Everest Group®

Enterprise Automation Playbook 2022

September 2022

UiPath™

Objective

The **Enterprise Automation Playbook** empowers enterprises at various stages of their process automation and transformation journeys with insights, methodologies, and practical advice to achieve best-in-class outcomes from Intelligent Automation (IA).

Contents

For more information on this and other research published by Everest Group, please contact us:

Amardeep Modi, Vice President

Anish Nath, Practice Director

Ashwin Ambala, Senior Analyst

Kumaraguru G, Senior Analyst

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The need to become a digital-first enterprise

- Drivers for transformation
- Intelligent Automation (IA) as a key lever to transform to digital-first operations
- Key components of IA
- Role that IA plays in addressing enterprise business challenges/imperatives
- Growth in demand for IA

Drivers for transformation

Evolving into a digital-first business is becoming increasingly important for organizations to remain resilient and competitive

Legacy business

Values	Cost reduction
	Efficient process
	SLA compliance
	Employee productivity
Levers	Legacy systems
	Lean Six Sigma
	Labor arbitrage
Approach	IT-led transformation
	Siloed implementations across business units / departments

Drivers of change

- Need to address talent shortage and rising employee expectations
- Navigating potential economic downturn
- Need to ensure business continuity and sustainability
- Evolving customer expectations
- Need for continuous innovation

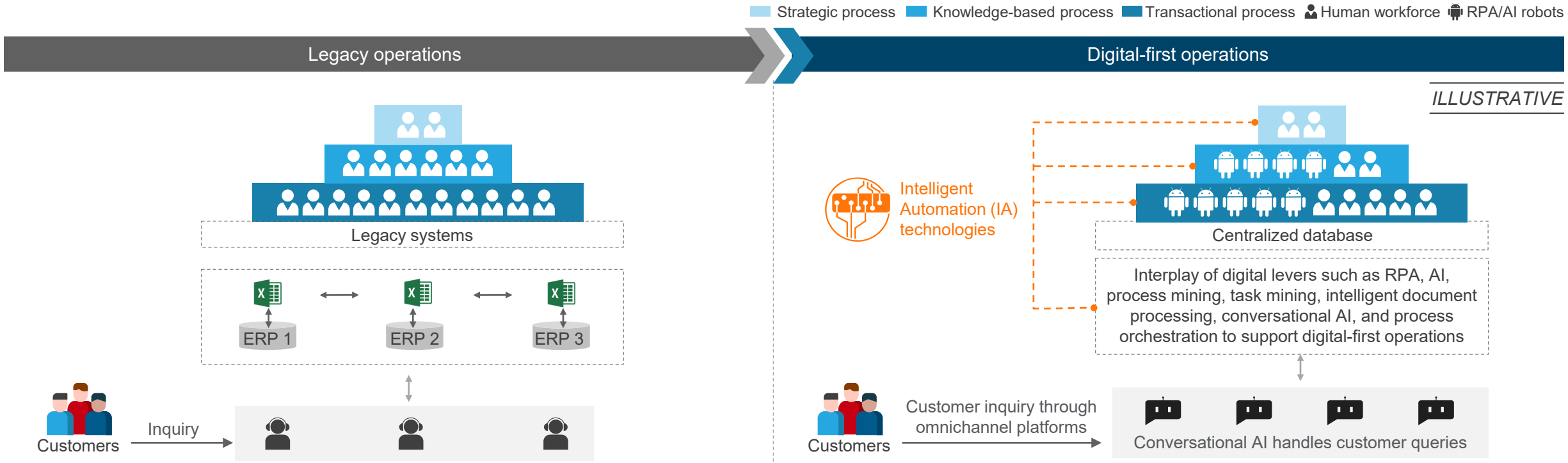
Digital-first business

Values	Reduction in manual work
	Enhanced stakeholder experience
	Continuous process improvement
	Focus on business metrics
Levers	Intelligent Automation (IA)
	Design thinking
	Deep domain expertise
Approach	Business- and IT-led transformation
	Organization-wide implementations

Traditional levers such as shared services, offshore labor arbitrage, and Enterprise Resource Planning (ERP) have become less effective in generating enterprise outcomes/benefits.

Intelligent Automation (IA) is a key lever to transform to digital-first operations

IA enables organizations to successfully evolve their operating models, meet their strategic objectives, and achieve enterprise-wide automation



Underlying issues in legacy operations

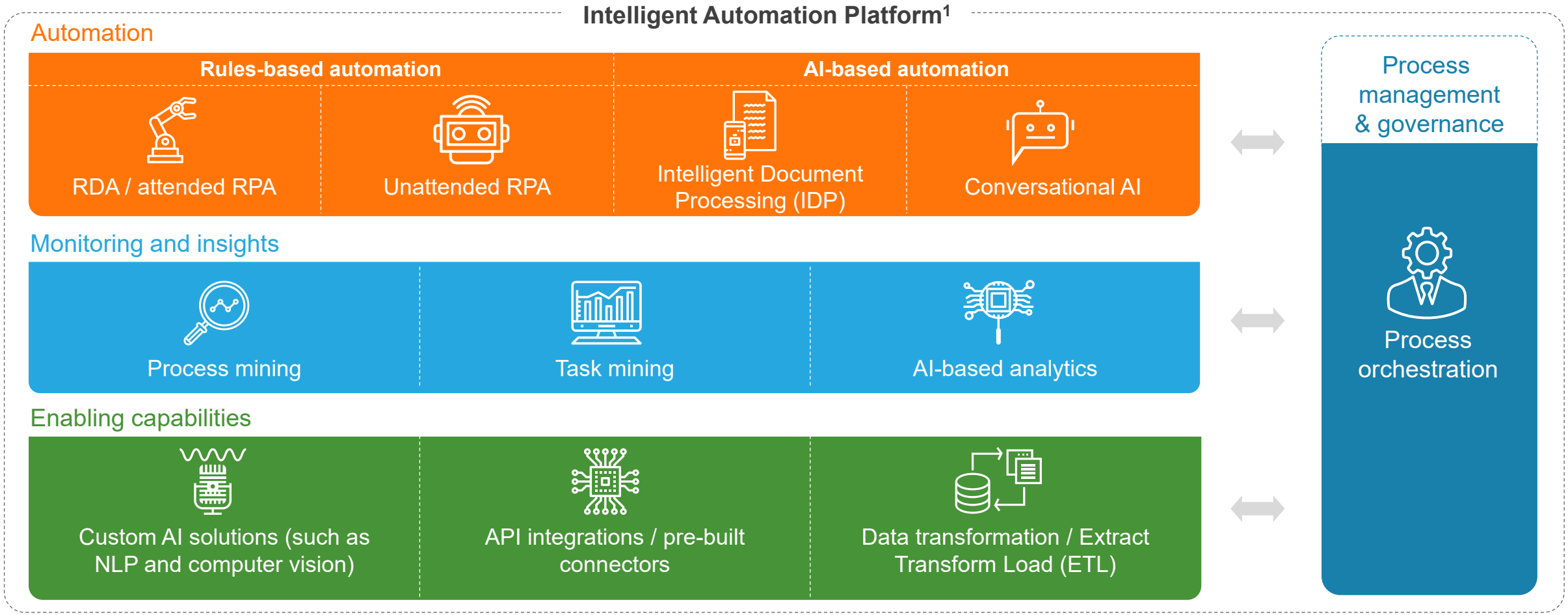
- Disjointed operations resulting in high turnaround time
- Heavy reliance on manual tasks resulting in low productivity and human errors
- High volumes of unstructured data
- Reliance on legacy systems resulting in lack of flexibility
- Cost-intensive operations

Business outcomes

- Higher flexibility and capacity creation
- Increased workforce productivity
- Enhanced employee experience
- Cost elimination and profit maximization
- Touchless transactions
- Process efficiencies
- Improved customer experience
- Improved governance and compliance
- Better partner/supplier enablement
- Improved collaboration across teams

Key components of IA

An ecosystem of no-code / low-code digital levers constitute an intelligent automation platform that helps enterprises discover, optimize, and automate both rules-based and judgment-intensive processes

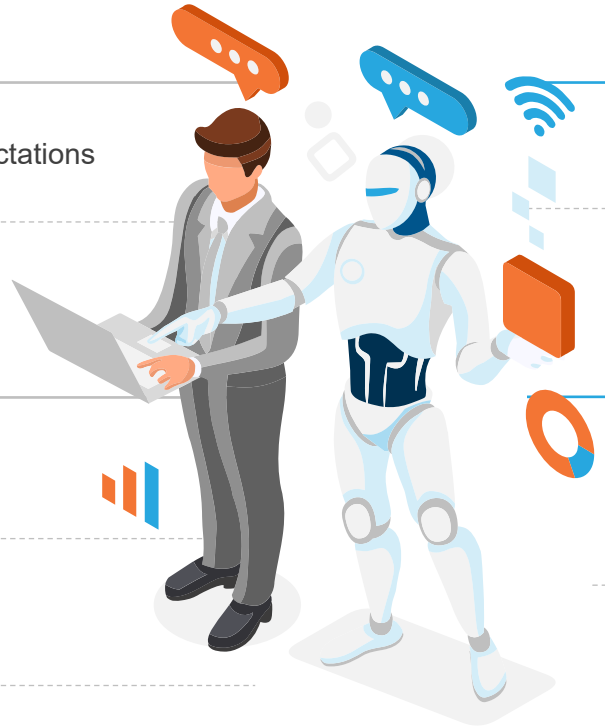


1 Refer to pages 124-130 for a detailed definition and applications of the key components of IA

Role that IA plays in addressing enterprise business challenges/imperatives

Enterprises with digital-first operations, enabled by IA, are better positioned to address both the short- and long-term challenges/imperatives

	Challenges/imperatives	How IA helps address the challenges
Short term challenges	Talent shortage and unfulfilled employee expectations	IA helps reduce employees' time spent in mundane and repetitive activities, thereby enhancing workforce productivity and improving employee experience.
	Potential economic downturn	• IA helps enterprises plan and forecast efficiently to mitigate risks arising from demand and supply disruptions • It offers cost savings as it optimizes/automates processes and efficiently uses resources/FTEs through the insights generated
Long term imperatives	Need for a resilient and sustainable business	• IA helps maintain business continuity through touchless transactions when human agents are unable to handle customer inquiries • IA aids in extracting and collating data from multiple sources for ESG reporting
	Enhanced customer experience	• IA helps build customer journey maps and solve customer pain points • It supports omnichannel communication and aims to provide quick inquiry resolution, thereby increasing customer delight
	Reinvention of business model and revenue growth	IA aids in continuous monitoring and redesign of business models and provides new avenues of increasing revenue.

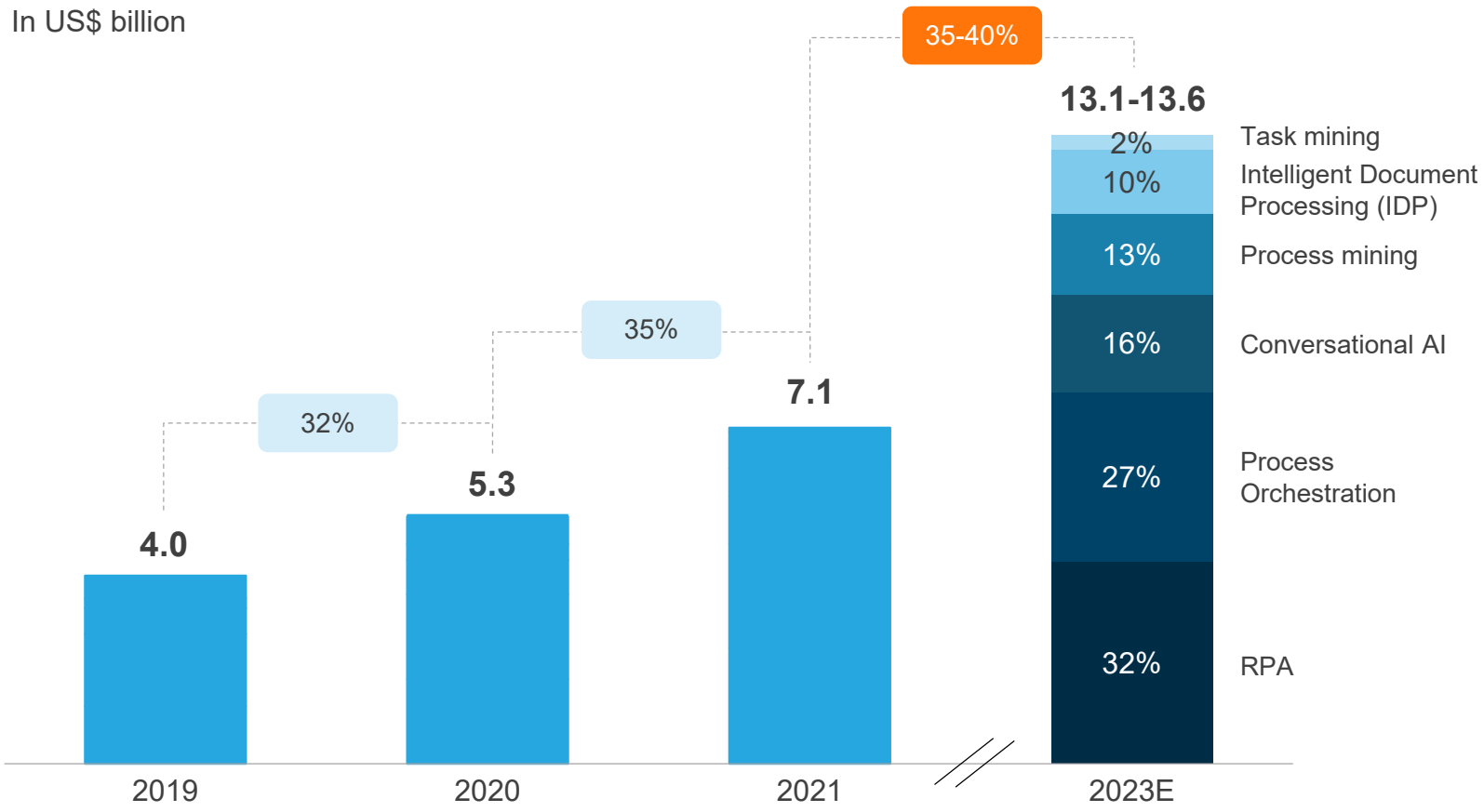


IA helps create additional FTE capacity that can be leveraged for more creative and strategic work – this allows enterprises to scale up their operations efficiently and profitably.

Growth in demand for IA

IA's role in helping enterprises transform to digital-first operations and address business challenges is driving rapid adoption

IA software market size[1]
In US$ billion



- The IA software market stood at over US$7 billion in 2021, showcasing a YoY growth of close to 35%
- In a business environment that is constantly evolving, enterprises are embracing IA to make their organizations digital-first and future-ready. Consequently, the IA software market is expected to grow at a CAGR of 35-40% in the next few years
- Key growth drivers include pent-up demand in the aftermath of the pandemic and improved sophistication of AI technologies accelerating the adoption of cognitive solutions along with RPA

1 Refer to pages 131-134 for the details on IA market adoption across industries, geographies, and process areas
Source: Everest Group (2022)

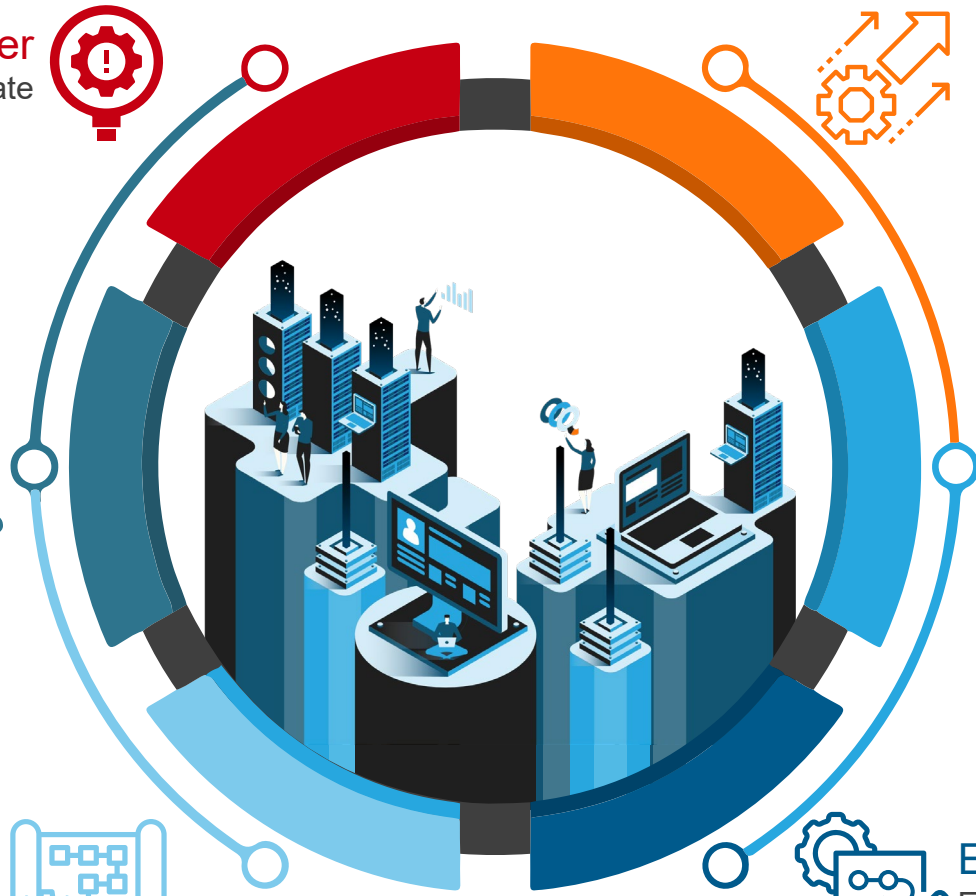
02

The IA paradigm

- Enterprise automation life cycle
- Role of IA across the enterprise automation life cycle
- Enterprise adoption of IA
- Benefits of adopting IA
- Use case – holistic intelligent automation approach

Enterprise automation life cycle

The enterprise automation life cycle starts from discovery and ends at continuous monitoring, which acts as a feedback loop back to discovery



Discover
Identify/verify the as-is process state

Optimize
Identify improvement opportunities and/or redesign processes

Prioritize
Assess processes for potential automation opportunities

Evaluate
Evaluate opportunities to identify the right target state with the highest RoI

Execute
Execute against the determined target state and employ a proper change management program

Continuous monitoring
Monitor processes for continuous feedback and improvement

Role of key constituents of an IA platform across the enterprise automation life cycle

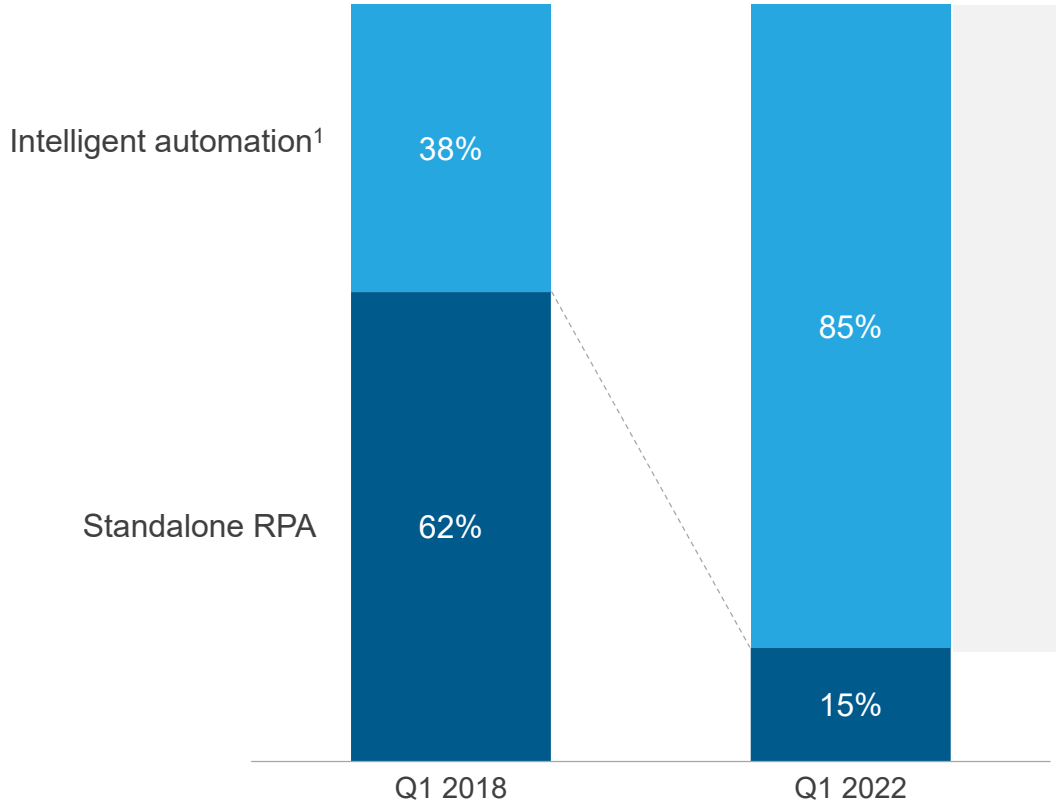
An IA platform offers capabilities that serve the key requirements across the different stages of enterprise automation life cycle

Automation life cycle stages	Discover	Optimize	Prioritize	Evaluate	Execute	Continuous monitoring
Applicable IA technologies (not exhaustive)	• Process mining • Task mining • Connectors • ETL	• Process mining • Task mining • AI-based analytics • Process orchestration	• Process mining • Task mining • AI-based analytics	• Process mining • Task mining • Process orchestration	• RPA • IDP • CAI • Process orchestration • Custom AI solutions	• Process mining • Task mining • Process orchestration
Role that IA plays in each of the stages	• Pre-processes and transforms the data that is accessed from sources such as systems of record • Analyzes the transformed data and provides a fact- and data-based view of the as-is process flows, along with essential step information such as time, cost, volume, and frequency	• Identifies opportunities to streamline/improve existing processes by investigating process deviations • Helps design/model new process flows to rectify identified process inefficiencies	• Assesses process steps to calculate automation potential by considering factors such as number of resources, step duration, and types of user action performed • Prioritizes automation candidates to help build a healthy pipeline	• Provides the ability for users to build scenarios based on the optimization and automation opportunities • Conducts virtual simulations to test changes to the as-is state and predict the RoI without impacting day-to-day operations	• Provides the ability to manage processes, including hybrid or human+robot workforce, after implementing the scenario with the maximum RoI • Carries out operations that are transactional or require judgment, in collaboration with human workforce	• Allows enterprises to continuously monitor process performance against expected/desired outcomes to identify further improvement opportunities • Helps refine/update the transformation roadmap/pipeline iteratively

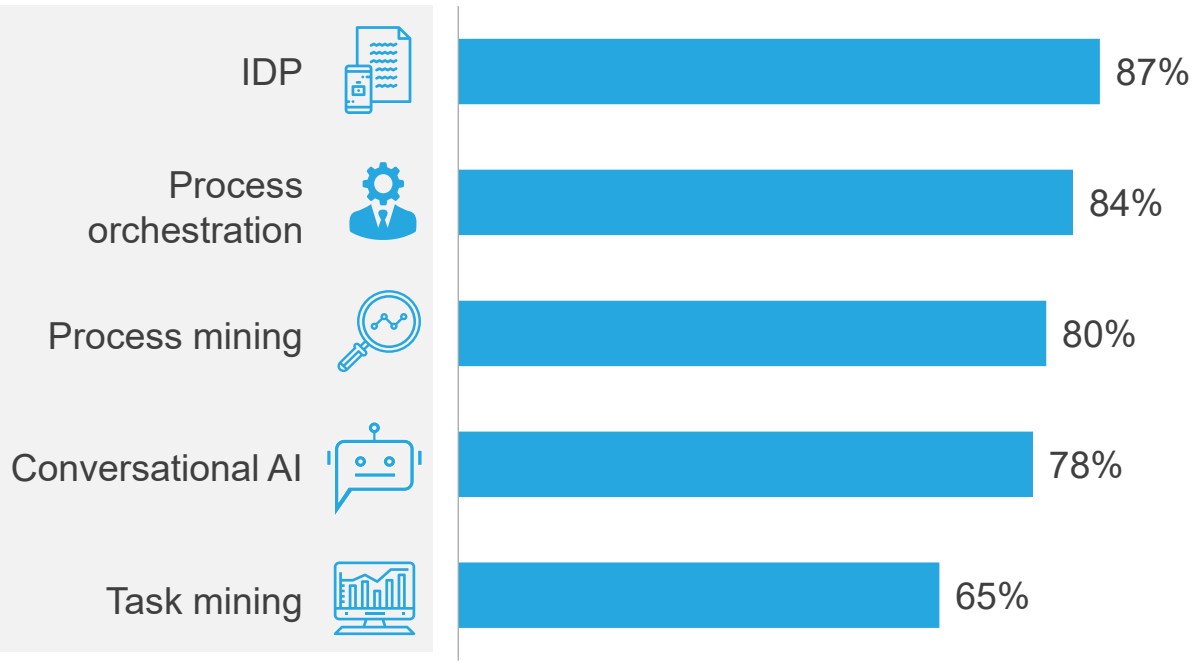
Enterprise adoption of intelligent automation

Enterprises are increasingly combining and orchestrating multiple intelligent automation technologies as part of their automation initiatives

Adoption of stand-alone RPA Vs. IA
Percentage of enterprises



Adoption of other IA levers in addition to RPA
Percentage of enterprises, 2022



1 Includes at least one other IA component in addition to RPA.
Note: Based on the survey responses from 52 enterprises (that primarily adopted standalone RPA) in Q4 2017 and 55 enterprises (who adopted IA) in Q1 2022
Source: Everest Group (2022)

Benefits of adopting a holistic intelligent automation approach

Enterprises are achieving increased business value by combining multiple IA technologies and adopting a holistic intelligent automation approach

Strategic impact | Operational impact | Cost impact

	Primarily by adopting **standalone RPA**		By adopting **IA**
Enterprises, on average, achieved a **positive impact on their revenue growth** of	~5%	as compared to	~38%
Enterprises, on average, achieved **operational efficiency improvement** of	38-43%	as compared to	50-55%
Enterprises, on average, achieved **employee productivity improvement** of	28-33%	as compared to	40-45%
Enterprises, on average, achieved a **RoI** of	~1.5X	as compared to	~2X

Enterprises, on average, achieved **40-45% improvement** in their **CSAT** score by adopting IA

Around **50%** of enterprises achieved **cost savings** greater than **US$1 million** by adopting IA

NOTE: Based on the survey responses of 52 enterprises (who primarily adopted standalone RPA) in Q4 2017 and 55 enterprises (who adopted IA) in Q1 2022
Source: Everest Group (2022)

Use case – holistic intelligent automation approach

Developing digital capabilities for customer onboarding

Automation life cycle stages	Discover, optimize, prioritize, and evaluate	Execute				Continuous monitoring
Key steps	Optimize the process	Understand customers' requirements, capture information, and pass to the system	Validation of identity documents	Uploading data into enterprise application to create a unique ID	Spreadsheet population and data manipulation; sending confirmation mail	Monitor for further process improvements
Role of IA	• Process mining and task mining tools discover the as-is state of the customer onboarding process and identify optimization and automation opportunities • Simulation analysis is conducted to arrive at the most efficient scenario (illustrated through steps in the Execute stage)	• CAI interacts with customers in natural language to understand the intent and capture required information • Exceptions are routed to human agents who are assisted by robots that suggest possible packages and solutions based on previous interactions. The agent is able to make decisions more quickly and the CAI learns by observing human actions • The information is passed on to an RPA robot that uses external websites and tools to complete the application form and saves it with a pre-defined naming convention	• Data entry is validated against supporting documents and discrepancies are flagged automatically for review • This process also aids in fraud detection and malware handling	The RPA robot runs the new data through various back-end systems to generate a unique customer ID and populate the details for the next billing cycle.	• The RPA robot manipulates data and makes entries into a pre-defined template • The RPA robot sends a confirmation email to the customer	Process mining, tasking mining, and process orchestration tools monitor the process and help iteratively discover and optimize the process – making it a virtuous cycle of process optimization
IA technologies leveraged	• Process mining • Task mining • Process orchestration	• CAI • RPA • Custom AI solutions	IDP	RPA	RPA	• Process mining • Task mining • Process orchestration

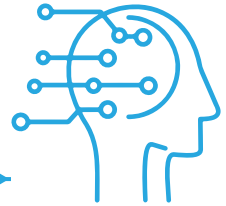
03

Enterprise automation journey

- Introduction to the enterprise automation journey
- Types of programmatic approaches
- Understand the current state
- Create a business case for the desired outcome
- Determine the capability target state
- Identify all determinants and map the path
- Execute against the mapped path

Adoption of IA can be driven by ad hoc needs to optimize a few processes or as part of an enterprise-wide strategy to transform operations

Ad hoc approach to adoption



- Enterprises could think about IA as a response to an event. In such cases, the thinking and approach to IA are typically limited to the process in the immediate scope
- Some examples are:
  - Cost savings opportunity in a manual-intensive process
  - Automation infusion in specific parts/tasks of an end-to-end process
  - Initiatives driven by specific functions / business units

Programmatic enterprise-wide automation strategy

- Organizations could also consider enterprise-wide adoption of IA solutions to optimize/transform processes. This is not limited to ad hoc events
- Such instances are on the rise, as enterprises are increasingly looking to become more agile and resilient

A programmatic approach helps enterprises realize maximum value from automation at scale. Therefore, this section focuses on the types of programmatic approaches and outlines a step-by-step strategy for enterprises to institutionalize the use of IA across their organizations

Types of programmatic approaches | top-down model

A top-down model of IA adoption is centrally driven and follows a process-centric approach to automation

Characteristics of a citizen-led model	
Role of management	Top management mandates automation, typically as part of a broader digital transformation agenda
Initiating stakeholders	Corporate or global business functions, with robust CoE support, primarily initiate projects
Team structure	Centralized automation team structure
Automation objective	Focus on driving end-to-end process automation and/or transformation
Automation approach	Process-centric approach to automation
Talent management	High emphasis on new hires and/or third-party resources
IT support	Requires significant support and involvement of enterprise IT

Advantages

- Top-down model has widespread familiarity and offers benefits such as clearer communication and greater accountability
- Centralized team/CoE structure enables policy adherence, tool standardization, and global governance for quality, speed, and automation reusability
- This approach helps organizations focus on process optimization and then automation, and enables design thinking and process reimagination. It also helps prioritize use cases that drive higher business impact

Limitations

- This model is unable to address the talent availability issue as it is dependent on skilled developers and IT talent
- Less room for creativity and innovation as there exists limited diversity in the resource set contributing to ideation and development
- High dependence on enterprise IT impacts speed and agility of implementations
- More change management effort is required as this approach is highly transformative in nature

Types of programmatic approaches | citizen-led model

A citizen-led model of IA adoption is extremely decentralized and follows a user-centric approach to automation

Characteristics of a citizen-led model	
Role of management	Top management endorses automation
Initiating stakeholders	Global shared services or local/regional business units, with limited CoE support, primarily initiate projects
Team structure	Decentralized automation team structure
Automation objective	Focus on improving employee productivity and experience; one robot for every employee
Automation approach	User-centric approach to automation
Talent management	Democratizing the use of automation and enabling citizen developers
IT support	Operations/business-led and requires less support from enterprise IT while operating within set frameworks and IT guidance

Advantages

- Decentralized team/CoE structure helps augment organizational capabilities with local or functional knowledge
- Business/operations resources contribute to automation opportunity identification and development, thereby reducing dependence on developers and increasing flexibility & agility
- Low upfront investment due to limited requirement of expensive automation-experienced resources or significant IT infrastructure

Limitations

- This model suffers from lack of or limited policy adherence, tool standardization, and application quality
- Absence of a centralized governance authority could lead to security threats
- This approach largely results in low-level automation of manual tasks, and there is no process optimization or reengineering to eliminate unnecessary steps in a process
- Additional effort is spent on training and enablement of citizen developers to fulfill organizations' overall automation development requirements

Types of programmatic approaches | hybrid model (page 1 of 2)

A hybrid model of IA adoption is a combination of the top-down and citizen-led models, bringing together the best attributes of each approach and overcoming their respective shortcomings

Team Structure	Initiating stakeholders	Role of management	Automation approach & objective	Talent management	IT support
Employs a dual structure – central team ensures standardization and governance, while local teams fuel innovation/creativity	Centralized CoE initiates projects with adequate involvement/participation from global and regional BUs	Top management provides sponsorship and promotes automation to enable digital-first operations	Combines process- and user-centric approaches to automation to improve employee productivity & experience and enable end-to-end process automation	Skilled developers and IT talent handle complex automation use cases while citizen developers take care of the simpler cases	Enterprise IT helps set policies during project initiation and provides ongoing support & guidance

"We use a combination of top-down and bottom-up approaches for automation. Crowdsourcing the niche, bottom-up use cases with citizen developers, allows the professional developers more time to work on top-down, large, complex use cases.

