



# The Ro-Man era

Process robotics and cognitive automation



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# Overview



Today, if someone were to look up in 'Google Trends' words such as robotics, process automation and cognitive, the graph in the current time would resemble a hockey stick. If we take a step back and look at the reasons why, we realise it is because corporations always want to know 'what next' would provide them with a competitive advantage or help them to remain relevant. This advantage could span across various elements such as shareholder wealth, attracting talent, customer centricity, analytics, etc.

**Evolution of operating models:** The late 1990s saw an era marking the start with consolidation of support activities and transfer to low cost locations using employees or via outsourced service providers of finance, HR and IT. Some ventured into territories such as engineering design followed by information management and analytics. Later, inflation rates in emerging economies did not present the same advantages. There was a next wave which led to the emergence of low cost destinations (Tier 2 to Tier n) that presented a multi-location and partnered eco system, offering an optimum delivery method.

**Data evolution:** Moving on to the data journey, it was observed that data initially started as a game changer in ERP during early 1990s and then moved into business warehouses for a 'slice and dice' analysis. Data storage-process-production were being reviewed

in the context of economic ups and downs, competition and talent management.

**Talent management:** During the digital and Gen Y era, interactions between customers and work force took a radical turn. This resulted in the rate of adoption of new ideas, smart-phones, digital retail and digital-enabled transport that led to slow but sure death for some industries on account of these changed patterns.

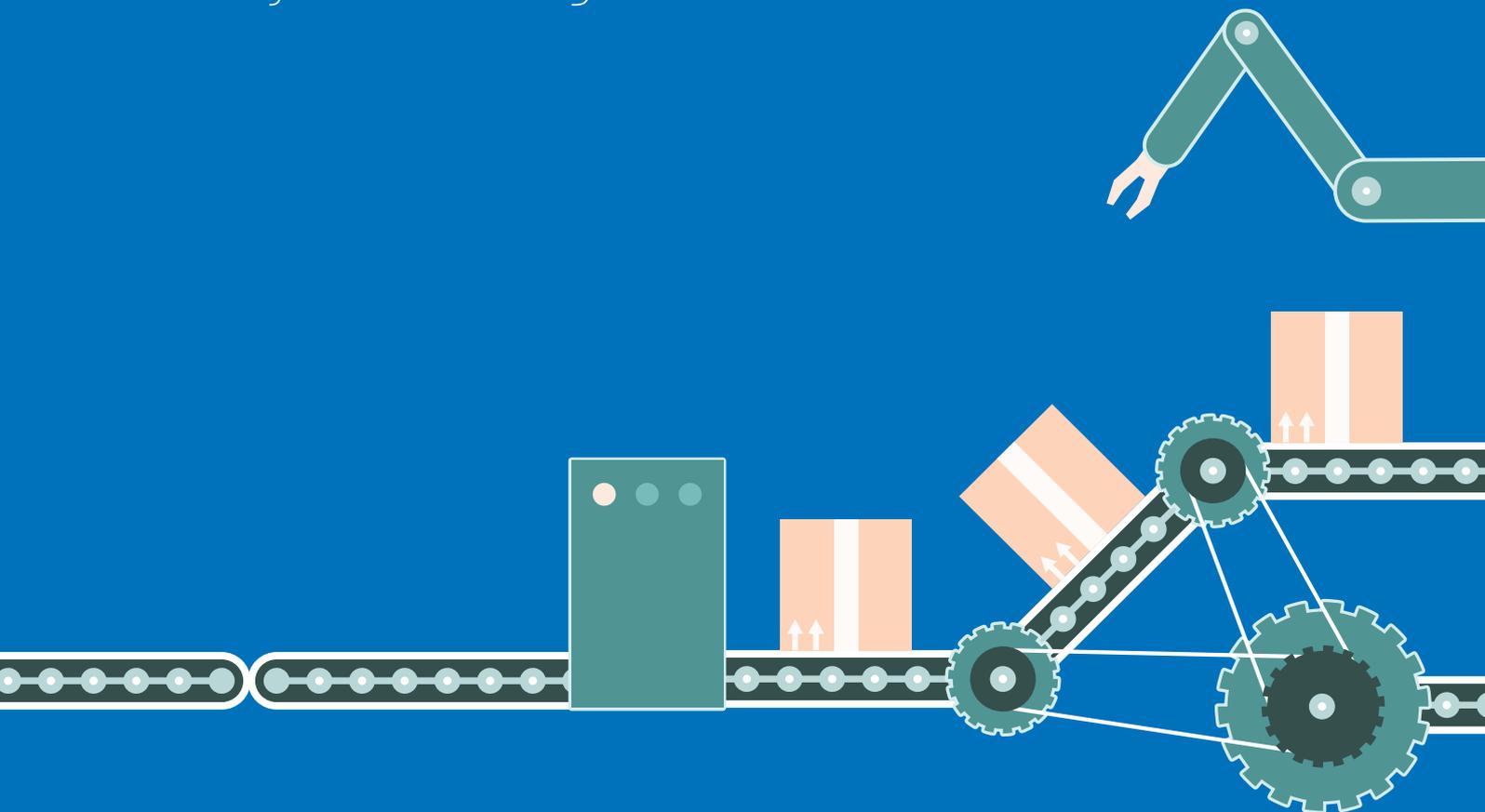
**So what?** There are sceptics that we have seen vanishing or barely surviving after few such game changing phenomena. There is always a viable strategic response to any phenomenon – do nothing. In this paper, we attempt to demonstrate why this response in relation to Robotics and Cognitive Automation (RCA) is discouraged. While our scope of study is primarily focused on the changing operating models and impact on Indian market, we believe the hypothesis may be extendible to other ecosystem components as well.

