to automate processes too sophisticated for robotic process automation (RPA). What is IPA? What do we need to know to achieve successful implementation?



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Overview of IPA and its emergence

In Japan, The RPA boom began around 2017 and is still going strong. The RPA installed base is growing rapidly among not only large companies but even SMEs and local governments. One factor behind RPA's increasing popularity in Japan is that the idea of automating white-collar jobs is in sync with Japan's workstyle reform movement, a major aim of which is to reform Japan's culture of overwork. Another factor is that RPA is not only less expensive than most other efficiency tools but also easier to implement and able to deliver a quicker payoff. However, with the RPA boom now in its second year, a number of issues have come to light through early RPA adopters' experiences.

One issue is that RPA has fairly limited capabilities. It is able to automate routine, repetitive business processes only. It also has multiple constraints including an inability to handle either exceptions or information not in a compatible data format. Consequently, the tasks within a serial workflow that can solely be automated through RPA tend to be narrow in scope[1]. In response to such limitations, automation vendors have recently started to combine RPA with AI in the aim of automating more sophisticated processes. This approach is called intelligent process automation (IPA)[2].

IPA automates business processes through use of AI such as machine learning and natural language processing in addition to RPA. By combining RPA and AI, you can automate decisions not automatable with RPA alone. You can also automate processes that read information not in an RPA-compatible data format. By virtue such capabilities, IPA is regarded as advanced automation. Its current use cases mostly combine RPA with AIs that can be used as specialist tools tailored to a specific business process. Examples include voice-to-text transcription tools (for, e.g., transcribing recorded telephone conversations), named entity recognition[3] (NER) tools that extract key words from long texts,

NOTE

1) For more details, see https://www.nri.com/en/knowledge/publication/fis/lakyara/lst/2017/05/02.

2) Synonyms for IPA include RPA 2.0 and cognitive automation. I opted against using "RPA" to refer to advanced automation based on the idea that IPA is distinct from, not an extension of, RPA.

3) NRI continues to conduct empirical research in fields related to named entity recognition.

and classification tools that sort large volumes of documents (e.g., emails) into groups. A classification tool combined with an NER tool can automate the process of sorting large numbers of incoming emails based on their content, extracting required information (e.g., customer information) from them and automatically generating replies. With conventional RPA, any process involving documents that differ even slightly from each other cannot be automated.

Tips for successful IPA implementation

One point to remember when implementing IPA is that AI tools all have their own respective accuracy constraints and therefore require human judgment when in question. AIs draw conclusions probabilistically, meaning that they make decisions that are most likely to be correct based on previously learned patterns. The less variation there is in the learned patterns, the more accurate an AI's conclusions will be. However, AI tools will never be 100% accurate because they will inevitably encounter unexpected patterns. Conclusions drawn by AIs consequently must be checked and corrected as needed by a human. Additionally, retraining of AI tools must be incorporated into business processes automated with IPA. When automating a business process with IPA, you therefore must analyze and adjust the division of tasks among RPA, AI and humans to optimize the overall process flow instead of automating an existing process as is. This process of modifying existing workflows was not necessary with conventional RPA, and in this respect, IPA differs markedly from RPA.

A second point to keep in mind is that AI tools differ widely from each other in terms of their constituent technologies (e.g., natural language processing, image recognition, voice recognition), ease of implementation, installation costs and expected payoffs. Not all of them yield immediate benefits. Selecting promising tools and properly evaluating their utility and ROI can consequently be challenging unless you have appropriately set medium/long-term objectives for your IPA implementation.

Such diversity within the IPA space is another respect in which IPA qualitatively differs materially from RPA, which is largely uniform across vendors in terms of its concept and capabilities[4]. As application-specific AI tools continue to diversify, IPA use cases should expand, but IPA implementation is prone to fail if approached with a casual "let's give this handy tool a try" attitude.

4) In light of such, it is advisable to establish a center of excellence (CoE) as a know-how repository when implementing IPA.

A third point is redefinition of RPA's place and role of IPA. RPA should be redefined as a platform for linking specialist tools (AIs) with human staff or with downstream IT systems instead of as the main automation engine[5].

5) Another point of view is that system configuration, not RPA, should serve as the link between AI tools and human staff and between AI tools and downstream IT systems. The question of whether RPA should play a tentative role requires further discussion.

If, for example, you wanted to automate the process of verifying corporate actions for your US securities holdings, the first step would be to use RPA to obtain company disclosures from the SEC's EDGAR site based on predetermined rules. Next, you would deploy an AI-powered NER tool to extract relevant verbiage and information from the disclosures' voluminous text. Lastly, the text/information thus extracted would be exported by RPA to (e.g., Excel) files and forwarded to someone to be checked as needed. In this example, the key to the automation's success is the extraction of information from the company disclosures by the AI tool. This extraction step requires the most know-how of any step in the automated process.

In contrast, RPA's role in the automated process is to merely serve as a link between the AI tool and human staff, both of which possess know-how and expertise, in accord with predetermined rules. Transmitting information between different systems in accord with given rules is in fact one of RPA's fortes. In such use cases, RPA is fulfilling one of its core functions.

IPA implementation thus requires an understanding of RPA, AI tools, human staff and IT systems' respective characteristics. It is important to automate processes by optimally combining all four. You should not implement IPA without first properly defining the roles and functions that RPA in particular will be called upon to perform.

IPA needs to be recognized as a new innovation, not an extension of conventional RPA. It arguably necessitates a radical rethink of various aspects of automation projects, including staffing, identification of business processes to be automated and medium/long-term goal-setting.

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