– Brian Klochkoff, Executive Vice President, Global Head of Automation, Dentsu International"

Types of programmatic approaches | hybrid model (page 2 of 2)

Given the benefits offered by the hybrid model, more enterprises are in the process of enabling such an approach to maximize success from IA adoption

Key benefits of implementing a hybrid model

Optimized cost

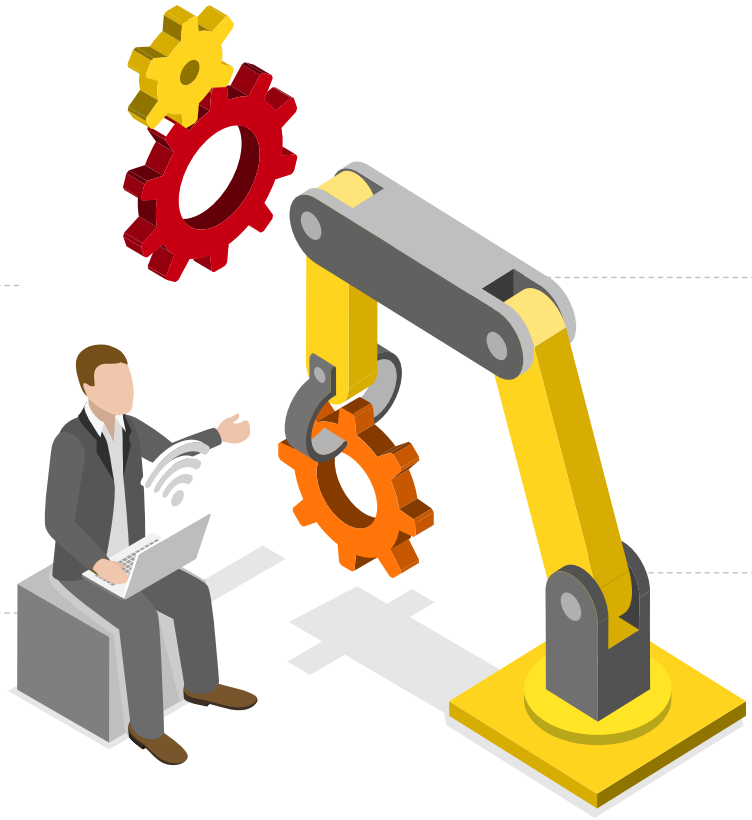
- Organizations that leverage existing operations resources/employees for development can rely less on hiring expensive IT talent
- In-house application development reduces professional services and outsourcing cost

Increased speed and efficiency

- Employing citizen developers to share some of the development requirements reduces the wait times to launch new applications
- Citizen-led development also leads to increase in hours saved, thereby providing competitive advantage

Enhanced innovation

- Citizen developers bring in creative thinking and innovation based on their front-line knowledge of businesses and potential process improvements
- They can also refine the applications independently by incorporating the feedback received directly from colleagues



Improved stakeholder satisfaction

Citizen developers can design applications that are more aligned with user needs and experience as they know what data needs to be collected and how information should be presented. This enablement also leads to increased employee satisfaction.

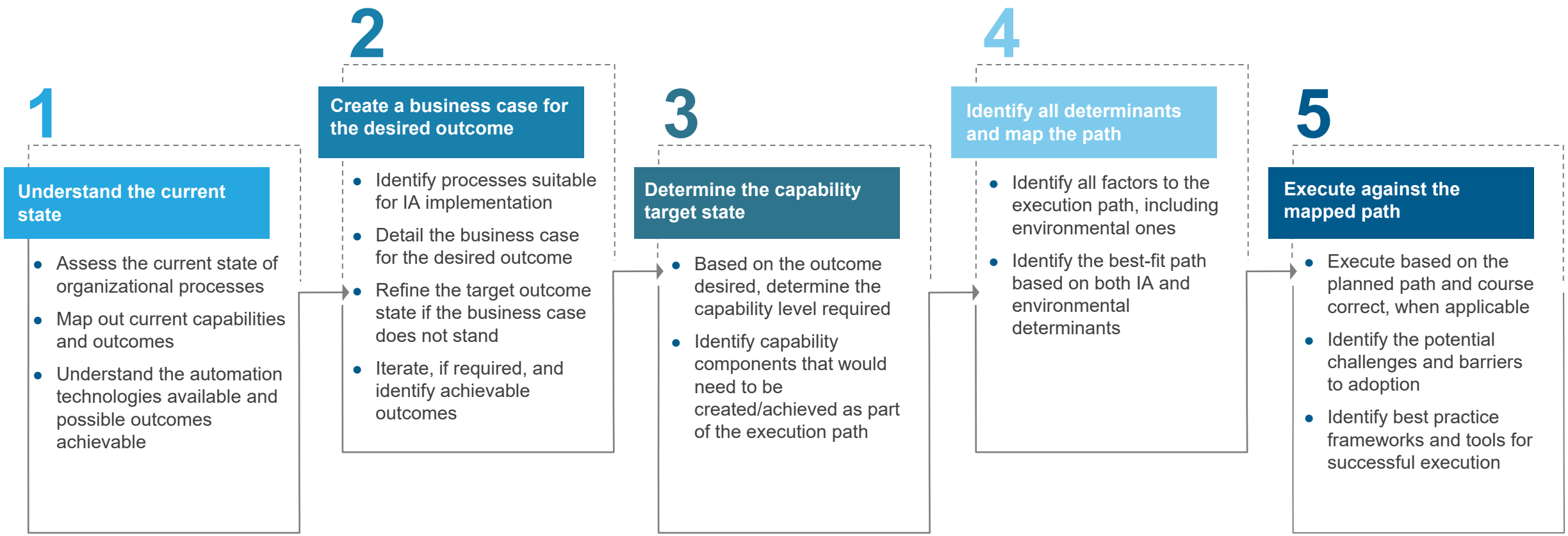
Lowered shadow IT risk

Empowering citizen developers to build applications based on their requirements within a controlled IT environment reduces the risk of shadow IT proliferation.

Reduced burden on enterprise IT

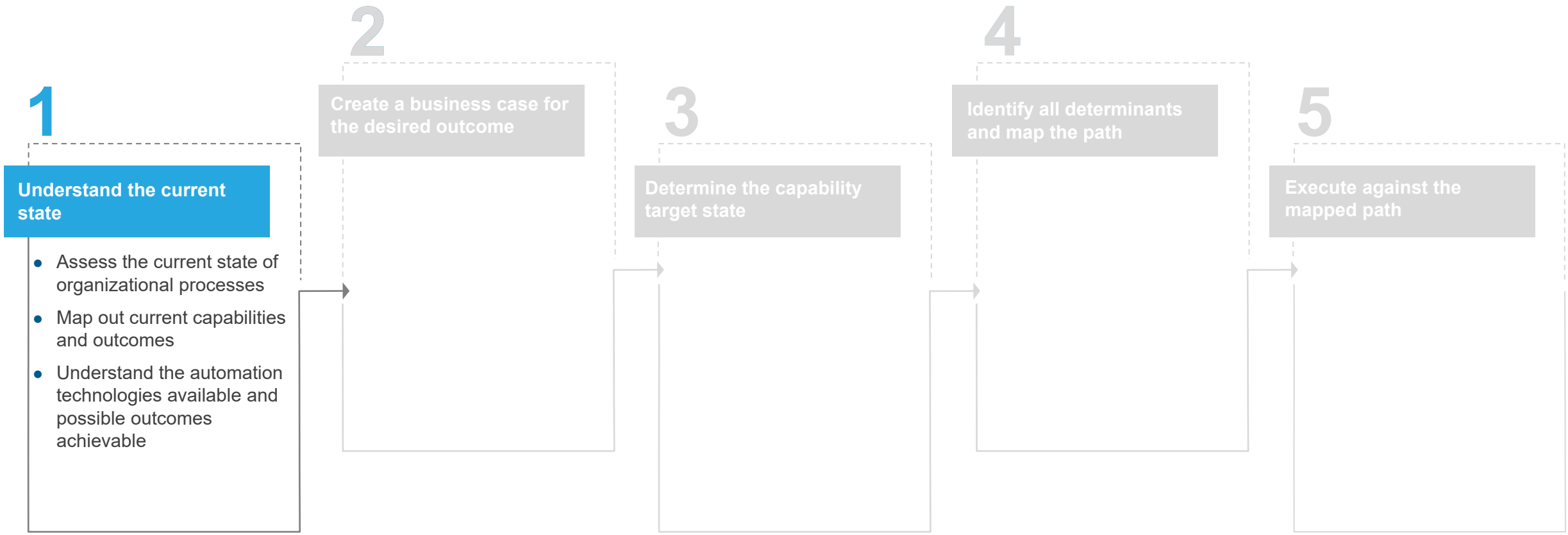
- Citizen developers can take some burden off the IT team, enabling them to focus on more complex and critical projects
- Reduced burden also enables the IT teams to support and monitor the citizen-led development program more efficiently

Enterprises can break down their automation journeys into five distinct steps



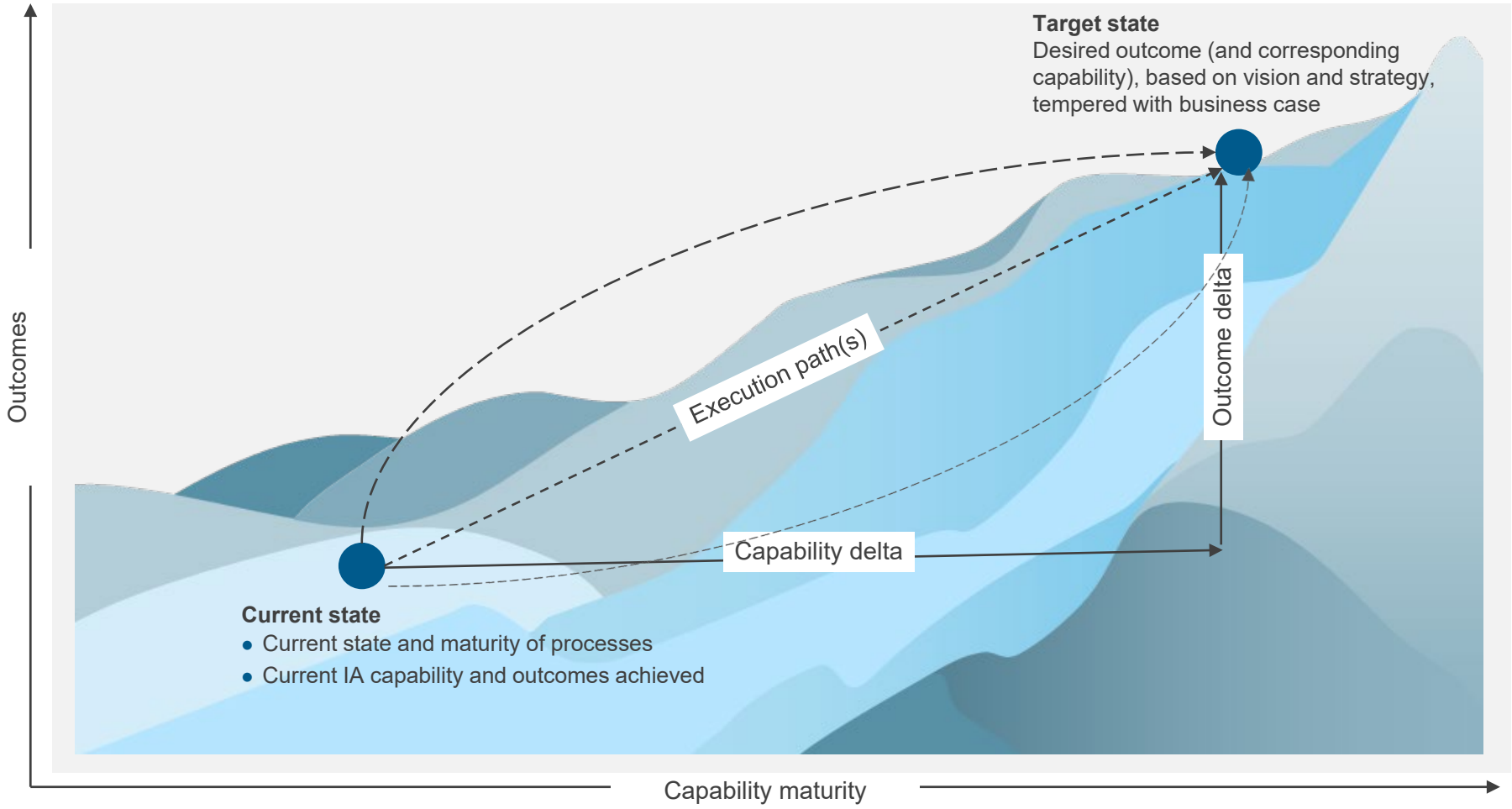
Enterprises can break down their automation journeys into five distinct steps

Step 1: understand the current state



Understand the current state (page 1 of 4)

It is important for enterprises to understand their existing and desired target outcome states to map the best-fit execution path for their automation journeys



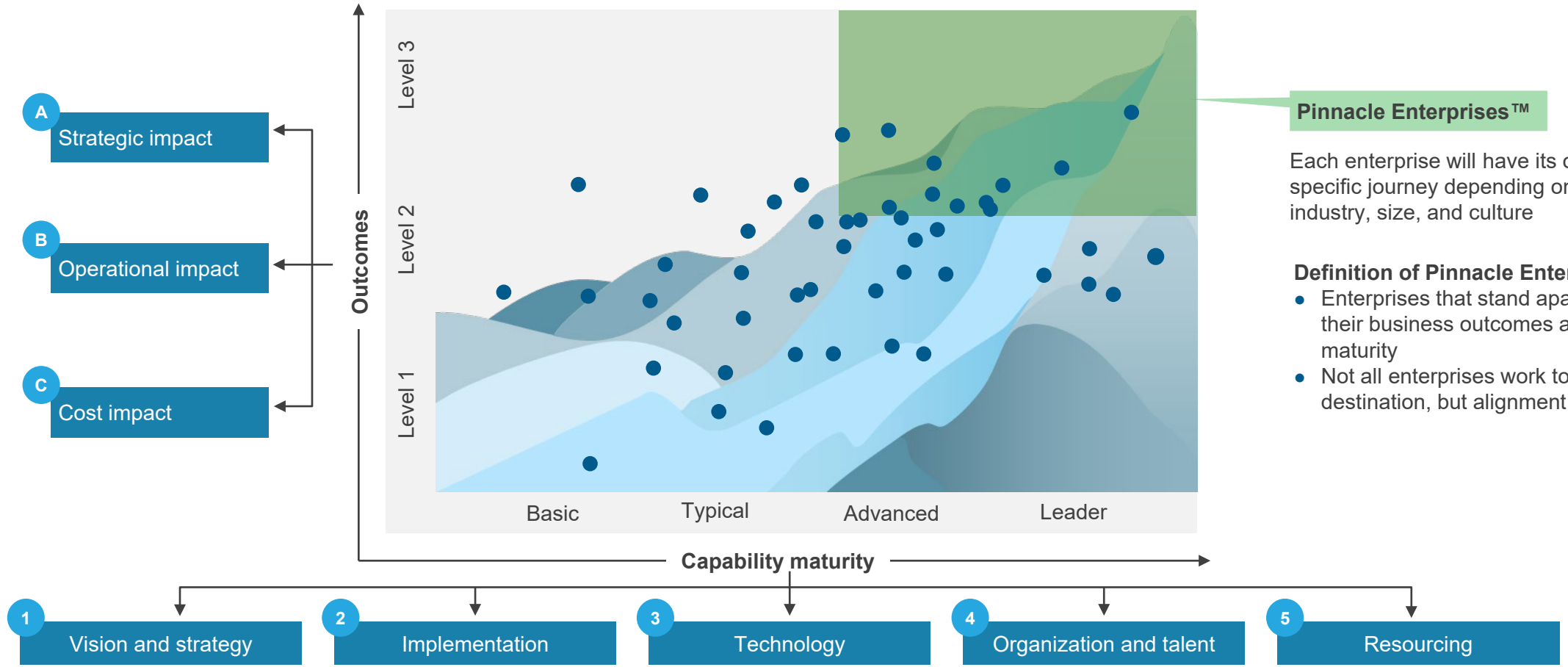
- The automation journey for every organization begins with an understanding of its current state of maturity and its aspirational target state
- The actual execution path to address the gaps will depend on multiple factors, as described in subsequent pages

Understand the current state (page 2 of 4)

The Pinnacle Model® provides enterprises with a framework to measure their automation journeys' current and target states, both in terms of outcomes and capabilities

ILLUSTRATIVE

Everest Group's Pinnacle Model® for mapping an enterprise's journey to become a Pinnacle Enterprise™



Pinnacle Enterprises™

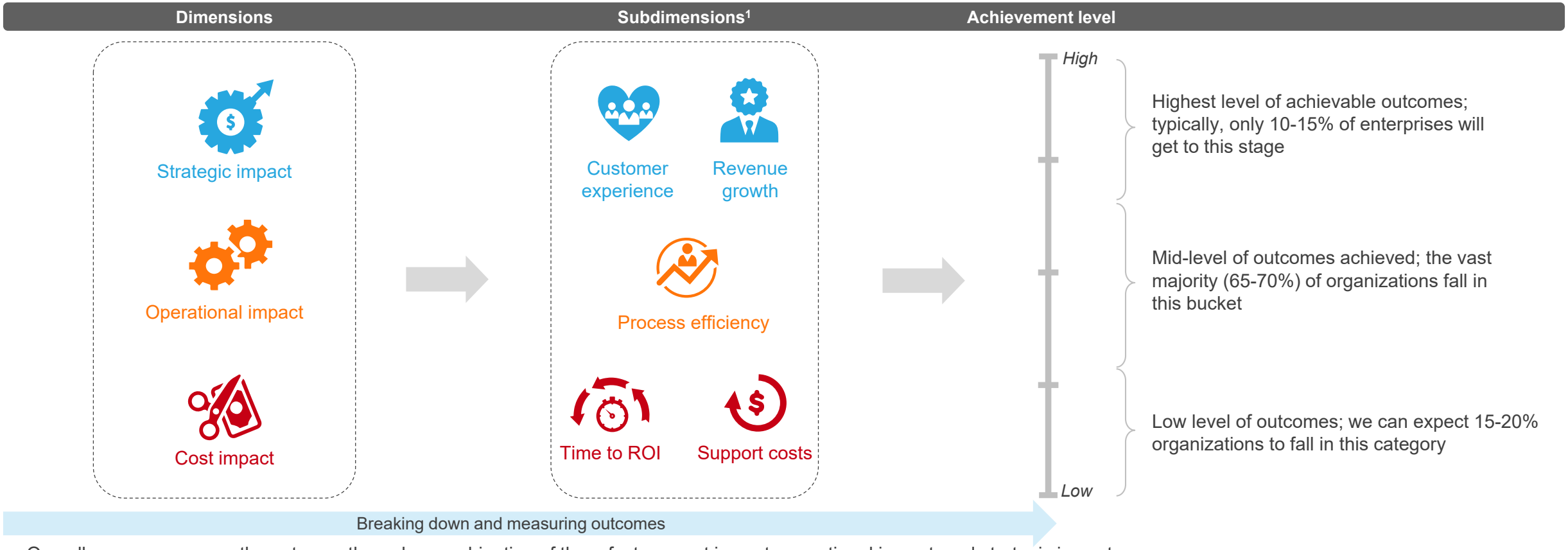
Each enterprise will have its own specific journey depending on the industry, size, and culture

Definition of Pinnacle Enterprises™

- Enterprises that stand apart from others for their business outcomes and capability maturity
- Not all enterprises work towards the same destination, but alignment is critical

Understand the current state (page 3 of 4)

Outcomes: use the Pinnacle Enterprise™ outcomes model to understand your current state and goals for the desired target state

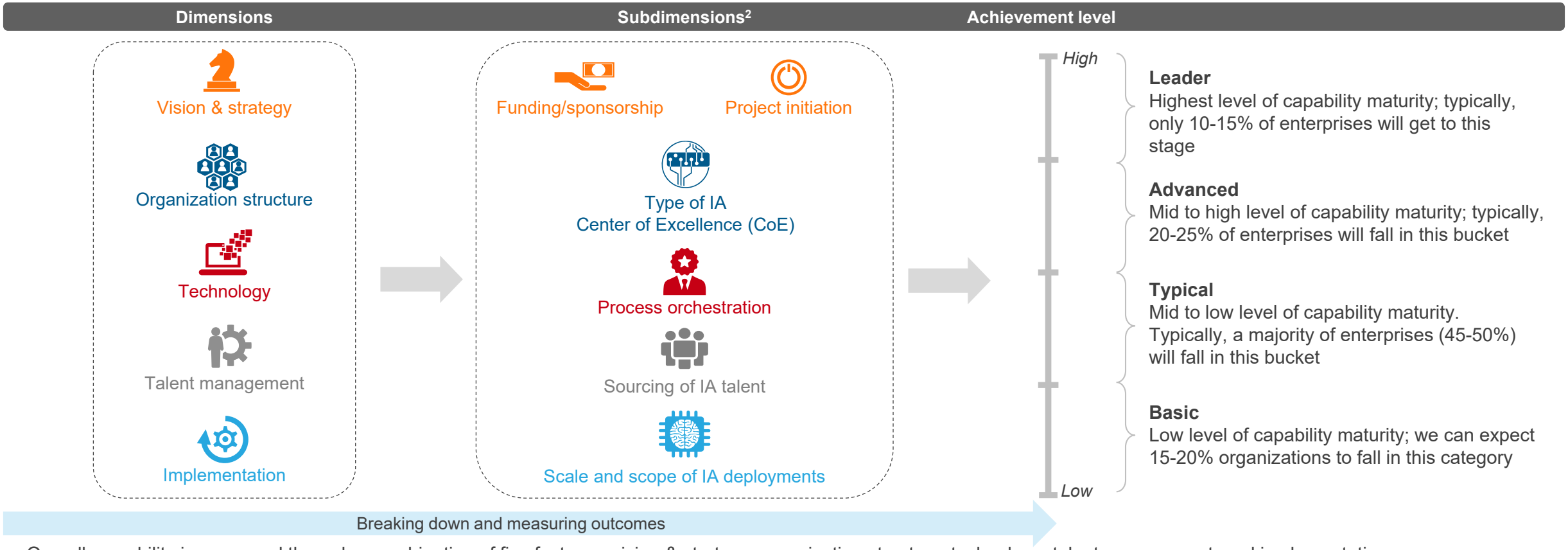


- Overall, we can measure the outcome through a combination of three factors: cost impact, operational impact, and strategic impact
- We can further break these down into subdimensions under one of the three buckets depending on the outcome level achieved. The exact outcome measures will vary significantly by the scope of IA implementation

1 Not exhaustive

Understand the current state (page 4 of 4)

Capability: the Pinnacle Enterprises™ Capability Maturity Model (CMM)1 can help enterprises understand their current state of capabilities and where they want to reach

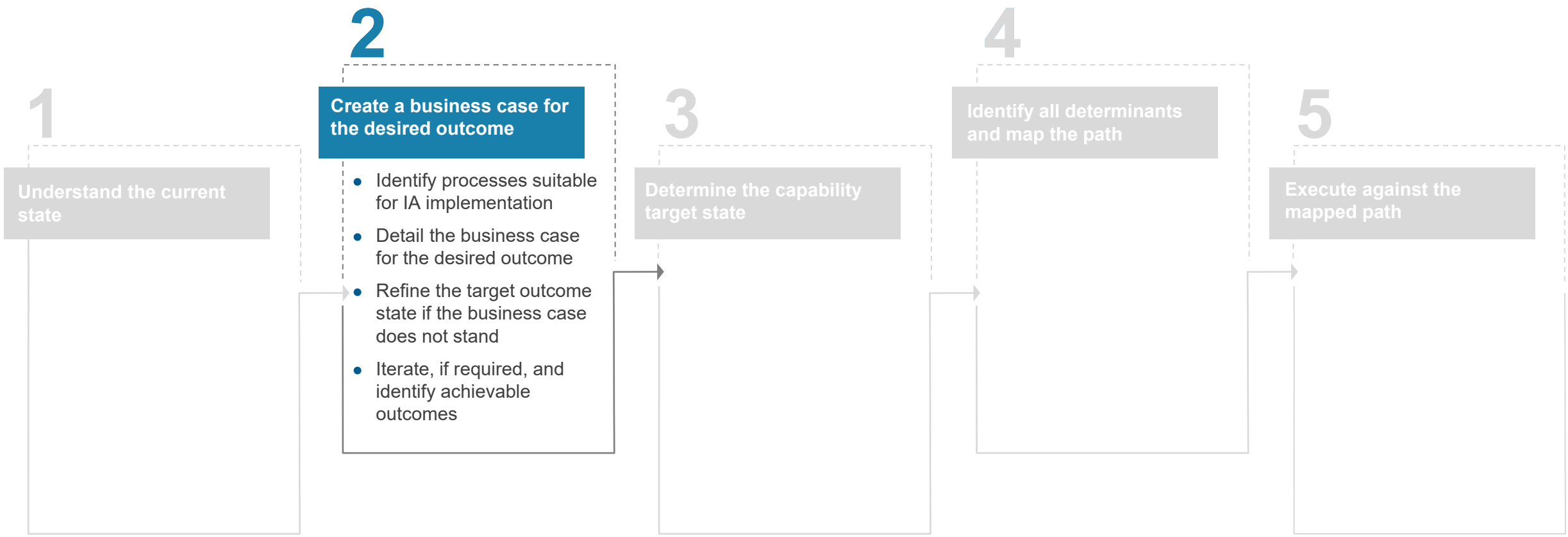


- Overall, capability is measured through a combination of five factors – vision & strategy, organization structure, technology, talent management, and implementation
- Each of these is further broken down into subdimensions, which can be measured under one of the four buckets depending on the maturity level: basic, typical, advanced, and leader

1 Refer to pages 135-152 for the detailed model, dimensions, and subdimensions
2 Not exhaustive

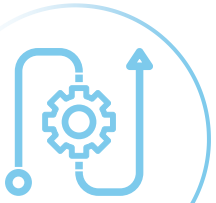
Enterprises can break down their automation journeys into five distinct steps

Step 2: create a business case for the desired outcome



Create a business case for the desired outcome (page 1 of 10)

Create a business case and refine the target outcome state



Identification of processes

- There are multiple processes within an enterprise where IA can be implemented
- The first step is to identify all the processes across business functions where IA can be applied

Prioritization of processes

- Once the processes are shortlisted, they need to be prioritized for IA implementation
- These processes must be prioritized using a structured and repeatable framework
- Processes with higher automation potential and impact on business should be prioritized

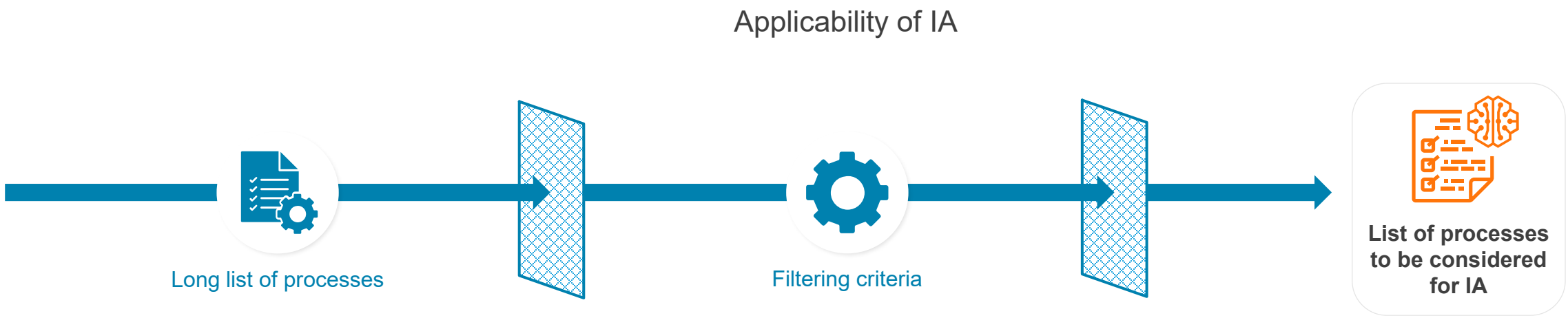
Creating a business case

- After shortlisting the top-priority processes, enterprises need to develop a business case to identify the target outcome state
- Enterprises must examine all potential use cases and target options to arrive at an achievable target outcome state

Create a business case for the desired outcome (page 2 of 10)

Processes that involve a high share of repetitive manual effort and are facing challenges related to costs, turnaround times, and quality should be identified and considered for subsequent steps

Identifying processes | Prioritizing processes | Creating a business case



- Processes that are plagued by challenges related to costs, turnaround times, quality of output
- Processes that involve a high share of repetitive and mundane manual activity

Create a business case for the desired outcome (page 3 of 10)

Enterprises should prioritize the identified processes for IA implementation, leveraging a structured and repeatable framework[1]

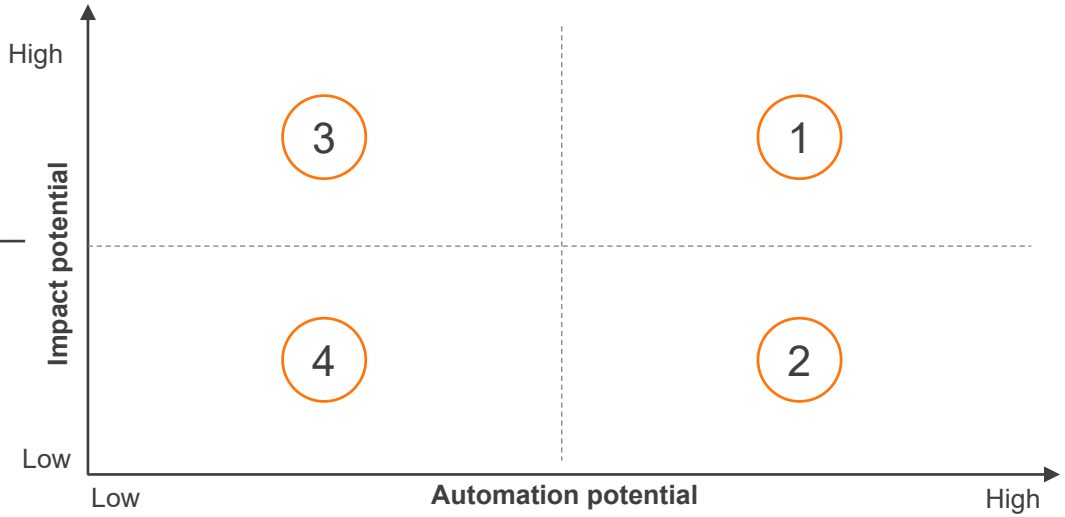
Identifying processes | **Prioritizing processes** | Creating a business case