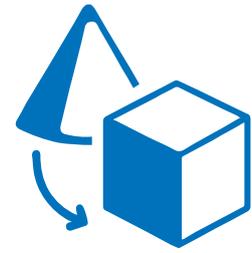
India caters to a majority of the global Business Process Management (BPM) services and houses more than 500 companies offering services to 66 countries with revenue above USD26 billion. There are nearly more than a million employees in the Indian BPM sector. The last decade witnessed an increased focus on incremental innovation and productivity improvement<sup>1</sup>.



1. Nasscom; <http://www.nasscom.in/overview-9>; 16 August 2016

# Operating models - A transformative journey





The organisational structure of global corporations is supported by various models – self-serving large near-shore or offshore shared services, bought out support from

Business Process Management (BPM) or a partnered hybrid version.

While we expect intelligent automation to impact the whole enterprise, that would require an

industry specific view. In this paper, we are agnostic to specificities referenced to industries, since we are looking at process automation in support processes.

## Outsourcing



Let's make an attempt to connect the dots backwards and review whether they hold true for the future. The initial set of companies that outsourced processes not only had heavy criticism but also set the way for commercial models. Earlier contracts were long-term and more stable. With time, various pricing strategies evolved including platforms, transformation deals being thrown in, lowering cost using second tier delivery locations and steadily moving from full-time

equivalent (FTE) based to transaction or outcome based. In the last five years, contract timelines have shrunk to three to five years and a trend of insourcing or changing the provider has been the 'new normal'. The urge to be economically viable and provide a competitive edge, drives global/local corporations to adjust their costs to a Volatile, Uncertain, Complex, Ambiguous (VUCA) world.