Cost of process

Average cost per transaction and volume of transactions

Business criticality

Relative correlation of the process with organizational targets, e.g., customer experience and top-line growth



Process complexity

Degree of human judgment, expertise, and experience required. Additionally, the spread of a process across departments or geographies

Existing process health

Measure of process health based on prior optimization or automation exercises performed for improvement

Technology fragmentation

Level of fragmentation in technology

Process awareness

Measure of the extent to which a process is well-defined and structured

Extent of digitization

Degree of digitized data and digital infrastructure already in existence

Create a business case for the desired outcome (page 4 of 10)

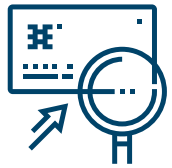
Illustration 1: a bank evaluating its KYC-AML (anti-money-laundering) business function identifies the processes to be considered for IA

KYC-AML value chain

Processes to be considered for IA implementation








KYC (onboarding, refresh, etc.)	Enhanced Due Diligence (EDD) / sanctions	Monitoring/surveillance	AML reporting	Fraud management	Chargeback
Document management	List/media screening (PEP, sanctions, media, etc.)	Activity/transaction monitoring	Alert management/investigation	Hardware monitoring	Escalation management
Customer risk assessment and data profiling	External data checks	AML monitoring for Money Service Businesses (MSB)	Compliance reporting	Navigation and link analysis	Dispute/recovery management
Compliance and quality checks	Data stream validation/ notification	Trade surveillance	Data sharing requests/reporting	Transaction screening	Model validation and refinement
Platforms					
Analytics					

Create a business case for the desired outcome (page 5 of 10)

After initial shortlisting, processes with high cost, business criticality, and high automation potential should be considered for further evaluation

ILLUSTRATIVE

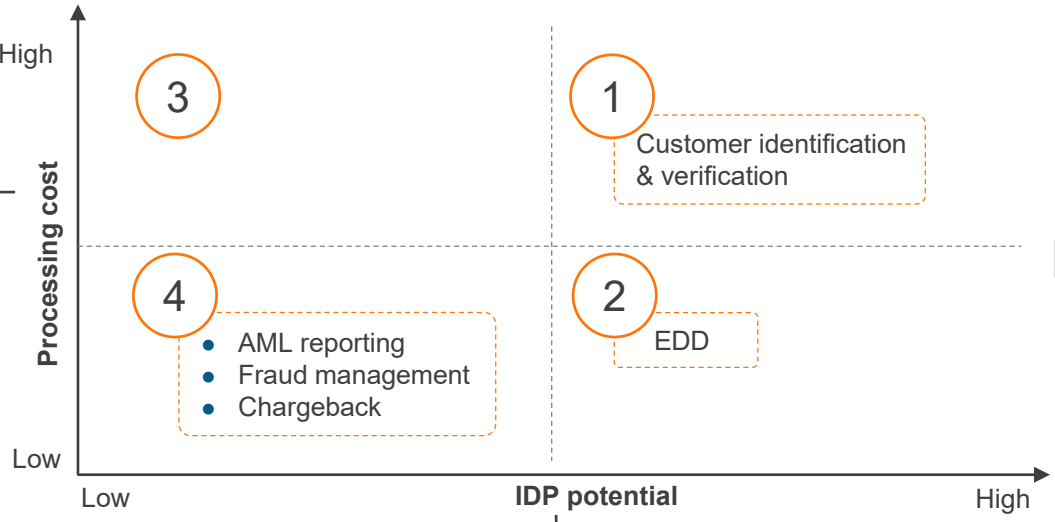
Identifying processes → **Prioritizing processes** → Creating a business case

Cost of process

Average cost per transaction and volume of transactions

Business criticality

Relative correlation of the process with organizational targets, e.g., customer experience and top-line growth



Processes in the upper right-hand quadrant would be the top priority for further consideration, given their high automation potential and impact potential

Process complexity

Degree of human judgment, expertise, and experience required. Additionally, the spread of a process across departments or geographies

Existing process health

Measure of process health based on prior optimization or automation exercises performed for improvement

Technology fragmentation

Level of fragmentation in technology

Process awareness

Measure of the extent to which a process is well-defined and structured

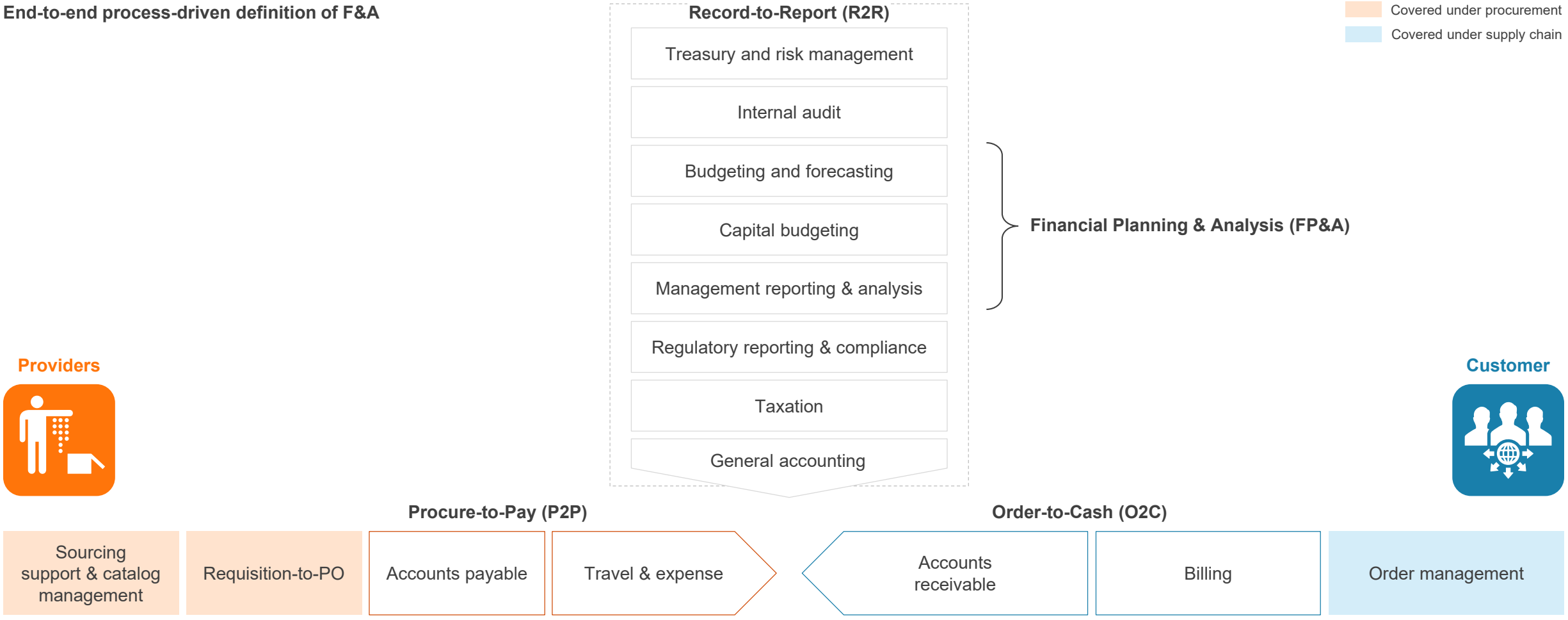
Extent of digitization

Degree of digitized data and digital infrastructure already in existence

Create a business case for the desired outcome (page 6 of 10)

Illustration 2: consider an organization evaluating its Finance and Accounting (F&A) business function for IA

End-to-end process-driven definition of F&A



Create a business case for the desired outcome (page 7 of 10)

After initial shortlisting, processes with high cost, business criticality, and high automation potential should be considered for further evaluation

ILLUSTRATIVE

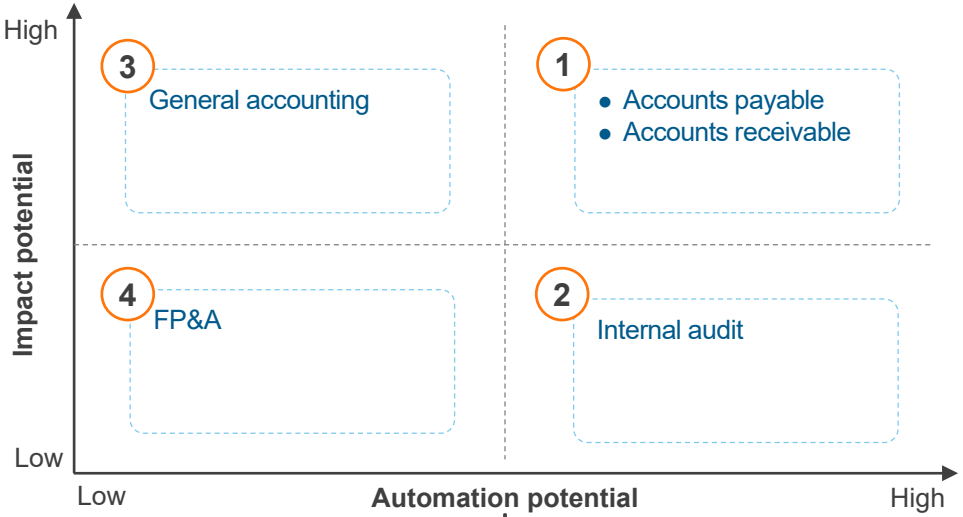
Identifying processes → **Prioritizing processes** → Creating a business case

Cost of process

Average cost per transaction and volume of transactions

Business criticality

Relative correlation of the process with organizational targets, e.g., customer experience and top-line growth



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Extent of digitization

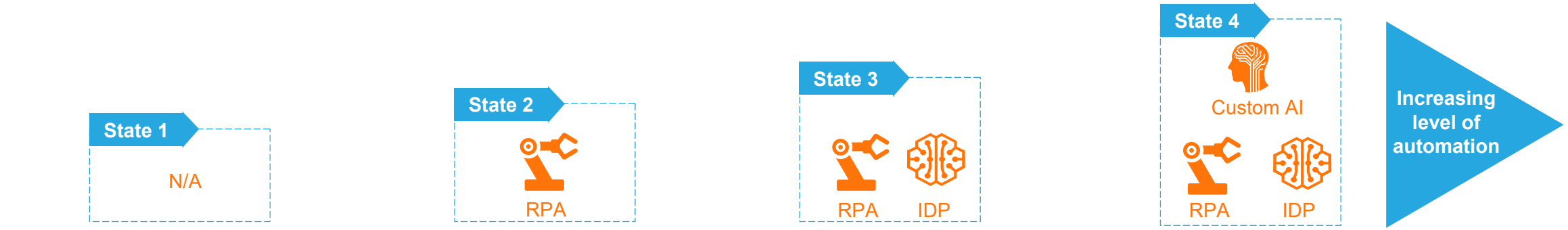
Degree of digitized data and digital infrastructure already in existence

Create a business case for the desired outcome (page 8 of 10)

Examining the target state options

Identifying processes → Prioritizing processes → **Creating a business case**

Consider accounts payable as an example. The illustrative process consists of three tasks: invoice data extraction, invoice exception handling, and provider/vendor account reconciliation. With increasing sophistication of IA technologies, larger parts of the process can be automated.



Use cases (all examples additive to previous state)

None – business as usual	• Robot(s) processing incoming emails, monitoring the inbox 24/7. When a new email arrives, the robot downloads the invoices attached to a shared drive and adds a reference for each one to an orchestrator queue • Provider/vendor account reconciliation	Use of IDP to digitize and extract data from invoices • Exception handling and verification through human in the loop	Exception handling through ML-based algorithms. ML-based predictive analytics to provide inputs on provider/vendor payment patterns, need for follow ups, payment terms suggestions, etc.

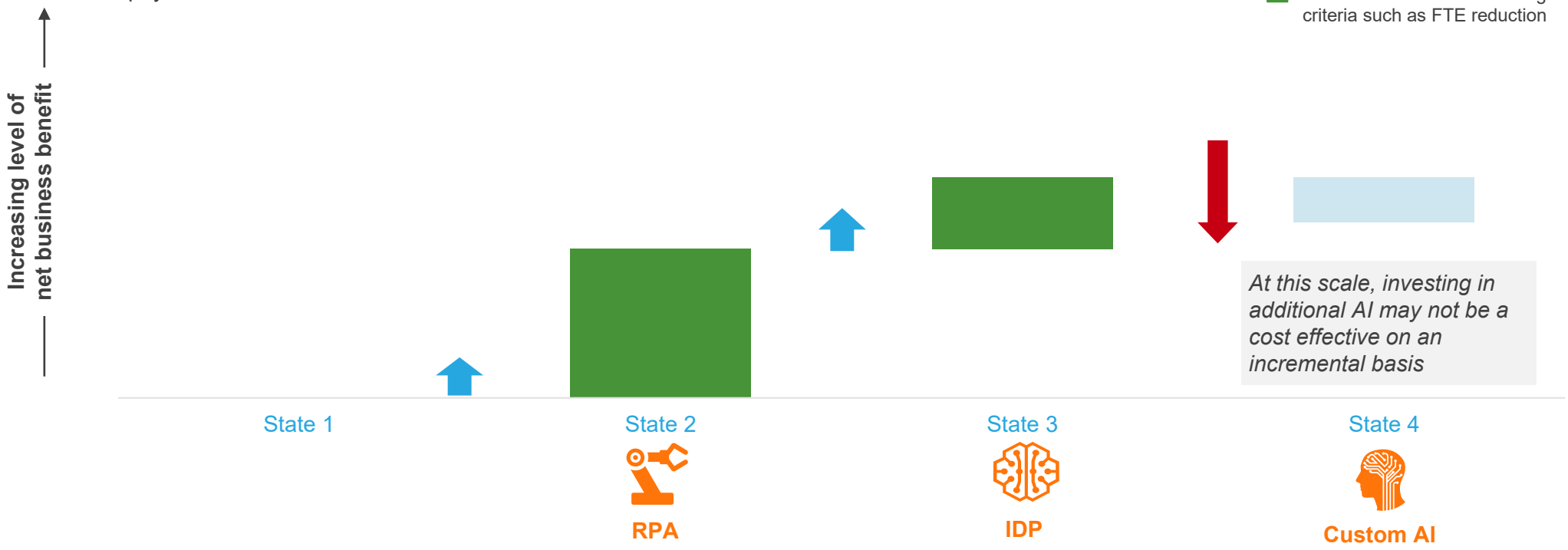
Create a business case for the desired outcome (page 9 of 10)

Enterprises can target multiple options with IA; the key is to evaluate the different target options against the likelihood of diminishing returns

ILLUSTRATIVE

Identifying processes → Prioritizing processes → Creating a business case

Example 1: Accounts payable; **low-scale of initial FTEs**



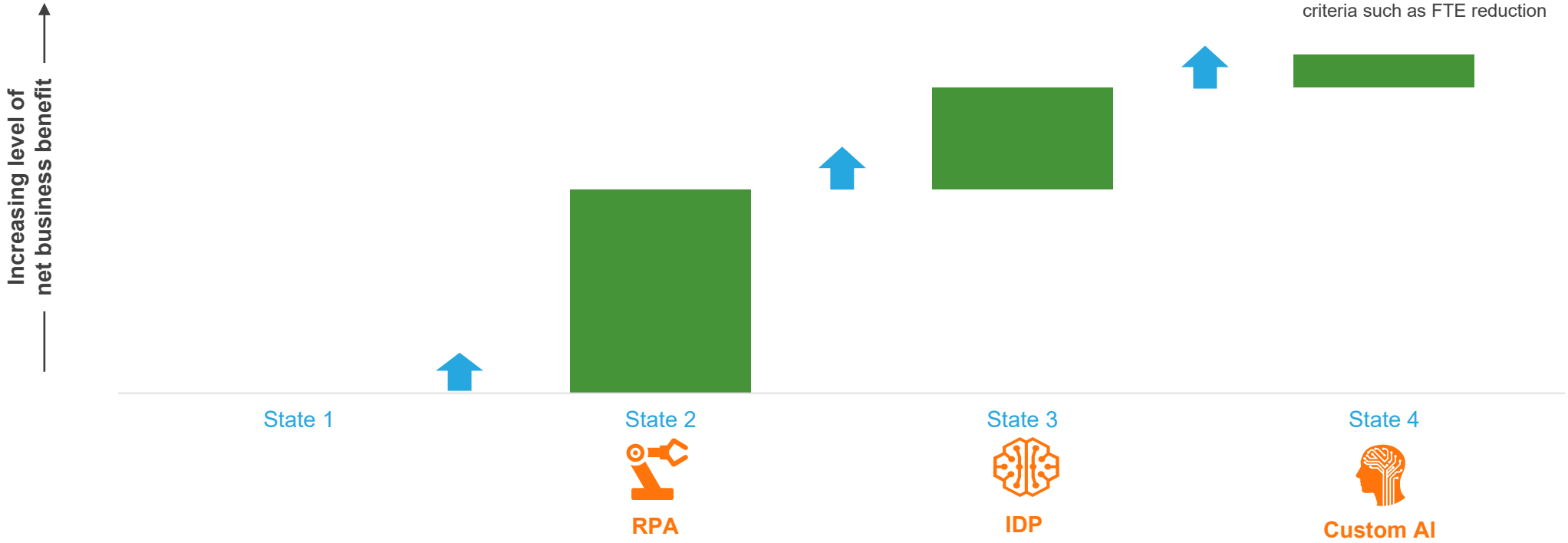
IA use cases (additive to previous state)	State 1	State 2	State 3	State 4
	None – business as usual	• Email monitoring and downloads • Provider/vendor account reconciliation	Digitize and extract data from invoices	• Exception handling • Predictive analytics

Create a business case for the desired outcome (page 10 of 10)

Enterprises can target multiple options with IA; the key is to evaluate the different target options against the likelihood of diminishing returns

Identifying processes → Prioritizing processes → Creating a business case

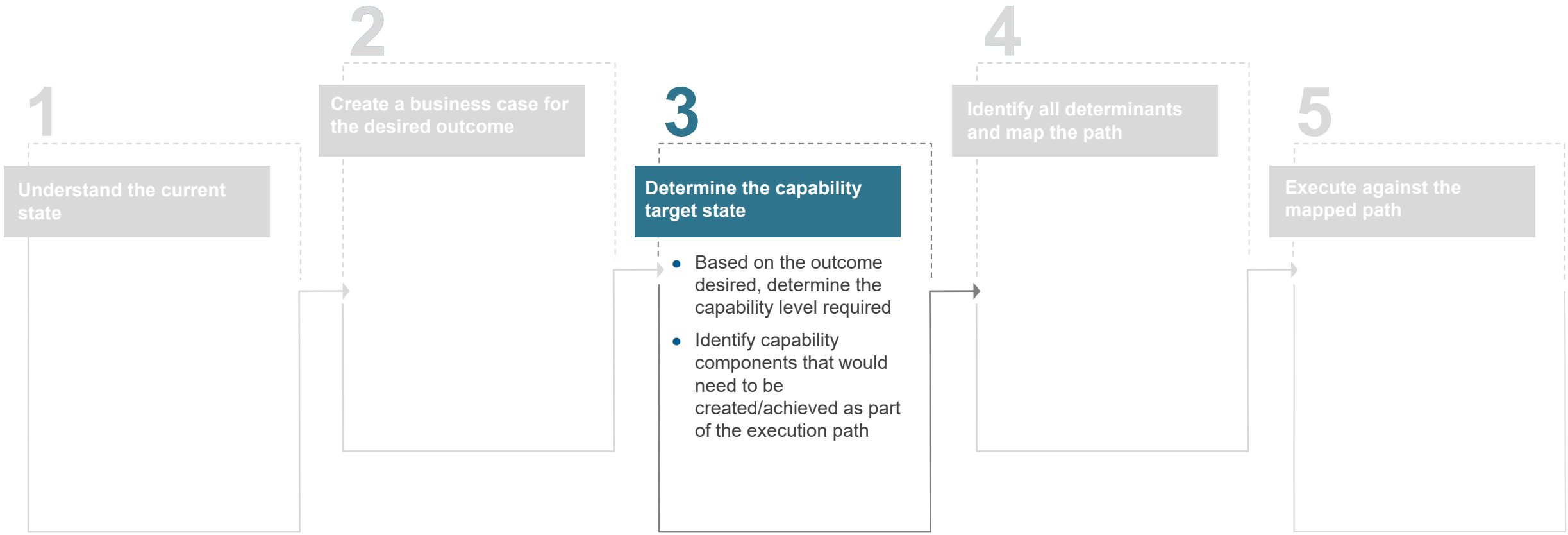
Example 2: Accounts payable; **high-scale of initial FTEs**



IA use cases (additive to previous state)			
None – business as usual	• Email monitoring and downloads • Provider/vendor account reconciliation	Digitize and extract data from invoices	• Exception handling • Predictive analytics

Enterprises can break down their automation journeys into five distinct steps

Step 3: determine the capability target state



Determine the capability target state (page 1 of 5)

The enterprise automation journey will take different forms based on two sets of determinants – IA solution-related and environmental

Key focus in step 3

Enterprise automation journey

Determination of the capability target state

IA solution-related determinants

- Current outcome and capability
- Enterprise objectives or target outcome
- Business case, including the availability of investment required
- Availability of low-hanging fruit

Execution path to be followed

Environmental determinants

- Organization structure
- People/process centricity
- Initiating stakeholder(s)
- Risk appetite
- Technology savviness
- Sensitivity to change
- Existing partnerships

Determine the capability target state (page 2 of 5)

Once enterprises have determined achievable outcomes, the next step is to map out what capabilities are required to achieve them

ILLUSTRATIVE

Required capability

Intelligent automation CMM (page 6 of 15)

Organization structure

Capability element	Basic	Typical	Advanced	Leader
Roles and responsibilities of the CoE	• Roll out and implement IA projects and ensure coordinated communication with relevant stakeholders • Loosely defined roles, responsibilities, and skill sets	• Ensure quality and compliance through well-defined standards, procedures, and guidelines • Roll out and implement IA projects and ensure coordinated communication with relevant stakeholders • Some key roles and responsibilities are well-defined	• Identify new opportunities and use cases; lead PoCs, testing, and maintenance; and approve all IA procedures before they are put into production/deployment • Ensure quality and compliance through well-defined standards, procedures, and guidelines owned and developed by the CoE for broader digital initiatives • Ensure coordinated communication with relevant stakeholders • Well-defined roles, responsibilities, and skill sets	• Educate business units on IA benefits; approve all IA procedures before they are put into deployment • Provide IA training and education programs to develop talent • Identify new opportunities and use cases; and lead PoCs, testing, and maintenance • Ensure quality and compliance through well-defined standards, procedures, and guidelines owned and developed by the CoE • Roll out and implement IA projects • Well-defined roles, responsibilities, and skill sets
Reusability of automations	Does not have a library of reusable automations	Locally developed libraries of reusable automations but not shared across business units / regions	Developed libraries of reusable automations and shared across some business units / regions	Developed a central library of reusable automations that are shared across the organization globally

Intelligent automation CMM (page 8 of 15)

Technology

Capability element	Basic	Typical	Advanced	Leader
RPA	Primarily attended RPA / RDA	Attended RPA / RDA and unattended RPA for batch processes	Autonomous RPA with human-in-the-loop for near real-time exception handling and user interaction	RPA-as-a-service; autonomous RPA with human-in-the-loop for near real-time exception handling and user interaction
IDP	Basic OCR for digitizing content; typed text; does not have the ability to automatically classify documents	OCR- and ML-based; document classification, data capture, and extraction using ML and validation; block letters (typed) and tables	OCR, auto ML, and NLP; document classification, data capture, and extraction using near real-time / active learning, auto ML, NLP, intent analysis, and validation; block letters (typed or handwritten), checkboxes, bar codes, and logos	OCR, domain ontology, deep learning, auto ML, and NLP; document classification, data capture, and extraction using near real-time / active learning, intent analysis, and validation; block letters (typed or handwritten), checkboxes, bar codes, logos, stamps, charts, signatures, and cursive writing
CAI	Simple and rules-based chatbots	CAI robots leveraging ML and NLP for training and intent recognition	CAI robots leveraging ML and NLP for training, intent recognition, and sentiment analysis; also providing omnichannel experience to users	CAI robots leveraging deep learning, ML, NLP, and contextual & domain ontology for training, intent recognition, and sentiment analysis; offering AI-enabled agent-assist capability

Note: Refer to pages 135-152 to understand the Capability Maturity Model (CMM)

Determine the capability target state (page 3 of 5)

Everest Group evaluates IA capabilities according to five key components of enterprises' automation journeys

Journey components	Key focus area
Vision & strategy	• Assess the organizational vision for IA and the drivers for its adoption • Evaluate the organization's readiness for IA adoption from process, security, and monitoring perspectives
Organization structure	• Assess the governance model for IA initiatives • Analyze the IA team structure and the COE's roles and responsibilities
Technology	• Assess the extent to which various IA components, such as RPA, IDP, conversational AI, and process mining, are being leveraged • Evaluate the level of sophistication of the IA technologies deployed
Talent management	• Assess the sourcing strategy, training, and education programs for various IA skills, along with the level of sharing/pooling of resources/skills • Evaluate the level of employee awareness and engagement for managing change
Implementation	Evaluate the maturity stage, scale, scope, and speed of IA adoption – in terms of number of processes, users, and business units

Determine the capability target state (page 4 of 5)

Enterprises' IA capabilities are assessed across 35+ capability elements

Journey components	Capability	
A. Vision & strategy (10 capabilities)	A1. End objectives of IA adoption A2. Funding/sponsorship A3. Project initiation A4. Security & risk preparedness for IA with factors considered A5. IT alignment	A6. Metrics and KPIs to measure the benefits/impact of IA A7. Metrics and KPIs to measure the effectiveness of IA initiatives A8. Targeted process types for IA adoption A9. Process prioritization A10. Process reengineering
B. Organization structure (8 capabilities)	B1. IA team structure and roles B2. Types of IA CoEs B3. Scope of the IA CoE B4. Roles and responsibilities of the CoE	B5. Reusability of automations B6. Focus on tracking/optimizing the effectiveness of the program B7. Focus on tracking/optimizing the benefits achieved B8. Process monitoring
C. Technology (10 capabilities)	C1. RPA C2. IDP C3. CAI C4. Process mining C5. Task mining	C6. Process orchestration / BPM C7. Analytics C8. Pre-built automation templates / accelerators C9. Hosting type C10. Product architecture
D. Talent management (6 capabilities)	D1. Sourcing of IA talent/skills D2. IA training and education D3. Sharing/pooling of IA skills D4. Employee awareness and engagement	D5. Nature of impact on employees D6. Citizen-led development
E. Implementation – scale, scope, and speed (4 capabilities)	E1. Distribution of IA projects by stage E2. Scale of IA adoption E3. Scope of IA adoption E4. Speed of IA adoption	

Determine the capability target state (page 5 of 5)

Enterprises' IA capabilities are assessed across four maturity levels

The four capability maturity levels

XX% Approximate share of enterprises at each maturity level

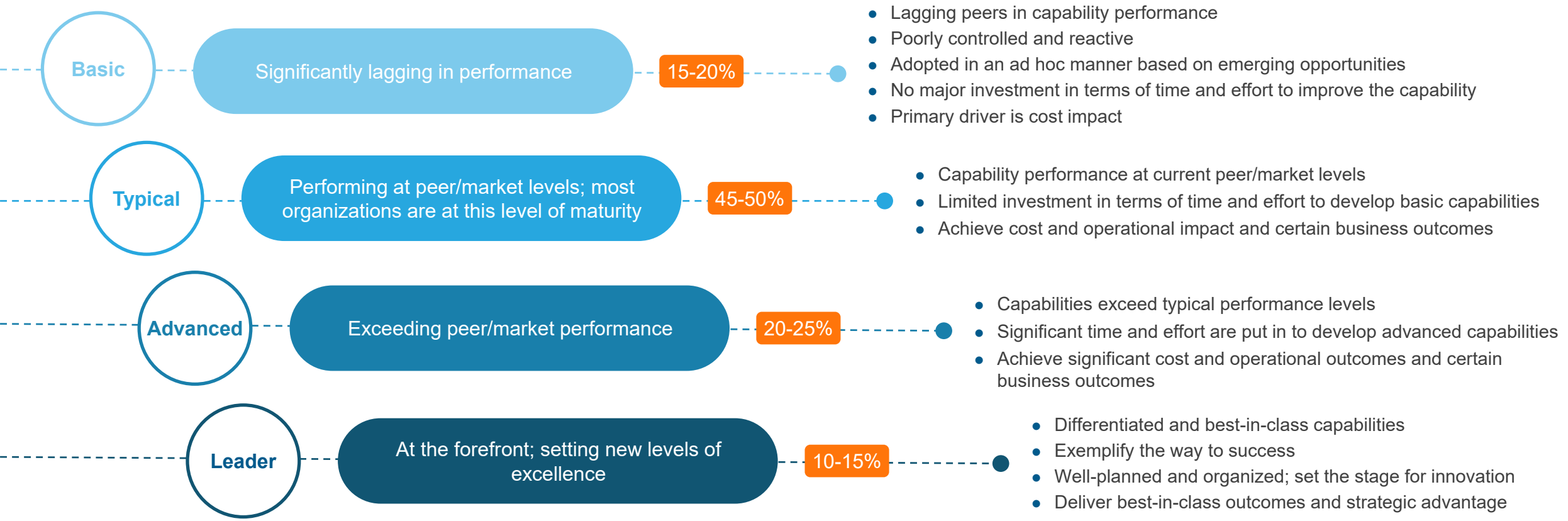


Illustration: non-linear organizational journeys (page 1 of 3)

Current state, enterprise objective, business case, and the availability of low-hanging fruit impact the determination of the capability target state

ILLUSTRATIVE

- The journey from the current capability state to the capability target state need not be linear. Organizations can undergo multiple sprints of varying durations to move from one state to another. The exhibit below talks about one such sprint
- Organizations can be at different levels of maturity across their capability elements. The current/target capability of an organization is a weighted average of the maturity levels across individual capability elements. For example, an organization can be at the Basic state across most capability elements and at the **Typical** or **Advanced** state in a few, but it might turn out to be at the **Basic** stage at an overall enterprise level
- In the exhibit below, we observe the journeys of two organizations with different current capabilities and objectives

Organization A		**Organization** B
The organization has adopted RPA and IDP in some processes but is new to other IA elements	Current state	The organization is new to automation overall including RPA
It plans to use IA for automating new processes and widening the scope of automation to include elements such as customer experience automation and broader process orchestration	Objective	It plans to use IA for automation of rules-based, transactional processes in backend operations along with continuous monitoring and process improvement
It possesses the financial strength to commit to the investment required to meet the objectives and has a favorable business case	Business case	It possesses the financial strength to commit to the investment required to meet the objectives and has a favorable business case
Processes where RPA is already deployed	Low-hanging fruit	Processes that are structured and contain a limited number of steps
This organization could remain at lower maturity levels (e.g., Basic) across capability elements such as process mining and task mining to start with; however, it might target higher maturity levels (e.g., Leader) across capability elements such as conversational AI and process orchestration	Target-state determination	This organization might target higher maturity levels across capability elements such as process mining and task mining; however, it could remain at lower maturity levels across capability elements such as conversational AI and IDP

Illustration: non-linear organizational journeys (page 2 of 3)

Overall organizational capability is a weighted average of all the individual capability elements

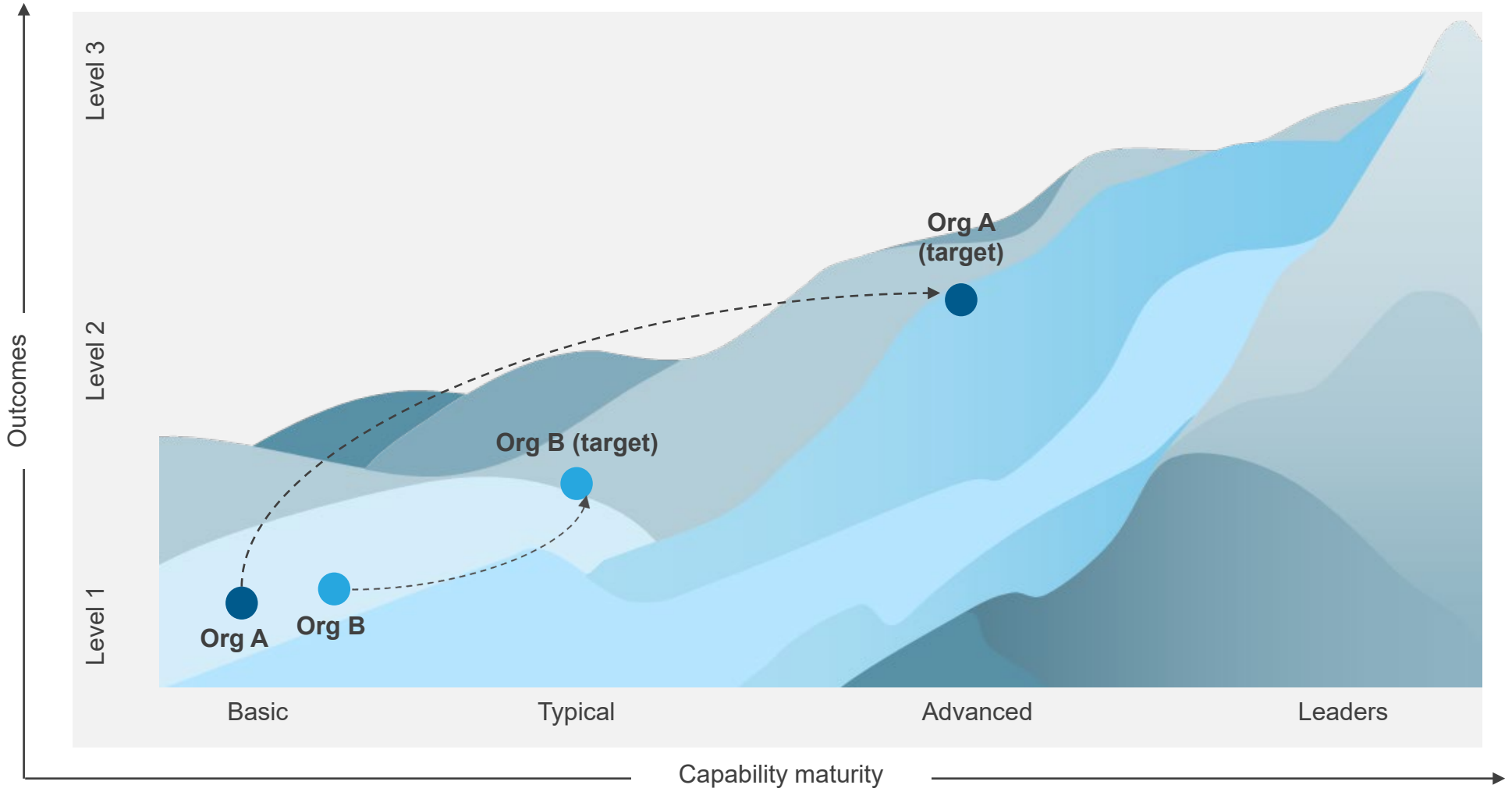
ILLUSTRATIVE

Journey component	Capability element/s	Organization A	Org A (target)	Organization B	Org B (target)
Vision & strategy	• End objectives and application of IA	Basic	Typical	Basic	Advanced
	• Funding/sponsorship	Typical	Advanced	Basic	Typical
Organization structure	Type of IA CoE	Typical	Leader	Basic	Basic
Technology	• RPA	Basic	Typical	Basic	Typical
	• IDP	Basic	Leader	Basic	Typical
Talent management	Sourcing of IA talent/skills	Basic	Advanced	Typical	Advanced
Implementation	Scale of IA adoption	Basic	Advanced	Basic	Typical
Overall		**Basic**	**Advanced**	**Basic**	**Typical**

Illustration: non-linear organizational journeys (page 3 of 3)

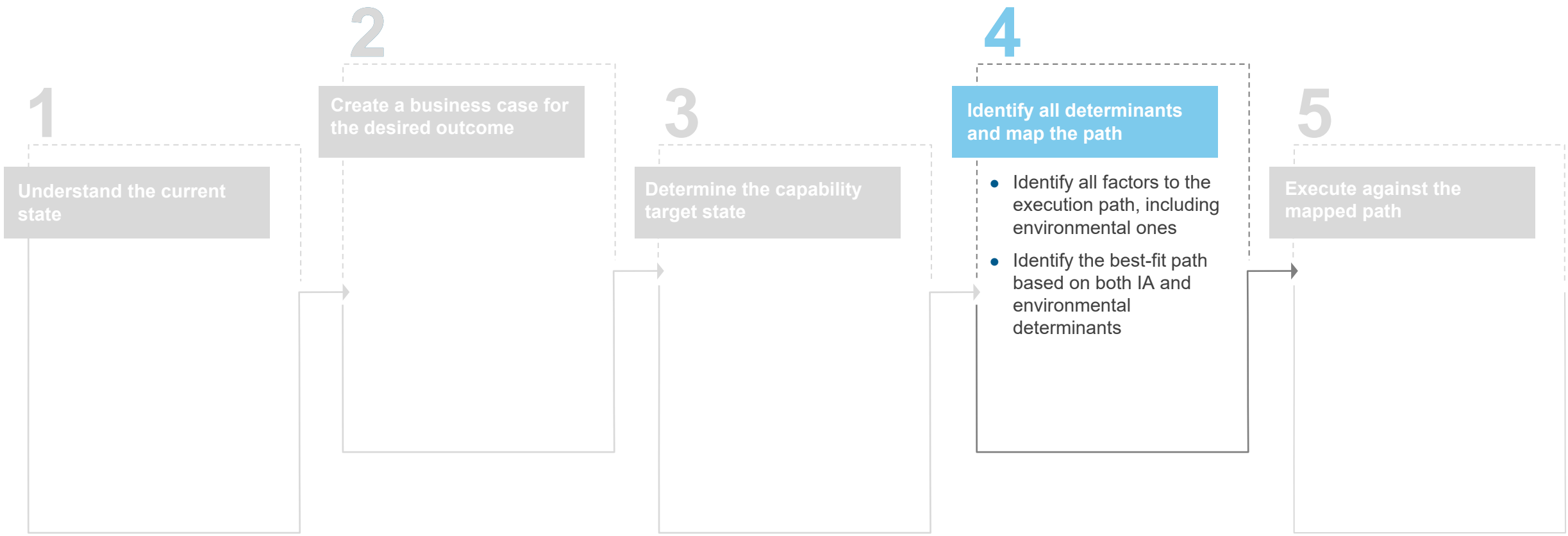
Organizations can jump from one capability state to another without necessarily following a linear journey from one state to the other

ILLUSTRATIVE



Enterprises can break down their automation journeys into five distinct steps

Step 4: identify all determinants and map the path



Identify all determinants and map the path (page 1 of 7)

The enterprise automation journey will take different routes based on two sets of determinants – IA solution-related and environmental

Enterprise automation journey

Determination of the capability target state

IA solution determinants
- Current outcome and capability
- Enterprise objectives or target outcome
- Business case, including the availability of investment required
- Availability of low-hanging fruits

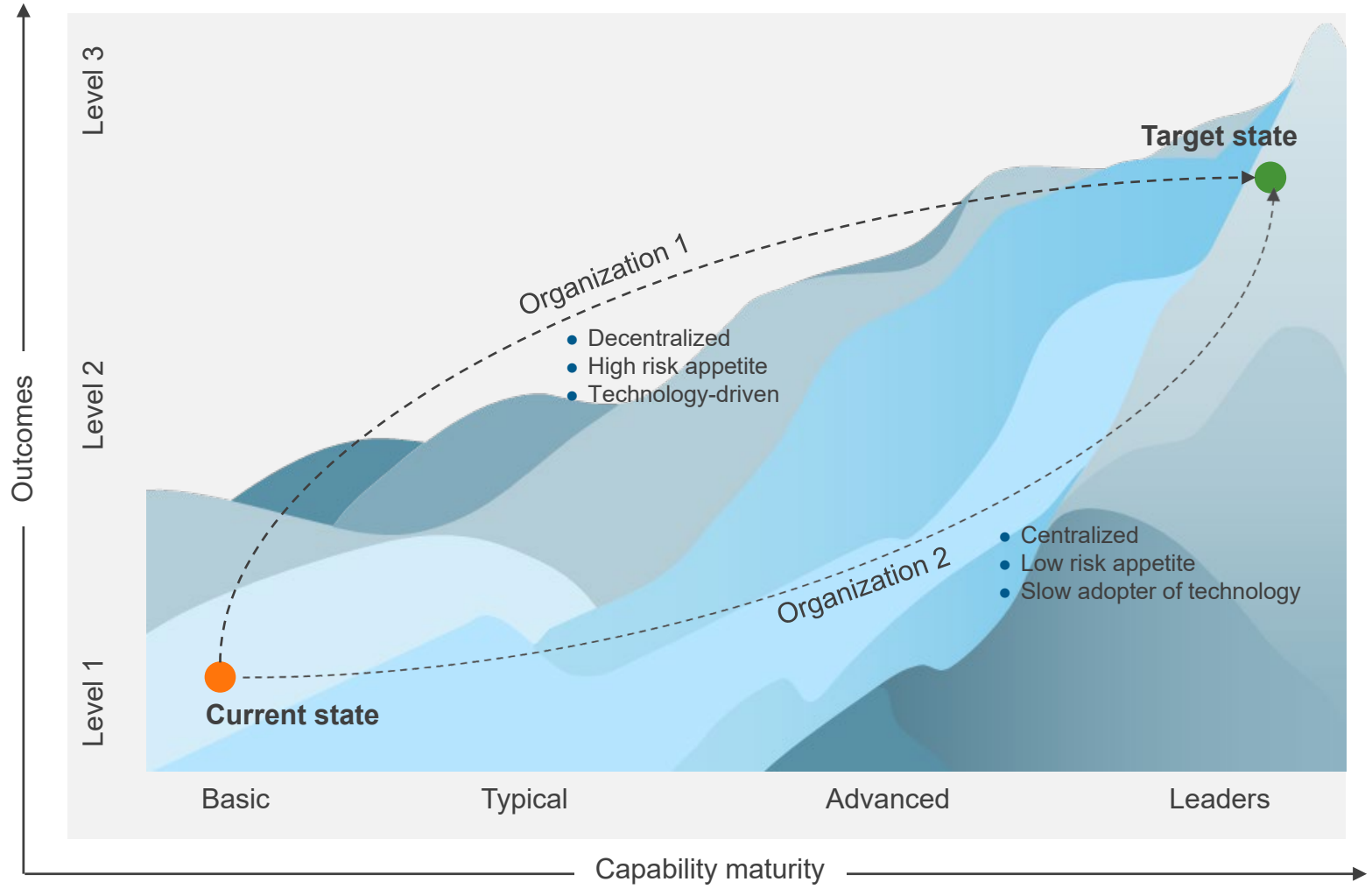
Execution path to be followed

Key focus in step 4

Environmental determinants
- Organization structure
- People-/process-centricity
- Initiating stakeholder(s)
- Risk appetite
- Technology savviness
- Sensitivity to change
- Existing partnerships

Identify all determinants and map the path (page 2 of 7)

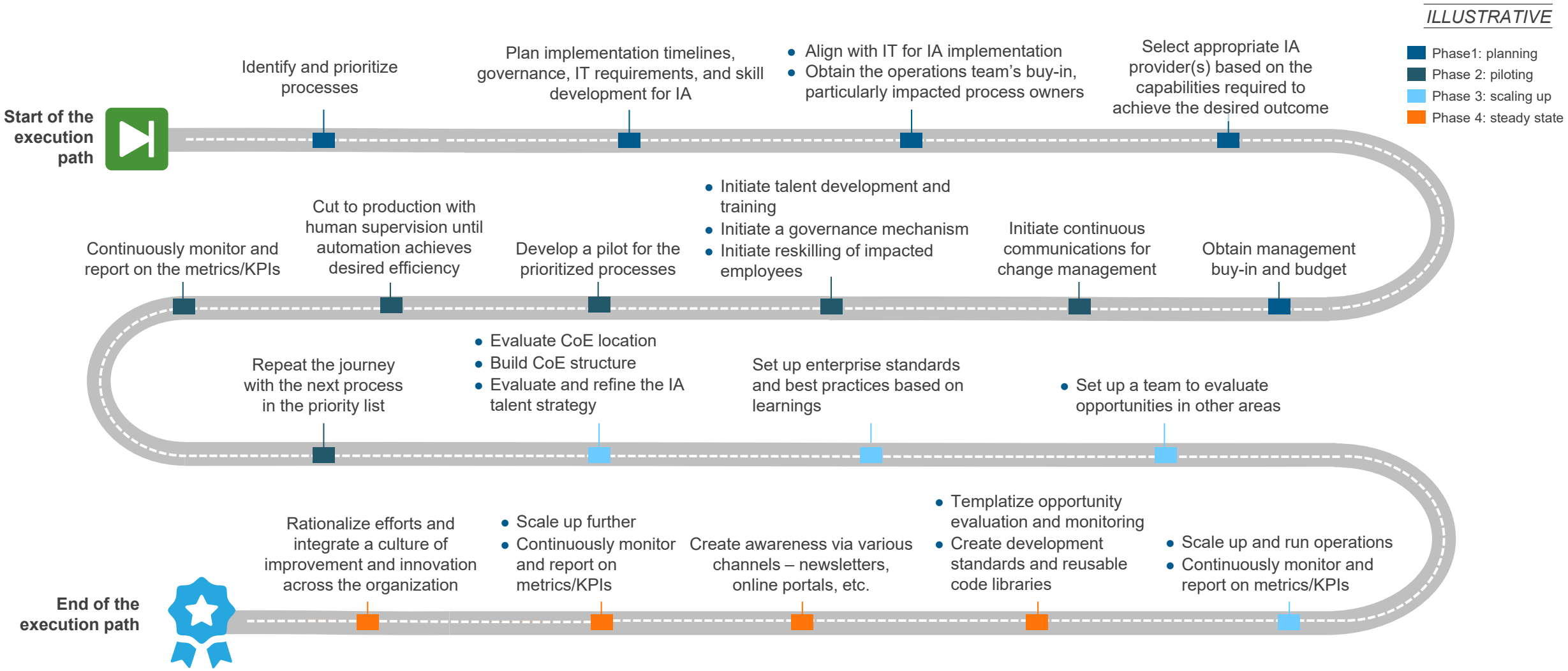
Even if two organizations have similar starting points and end goals, their culture, structure, and other environmental factors will influence the paths they take



Two enterprises starting their journeys at the same low level of IA adoption maturity and wishing to reach the same advanced target state may take significantly different execution paths; the paths would largely depend on environmental determinants.

Identify all determinants and map the path (page 3 of 7)

While all enterprises will likely follow a series of steps in their execution paths…



Identify all determinants and map the path (page 4 of 7)

… the nature of those steps will vary based on environmental determinants[1]

ILLUSTRATIVE

Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 1 of 4)
Planning

Steps		Determinants	Path options
1	Identify and prioritize processes using the prioritization framework	• Risk appetite • Sensitivity to change • Availability of event logs	• Imp • Imp • Big
2	Plan implementation timelines, governance, and skill development for IA	NA	NA
3a	Align with IT for IA implementation	• Organization structure • Technology savviness • Initiating stakeholders	• IT • IT • IT
3b	Obtain the operations team's, particularly process owners', buy-in	• Sensitivity to change • People/process centricity	• Op • Sel • Sel
4	Select appropriate IA provider(s) based on the capabilities required to achieve the desired outcome	• Existing IA partnerships • Risk appetite	• Lev • Eva • Eva
5	Obtain management buy-in and budget	• Organization structure • Initiating stakeholders	• Bu • Bu • Bu

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Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 2 of 4)
Piloting

Steps		Determinants	Path options
6	Initiate continuous communication as part of change management	• Sensitivity to change • People/process centricity	• Low to no communication • Medi • Freq
7a	Initiate talent development	• Technology savviness	• Deve • Use • Use
7b	Initiate training of resources for IA skills	• Technology savviness	• Train • Leve • A hy
7c	Initiate a governance mechanism	• Risk appetite • Organization structure	• A sta • Com
7d	Initiate reskilling of impacted employees	• People centricity	• No r • Upsk • Resk
8	Develop a pilot for prioritized processes	• Risk appetite • Sensitivity to change • Availability of event logs	• Pilot • Pilot
9	Cut to production with human supervision until automation achieves desired efficiency	• Risk appetite	• Alwa • Emp • Allow
10	Continuously monitor and report on metrics/KPIs	NA	NA
11	Repeat the journey with the next process in the priority list	NA	NA

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Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 3 of 4)
Scaling up

Steps		Determinants	Path options
12a	Evaluate the CoE's location	• Organization structure • Initiating stakeholders	• Ind • Em
12b	Build the CoE's structure	• Organization structure • Initiating stakeholders	• Ce • Hu
12c	Evaluate and refine the IA talent strategy	• Technology savviness • Risk appetite	• Le • Us • De
13	Set up enterprise standards and best practices based on learnings	NA	NA
14	Set up a team to evaluate opportunities in other areas	Organization structure	• Ce • Ce • Tr
15a	Scale up and run operations	NA	NA
15b	Continuously monitor and report on metrics/KPIs	NA	NA

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Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 3 of 4)
Steady state

Steps		Determinants	Path options
16a	Templatize opportunity evaluation and monitoring	NA	NA
16b	Create development standards and reusable code libraries	NA	NA
17	Create awareness via various channels – newsletters, online portals, etc.	NA	NA
18a	Scale up further	NA	NA
18b	Continuously monitor and report on metrics/KPIs	NA	NA
19	Rationalize effort and integrate a culture of improvement and innovation across the organization	NA	NA

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1 Refer to pages 153-157 for the overview of the environmental determinants and the various path options for the enterprise at each step

Identify all determinants and map the path (page 5 of 7)

Example: consider two organizations with different characteristics, both seeking to reach similar target states from similar current states in the enterprise automation journeys for their O2C processes

ILLUSTRATIVE

Consider two organizations with the same current state and achievable target state

- **Current state**: The organizations have a single ERP system with a workflow system for the P2P process. Neither have implemented any RPA or AI-based automation. Invoice and delivery notes are manually entered from scanned PDF or images-based documents. Each has about 20 FTEs currently employed in each task.
- **Achievable target state**: Both organizations have the same achievable target state. Both are trying to reach the Pinnacle category in both capability maturity and business outcomes

The ideal execution path for the two organizations would depend on environmental determinants, such as those listed below:

Environmental determinants

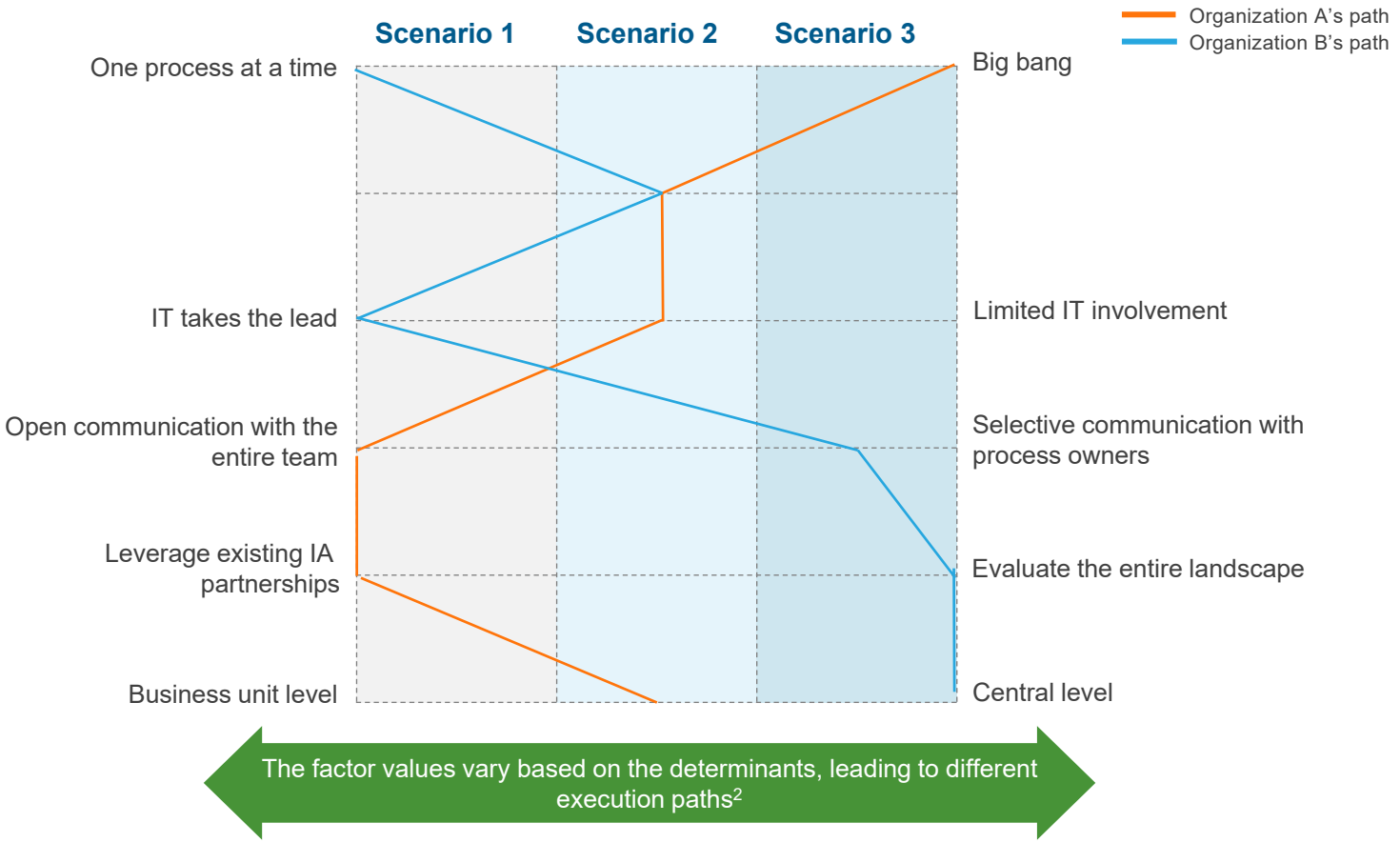
Organization A – digital-born e-commerce firm		Organization B – conservative manufacturing firm
Decentralized	Organization structure	Centralized
Low people-centricity	People centricity	High people-centricity / unionized
BU-driven	Initiating stakeholders	Centrally driven
High risk appetite	Risk appetite	Low risk appetite
Highly tech-savvy firm	Technology savviness	Low level of technology savviness
Workforce is receptive and accepting of change	Sensitivity to change	High sensitivity; willing to accept smaller changes
Existing relationship with IA providers	Existing IA partnerships	No relationship with IA providers
High adoption of IT systems and availability of logs	Availability of event logs	High adoption of IT systems and availability of logs

Identify all determinants and map the path (page 6 of 7)

Execution paths differ based on environmental determinants

ILLUSTRATIVE

Execution path components	Enterprise scenarios
Identify and prioritize processes	
Plan implementation timelines, governance, IT requirements, and skill development for IA[1]	
Align with IT for IA implementation	
Obtain the operation team's buy-in and, particularly, impacted process owners	
Select appropriate IA provider(s) based on the capabilities required to achieve the desired outcome	
Obtain management buy-in and budget	



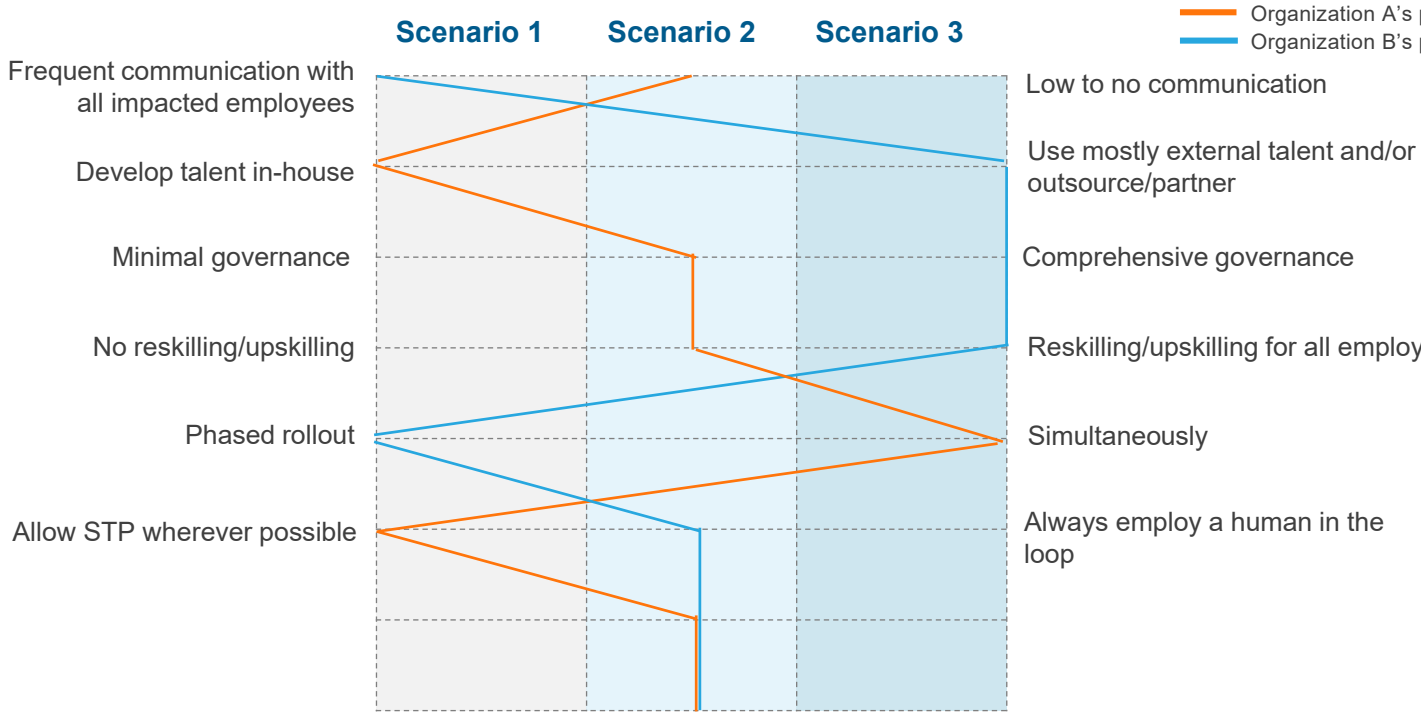
1 This step does not vary for organizations based on the environmental determinants
2 Refer to Appendix pages 154-157 for variation in the execution path by determinant

Identify all determinants and map the path (page 7 of 7)

Execution paths differ based on environmental determinants

ILLUSTRATIVE

Execution path components	Enterprise scenarios
Initiate continuous communications for change management	Frequent communication with all impacted employees ↔ Low to no communication
Initiate talent development and training	Develop talent in-house ↔ Use mostly external talent and/or outsource/partner
Initiate a governance mechanism	Minimal governance ↔ Comprehensive governance
Initiate reskilling of impacted employees	No reskilling/upskilling ↔ Reskilling/upskilling for all employees
Develop a pilot for the prioritized processes	Phased rollout ↔ Simultaneously
Cut to production with human supervision until automation achieves desired efficiency	Allow STP wherever possible ↔ Always employ a human in the loop
Continuously monitor and report on metrics/KPIs[1]	
Repeat the journey with the next process in the priority list[1]	

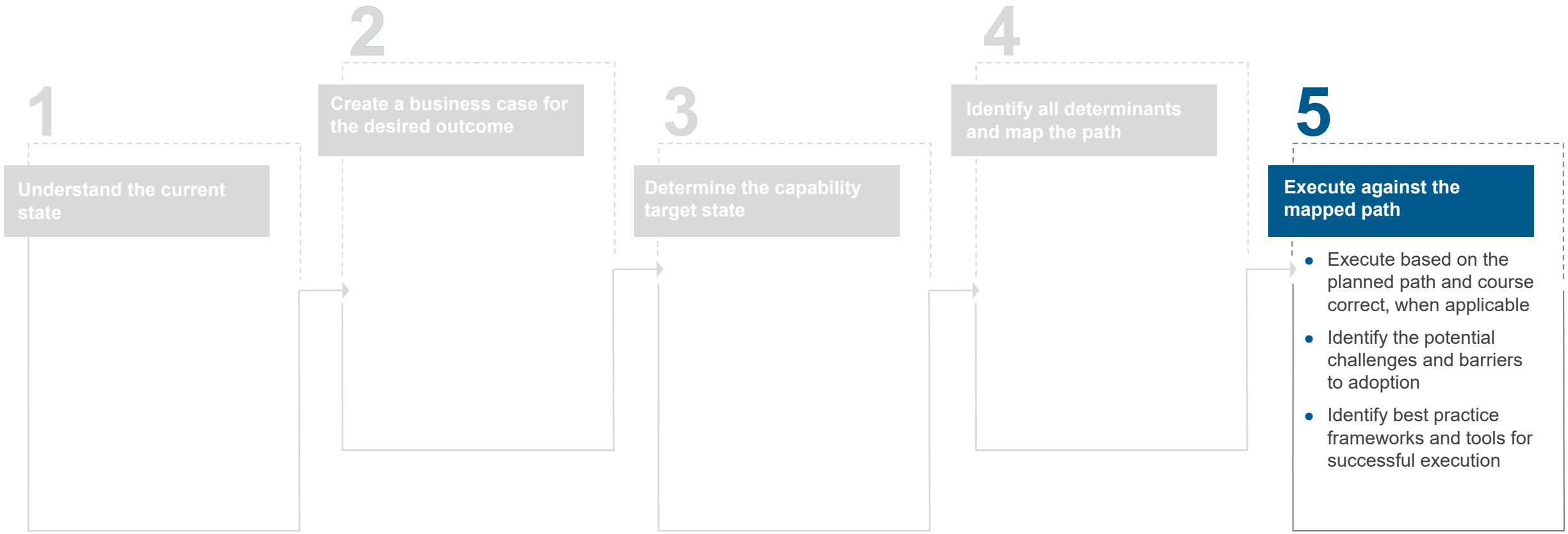


The factor values vary based on the determinants, leading to different execution paths[2]

1 This step does not vary for organizations based on the environmental determinants
2 Refer to Appendix pages 154-157 for variation in the execution path by determinant

Enterprises can break down their automation journeys into five distinct steps

Step 5: execute against the mapped path



Execute against the mapped path (page 1 of 3)

Arm yourself with practitioner insights and best practices to overcome execution challenges