## Shared Services



Outsourcing also took a differential turn when large corporates began to think through the importance of various factors including culture, belonging and set-up near-shore or offshore shared services centres. Like Simon Sinek said "Corporate Culture Matters". How the management chooses to treat its people impacts everything - for better or for worse. These companies based their hypotheses on various factors such as career paths, promotion of corporate culture, succession planning, well-rounded experiences and from ranks being critical to maintaining the grain of knowledge. These

factors were sometimes considered to be competitive advantages or industry specific nuances that required to be taught. The cost and evolution structure traces a journey that started as a cost plus centre for basic processes, then moved into more complex roles that were agencies and moved from the pure back office to the middle or front office. Measurements moved from people owned to outcomes produced, and intricate handoffs were better managed if co-located. Some even tried to project support functions as moving towards profit centres from pure cost centres.

## Hybrid Model



The third mutated structure that has gained votes is a hybrid multi-location and multi-partner environment in a shared services centre,

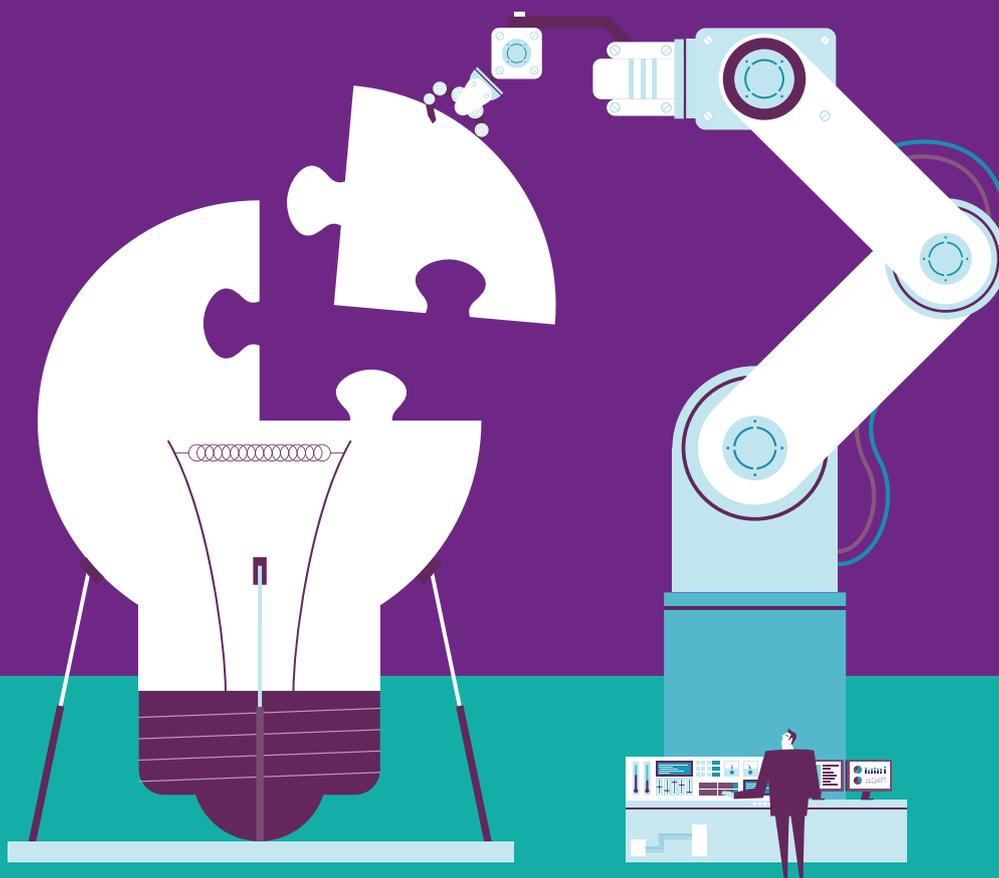
where partners are co-located for better results and understanding of business.