	Challenges	Winning insights
Availability and preparation of data	• Lack of good quality labelled data creates impediment in adopting the cognitive automation capabilities • The availability of event log data and the transformation of data to the right format, especially from non-standard IT systems, can be the roadblocks to adoption of IA	• Educate all key stakeholders around the need for good quality labeled data sets for automation • Leverage third-party or natively built connectors, APIs, and Extract, Transform, and Load (ETL) tools to convert stored data into appropriate formats, whenever necessary
Solution awareness and expectations mismatch	• Impediments in getting stakeholder buy-in, due to limited knowledge about IA technologies, their applications, and benefits • Many stakeholders have unrealistic RoI expectations from the adoption and end up being disillusioned with the outcomes	• Secure buy-in from the executives or senior leadership in time through regular interactions, demo sessions and well-planned outcomes • Initiate the journey through proof of concept, that is structured, has limited number of steps, and where the leadership is directly involved
Improper automation life cycle management	• Once deployed to production automations may face breakdown of robots, process changes, degradation of ML models, etc. • Poor monitoring of deployed automations can limit the value realization of IA substantially	• Right set of parameters to track can be zeroed down by understanding similar use cases that other enterprises have adopted and customized • Plan in advance for maintenance based on process changes and create guidelines to ensure creation of more resilient robots
Apprehensions of employees	• Hinderance in the adoption of IA solutions due to increased transparency and visibility into the ways of working of employees • Fear around job security could arising due to automation of many repetitive and time-consuming manual processes • General resistance to change among employees and adopting new ways of working could also become a factor of concern	• Proactive communication about the vision and benefits of IA would help employees in considering it as a means to reduce tedious, repetitive manual work and an opportunity for more productive work • Chart a plan to address impacted employees though guidance around alternate career paths, creating new automation focused roles, and addressing their concerns through townhall sessions

> We took a grassroots approach and spent a significant amount of time building a solid foundation, focusing on a change management program, logical access, and internal controls from an audit perspective. We designed and documented good processes and procedures which resulted in our ability to scale quickly and easily throughout the years. We educated the different levels of management, which we knew would be great champions for us moving forward. Once our process was solid, we began with working with the CEO to champion our automation efforts.
>
> – Amy Chandler, Second Vice President, RPA CoE Leader and Six Sigma Master Black Belt, Security Benefit

Execute against the mapped path (page 2 of 3)

Arm yourself with practitioner insights and best practices to overcome execution challenges

	Challenges	Winning insights
 Shortage of IA talent	• Shortage of skills and practical knowledge to develop, manage, and implement automation solutions can become an impediment • High training costs and limitations of relevant training programs can create obstacles for enterprises in short term, since the cost of adoption would seem to increase	• Collaborate with technology providers or their training partners and leverage in-house experts to train employees on using the platform and developing a hypothesis-driven mindset • Promote citizen development through incentives and maintain a healthy mix of professional and citizen developers • Leverage alternate channels to source IA talent such as through IA service providers and diversified talent location strategies
 Inability to scale automation program	• Ineffective approach towards identifying the right set of processes for automation can derail the automation initiatives and impact the long-term value proposition • Inability to create and maintain a healthy automation pipeline while scaling up for different use cases limits the scale of the outcomes • Enterprises tending towards point automation initiatives to achieve short term objectives, can obstruct the realisation of the true potential of IA	• Organizations should incorporate process intelligence solutions, such as process mining and task mining, to identify process improvement opportunities and discover inefficiencies that can be automated • CoE should continuously assess, prioritize, and maintain the automation pipeline of use cases. Establish a system to incentivize business users for citizen-led use case identification • Implement an enterprise grade IA solution rather than following a piece-meal approach to achieve strategic and sustained advantages
 Lack of proper governance and security	• Getting access to event logs data can be challenging, due to data security concerns. Getting approvals from enterprise IT to access data could be a time-consuming process • Poor quality of the developed automation code and inconsistent standards can also become roadblocks during deployment and execution of robots	• Set up a dedicated CoE early in the journey to drive technology adoption. Develop structured frameworks that enable business units to use IA on their own, with centralized governance and support from the CoE • Define the best practices and standards for automations, for both, professional and citizen developers. Also, enforce code reviews and checks by the automation CoE to ensure quality

Execute against the mapped path (page 3 of 3)

Leverage best practice frameworks and tools[1] to accelerate the enterprise automation journey

1. Securing executive sponsorship and funding
2. Creating a healthy transformation pipeline
3. Developing a business case for IA
4. Selecting an enterprise-grade IA solution

5. Setting up a Center of Excellence (CoE)
6. Identifying and sourcing IA talent
7. Enabling citizen-led development
8. Developing an effective change management program

1 Best practices in each of these areas are covered in detail in the subsequent section

04

Accelerating the enterprise automation journey

- Securing executive sponsorship and funding
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Accelerating the enterprise automation journey

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Securing executive sponsorship and funding (page 1 of 2)

Securing the right level of executive sponsorship and funding is key to ensuring the success of the IA program

Executive support & sponsorship

Typical challenges with sponsorship

- Low, late, and constrained buy-in from the executive management hampers the realization of IA's full potential
- Lack of strategic and long-term view impacts the process of implementation and makes the journey directionless

Ways to address the challenges

- The advocates of IA should back the claims with solid numbers and convincing metrics to track them – whether it is reduced manual hours and errors or increased speed of task completion, employee satisfaction, etc.
- While zeroing in on the pilot proof-of-concept of the program, choose those business functions and processes that have the quickest and biggest payoffs

Key attributes of effective sponsors

Sponsors should be senior leaders (preferably CXOs) who are:

- Enthusiastic about the possibilities of IA, take ownership, and drive the initiative continuously
- Capable of convincing and securing budget from the company board / management for the project
- Able to assume the role of change champions with capacity to influence people
- Able to bring IT and business leaders together to ensure healthy collaboration

Securing executive sponsorship and funding (page 2 of 2)

While most IA programs have a mix of center-led and individual business unit-led funding, there is greater contribution from business units and functions as IA programs mature

Increasing maturity of IA adoption

Contribution from individual business units		
20-30%	~50%	70-80%

- As automation programs scale up, funding for the programs transitions from primarily the center to a mix of central and project-based funding, wherein the contribution from individual business units and functions increases
- This demonstrates a crucial shift in mindset, with individual businesses becoming more invested in the success of these projects
  - It helps instill a greater sense of ownership in the functional and local business leaders
  - It also accelerates adoption as they hold greater responsibility for generating demand and identifying new use cases to maintain a healthy automation pipeline

Source: Everest Group (2022); Based on inputs from market players, practitioners, data collection exercise, and Everest Group's ongoing interactions with enterprises

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Creating a healthy transformation pipeline (page 1 of 3)

Maintaining a healthy transformation pipeline is critical to ensuring enterprise-wide automation, and it comprises four key elements

Scaled discovery of as-is processes

The first step toward building a healthy pipeline is to have an accurate and fact-based approach to discover as-is processes at scale. A complete picture of the as-is state requires process discovery at both the macro- and micro-levels

- The macro-level view provides overall visibility into all the key process steps performed using enterprise IT systems such as ERP, CRM, and SCM. It also helps understand the key steps in a process, identify bottlenecks, and determine broader process optimization opportunities
- A micro-level view provides granular visibility into end-user activities/tasks, especially those performed outside enterprises' IT systems using productivity tools such as MS Excel, Outlook, and PPT. It helps identify task-level improvement opportunities and analyze their impact on the overall process performance

Comprehensive identification of transformation opportunities

- A stand-alone automation approach can help make some tasks more efficient and drive quick cost savings; however, it typically fails to deliver transformational benefits. Automating poorly designed, non-standardized, and broken processes can amplify inefficiencies and result in heavy technical debt
- Therefore, the second step in building a healthy pipeline is to have the ability to identify process improvement potential in an integrated manner – this includes process standardization, reengineering, and automation opportunities. Process simplification and standardization alone can create significant business impact even before automation

Creating a healthy transformation pipeline (page 2 of 3)

Holistic view of ROI and continuous monitoring help organizations prioritize and refine their transformation roadmap

Holistic view of RoI

- After identifying transformation opportunities, an organization should prioritize them by evaluating the associated RoI. While doing that, it is important to look beyond cost savings and factor in associated operational (e.g., quality, speed, and efficiency) and strategic (e.g., customer/stakeholder experience and top-line growth) benefits
- As the drivers of automation adoption become more strategic, enterprises should align their transformation roadmaps with their key organizational objectives and priorities. This alignment also helps drive senior leadership buy-in and action

Continuous monitoring of ongoing initiatives

- Building and maintaining a healthy pipeline also requires an ability to continuously monitor the impact of the implemented initiatives. Tracking and monitoring helps enterprises understand the actual RoI/impact achieved vis-à-vis initial expectations
- The impact achieved can also be leveraged to make the initial use case stronger and richer – allowing expansion to broader processes and business lines. Hence, continuous monitoring creates a constant feedback mechanism that helps validate and refine an organization's transformation roadmap

> We wanted to make sure there was always a healthy pipeline for automation. For the first year, the priority was to show the business units the value of automation. So that once you've got that engine running, you don't stop it, and automation becomes an ongoing cycle.
>
> – John Russo, Director IT, EY

Creating a healthy transformation pipeline (page 3 of 3)

Process intelligence solutions, comprising process mining and task mining, play a critical role in building a healthy pipeline

Key elements of a healthy pipeline	Role of process intelligence solutions
Scaled discovery of as-is process	These solutions stitch together event logs and UI logs to provide a fact-based and automated discovery of as-is processes at both macro and micro levels.
Comprehensive identification of transformation opportunities	Process intelligence solutions provide a comprehensive view of the process optimization opportunities (e.g., step elimination, standardization, process conformance, and automation potential) down to task-level candidates for automation.
Holistic view of RoI	Organizations can leverage these solutions to perform what-if simulations, analyze the impact of transformation levers on target business KPIs (e.g., cycle time, top-line impact, on-time payments, variant reduction, and compliance), and prioritize their transformation use cases.
Continuous monitoring of ongoing initiatives for feedback	The solutions continuously monitor the actual impact of the initiatives implemented, at an end-user and an enterprise-process level. This helps validate and/or refine the transformation pipeline.

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Context, scope, and assumptions related to business cases (page 1 of 3)

Illustrative example of a business case for a manufacturing enterprise's automation initiative in AP operations

ILLUSTRATIVE

Context

We have considered a US-based manufacturing enterprise with operations worldwide

- The enterprise generates US$10 billion in revenue, of which it spends about 70% on procurement
- Cost of Goods Sold (COGS) and Selling, General, and Administrative (SG&A) expenses as percentages of revenue are 60% and 20%, respectively
- It employs 140-160 FTEs in the AP process and processes about 1.1 million invoices a year
- It has an in-house team of operational excellence resources (green/black belts) for process optimization

Scope

- The enterprise has embarked on a journey of transforming its traditional AP operations to digital-first operations using IA
- The entire journey is broken down as per the automation life cycle stages as described below
- The enterprise is expected to take 6-12 months to arrive at the steady of operations after implementing IA
- In this section, we illustrate the business case for IA in the AP process in F&A. We will look at the net business benefit and ROI that the enterprise is able to realize in two years

Automation life cycle stages

Stages 1-4	Stage 5	Stage 6
• Automation life cycle stages involved: discover, optimize, prioritize, and evaluate • Key activities in these stages: – Process mining and task mining discover the as-is working of the AP process – These technologies help identify and prioritize four improvement opportunities (illustrated in the subsequent slide)	• Automation life cycle stages involved: execute • Key activities in this stage: – Digital-first AP operations are executed / carried out using IA technologies such as RPA, IDP, and process mining – Organizational change management, including ongoing training, is conducted to realize benefits from the identified improvement opportunities	• Automation life cycle stages involved: continuous monitoring • Key activities in this stage: – Process mining and task mining help monitor the AP process and use the feedback to iteratively discover and optimize the process – making it a virtuous cycle of process optimization

Context, scope, and assumptions related to business cases (page 2 of 3)

Identified improvement opportunities that are expected to generate business outcomes/benefits for the manufacturing enterprise

ILLUSTRATIVE

Increase in FTE capacity

- Manual operations, such as checking emails and fetching data from invoices, can be significantly reduced by using IA technologies such as RPA and IDP
- For instance, in this case, FTE headcount reduction is 31-40% with RPA and 11-20% with IDP

Spend control

- Enterprises lose approximately 0.1% of the overall procurement spend in a year due to duplicate invoice payments
- IA, including process mining and custom AI/ML models, can identify duplicate invoices and prevent payouts, thereby arresting excess spend

Automated three-way match

- Typically, 15-25% of the invoices fail the three-way match process in most organizations
- An automated process, which is carried out by RPA, IDP, and process mining, can prevent or resolve three-way match errors and reduce/eliminate rework

Working capital optimization

- Enterprises with unoptimized/low DPO pay their invoices early and are forced to obtain a working capital loan
- IA can adjust payment runs and ensure payment terms consistency, thereby increasing DPO (increase in DPO assumed to be 1 day for the business case) and optimizing working capital requirement

> When we build the business case for automation, we look beyond just dollar savings. We look at risk reduction, improvement in quality, faster turnaround times, better customer experience, capability enhancement, etc. We try to also build in measurement for these metrics as we develop the automation, to validate the outcomes that have been achieved against the plan.
>
> – John Russo, Director IT, EY

Context, scope, and assumptions related to business cases (page 3 of 3)

Analysis of cost components involved in the automation initiative

ILLUSTRATIVE

Software cost	Value (per year)
Process mining software license cost (for the AP process)	US$40,000-45,000
Task mining software license cost (per recorder)	US$600-800
RPA – unattended robot license cost (per robot)	US$5,000-8,000
RPA platform/orchestrator license cost	US$40,000-50,000
IDP software license cost (per page processed)	US$0.05-0.08
IDP platform license cost	US$30,000-35,000
People cost	**Value**
Blended hourly rate of process excellence resources	US$90-95
Blended hourly rate of operational SMEs	US$45-50
Blended hourly rate of data engineers / developers	US$55-60
Software implementation cost	It is a one-time fee that depends on the number and types of use cases, development effort, model training, etc. required for the deployed IA technologies
Other costs	**Value**
Average cost of processing a supplier invoice, from reception through payment	US$4
Enterprise's cost of capital	7%
Organizational Change Management (OCM) cost, during execute stage	4% of Total Cost of Ownership (TCO) of the automation initiative
Ongoing training cost	3% of TCO of the automation initiative

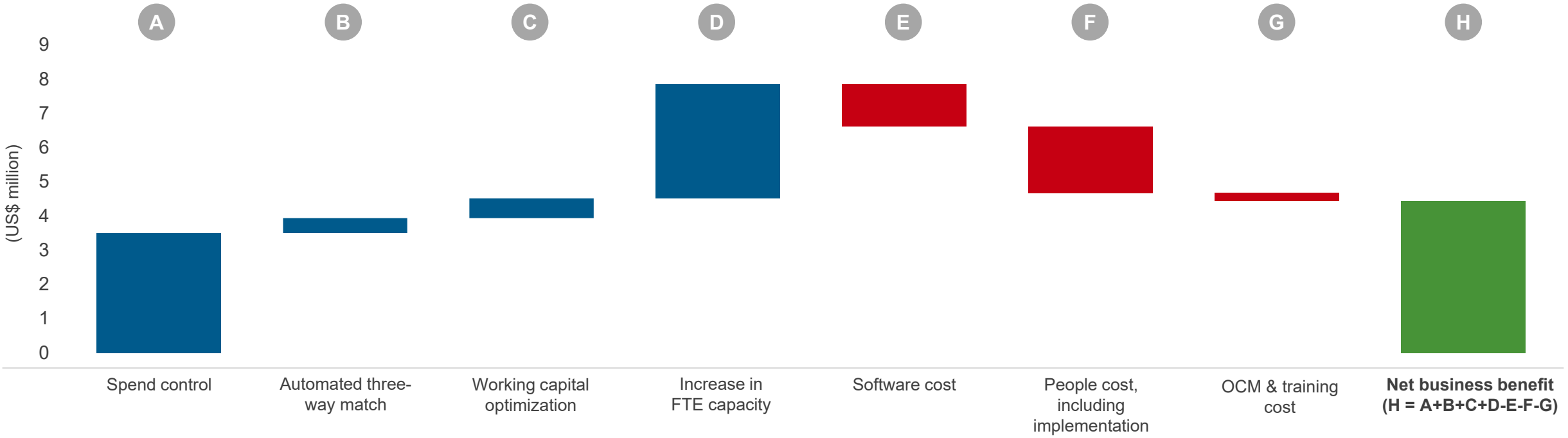
The enterprise is using the SaaS versions of the various IA technologies – we have considered the software license cost accordingly.

The business case for IA (page 1 of 2)

Benefits identified by IA outweigh the costs

In this context, the enterprise has the potential to realize a net benefit of close to **US$4.4 million** or an ROI of **~2.3X** in 2 years

ILLUSTRATIVE



Outcomes

- The number and type of process improvement opportunities could vary for enterprises
- In the context considered, identified improvement opportunities have generated benefits worth ~2.3X the total cost. The enterprise has the potential to realize a net benefit of about US$4.4 million in 2 years

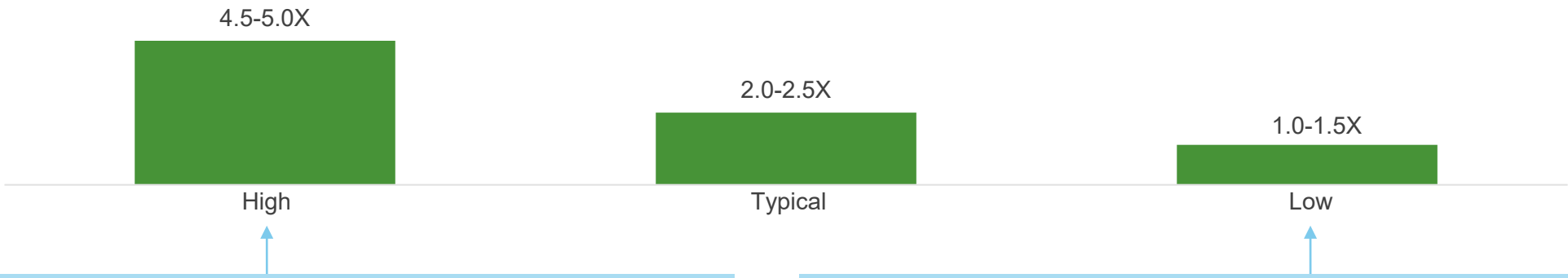
The business case for IA (page 2 of 2)

ROI from IA could vary significantly based on specific organizational factors

While typical ROI for an enterprise could be ~2.3X (as illustrated in the previous slide), it could vary significantly – from 1.0X to 5.0X – depending on specific organizational characteristics such as process maturity, standardization, delivery mix, and governance

ILLUSTRATIVE

ROI for a 2-year term
(As a multiple of the total investment)



Typical characteristics

- Consolidated FTEs across few delivery locations
- Highly standardized, harmonized, and well documented processes
- Use cases consisting of onshore and offshore/nearshore resource mix
- Highly experienced deployment team / strong automation CoE support to start with
- High alignment of IT and senior leadership to address any roadblocks / change management
- Short (one to two waves with lift-and-shift approach and limited process changes) or no transition

Typical characteristics

- Fragmented FTEs across multiple delivery locations
- Low standardization and harmonization with little or no process documentation
- Use cases consisting of nearshore and offshore resource mix
- Relatively newer deployment team / no or low support from automation CoE at the start
- Low alignment of IT and senior leadership to address roadblocks / change management
- Multi-wave transition (three to five waves) that requires significant process reengineering

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Selecting the best-fit enterprise-grade IA solution

To choose the right intelligent automation solution, enterprises need to consider certain factors

Key factors to consider when selecting an enterprise-grade intelligent automation solution

- Product capabilities
- Ecosystem of services partners
- Product training and support
- Commercial models

Selecting the best-fit enterprise-grade IA solution | product capabilities

Overall product capabilities can be broken down into technology-specific and technology-agnostic capabilities

Product capabilities

=

IA technology-specific capabilities for
RPA
IDP
CAI
Process mining
Task mining
Process orchestration

+

IA technology-agnostic capabilities around
Security & risk management
Accelerators
Hosting & product architecture
Monitoring & analytics
Low-code/no-code design

Selecting the best-fit enterprise-grade IA solution | product capabilities

Robotic Process Automation (RPA)

Capability	Description
Accurate identification of objects from the user interface	As RPA works on the user interface, this feature becomes a necessity; therefore, enterprises should not face problems when underlying screen resolution or related factors change
Web-based interface to control and monitor robots	This feature enables enterprises to remotely monitor, manage, and control robots as and when required. This becomes even more important with large-scale robot deployments
Ability to auto-scale based on process load	The capability of the robot platform to dynamically adjust the robotic resource usage directly influences how the fluctuations in transactions volume of an enterprise are handled – scaled up or scaled down as per need
Ability to execute multiple operations in parallel	A parallel execution of automated process' multiple instances or multiple robot runtimes increases processing speeds and optimizes resource leverage
Ability to be deployed in both attended and unattended modes	Automating certain processes may require the user's input before the robot is invoked for the automated action, while others may run on a virtualized desktop without any user interaction
Scheduling, queuing, and other robot management features	The software should allow straightforward scheduling, queuing, and conditional execution of robots based on some pre-defined trigger events

Selecting the best-fit enterprise-grade IA solution | product capabilities

Intelligent Document Processing (IDP)

Capability	Description
Image preprocessing	Improves quality of images and handwritten documents with features such as auto crop, background editor, and noise reduction
Document classification – leveraging ML	Built-in ML & deep learning algorithms help in document classification. ML algorithms provide the ability to classify unstructured documents; they also help in splitting/classifying pages within a document
Data extraction – ML, NLP, and deep learning	With the help of ML, deep learning, and NLP, IDP solutions can extract data, analyze the running text in documents, understand the context, consolidate the extracted data, and map the extracted fields to a defined taxonomy. It also helps in recognizing the sentiments from the text (e.g., from emails and other unstructured data) and classifying into different categories
Configure, set-up, and review GUI	Allows administrators to add new use cases, define fields that need to be extracted, upload the documents by batches, manage user access controls, customize the accuracy thresholds for classification & extraction of fields, and modify business validation rules. The users are able to review the processed documents – displays confidence levels of the extracted fields, details on failure, etc.
Processing different data types	Allows users to process and extract data types of varying complexities. Low-medium complexity data types include printed text, tables, barcodes, and block handwriting, whereas high complexity data types include logos, signatures, freestyle handwriting, and charts
Multi-lingual document processing	Availability of multi-language support for extraction and user interface. Increasingly, IDP solutions for non-Latin scripts are also coming into play. Few providers are also able to identify and process multiple languages within the same document.

Selecting the best-fit enterprise-grade IA solution | product capabilities

Conversational AI (CAI)

Capability	Description
Listening engine	Understands customer input with the help of NLP (including multiple intent and entity recognition module) and sentiment/tone analysis
Intelligent Virtual Agent (IVA)	These agents enable resolution of customer queries with as little human intervention as possible
Learning engine	Query resolution output is fed into machine and deep learning algorithms; feedback from the engine makes the IVA, listening engine, and agent-assist technologies better over time
Analytics	Insights are generated from speech/text analytics, voice of customer, and customer information stored in databases
Agent-assist technologies	Insights from analytics and listening engines help the human agents with the next best action to perform and to resolve customer queries
Omnichannel environment	This enhances customer experience by enabling seamless transition across all available channels

Selecting the best-fit enterprise-grade IA solution | product capabilities

Process mining

Capability	Description
Pre-built connectors and ETL capabilities	Pre-built connectors for leading enterprise systems such as SAP, Salesforce, Oracle, and Microsoft Dynamics simplify the process of integration and data collection. The Extract, Transform, Load (ETL) technology can extract event logs from enterprises' source systems, transform data, and load it on to process mining tools
Discovery of as-is process models	The discovery of the as-is process map based on event logs data offers a view of how processes are being executed presently
Compliance checks and root cause analysis	Compliance checks refer to a comparison of the discovered as-is processes based on event logs data with a reference model to analyze deviations. Providers offer the ability to import or create BPMN 2.0 compliant process models for comparison. Root-cause analysis helps identify the causes of (un)desirable deviances/violations in the discovered process variants
Continuous process monitoring	This capability helps to continuously monitor changes in processes, with updates on the ingestion of event logs in near real-time
Triggering actions	This involves notifying users via appropriate channels, such as email, SMS, and web/mobile/desktop applications, or triggering automations via integrations with RPA/automation tools. This is based on certain events such as SLA/KPI breaches and system failures and can be made predictive using AI/ML
Simulations and what-if analysis	This involves the ability to define scenarios and run process simulations by defining certain attributes/variables and using process filters to compare process steps for examining the impact on relevant KPIs, such as throughput time and rework

Selecting the best-fit enterprise-grade IA solution | product capabilities

Task mining

Capability	Description
Data capture and discovery of as-is models	The desktop recorder captures user interaction data, including screenshots, clicks, scrolls, keystrokes, and the corresponding timestamps. This helps in discovering as-is process maps based on UI logs data; it offers an aggregated view of a process from the recorded user activity data across teams, units, and locations, using AI/ML models
Variant analysis	Analyzes different variants of a discovered task across teams, business units, and geographies; some task mining providers also offer a side-by-side view for comparison to identify best practices within an organization
Documentation	Generates PDDs for discovered models, along with insights and captured screenshots for each task
Workforce intelligence	Provides workforce-related insights, such as team productivity, most productive teams by task, and the amount of time each team spends on different applications to improve resource utilization and reallocation
Automation recommender and automating the automation	Identifies opportunities for automating manual tasks and providing recommendations on prioritizing tasks based on automation potential; technology providers offer a metric known as automation potential to indicate tasks that can be automated. A few providers also help in automatically creating automation workflows based on the optimal process variant through integration with automation/RPA tools
Simulation analysis	Defines scenarios and runs simulations by listing certain attributes/variables and using multiple filters to compare tasks for examining the impact on relevant KPIs, such as throughput time and costs

Selecting the best-fit enterprise-grade IA solution | product capabilities

Process orchestration

Capability	Description
Process modeling	The ability of designing or modifying business processes using simple drag-and-drop interface and documenting these process maps. This also allows enterprises to track changes made by business users
Business rules and decision management	This refers to the ability to add custom business rules within the process either through drag-and-drop interface or through custom scripting. AI/ML algorithms can help discover existing business rules in the process which can be modified or reused later.
User interface development	Process orchestration providers offer simple drag-and-drop interface for enterprises with various controls such as buttons, text boxes, dropdown menus, and others to create digital forms and map out fully functioning workflows. Some providers also offer out-of-the-box pre-built modules/UI for process-centric or customer-facing applications
Task allocation and management	This refers to the ability to assign tasks to individual users and user groups in near real-time. This also includes integrating with RPA tools to assign tasks to robots based on availability and sending push notifications to notify users about pending tasks
Exception handling	This refers to the built-in capability of the platform to allow users to define rules for workflow exceptions and can automatically route exceptions to users with a default handler for each process
Workload balancing	This refers to automatic workload balancing for work allocation to resources as well as enabling human agents to allocate tasks, start and schedule robots and workflows, and manage exceptions and errors as necessary

Selecting the best-fit enterprise-grade IA solution | product capabilities

IA technology-agnostic capabilities

Capability	Description
Security & risk management	The IA solution should offer security & risk management features such as: • Role-Based Access Control (RBAC) and credential vaults • Adherence to security standards such as GDPR • PII redaction/removal • Data encryption during transit and at rest • Version control and management
Accelerators	To enable quick time-to-value, providers should offer accelerators such as: • Reusable robots/components or automation templates for tasks that are simple, basic, and repetitive in nature • Data management accelerators, including pre-built connectors/APIs, primarily for ETL capabilities • Accelerators for automatic robot code generation and review • Cognitive accelerators such as AI/ML life cycle management tools and pre-trained AI/ML models
Hosting & product architecture	There should be flexibility to deploy the solution on-premise or on private/public cloud. A SaaS offering can help reduce TCO and improve accessibility, scalability, and implementation time. Given the growing demand for cloud, providers are increasingly moving toward a cloud-native architecture with microservices and containerization
Monitoring & analytics	It is important to monitor and analyze the usage and benefits of IA. The dashboard while giving a bird's eye view can also be customized to monitor, measure, and report KPIs to better suit the enterprise requirements
User interface	An easy to use and intuitive user interface with low-code/no-code features, drag and drop functionality, etc., helps in reducing the time taken in training resources, achieving higher adoption, and enabling general business users to use the IA solution

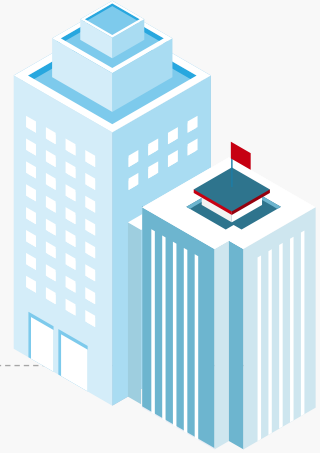
> RPA's biggest selling point is that it should be quick in adoption, meaning faster time to market and more ease of use, hence the low-code/no-code feature has started playing a very important role.
>
> – Keith Edwards, VP Intelligent Process Automation, Fiserv

Selecting the best-fit enterprise-grade IA solution | ecosystem of services partners

Roles and responsibilities of services partners

- Provide business, domain, and process expertise; primarily used at the time of identification of use cases for automation, process reengineering, etc.
- Provide implementation expertise to help enterprises configure, customize, and deploy IA solutions according to their requirements
- Can be leveraged to overcome challenges in areas such as change management, COE setup, governance, business case realization, and scaling up
- Can provide product training and support, certification programs, and broader managed services

Key benefits for enterprises



Global support
Get support in geographies/languages where the IA provider does not have direct presence

Integration
Benefit from an integrated offering in case the partner deploys broader solutions (automation, digital transformation, ERP migration, etc.)

Product expertise
Get a quick start to their programs due to access to accelerators (e.g., pre-built templates) and resources trained/experienced in implementing and leveraging IA solutions

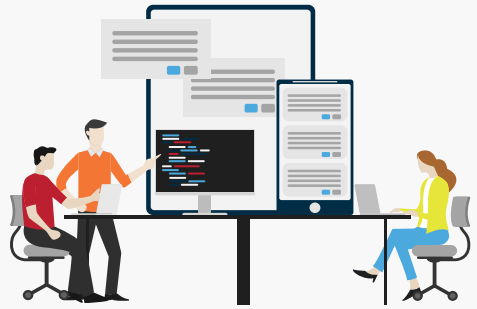
Enterprise-wide deployment
Leverage the consulting capabilities and domain expertise of partners to navigate through challenges, especially during enterprise-wide deployments

Selecting the best-fit enterprise-grade IA solution | product training and support

Product support and maintenance

- Product support and maintenance are very important for a smooth journey experience, and, hence, enterprises should look for IA provider(s) that offers robust and continuous product and maintenance support. Since the market is at an early maturity stage, enterprises typically require more support from providers, especially during initial deployments
- An online community platform where users/contributors can answer a query or disseminate information is often very helpful for enterprises. These platforms enable them to learn best practices from relatable initiatives, while keeping them abreast of recent developments and technology upgrades
- A uniform product update/release cycle and maintenance services helps enterprises avoid/minimize the challenges with their deployments, especially when they have scaled up. An enterprise's IT and operations department should not be burdened with issues resulting from inadequate product support but be appropriately assisted to ensure the most efficient use of resources

Product training and certifications



- A training platform with robust training documentation, which can be downloaded and viewed offline, and self-paced online training courses and certifications should be an important consideration in provider selection. The availability of robust online training has become critical for ease of access
- The availability of different training modules depending on the role or user type, such as analysts, business users, and data specialists, helps facilitate more focused training and certifications
- IA providers also partner with service providers to extend training support to clients and can play an important role when dealing with regional languages and a globally dispersed workforce

Selecting the best-fit enterprise-grade IA solution | commercial models

Subscription-based model is the most prevalent and adopted in the IA market; outcome-based models are in early stages of adoption

Subscription-based

Transaction-/usage-based

Clients are charged based on the usage. For example, number of pages processed in an IDP solution or number of interactions in a CAI solution.

Per entity-based

Clients are charged based on number of users/robots/recorders licensed. For example, number of robots licensed in RPA or number of named users who can use the process mining software.

Bundled pricing

This pricing model is employed by providers that offer broader IA platforms to clients. Individual IA components are available for free as part of the platform or available via discounted upgrades.

Outcome-based

Pricing linked to outcomes; i.e., measurable cost or revenue impact delivered to the buyer; price based on gainsharing model

Key factors affecting the suitability of commercial models

The **size of the organization** is a major factor that needs to be considered during the license selection process; things to consider include whether to opt for a specific number of licenses or licenses for a specific tier.

The **scale of deployment** is another factor that helps enterprises decide the kind of licensing to deploy based on the number of processes for which they want to deploy the IA solution.

The **number of users** is also important, as enterprises may start with fewer users initially and then expand to different types of users who leverage the IA solution.

The **scope of engagement** with the provider needs to be considered in terms of the requirement for an annual versus multi-year licensing model.

The **type of deployment model**, whether on-premise or SaaS (public or private cloud) has an impact on the licensing decision

Accelerating the enterprise automation journey

1. Securing executive sponsorship and funding
2. Creating a healthy transformation pipeline
3. Developing a business case for IA
4. Selecting an enterprise-grade IA solution

5. Setting up a Center of Excellence (CoE)
6. Identifying and sourcing IA talent
7. Enabling citizen-led development
8. Developing an effective change management program

Setting up an IA CoE

An IA CoE plays a key role in ensuring successful adoption of IA across the enterprise

Relevance

- Why is a dedicated CoE needed for IA?
- When should a CoE be set up?
- What are the responsibilities of the CoE leader?
- How is a CoE governed?
- What services does a CoE offer?

Structure

- Which CoE models do the enterprises adopt?
- What are the advantages and limitations of the commonly adopted CoE models?

Location

- Where should a CoE be located within an enterprise?
- What are the major considerations for the various CoE locations?

Evolution

- How do the responsibilities of a CoE change as it matures?
- Which structure and location suit an enterprise CoE as it matures in its automation journey?

Relevance (page 1 of 4)

A dedicated CoE for IA should ideally be set up at the beginning of the journey to ensure centralized governance, knowledge management, and continuous improvement of the IA program

Why is a dedicated CoE needed for IA?

- A dedicated IA CoE provides a strong centralized structure and governance for sharing skills, resources, assets, and best practices
- It encourages knowledge sharing and overcomes redundancy/duplication of effort across silos
- It enables consolidation and optimization of IA solutions, providers, and licenses, and encourages reuse of pre-built assets and code
- It increases the agility and speed of IA implementation in new operational areas
- It maintains consistency in identifying and prioritizing areas of automation

When should a CoE be set up?

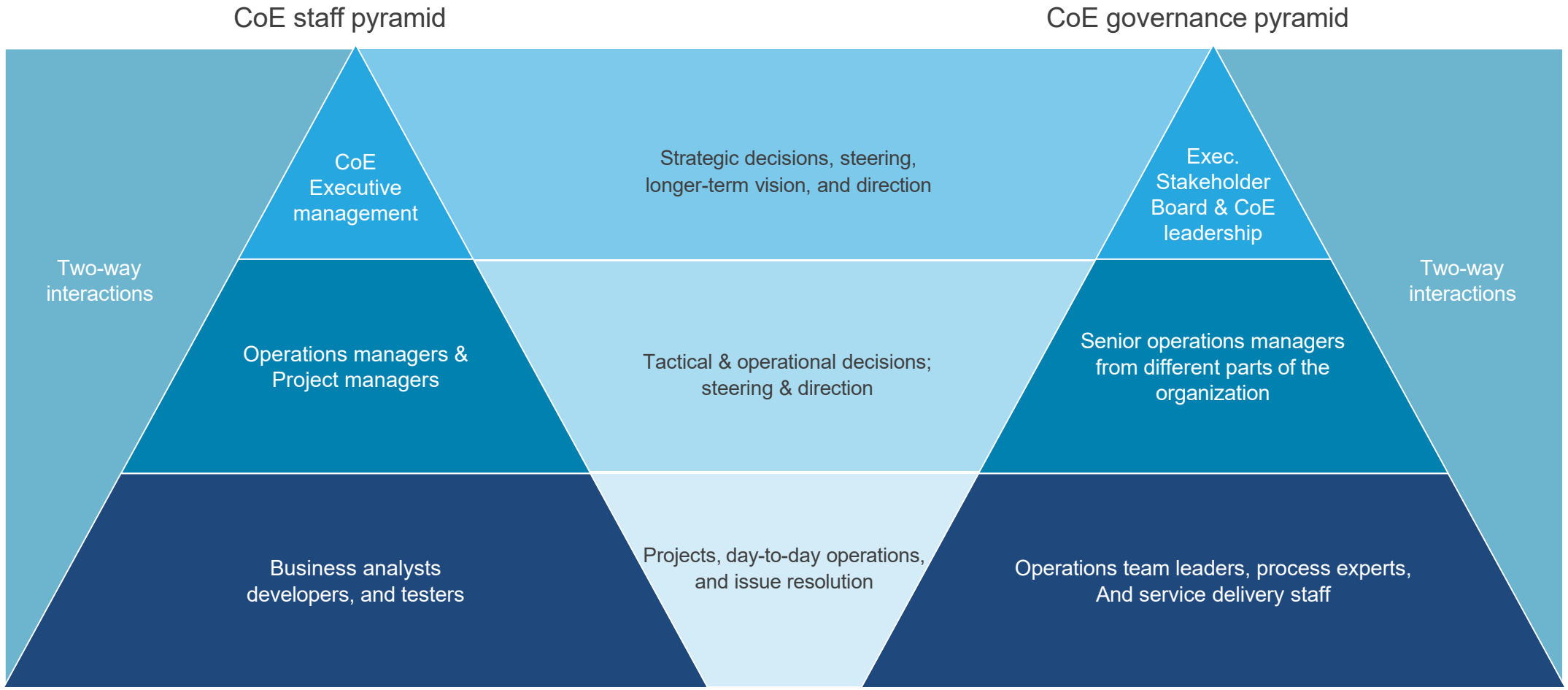
- The ideal time to set up a CoE is at the start of the enterprise's IA journey. This timing will ensure that the organization learns once and shares its knowledge and skills multiple times
- The CoE can start by capturing ongoing automation project documents and best practices and grow its skills, scope, and responsibilities over time
- Another approach is to set up a CoE once the initial proofs of concept have been completed, and the project files, skills, assets, and lessons learned can be transferred for reuse and sharing

What are the responsibilities of the CoE leader?

- The CoE leader builds and manages the IA CoE
- This role is responsible for demand management, translation of strategic goals, and interaction with the sponsor and other stakeholders
- The incumbent is also responsible for driving enterprise-wide adoption and the maturity of the CoE

Relevance | CoE governance model (page 2 of 4)

The CoE pyramid has three distinct layers that enable it to drive strategic, tactical, as well as day-to-day operational decisions



Relevance | CoE governance model (page 3 of 4)

Each layer of the pyramid has its unique set of responsibilities

Strategic decisions, steering, and direction

The CoE and the executive stakeholder board decide the long-term strategy for the CoE, including decisions such as:

- Funding and governance models including criteria for prioritizing automation requirements
- Performance reviews
- Expansion
- If the CoE needs to expand in size for current operations
- If the CoE needs to expand to offer more services or to offer services to new groups and in new geographies
- Supplier or service provider executive relationships, partnership, or procurement strategies

Tactical & operational decisions; steering and direction

Senior operations managers, line of operations managers, and program/project managers are responsible for mid-term planning:

- They address requirements such as infrastructure and capacity planning, risk and compliance policies, resourcing, and aligning of CoE work with operational priorities
- The steering group tracks CoE performance at a detailed operational level. It collects information from operational teams, addresses issues, and reports to the executive stakeholder board
- Within the CoE, mid-level managers are responsible for technical skills development. They arrange trials of new technologies and manage the relationship with suppliers and service providers' mid-level managers

Projects, day-to-day operations, and issue resolution

This is the group that uses the automation software and robots and ensures smooth daily operations:

- Within the CoE, business analysts, developers, and testers are engaged in the design, development, and day-to-day running of automation efforts, typically supported by the central IT group (for infrastructure support)
- They work closely with their operations clients and process experts to ensure consistency in design; they also test for accuracy and adherence to client specifications
- They collect daily operations information and report internally and to senior management
- Process experts and operational staff have to make sure that processes are run according to schedules and priorities. They check the outputs of the automated processes and report quality issues to the CoE staff
- They ensure that CoE personnel are made aware of changes to process requirements

Relevance (page 4 of 4)
What services does a CoE offer?

Governance

- Align with the enterprise leadership's business objectives and priorities
- Develop a roadmap for the adoption and growth of IA
- Define frameworks for process identification and prioritization; and standards, procedures, and guidelines for IA implementation
- Ensure course correction based on feedback and learnings along the way
- Identify best practices that can be shared and reused
- Monitor and report progress to the executive sponsor
- Drive citizen-led development

Technical support

- Support data integration and preparation, quality assurance, and overall technical connectivity
- Assist in arranging approvals pertaining to data privacy
- Reduce time, effort, and costs related to delivery, development, and maintenance through increased efficiency
- Create a scalable technical environment

Execution and change management

- Coordinate with business and IT stakeholders to drive action, including identifying and prioritizing use cases
- Develop business cases to measure value and streamline approach
- Identify and develop reusable assets to improve RoI
- Employ a change management program, including training, awareness, and education, to get the most out of the investments made
- Evangelize IA and empower automation teams and end users to adopt insights derived from different capabilities for daily use and create a culture of continuous improvement

> We set up a rigorous code review process. The central CoE reviewed the code for every automation, even those created by citizen developers. We also created comprehensive standards and guidelines which were shared with all the developers.
>
> – Keith Edwards, VP Intelligent Process Automation, Fiserv

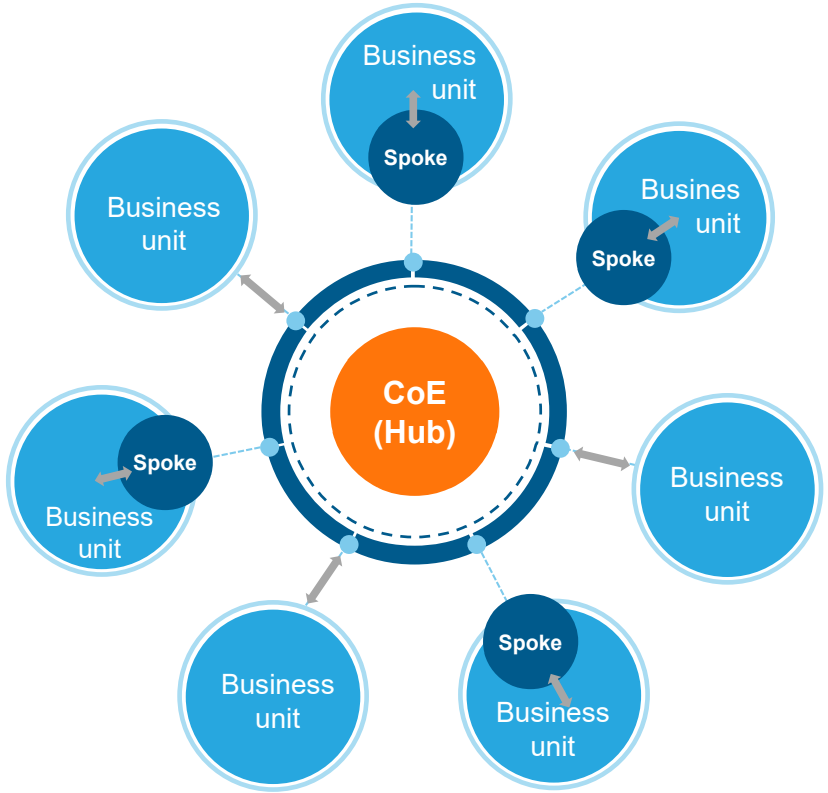
CoE structure (page 1 of 2)

The most common CoE structures for IA are the centralized CoE model and the hub-and-spoke CoE model

Centralized CoE model

The centralized CoE handles all strategic and operational functions for IA initiatives across the organization.

Hub-and-spoke CoE model



The central hub handles strategic functions; the spoke are IA teams aligned to individual BUs to handle operational functions.

CoE structure (page 2 of 2)

While a centralized CoE offers strong governance and standardization, the hub-and-spoke CoE model provides greater local knowledge and specialization

	Centralized CoE model	Hub-and-spoke CoE model
Advantages	• A centralized CoE liaises with relevant stakeholders, such as IT and data management teams, to develop the organization's IA capabilities • It can maximize adherence to corporate automation policies, governance, and management reporting by having all the staff under one roof and following the required procedures • It can maximize the standardization of tools and make the most of existing IA assets through reuse and redeployment • A centralized CoE can result in cost efficiencies, with only one center to run and manage	• The central hub plays a key role in creating the core IA capabilities and governance mechanism at the corporate level, which the spokes can leverage to operationalize automations in their respective BUs • The spokes can further enhance automation capabilities with their local or functional knowledge • The spokes can identify BU-specific use cases in adherence with local policies and procedures and can specialize in them • For non-specialized IA initiatives, resources can be pooled/shared and run from the central hub
Limitations	• A centralized CoE can become too rigid in its pursuit of adherence to policies and procedures • It can become inward-looking and miss out on new automation opportunities or business innovation • It may face challenges in understanding and meeting the distinct needs of BUs in different geographies	• IA talent might be limited in certain BUs/geographies • It may be more challenging to standardize tools and procedures • Greater effort is required to manage ongoing communications, training, and policy updates • There may be duplication of knowledge and skills in the hub and spoke teams, which can reduce the efficiencies gained by the shared model

CoE location

The IA CoE can be located as part of different units within the enterprise, each location bringing its own advantages and limitations

Independent CoE

Corporate IT

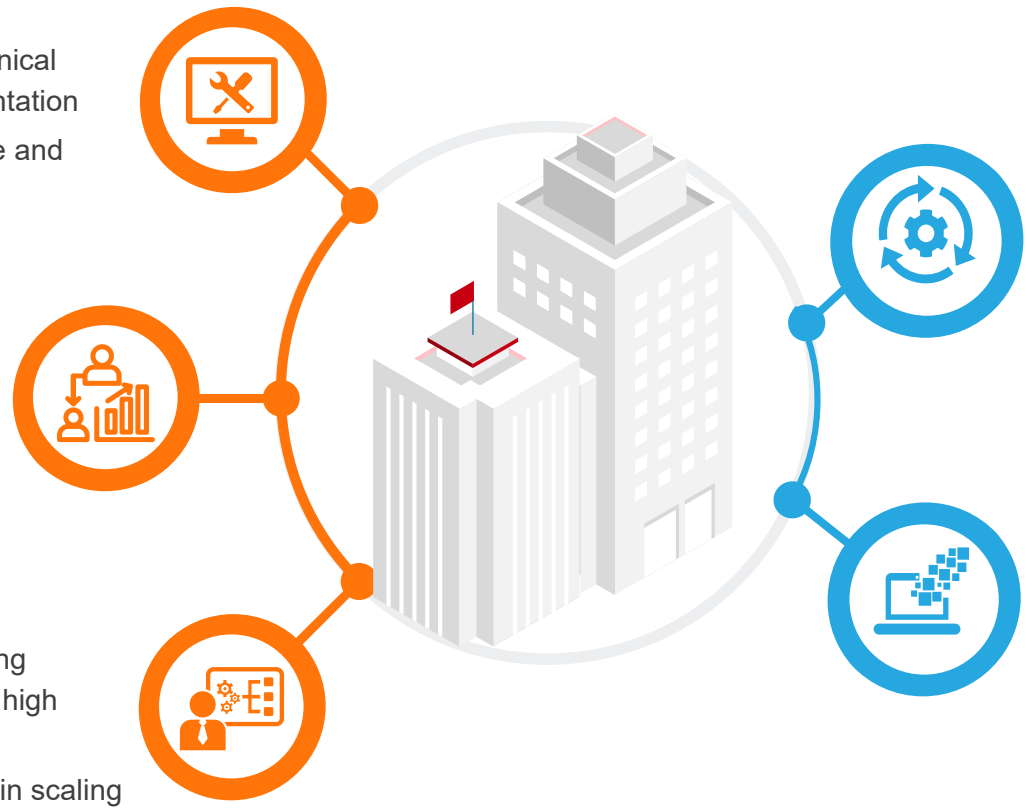
- The CoE, as part of corporate IT, has strong technical competence related to data access and implementation
- However, the CoE has limited process knowledge and influence to drive operational change

Shared services

- The CoE, as part of shared services, has access to the domain knowledge of both IT and business
- However, shared services that focus on support processes may lack core business domain view

Business function

- The CoE, as part of a business function, has strong business knowledge of that function and ensures high demand and impact
- However, such a CoE is likely to face challenges in scaling up automations and in complex technical implementations



Embedded CoE

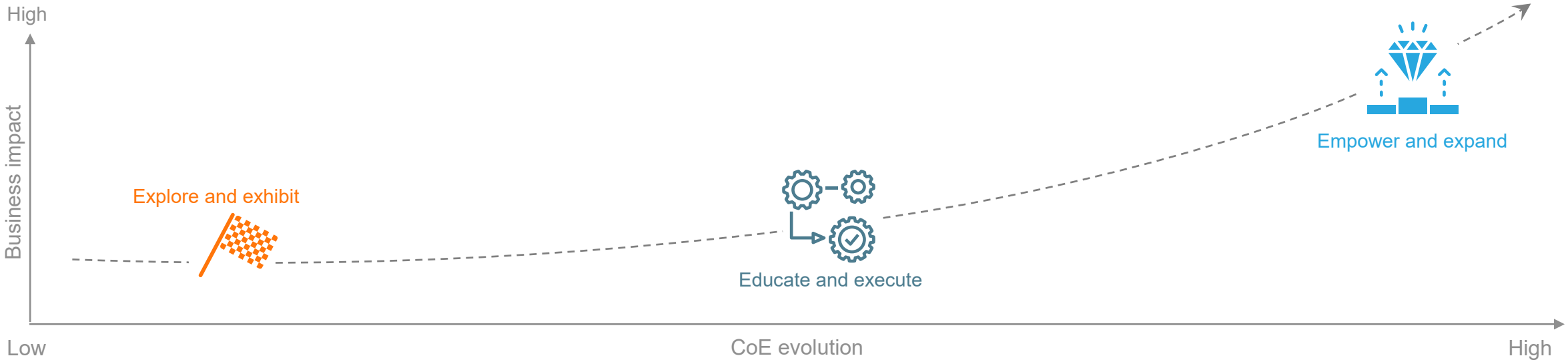
Process excellence CoE

- The IA CoE, embedded in a process excellence CoE, is aligned with the management's strategic targets and can reuse knowledge across functions
- However, limited domain and core IT expertise could be create challenges for the CoE

Digital transformation CoE

- The IA CoE, as part of a broader digital transformation CoE, is strongly aligned with an enterprise's strategic direction
- However, the CoE could face challenges due to limited domain and core IT expertise

CoE evolution (page 1 of 2)
Responsibilities change and expand as the CoE evolves



Focus areas

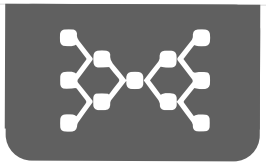
- Outline roles, responsibilities, and structures for collaboration with IT and other corporate functions
- Augment skills and technology with third-party provider support
- Initiate first use cases and implement the solutions
- Coordinate with stakeholders to leverage insights and improve process execution
- Achieve and communicate initial successes

- Create demand and expand the scope of implementation across silos
- Continue to coordinate with stakeholders to leverage insights and improve process execution
- Drive adoption through change management, training, and user-enablement sessions
- Develop in-house experts and optimize provider leverage
- Develop and institutionalize standards and governance mechanisms

- Continue to coordinate with stakeholders to leverage insights and improve process execution
- Develop structured frameworks that enable business units to use IA on their own, with centralized governance and support from the CoE
- Continuously empower the community with regular events on innovations and best practices

CoE evolution (page 2 of 2)

As the enterprise matures in its automation journey and scales up IA adoption, a hub-and-spoke CoE model located within a broader digital transformation CoE will have the most impact



Recommended structure: hub-and-spoke

- Most enterprises start their automation journeys with a centralized CoE model
- As enterprises mature, it becomes difficult for the CoE to manage all the use cases from different BUs
- A centralized CoE's resource pool is not sufficient to deal with the large volume of use cases. It is not optimal to increase headcount at the central level due to fluctuating demand from BUs
- As maturity increases, use cases are expected to become BU-specific and not remain generic
- For the above reasons, enterprises should adopt a hub-and-spoke model when they mature. The central hub will handle strategic functions and share best practices; while the spokes in the BUs will work on the use cases

Recommended location: within a digital transformation CoE

- Most enterprises establish their preliminary IA CoEs within a specific business function, corporate IT, or shared services, depending on the sponsor or source of budget
- Over time, IA is expected to align with the enterprise digital transformation agenda, which inevitably starts with the discovery of workflows that can be automated using cognitive capabilities
- To enable a holistic view of enterprise-wide automation, the IA CoE should reside within a broader digital transformation CoE
- Specialized teams of IA should reside within the central hub, while BUs should have spokes of the specialized constituent CoEs

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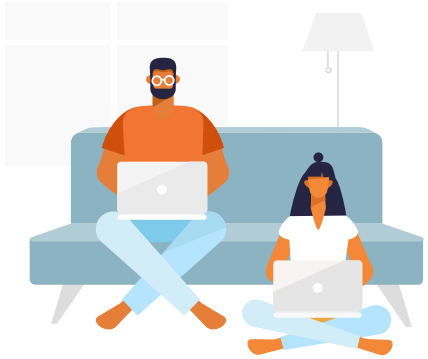
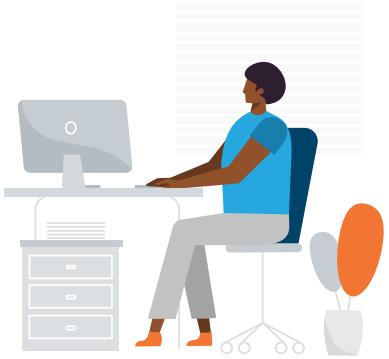
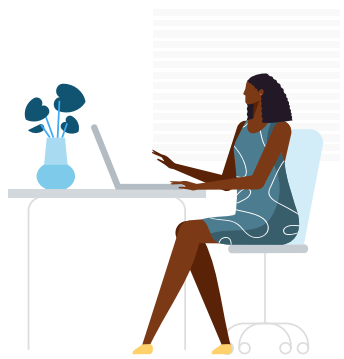
Talent management (page 1 of 5)

Multiple talent groups need to work together to effectively support the IA initiatives


Project governance

This talent group is responsible for the execution and governance of IA projects. The roles include:

- Project sponsor
- Project manager

Business analysis

This group is responsible for interpreting business impact and actioning on it. The roles include:

- Process specialist
- Business analyst

Development and support

This group is responsible for technical integration, data access, data cleaning, and data transformation. The roles include:

- Developer
- Tester
- Support expert

Data and ML

This group is responsible for data access, data cleaning, data transformation, and machine learning. The roles include:

- IT administrator
- Data specialist
- ML engineer

Talent management (page 2 of 5)

Roles, responsibilities, and skills required for different talent groups

	Project governance talent group		Business analysis talent group	
	Project sponsor	Project manager	Process specialist	Business analyst
Skills required	Ability to influence the organization and senior stakeholders with a strong conviction on the potential of IA.	Strong project delivery and change management credentials with good understanding of business processes and automation technologies.	A team player having operational and on ground expertise of the concerned line of business, with a basic understanding of automation tools and an eye for process improvements.	Thorough understanding of business processes, experience in process improvement tools such as Lean Six Sigma, and strong process-reengineering acumen with an analytical bent of mind.
Responsibilities	• They are responsible for championing the project and securing buy-in and budget from senior decision-makers • Typically, they are the project owners during enterprise's regular operations and take full ownership of the initiative's outcome. For example, for the accounts payable process within F&A, the Chief Financial Officer is likely to be the project sponsor	• Project managers are the single point of contact for all the execution-related activities of intelligent automation. It includes technology selection, risk assessments, business adoption, and requirements specification • They are also responsible for supervising, monitoring, reporting, and defining realistic milestones along with ensuring timely delivery	• They are responsible for undertaking process analysis, managing process versions, performing data-validation sessions, defining the outcomes to be delivered, and reviewing findings through collaborations with business analysts • They give inputs to testing scripts, help gain access to annotated data, and do user testing	• Business analysts evaluate processes and create the process definitions to execute automation from a business perspective • They are responsible for gathering requirements, interpreting business impact, liaising with automation experts, monitoring outcomes, and formulating performance KPIs • They ensure continuous training and maintenance of models for lower complexity platform-based ML solutions

Talent management (page 3 of 5)

Roles, responsibilities, and skills required for different talent groups

	Development and support talent group		
	Developer	Tester	Support expert
Skills required	Expert in the usage of the automation tools with scripting or programming experience, problem solving ability, and an understanding of the business processes being automated. Can often be skilled in multiple IA technologies.	Experience in software testing tools and automation tools, scripting experience, problem solving ability, and an understanding of the business processes being automated	Experience in maintaining, monitoring and auditing the performance of the automation software along with an understanding of the business processes being automated.
Responsibilities	• They work with business analysts to translate the process specifications into codes • They are responsible for the design, development and release of automation tools, along with their upgradations and integration with different systems and applications	• They undertake testing at different stages of the development cycle to identify and report bugs • They collaborate with operations staff to write testing scripts • They report bugs and issues and undertake retesting of bug fixes	• They are the first point of contact for the operations team and are responsible for handling any incidents, errors, and queries related to the deployed automation tool • They perform routine checking of the control tower, automation logs, and identify any potential problems to ensure smooth running of the workflows

Talent management (page 4 of 5)

Roles, responsibilities, and skills required for different talent groups

	Data and ML talent group		
	IT administrator	Data specialist	ML engineer
Skills required	Strong understanding of the enterprise technology and data landscape, security, and data privacy compliance requirements, with a good grasp of the IA project scope.	Well-versed with data transformation with tools, such as Excel, SQL, ETL tools, or scripting languages, such as Python or R, with a strong understanding of both the process and IT landscape.	Expertise in ML, pedigree in statistical, mathematical, and computer science-related fields and hands on capability in programming in one or more languages such as R and Python.
Responsibilities	• IT administrators are responsible for authorizing, facilitating, and maintaining the required technical integrations and getting information security clearances • IT administrators help extract data from enterprise systems, clarify questions about the data itself, and provide a glossary containing the meanings of different data fields	• Data analysts are responsible for merging different data sources and reformatting or processing the data through a variety of tools • They conduct tests and fix issues related to data quality	• They work on ML-based problems such as CV-based image recognition, and cognitive chat bots/voice bots • They apply statistical theory to choose/engineer/optimize approaches (and corresponding algorithms) across multiple use cases and data sets

Talent management (page 5 of 5)

Enterprises leverage different channels to source the talent required for IA programs

Leveraging existing provider partners for end-to-end execution of IA

- Ensures quick implementation of the planned automation across the enterprise
- Better accustomed with the technology and the requirements

Seeking third-party service providers for implementation of IA technologies

- Helps leverage industry best practices and insights, thereby helping in scaling up the program quickly
- Leverage guidance on the latest innovations in IA and helping unlock the next level of benefits from IA

Upskilling/reskilling existing employees for different IA-related requirements

- Helps enterprises build the relevant IA talent base in-house for the long-term
- Reduces the burden on CoEs, business analysts, and IT
- Helps improve employee experience by offering alternate career tracks for employees

Hiring and onboarding skilled IA workforce across different stages

- Helps acquire specialized IA skill sets to strengthen the CoE
- Helps in handholding and upskilling the existing employees
- Reduces the time to value from IA initiatives

Most enterprises adopt a muti-pronged strategy of leveraging third-party service provider talent, building the internal talent base by hiring experienced IA resources, and upskilling the existing talent base in the organization.