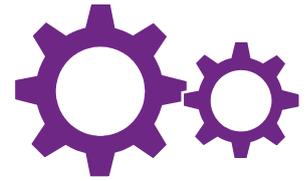
These operating models and cost structures are now quite well settled and therefore switching options from one vendor to another, could provide temporary relief but would nevertheless lower the margin of the provider. Also, the cost at which the service is obtained has a range

of possibilities depending on the continuum where the organisation is, with respect to outsourcing. On the shared services front, the operations costs are almost drawing close to the original structure and the leverage on labour arbitrage is being eaten away slowly and steadily by inflation,

talent costs and real estate. In any of these models it is now becoming clear to organisations that change is inevitable. We believe RCA will become a game changer.

# Automation destination





In order to fully understand the paradigm of change, it is important to level set information asymmetry on what we are referring to as Robotics and Cognitive Automation.

Automation can be classified as follows:

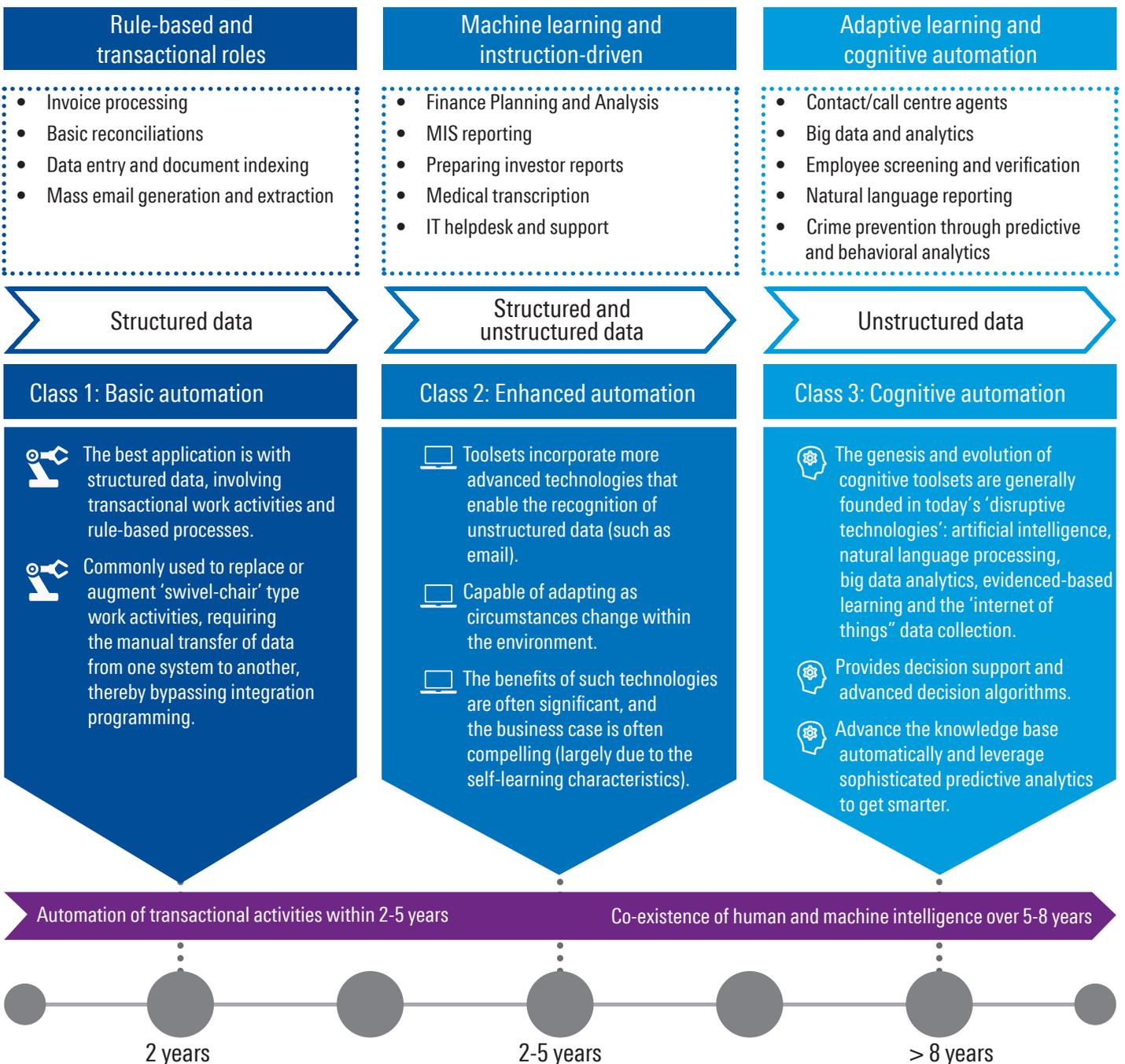
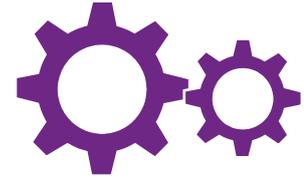