> We always try to appreciate the automation talent, treasure their contribution, and empower them. Trust and confidence is key to retaining automation talent in the current market.
> – Keith Edwards, VP Intelligent Process Automation, Fiserv

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Enabling citizen-led development (page 1 of 4)

In a citizen-led development model, business/operations resources actively identify the areas of improvement, develop business cases, support development of robots, and automate relevant tasks

Evolution of a citizen-led development model that enables greater business participation, leveraging in-house potential

Low ☐☐☐☐☐ High



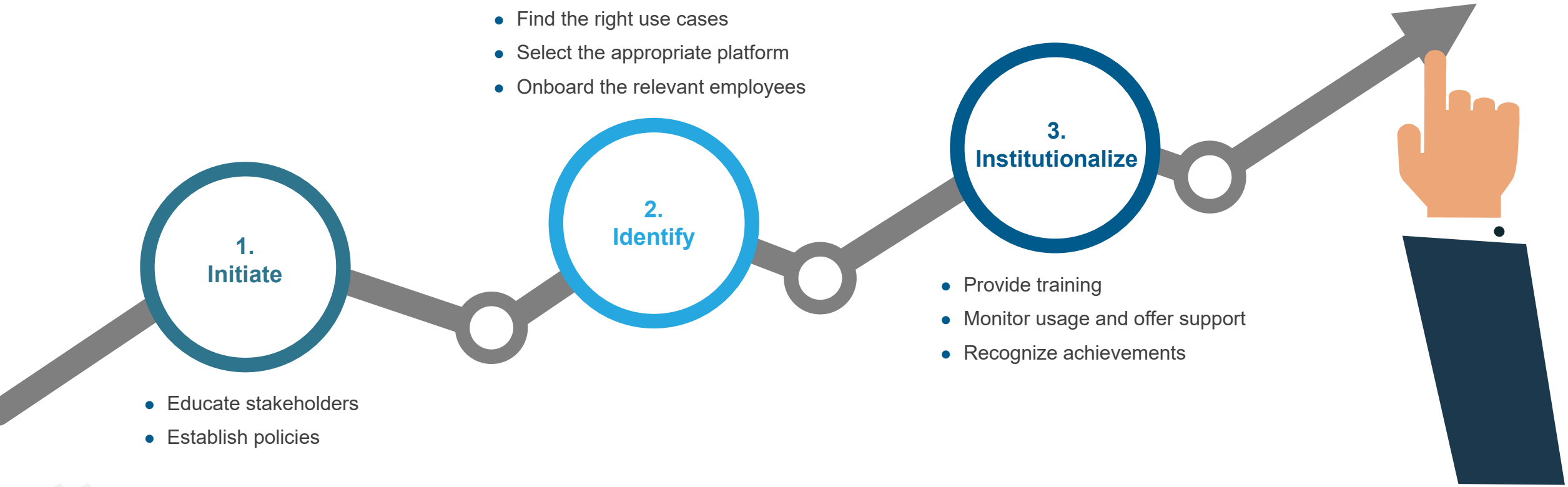
Maturity stage — Opportunistic → Programmatic

Increasing maturity of the citizen-led development model

Level of citizen involvement	• Primarily in discovery, mostly in contributing ideas for automation • Very limited involvement in development	Developing attended robots in addition to idea generation	Idea generation as well as developing both attended and unattended automations
Training focus	Leveraging training programs of technology providers to upskill business resources	Leveraging training programs of technology providers to upskill business resources	CoE driving targeted training/upskilling programs for business resources
Market prevalence	■■■☐☐	■■☐☐☐	◧☐☐☐☐

Enabling citizen-led development (page 2 of 4)

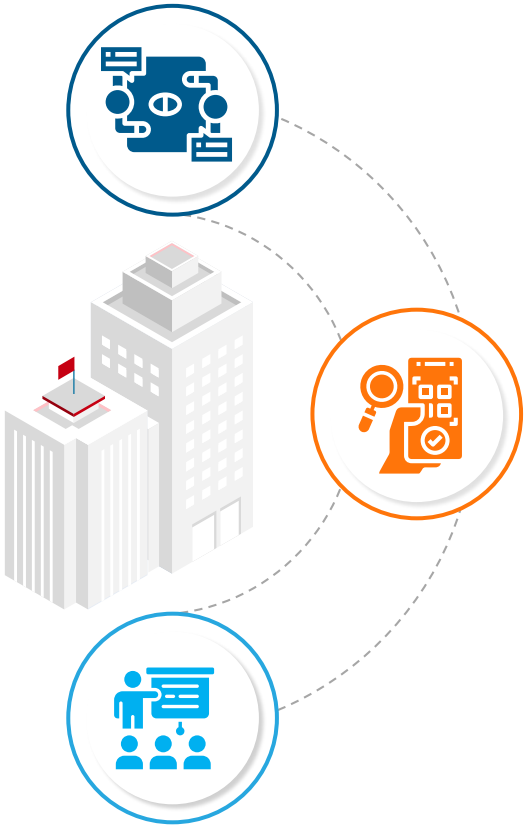
A phased approach based on a 3-I framework helps organizations establish and reap benefits from a programmatic citizen-led development model



> Having structured learning paths for citizen developers is key. If someone is going to sign up for the citizen development program, they're agreeing to a certain code of conduct. While this may not be their full-time job, it is something to be taken seriously and also be considered as an element in their professional development goals.
>
> – Brian Klochkoff, Executive Vice President, Global Head of Automation, Dentsu International

Enabling citizen-led development (page 3 of 4)

A sustained effort is required to institutionalize citizen development across the organization



Initiate

- Obtain buy-in from senior management
- Leverage centralized CoE's help to communicate and educate all stakeholders regarding responsibilities, expectations, and benefits
- Establish policies and standards to ensure ownership, security, control, and quality
  - Set boundaries and oversight between IT and citizen developers
  - Provide role-based user access to citizen developers to prevent security issues
  - Practice and preach the concept of documenting projects in a central repository that is widely accessible

Identify

- Find and prioritize use cases from the organization's transformation pipeline that are simple in nature and can be taken up by citizen developers (over time, citizen developers can be expected to handle complex use cases)
- Shortlist and finalize on a no-code platform that offers drag-and-drop capabilities
- Onboard relevant operations users into the citizen-led development program who:
  - Have moderate technology skills and hold an interest in learning application development
  - Are comfortable with spreadsheets & macros and possess some understanding of the existing business application infrastructure

Institutionalize

- Provide comprehensive and customized training to citizen developers on areas such as the development platform's usage, agile environments, information security, version control, and testing
- Set up governance tools and monitor data usage, user access, and newly-built applications' scope
- Support the citizen developers with embedded application templates created by the IT department
- Recognize and reward successful citizen developers and help them become program evangelists
  - Offer alternate career paths, including transition to automation CoE roles

Enabling citizen-led development (page 4 of 4)

Factors to set up a robust citizen-led development model

Best practices

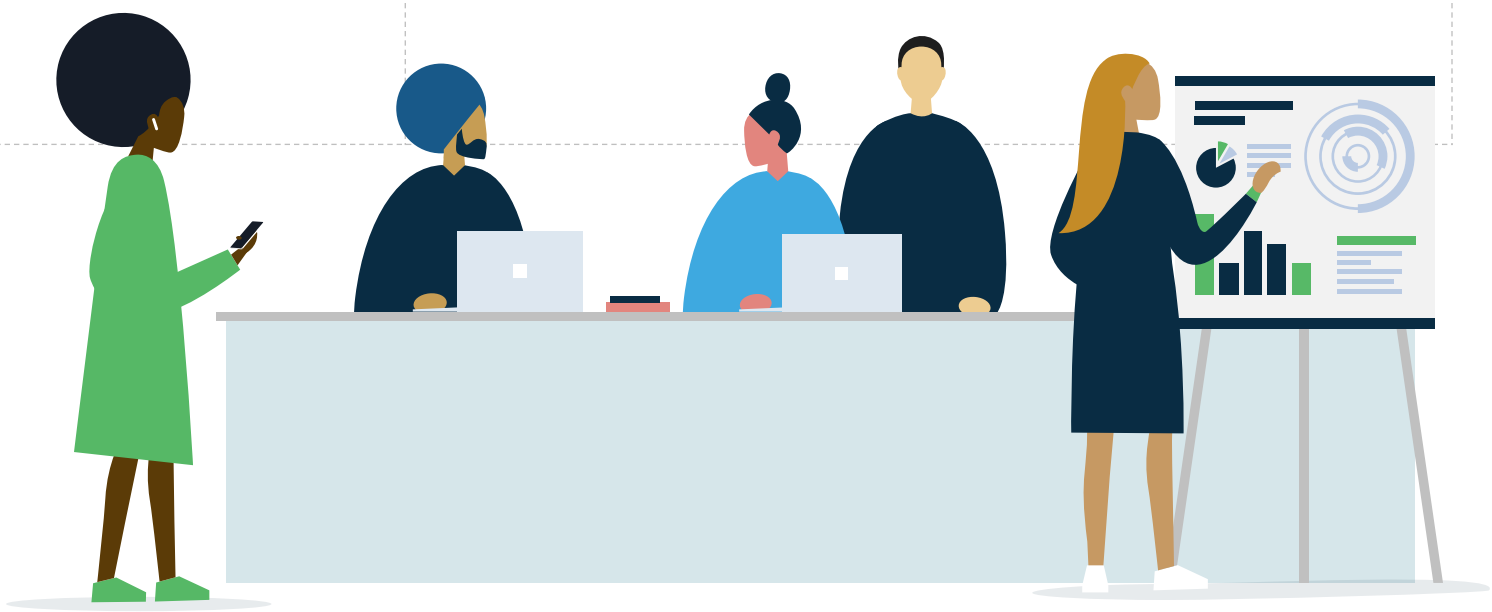
- Rewards & recognition program, hackathons, and internal contests encourage employees to contribute and share ideas, thereby filling pipeline of automation opportunities
- Quality of codes developed by citizen developers can be improved by better enabling and educating them, by providing access to free technical training and certifications offered by technology providers
- Education programs for managers to provide flexibility in selected employees' work schedules/targets encourage participation in the citizen-developer program

Success metrics

- Often measured by level of employee engagement and extent to which employees are contributing ideas for automation
- Some enterprises also measure the number of deployments, number of resources that have undergone a formal training, etc.

CoE involvement

- Most enterprises that have successfully scaled up the citizen-led model have a federated or hub-and-spoke CoE model wherein
  - CoE hub – handles license procurement, overall governance, vision for the automation program, and coordination with businesses
  - CoE spokes – also individual businesses or geography units, responsible for outcomes of automation specific to their business or geography
- This model helps push for more citizen-led development as the responsibility of outcomes resides with CoE spokes or businesses



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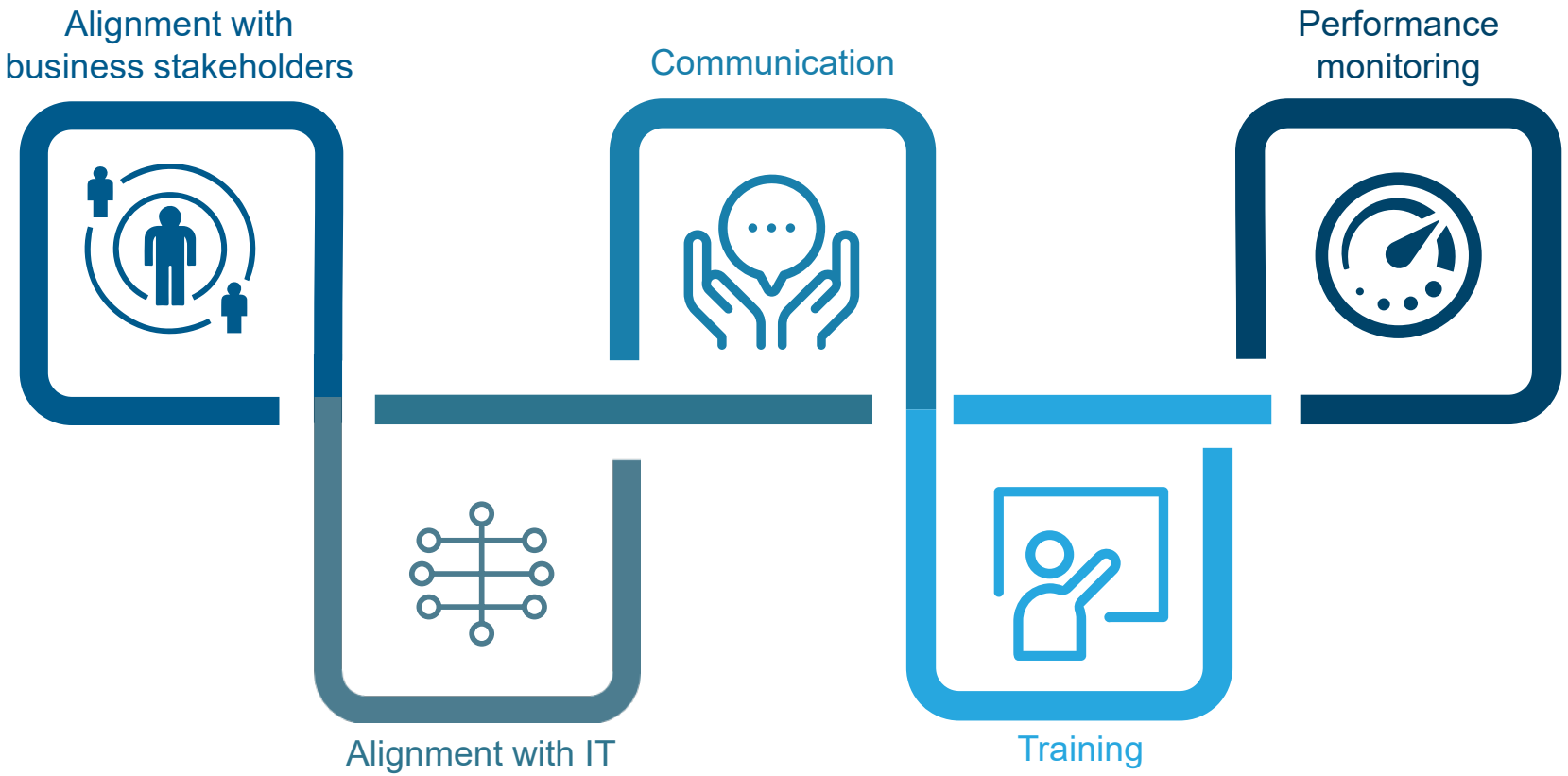
Key factors for change management when implementing IA

An effective IA change management program includes five key levers to drive and embed the change within the organization



> Effectively addressing the apprehensions of employees with respect to automation is important. We need to convey that automation is not about taking away your jobs, but rather about letting you do more, get more value out of what you're doing, and taking away the mundane.
>
> – John Russo, Director IT, EY

Best practices for effective change management (page 1 of 2)

	Alignment with business stakeholders	Communication
Challenges	• Departmental silos leading to inadequate information flow, gaps in collaboration, redundant efforts, and lower RoI • Restrictive enterprise policies on data confidentiality and third-party access	• Apprehensions around potential redundancies through adoption of IA leading to conflict • Selective information processing and resistance to change leading to poor understanding and acceptance of IA from employees
Ways to overcome the challenges	• Educate front-line managers to build a community of change leaders who can then shoulder the responsibility of influencing other people in the system • Gain support from all stakeholders by bringing interdepartmental leaders together and establishing process ownership and accountability • Ensure buy-in from the support teams such as privacy/security and compliance for a smooth transformational journey	• Chart a two-pronged approach for effective communication – one from the top management indicating the organization-wide vision and the other being personalized to improve the involvement of employees • Design relevant and effective communication policies proactively addressing employee concerns • Create awareness and educate employees using different channels such as newsletters, hackathons, and enterprise social media accounts; showcase success stories and organizational benefits to drive enthusiasm

Best practices for effective change management (page 2 of 2)

	Performance monitoring	Alignment with IT	Training and upskilling
Challenges	• Unrealistic expectations leading to premature failure of projects • Insufficient measurement and reporting leading to loss of management interest and focus	• The lack of a shared vision between IT and business results in disagreements on various fronts, such as effort and utilization of IT resources • Delay in getting approvals from enterprise IT due to apprehensions around data security and privacy	• Limited adoption of IA due to inertia and presumed complexity of new tools • Constrained supply of experienced resources
Ways to overcome the challenges	• Define the metrics/KPIs to measure and monitor the performance • Perform periodic governance to evaluate the success and bottlenecks of all the initiatives • Redefine and reevaluate all the KPIs over the duration of the transformational journey after analyzing deviations in the process	• Ensure proper division of work between the business team and IT team to avoid conflicts and guarantee cooperation toward the common goal • Understand the IT infrastructure and ERP systems at the beginning for a smooth transformational journey • Address data sharing and storage-related concerns	• Collaborate with providers and service providers to conduct structured training and certification programs for employees • Define tailored training modules for different roles such as business analysts and process specialists • Organize trainings for citizen developers to inculcate an analyst-like mindset, including new ways of thinking and hypothesis building and testing

05

Enterprise case studies

Case study | EY (page 1 of 2)

Enterprise overview

EY is a multinational professional services company, headquartered in London, UK. EY's roots date back to 1903 with Ernst & Ernst and Arthur Young which merged in 1989 and currently has operations in over 150 countries across the world. It delivers a wide range of offerings, comprising advisory, assurance, accounting, consulting, law, strategy, financial services, legal and managed services. EY began its automation journey in 2016 and engaged with UiPath for its attended RPA.
Website: https://www.ey.com/en_gl

Drivers of adoption

- **Improve process efficiency:** reducing process overheads and error rates, and improving the quality as well as enhancing the capabilities of the workforce
- **Reduce time to market:** reducing the time to market even when the volume of transactions rise
- **Cost avoidance:** reducing future labor demand as well as the cost of errors and risk as the scale of operations grows

IA technologies leveraged

- RPA (both attended and unattended)
- Process mining
- Task mining
- Conversational AI
- IDP

Approach toward intelligent automation initiatives

- **Project initiation:** after a pilot project in the finance function, automation was introduced as an enterprise-wide initiative for reducing risk, improving customer experience, and process speed rather than just cost savings
- **Process selection:** the consulting team conducted workshops for different business teams to brainstorm and create a pipeline of roughly 50-70 process ideas per team. The respective department, along with the automation development team, and governance team, prioritize and select the processes in their respective pipelines
- **Talent:** the team now consists of EY employees and third-party contractors. A structured citizen development program was created, including a new platform to provide support to scale up citizen development to a large share of the workforce
- **Organization structure:** originally adopted a centralized CoE and later matured into a federated model, in which the IA initiatives were funded from a central automation budget for the first year. From the second year onwards, the business units could spend a percentage of the realized cost savings on further automations with approval from the CoE

Key business outcomes

- While the transactions grew by around 30-40% annually, EY was able to manage those transactions with just a 5% increase in workforce over four years
- The automated ERP processes reduced the training time by more than 90% and IA technologies have reduced the human dependency in handling escalations or exceptions
- The IT spending was reduced by more than US$50 million; overall intelligent automation savings is estimated at around three-four million hours annually

Case study | EY (page 2 of 2)

Current status of the intelligent automation initiative	Future plans for the intelligent automation initiative
• Six years since the initiation of the enterprise automation journey • Built approximately 1,500 robots with around 700-900 robots running per day	• While currently 60% of the automations use more than one IA technology, in the next one or two years there are plans to make 80% of automations use a combination of IA technologies • They plan to support more citizen developers and aim to have every employee aided by personal automations in their desktop
Challenges	**Winning insights**
• Fear of job losses leads to resistance to adoption of automation technologies which needs to be addressed up front with communications and staff planning • Brainstorming sessions to identify processes for automation may become ineffective due to undue focus on cost savings while neglecting benefits such as better customer experience, risk reduction, speed to delivery, and decrease in error rates • The scale of deployment and spikes in business demand may overwhelm the solution, if not designed into the solution	• Align expectations with the business owners on success measures and build the KPIs/metrics during the automation development, which can be used in the periodic business review cycle • Make sure that processes with high SLA levels have adequate support from the provider and reduce the dependence on human exception handling before trying to scale up • To meet demand fluctuations, build automations on cloud that can dynamically scale up or down

> We wanted to make sure there was always a healthy pipeline for automation. For the first year, the priority was to show the business units the value of automation. So that once you've got that engine running, you don't stop it, and automation becomes an ongoing cycle.
>
> – John Russo, Director IT, EY

Case study | Security Benefit (page 1 of 2)

Enterprise overview

Security Benefit Corporation ("Security Benefit"), an Eldridge business, through its subsidiary Security Benefit Life Insurance Company (SBL), a Kansas-based insurance company that has been in business for 130 years, is a leader in the US retirement market. Security Benefit, together with its affiliates, offers products in a full range of retirement markets and wealth segments for employers and individuals and holds US$46.9 billion in assets under management as of December 31, 2021. Security Benefit began its automation journey in 2017 with UiPath.

Website: www.securitybenefit.com

Drivers of adoption

- **Reduce manual effort in less value-adding activities:** optimizing the processes and engaging the workforce in value-adding activities
- **Application rationalization:** reduce inefficiencies due to legacy applications by either eliminating legacy applications using automation or using automation as a stopgap until the application could be upgraded

IA technologies leveraged

- RPA
- Task mining
- AI/ML models

Approach toward intelligent automation initiatives

- **Project initiation:** automation was introduced as an enterprise-wide initiative and the different business functions were educated on the benefits of automation. The RPA CoE conducted brainstorming sessions with each function to identify ideal processes for automation and build the automation pipeline
- **Process selection:** the identified processes were prioritized based on the time savings the automation would yield, the effort required to build the automation, and process owners who could act as champions to drive adoption within the function
- **Talent:** third-party talent was leveraged for installation and automation development during the initial phases and later it was used for training and mentoring the in-house development team. Citizen development is supported with citizen developer licenses and a well-defined governance and approval process
- **Organization structure:** a centralized CoE model was adopted, with major projects funded by the Chief Digital Officer (CDO). The automation CoE is embedded within the Six Sigma department, as part of a broader process excellence team under the CDO organization

Key business outcomes

- The automations led to cost savings of approximately US$4.5 million, which is significant given that the majority of the operations processes are outsourced
- Saved 107,000 hours of employee effort through automation

Case study | Security Benefit (page 2 of 2)

Security Benefit®

Current status of the intelligent automation initiative

- Expanded automation to 107 processes across different business functions
- Piloted Test Manager capability for one RPA use case process prior to expanding out to automated web regression testing resulting in over 59,000 hours saved / capacity created per year

Future plans for the intelligent automation initiative

- Leverage Intelligent Document Processing (IDP) and task mining capabilities along with RPA
- Review and automate 170+ processes in the automation pipeline
- Leverage more automated testing capabilities with other applications, and incorporate automated testing even within the automation development life cycle as well

Challenges

- Obtaining initial leadership approval for the overall RPA project was difficult
- Experienced difficulty in getting into certain areas due to lack of effective support from some leaders
- Finding, developing, and retaining the talent to build, test, and maintain the automations is challenging due to the high demand for automation talent in the market
- Business functions lack people with good business analytics skills that understand end-to-end process flows. This is exacerbated by the siloed view that people within a department may have on processes, especially for inter-departmental processes

Winning insights

- Educate, motivate, and reward employees for optimizing and automating the business processes including the tasks that get executed on their desktops
- Initial process focused on a quick win, that has no impact to production, allowing to fail fast and test the infrastructure setup with minimal impacts
- Utilizing automations that are flexible and scalable contributes to increasing processing volumes without adding resources
- After identifying the potential processes to automate, the relevant function head, process owner, and development team should come together to justify the need for automation and optimize the processes before proceeding to the development phase. This is especially important when automating end-to-end processes spanning multiple business functions

> We took a grassroots approach and spent a significant amount of time building a solid foundation, focusing on a change management program, logical access, and internal controls from an audit perspective. We designed and documented good processes and procedures which resulted in our ability to scale quickly and easily throughout the years. We educated the different levels of management, which we knew would be great champions for us moving forward. Once our process was solid, we began with working with the CEO to champion our automation efforts.
>
> – Amy Chandler, Second Vice President, RPA CoE Leader and Six Sigma Master Black Belt, Security Benefit

Case study | Fiserv (page 1 of 2)

Enterprise overview:

Fiserv is a global financial technology and services firm headquartered in Brookfield, Wisconsin (USA). It started in 1984 as a data processing organisation focused on the financial services industry and has evolved into a large payments and FinTech provider. The firm serves nearly six million merchant locations, has around 10,000 financial institution clients, and handles nearly 12,000 transactions every second. It offers technology solutions in areas such as payments, customer & channel management, insights & optimization, risk & compliance, and processing services. Its automation journey started in late 2017, in partnership with UiPath.
Website: https://www.fiserv.com/

Drivers of adoption

- **Improving efficiency:** automate repetitive, manual, and tedious tasks, especially in the contact center vertical, for improved efficiency
- **Reducing costs:** curtail costs associated with increased number of FTEs in sustained manner
- **Higher accuracy:** being a financial services firm, accuracy, error reduction, penalty avoidance, etc. were also important drivers for adoption

IA technologies leveraged

- RPA
- Intelligent Document Processing (IDP)
- AI/ML (early stages)
- Conversational AI
- Process orchestration / BPM

Approach toward intelligent automation initiatives

- **Project initiation:** initiated the automation journey with the contact center unit. Created a strong business case with cost-benefit analysis and justified RoI for the initial PoC
- **Process selection:** structured assessment framework was used to prioritize processes, with preference for low-complexity and high-benefit use cases. The selected processes are fed into a backlog and picked up based on priority and available resource capacity
- **Talent:** automation talent was built through external hiring and internal training programs, with high focus on training, employee growth, and retention
- **Organization structure:** primarily leveraged a centralized CoE for automation, which is funded by the IT organization and charged back to business units based on automations deployed. Self-service automation teams were also leveraged by a few business units, and a citizen development program was also initiated. Review and governance for all automations across the organization done by the central CoE

Key business outcomes

- Captured annual cost savings of around US$10-12 million from the deployment of new use cases of automation, over and above the existing use cases
- Improved operational efficiency with 75,000 robot hours being utilized last year, which is an aggregate across all the instances of automations deployed in the firm
- Achieved improvement in SLAs for customer-facing processes resulting in better customer retention rates

Case study | Fiserv (page 2 of 2)

fiserv.

Current status of the intelligent automation initiative	Future plans for the intelligent automation initiative
• Currently automations deployed for around 220 unattended use cases on premise and around 80-100 attended users with orchestration on the SaaS • Primarily used in contact center units globally, which accounts for about 40-50% of all the automations, but expanded to other areas as well such as HR, legal, and IT	• Develop a larger solutions catalog through a suite of AI-/ML-based technologies provided by intelligent automation • Move toward deployment of the automation platform on private cloud for additional benefits with improved security and firewalls
Challenges	**Winning insights**
• Lack of readiness of infrastructure operations for unattended bots, which were deployed on servers was an impediment. Needed to secure support with IT infrastructure team for issues such as firewall access • Getting access to different business applications was also a challenge. There were concerns from application teams about the need for access, the robots' impact on application load, and potential roadblocks/dependencies for application upgrades because of the robots. It required regular engagement and education of the applications teams to ensure alignment • Developing a business case to showcase the benefit of automation can also be an obstacle. Estimations of savings for different use cases, volume of transactions that can be achieved, number of human hours saved, etc., needs to be backed with data	• Implement a yearly assessment mechanism to review the automation life cycle methodology and regularly upgrade them with changing requirements by adding new technologies • Always try to appreciate the automation talent, treasure their contribution, and empower them. Trust and confidence is key to retaining automation talent in the current market • Create a CoE in collaboration with IT and ensure dedicated funding. A hybrid CoE model is preferred, wherein certain localized teams are also deployed at business units. Regular training of such localized teams is also important • Define a structured citizen development program to create a strong talent pool for enterprise-wide automation. Right incentivization and career growth prospects are key aspects of this program

"We set up a rigorous code review process. The central CoE reviewed the code for every automation, even those created by citizen developers. We also created comprehensive standards and guidelines which were shared with all the developers."

– Keith Edwards, VP Intelligent Process Automation, Fiserv

Case study | Dentsu International (page 1 of 2)

dentsu

Enterprise overview

Part of Dentsu Group, Dentsu International is a network designed for helping clients predict and plan for disruptive future opportunities and create new paths to growth in the sustainable economy. Dentsu delivers people-focused solutions and services through five global leadership brands – Carat, Dentsu Creative, dentsu X, iProspect, and Merkle. Dentsu International operates in over 145 markets worldwide with more than 46,000 dedicated specialists, and partners with 95 of the top 100 global advertisers. Dentsu began its automation journey in 2017 and has partnered with UiPath as part of its automation program.
Website: www.dentsu.com

Drivers of adoption

Reduce time spent in routine work: reducing the time spent in repetitive, non-productive work that can instead be utilized in creative, human-centric work

IA technologies leveraged

- RPA
- Process mining
- Task mining
- Conversational AI
- Intelligent Document Processing (IDP)
- Process orchestration

Approach toward intelligent automation initiatives

- **Project initiation:** the initial automations were siloed, function-specific deployments, funded by the respective functions. As these deployments increased, the overhead in terms of licenses and systems increased. A central automation CoE was then set up with to consolidate the contracts and scale up the automations
- **Process selection:** use cases with automation potential are collected through crowd sourcing as well as through process mining. The ideas are assessed by the solution architecture team along with process owners, who conduct a quick feasibility study. The idea is then presented to the function's steering committee, in order to understand and incorporate function leaders' expectations before development begins
- **Talent:** the development is done internally with occasional help from professional service providers to augment the in-house talent. The team consists of 60 professional developers and over 100 citizen developers monitored by the regional solution architects
- **Organization structure:** the automation team reports to the CIO. The budget for automations and training is centralized

Key business outcomes

- Automated around 800,000 hours of manual work
- Bridged the deficiencies in their business platforms with the help of automations to reduce errors and reconciliation efforts
- Improved employee satisfaction due to automation, with citizen developers exhibiting better retention rates compared to other employees

Case study | Dentsu International (page 2 of 2)

dentsu

Current status of the intelligent automation initiative	Future plans for the intelligent automation initiative
• Around 800 employees are actively engaged in the automation efforts and contribute automation ideas to the hub • Around 275 licenses have been deployed including 50 unattended robots	• Plans to expand the automation pipeline and standardize the automation lifecycle by improving the process selection and development methodology • The aim is to shift the focus to more innovation and creative problem solving
Challenges	**Winning insights**
• Making stakeholders understand that the success metrics of automation are not just about headcount reduction and cost savings • Due to the siloed nature of operations, employees may have a limited task-level view of the process. This makes it difficult for automation teams to identify the processes to automate as process maps are not readily available • Availability of professional developers to build, test, deploy, and manage the automations is a challenge. They must also be trained to keep them abreast of the recent advancements in technology • Misconceptions by stakeholders who consider automation to be just about RPA can limit the outcomes possible. It requires education for the stakeholders to understand the additional value brought in by other capabilities beyond RPA	• Having structured learning paths for the citizen developers is important. The citizen developers should have dedicated time within their work hours for training and development. In addition, their contribution should be considered as an element in their professional development goals • Ensuring that the employees (not just citizen developers) are actively involved in the automation program by tracking metrics such as number of automation ideas submitted, usage of automations, and engagement with the newsletter and updates from the automation CoE • It is also important to keep the senior leadership up-to-date about the recent advancements in automation so they can understand the value of the upgrades that the CoE makes

> Having structured learning paths for citizen developers is key. If someone is going to sign up for the citizen development program, they're agreeing to a certain code of conduct. While this may not be their full-time job, it is something to be taken seriously and also be considered as an element in their professional development goals.
>
> – Brian Klochkoff, Executive Vice President, Global Head of Automation, Dentsu International

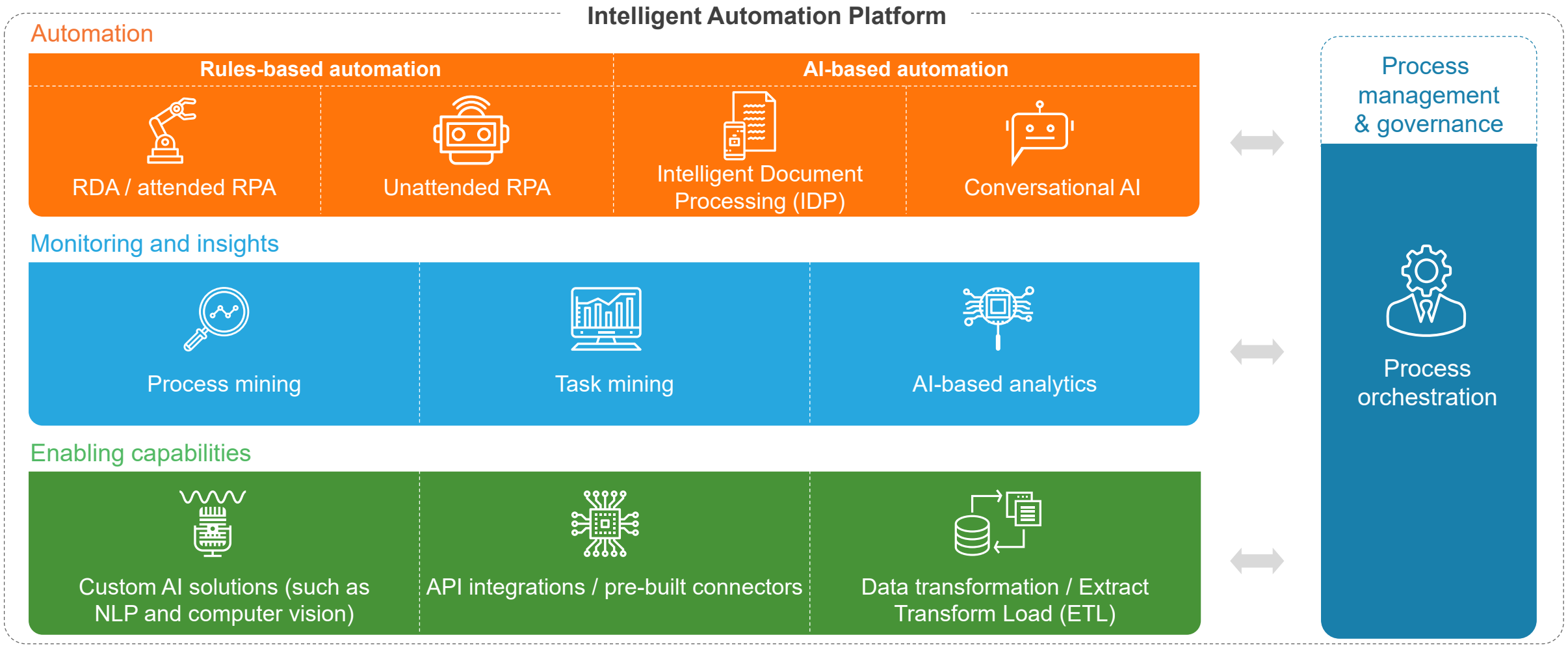
06

Appendix

- Understanding IA technologies
- IA market characteristics
- Intelligent automation Capability Maturity Model (CMM)
- Environmental determinants
- Variance in execution path steps
- Glossary

Understanding IA technologies (page 1 of 7)

An ecosystem of no-code / low-code digital levers constitute an intelligent automation platform that helps enterprises discover, optimize, and automate both rules-based and judgment-intensive processes