Figure 1: The RCA continuum<sup>2</sup>

2. KPMG in India's analysis



Any of the activities using structured data that revolve around data validation and rule-based activities have high scope for automation from the available tools. This would be across the shared services or BPM landscape. This choice may be determined on the basis of marginal costing and future cash flows on the options in comparison.

The key question here revolves not just around what the operating costs for maintaining process automation or machine learning algorithms are, but also what human talent would focus on. There would be complex preparation work where data is used from various sources, structured and unstructured, to identify patterns

that might help an organisation to survive and take decisions at the right time. Automation shall strive to be a great ally in that area, since the ability to ingest and make sense of vast amount of data might aid improved pattern identification. There may be specific services where human intervention is very necessary and could continue to be ruled by humans in the near future.

In our view, we are at the onset of the 'Ro-Man era', where some activities would be dominated by robots, some by humans and some where they would co-exist. This being an initial view, we expect changes to the classification of activities over a period of time.

Keeping in mind one of the effects of Robotics Process Automation (RPA) on organisations, the workforce will have to up-skill themselves and evaluate options in order to make themselves relevant. ■

- Jitendra Agarwal,  
Sr. VP Business & Service  
Excellence (BSE)  
HDFC Life

**This is our view based on current maturity levels of RCA.**

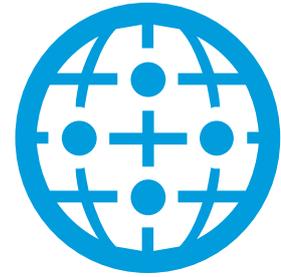
Robotic dominance	Co-existence	Human dominance
<p>Activities that are expected to be completely automated:</p> <ul style="list-style-type: none"> <li>• Repetitive</li> <li>• Transactional</li> <li>• Calculative</li> <li>• Rule-based</li> <li>• High volume</li> <li>• Involving structured data</li> </ul>	<p>Activities that could require machine and humans to work together:</p> <ul style="list-style-type: none"> <li>• Collaborative</li> <li>• Involving rule and judgment-based roles</li> <li>• High and fluctuating volumes</li> <li>• Calculative and intelligent reasoning</li> <li>• Decisions requiring assistance from robots</li> <li>• Involving structured and unstructured data</li> </ul>	<p>Activities that may continue to remain with humans:</p> <ul style="list-style-type: none"> <li>• Highly judgmental</li> <li>• Low volumes</li> <li>• Elements of uncertainty</li> <li>• Holistic decision-making</li> <li>• Engaging in activities around imagination, sentiments, emotions, views, thoughts and opinions</li> <li>• Personalised services</li> <li>• Involving structured and unstructured data</li> </ul>

Figure 2: Areas of Ro-Man dominance



# Factors influencing intelligent automation decisions





According to our analysis, we expect the decision tree for operating models supported by BPM or service providers to be different from the ones supported by shared services. Organisations need to understand how automation in the middle and back office could cascade into the front office or ecosystem. Also, organisations would need to plan on leveraging the potential benefits and mitigate the risks arising from what may snowball. Listed below are certain key factors that may influence decisions pertaining to RCA, where the global organisations are supported by BPM:

- What negotiation value can be assigned to the vendor contract for going first versus delaying? Is there an advantage that can be sought for simply being an early adopter?
- Remaining contract period, including exit costs
- Relative costs of implementing technology in-house versus engaging with the provider

- Exit route possibilities post automation from the provider – with whom the intellectual property (IP) would vest and what are the possibilities of transferring the automated processes in-house

If the operating model is supported by an in-sourced/hybrid near-shore/offshore centres additionally, the factors may include:

- Cost structure of the shared services and place in the maturity continuum. We believe that there is a possibility to leapfrog some steps and go ahead of the curve, if the position of the shared services is not towards higher maturity in the curve
- Penetration of digital technology and availability of data across the organisation, and in specific to the shared services. Higher the penetration, more is the possibility of availability of roles for fulfillment of the released capacity.
- Possibility of cross utilisation of the time released from available talent and capability to take on more work at lower or static cost points

The report, until this point, largely discusses the demand side on automation and cognitive and how we expect it to operate. The supply side would also evolve over a period of time and the available solutions can be categorised as below:

- Plug and play type of tools that have pre-configured IPs either for a function, sub-function, process or industry
- Functionalities in tools that can be used across the organisation for specific tasks – these may not contain pre-configured IPs and therefore need more customisation, though the changes might be easier than pre-configured
- Machine learning enabled process automation
- Platforms created using multiple RCA tools available or as a part of services provided.
- Custom made solutions that might work only in one organisation.



# Impact of automation on the ecosystem





We expect that the advancement of automation and cognitive shall have a definitive impact on the ecosystem across the procurement/commercial models for technology, customer/vendor interactions, talent availability, education curriculum, etc.

**Sourcing models** - There are pros and cons of entering early into an environment when the commercial models are not established. This needs to be evaluated carefully in terms of the risks associated and potential rewards that one may gain. We expect that the early adopters, both from technology vendors as well as BPM, would be able to drive a negotiation value for being the first. Conservative advice would be to look at deal periods of 36 months or less and to help ensure that the relative risks of getting a better deal on higher adoption is managed. In our view, the exit, transfer and assignment options on automation/cognitive might be more complex and hence requires attention to details.

**Operations** - We expect that procurement and technology teams may need to work hand-in-hand to evaluate their relative options, keeping in mind the shift in business strategy due to the changing landscape. For example, if the client services of an enterprise are largely targeted to a client profile that generates unstructured data using mobile, then the relative preference to cognitive may increase in a shorter time span.

**Social impact** - The business environment is constantly changing and we have seen examples of industries being wiped out by innovation/digital

advancements. So what about colleges that religiously produce students to execute something repetitive and mundane? This could be potentially a high social impact of available jobs and fitment of talent. We expect that academic institutions might need to proactively change their curriculum to survive. This may perhaps be the end of a pure subject matter expert curriculum that is not integrated with technology.

**Regulatory impact** - We also expect regulatory developments in this area. For example, if we expect an enterprise to shift to a more digital labour scenario, how would direct taxes thrive? The birth of tax laws in the U.S. and the U.K. such as the Outsourcing Law, Transfer of Undertakings and Protection of Employment (TUPE), etc. has impacted people across the world. Imagine how transfer pricing might work if there is a bot hosted in an Ireland data centre with vendor platforms on cloud and performing work across entities around the world. Additionally, interacting with multiple combinations and understanding which countries could be levying tax against those who might be paying tax. It is safe to imagine a complex weaving of transactional webs with possibilities galore.

**Audit, Business Continuity Management (BCM) and cyber security environment** - The extended impact to the ecosystem of auditors both internal and external could be immediate. The methods of testing, evaluation, risks and controls may undergo considerable change. In an area like invoice processing, the throughput volumes could be very high and therefore one mistake in a build

operate transfer (BOT) environment could end up to be materially impacting. This would necessitate different BCM measures and cyber security initiatives that would evolve with time.

**Industries and economic impact** - There are linked industries in the Indian context on administration of large facility costs such as real estate, transportation and infrastructure for the employees. Though in the near future we expect more redeployment than loss of jobs, it may turn out that there is no growth in real estate demand in key IT sectoral regions and that might cause some slump in the economy, perhaps, since there would be more supply than demand.



Robotics Process Automation (RPA) will have a big impact on the industry, just like industrial revolution had in Europe. ■

- Guillaume Duguet,  
Head of Re-Engineering and  
Production Management, Global  
Service Centers, HSBC Operations

# Process Automation Index (PAI)





Now that we have reviewed the changes and impact, we would like to enable you to individually assess the potential for automation using **Process Automation Index (PAI)**. PAI helps to indicate if a process has Class I automation potential. This comprises two components - Automation Qualifiers and Enablers<sup>3</sup>.

**Automation Qualifiers are criteria that qualify the process for automation.**

**Automation Enablers are criteria that advance the possibility of automating a process**

$$\text{PAI} = \text{Automation Qualifiers} + \text{Automation Enablers}$$

To arrive at the PAI for Class I Automation possibility on a particular process, rate all the qualifiers and enablers on the following response scale.

**Response scale - (1 – Very low, 2 – low, 3 – moderate, 4 – high, 5 – very high)**

**Automation Qualifiers – If your process meets the below criteria, you can consider the possibility for automation**

Qualifiers	Description
<b>Volume</b>	Number of transactions performed in the process
<b>Repetition</b>	Repetition of steps performed in the process
<b>Rule-based</b>	Rule-based decision making in the process
<b>Structured data</b>	Amount of structured data in the process

Qualifiers primarily contribute the highest towards automation of a process. If the combined score of qualifiers is less than 10, the particular process may not qualify for Class I Automation.

**Automation Enablers – Additionally the below mentioned enablers can accelerate the case for automation**

Enablers	Description
<b>Frequency</b>	Process execution frequency (daily, monthly, weekly etc)
<b>Number of disparate systems</b>	Number of systems accessed while performing the process
<b>Cycle time</b>	Time to execute the process
<b>Head count</b>	Number of people working on the process

3. KPMG in India's analysis



**Automation Influencers – The following factors have a bearing on automation decisions taken by organisations.**

Influencers	Description
<b>Attrition</b>	Number of employee exits
<b>Operational cost</b>	Cost to execute the process
<b>Criticality</b>	Business criticality of the process
<b>Fluctuation in volume</b>	Constant change in number of transactions performed

Now plot PAI and the score of Automation Influencers on the following Class I Automation decision grid.

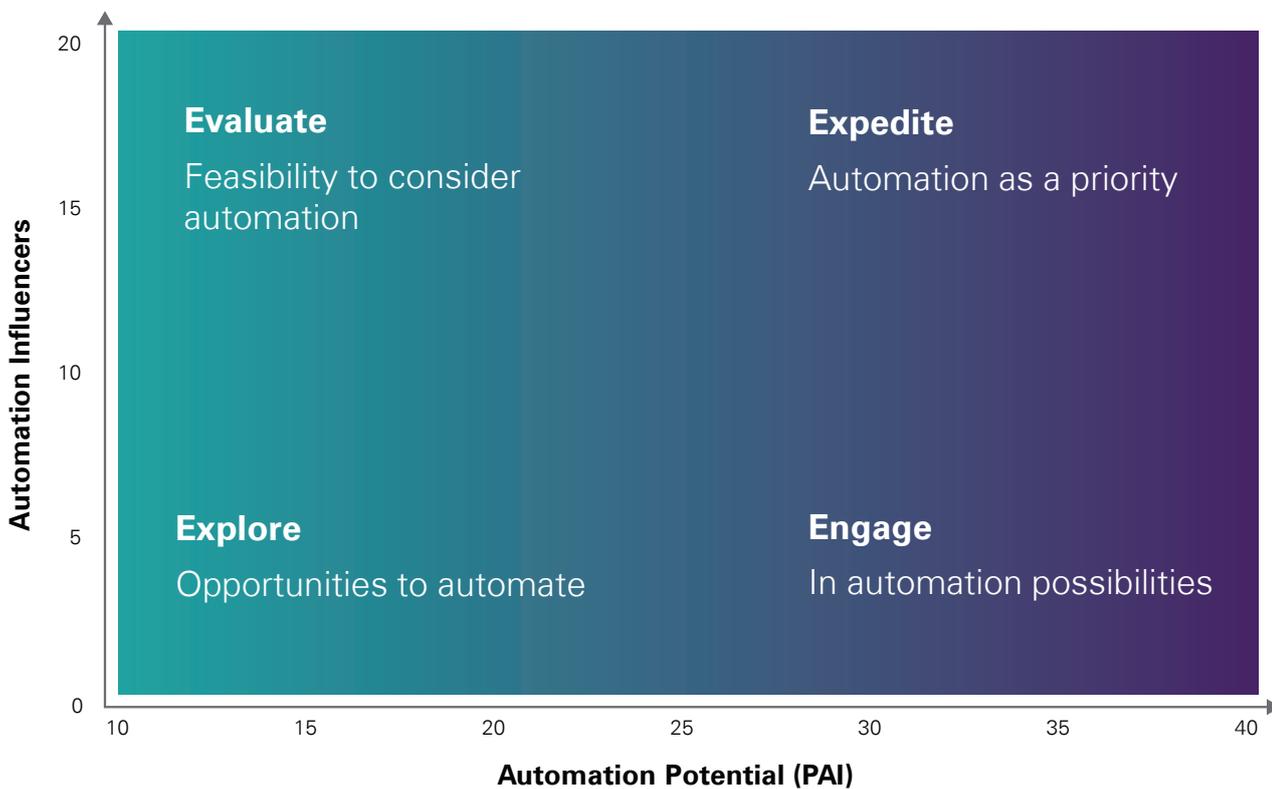


Figure 3: PAI Decision Grid

### Points to consider:

1. Apart from the direct quantitative factors considered, qualitative aspects such as contracts, human interaction in the process, involvement of contextual data, risks involved, etc. need due consideration.
2. Complexity is not included in the PAI due to the assumption that the processes are a combination of simple steps
3. The above PAI will not be applicable for assessing Class II and III Automation potential

# Way forward



Whether you are a large enterprise with/without shared services or BPM, here are a set of actions you may want to consider:

- Evaluate how this automation and cognitive may give rise to businesses that may become an existential threat for your enterprise in the next decade, and what counter measures you may want to adopt and start now
  - Identify the possible pilot areas in the front, middle and back offices based on cost and data structures
  - Evaluate the social impact of the choices you make
- and arrive at what speed of execution works for the environment and your enterprise
- Look around and learn about the various options and alternatives carefully before committing a budget
  - Choose allies/partners in the journey, sceptics within your enterprise and outside; rely on the power of building a diverse network. Market signals that come from a diverse network are more reliable than any others
  - If your partner contracts are due for renegotiations in the next 12-18 months, push the pedal on proactively
- challenging options in front of you
- Identify negotiation variables that could fetch commercial benefit to the enterprise if you onboard the automation journey in an immature commercial landscape
  - Calculate your PAI score on the basic automation potential, followed by a diagnostic study
  - Last but not the least, evaluate the downside and upside of doing nothing in your enterprise context and involve the board.

**Mahatma Gandhi** said, “Action expresses priorities”  
Do you want to make Process robotics and cognitive automation an enterprise priority?



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