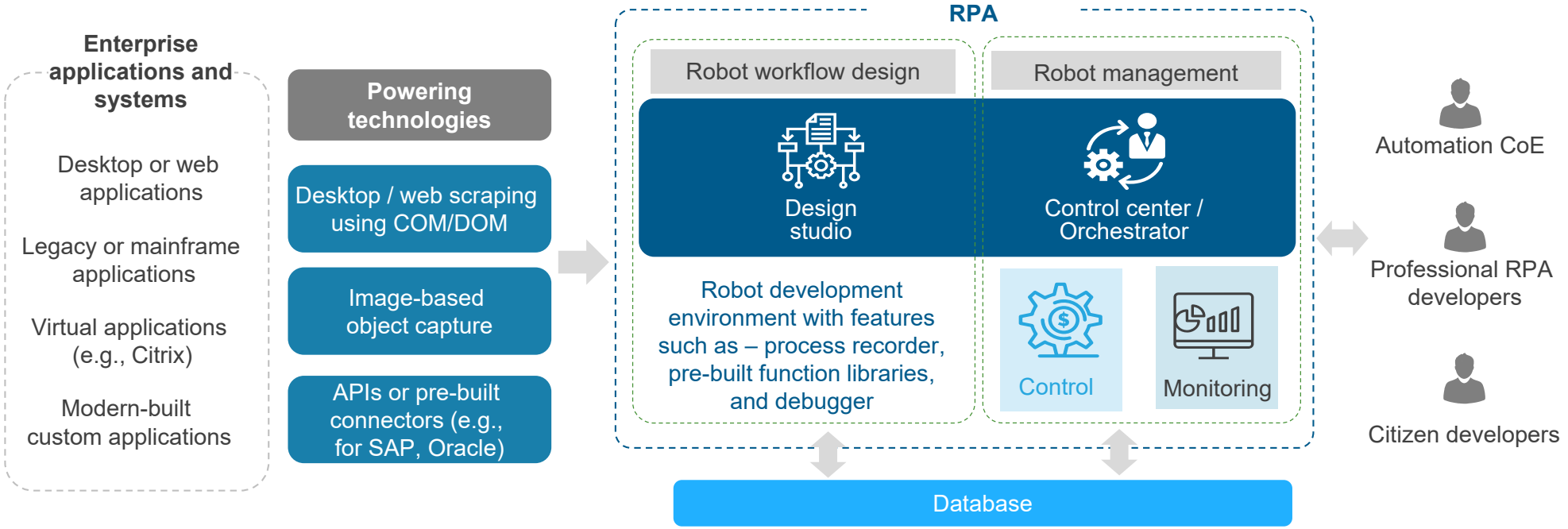


Understanding IA technologies (page 2 of 7)

Robotic Process Automation (RPA)

RPA is any software or product that helps automate rules-based business tasks by mimicking a user's activities in a non-invasive manner. An RPA solution can be deployed on-premise or on cloud and comprises following key components:

- **Design studio** is a desktop/web application that offers a development environment for citizen users / IT developers to create attended and unattended automations. It comes with functionalities such as a process recorder to develop automation workflows by capturing user actions performed on physical/virtual desktops, debugging capability, and library of pre-built reusable automation assets
- **Orchestrator / control center** offers a centralized interface with features to control and monitor automations. It provides control functionalities such as scheduling/queuing, dynamic load balancing, pausing, and resuming workflows. It also provides robot monitoring capability and analytics dashboards with historical and near-real time information on the status of automations' execution and its impact on process KPIs



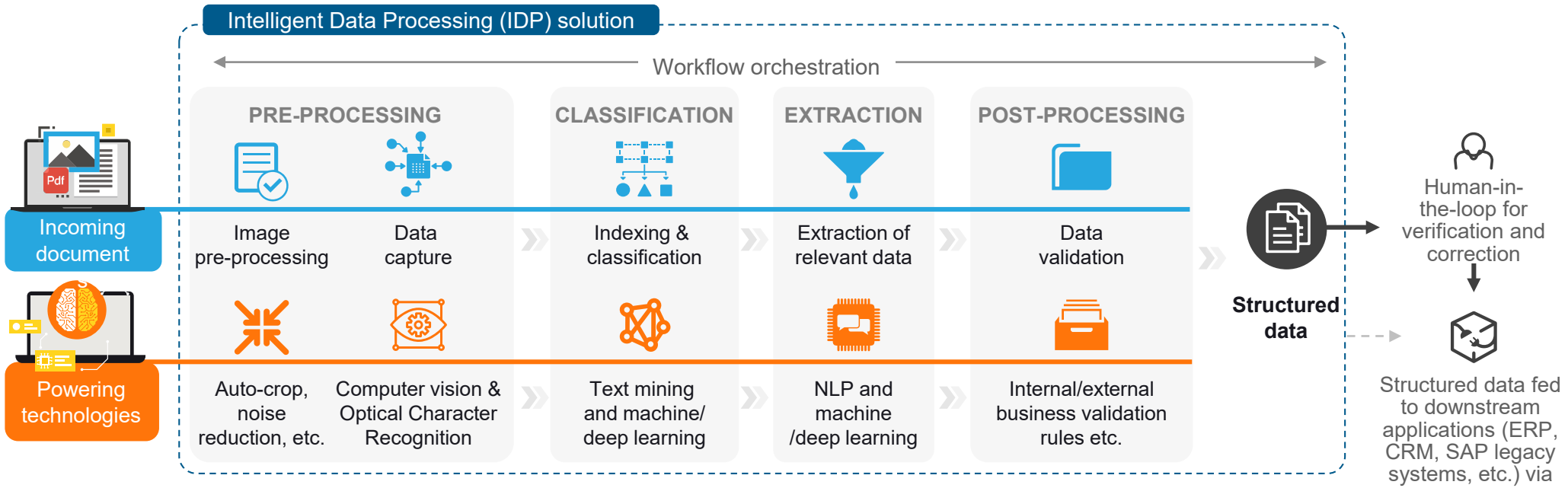
Key applications (illustrative)

- Data transfer or migration
- Data validation
- Scraping information from web pages
- Near real-time agent guidance
- Reports generation

Understanding IA technologies (page 3 of 7)
Intelligent Document Processing (IDP)

Intelligent Document Processing (IDP) refers to any software product or solution that can automate processing of documents using AI. An enterprise-grade IDP solution has the following capabilities:

- **Pre-processing:** performs image pre-processing to increase the quality of the scanned document and uses OCR/computer vision technology to capture data
- **Classification:** indexes and classifies the documents into categories using text mining & ML/deep learning capabilities
- **Extraction:** extracts relevant data, leveraging NLP and ML/deep learning capabilities for further processing
- **Post-processing:** validates the extracted data with the help of pre-defined taxonomies, data dictionary, and business validation rules

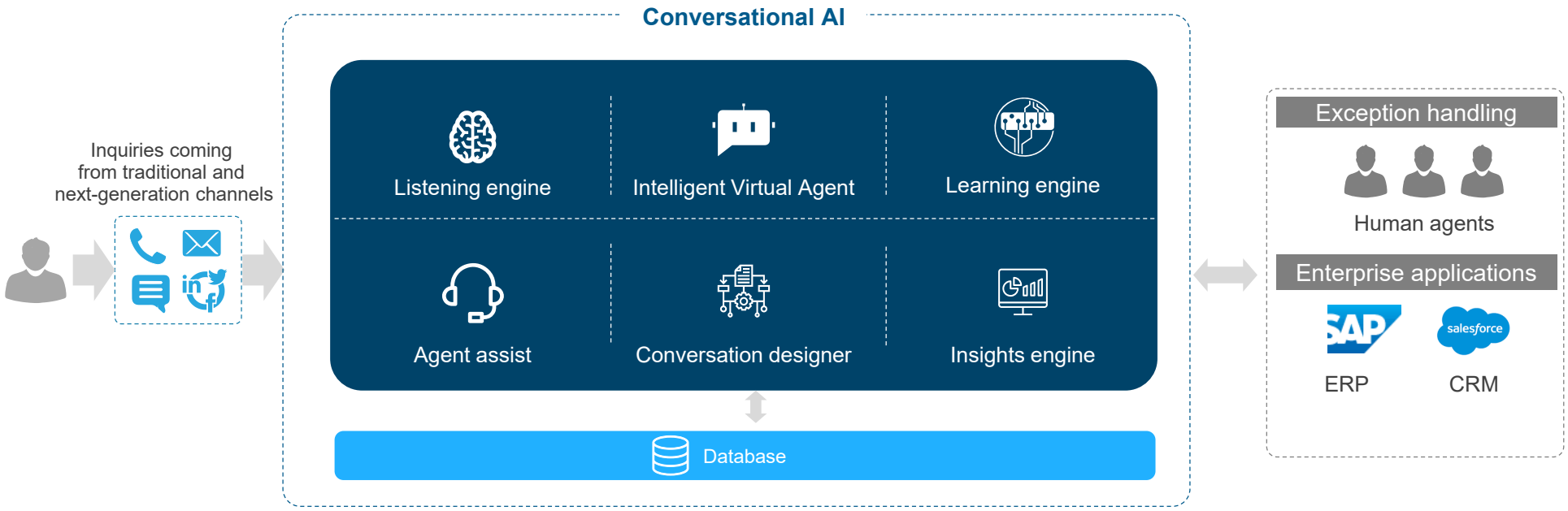


Key applications

- Document routing
- Structured data extraction
- Document insights
- Document comparison
- Document search
- Redaction

Understanding IA technologies (page 4 of 7)
Conversational AI

Conversational AI is an ecosystem of advanced technologies and solutions that work in an integrated fashion by interacting with each other and sharing information across systems in a contact center environment. Conversational AI improves overall contact center efficiency, customer experience, and agent experience by leveraging technologies such as Intelligent Virtual Agents (IVA), agent-assist solutions, analytics & insights, and other automation solutions such as RPA. At the heart of any conversational AI offering are powerful Artificial Intelligence (AI) and Machine Learning (ML) capabilities.



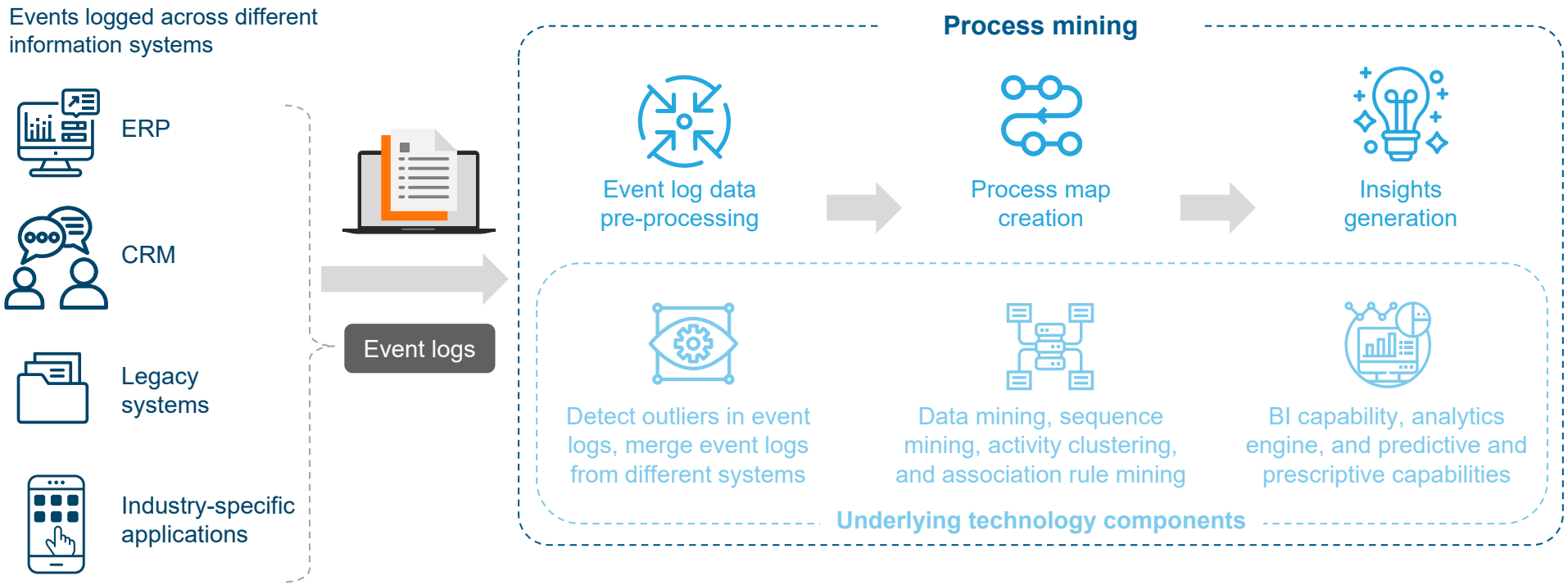
Key applications

- Automated conversations
- Dynamic routing
- AI recommendations
- Personal assistant
- Customer analytics

Understanding IA technologies (page 5 of 7)
Process mining

Process mining is any software product or solution that can:

- **Collect event log data from different information systems, such as ERP and CRM**, which contains date, time, user, activity, etc., and is further analyzed
- **Generate** process maps capturing the different process variants, with the sequence of tasks/steps involved
- **Extract relevant business insights,** such as process discovery, root-cause analysis, process conformance checks, and process benchmarking



Key applications

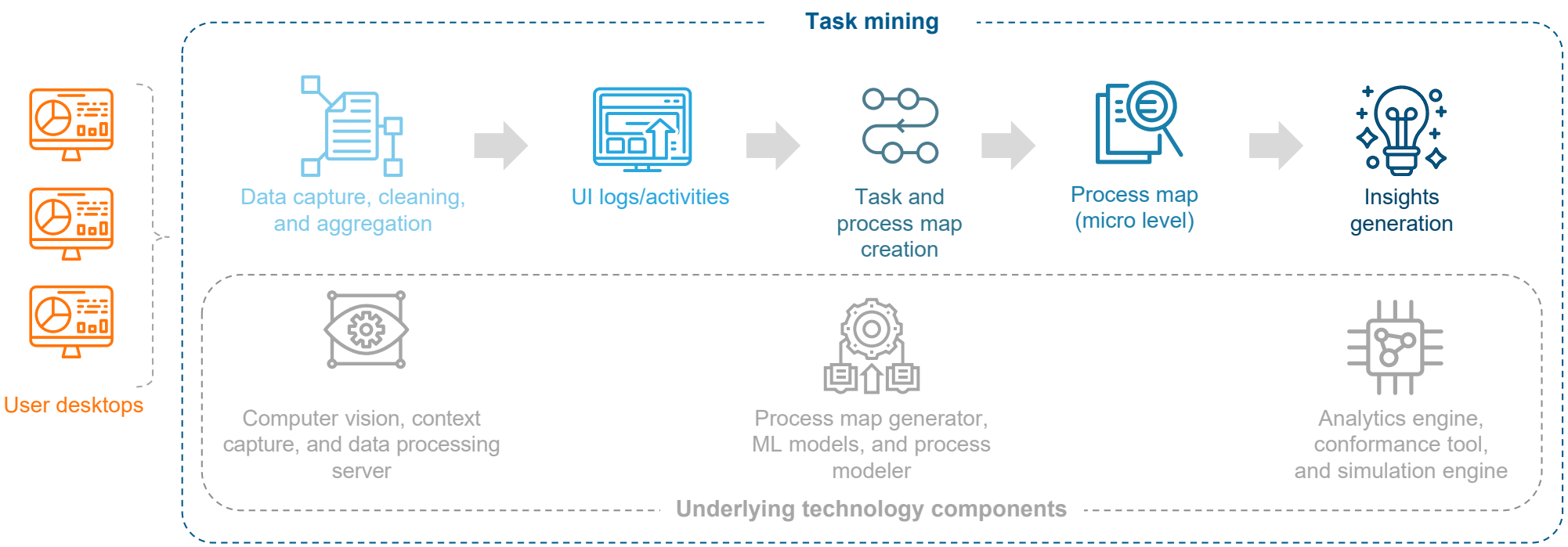
- Process discovery (macro level)
- Process conformance
- Process improvement use cases
- Process simulation
- Process monitoring

Understanding IA technologies (page 6 of 7)

Task mining

Task mining is any software product or solution that can:

- **Create UI logs:** user actions and metadata, such as keystrokes, mouse clicks, activity screenshots, and application object IDs, are captured/recorded across desktops to create UI logs
- **Generate** process maps capturing the different process variants, with the sequence of tasks/steps involved
- **Extract relevant business insights**, such as task-level automation opportunities



Key applications

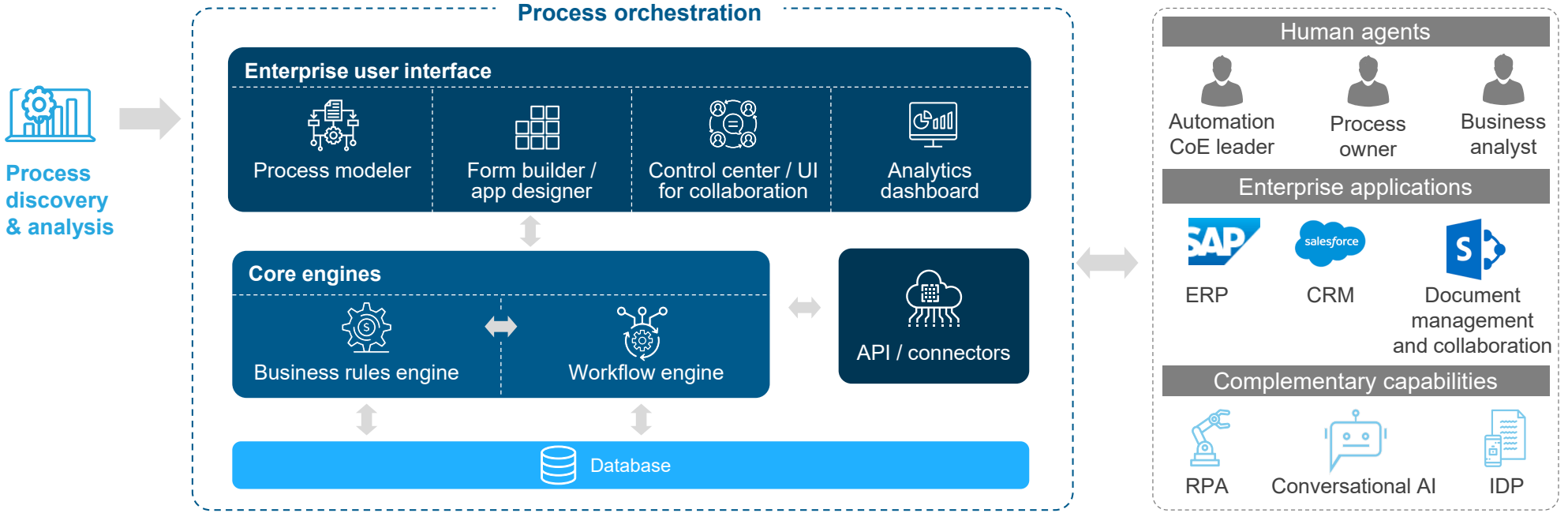
- Process discovery (micro level)
- Task automation use cases
- Workforce intelligence
- Process monitoring
- Process conformance
- Action triggers

Understanding IA technologies (page 7 of 7)

Process orchestration

Enterprise process orchestration is any software or product that

- **Allows** business users design, execute, and monitor end-to-end business processes and provide process-related insights
- **Consists of** key capabilities such as process modeling, business rules management, ability to design user interfaces for capturing/presenting data, hybrid workforce management
- **Orchestrates** the flow of work across human workers, digital workers (such as RPA, IDP, and conversational AI), and enterprise applications in long-running workflows



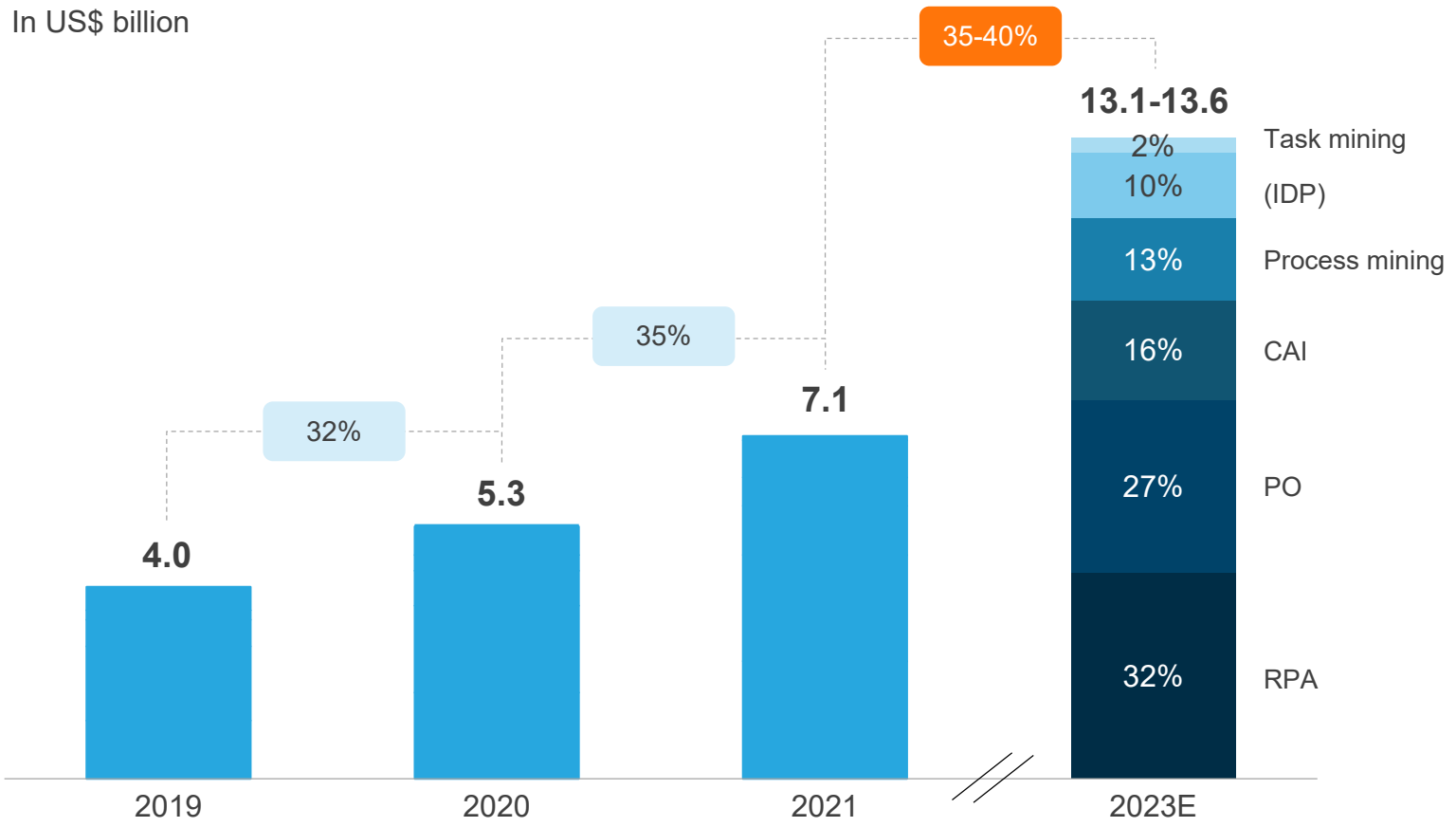
Key applications

- Process modeling
- Business rule management
- Low-/no-code UI development
- Hybrid workforce management

IA market characteristics (page 1 of 4)

IA's role in helping enterprises transform to digital-first operations and address business challenges is driving its growth in adoption

IA software market size
In US$ billion

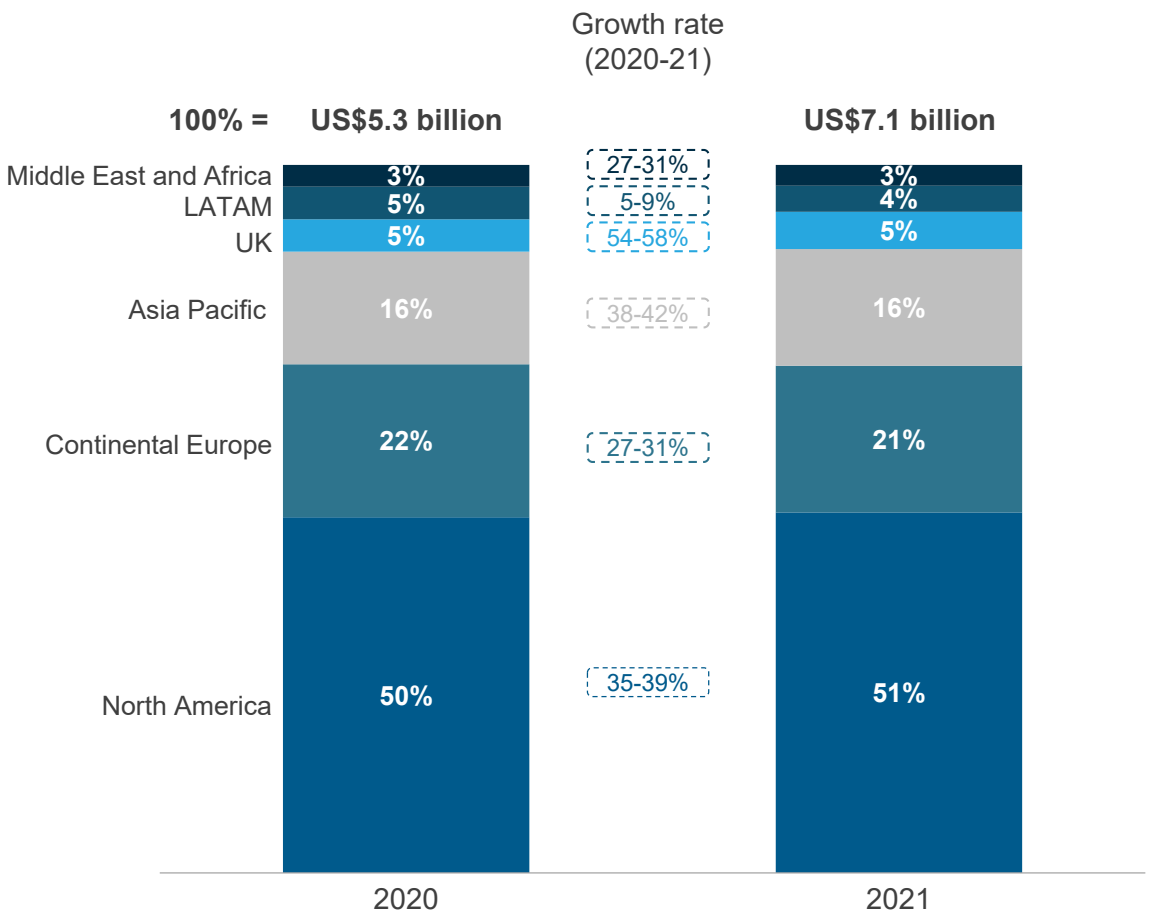


- The IA software market stood at over US$7 billion in 2021, showcasing a YoY growth of close to 35%
- In a business environment that is constantly evolving, enterprises are embracing IA to make their organizations digital-first and future-ready. Consequently, the IA software market is expected to grow at a CAGR of 35-40% in the next few years
- Some of the key growth drivers are pent-up demand in the aftermath of the pandemic and improved sophistication of AI technologies accelerating the adoption of cognitive solutions along with RPA

Source: Everest Group (2022)

IA market characteristics (page 2 of 4)

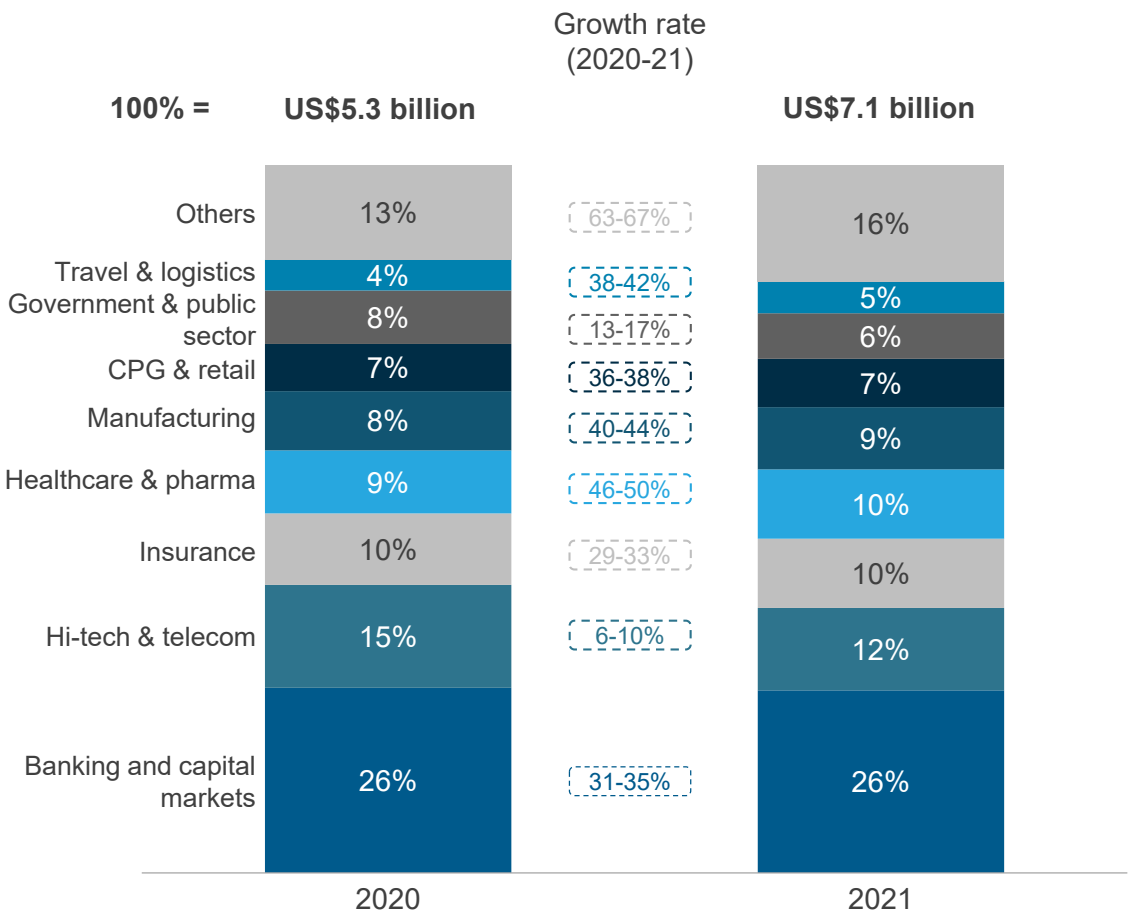
Adoption of IA across geographies



- North America continues to be the largest market for Intelligent Automation (IA) solutions with around 50% of the market share and a growth rate of around 37%. The growth is primarily driven by the mature BFSI and healthcare sectors
- The UK, even though under penetrated, reported the biggest uptick in demand over the last year, with growth rates of about 56%. The APAC region also showed a strong growth of about 40%. This can be attributed to the emergence of regional players catering to the growing demand for IA solutions
- The growth in Continental Europe, which is around one-fifth of the total IA market, is due to acceleration in automation initiatives and consequent shortening of the sales cycle. The need for digitization and increased operational efficiencies continue to be the key drivers
- The emerging markets of LATAM and the Middle East and Africa are showing early promises for healthy adoption going forward, mostly driven by continued success stories in mature geographies, as well as increased availability of easily deployable packaged solutions. However, MEA and LATAM are still largely untapped and offer considerable growth potential

IA market characteristics (page 3 of 4)

Adoption of IA across industries

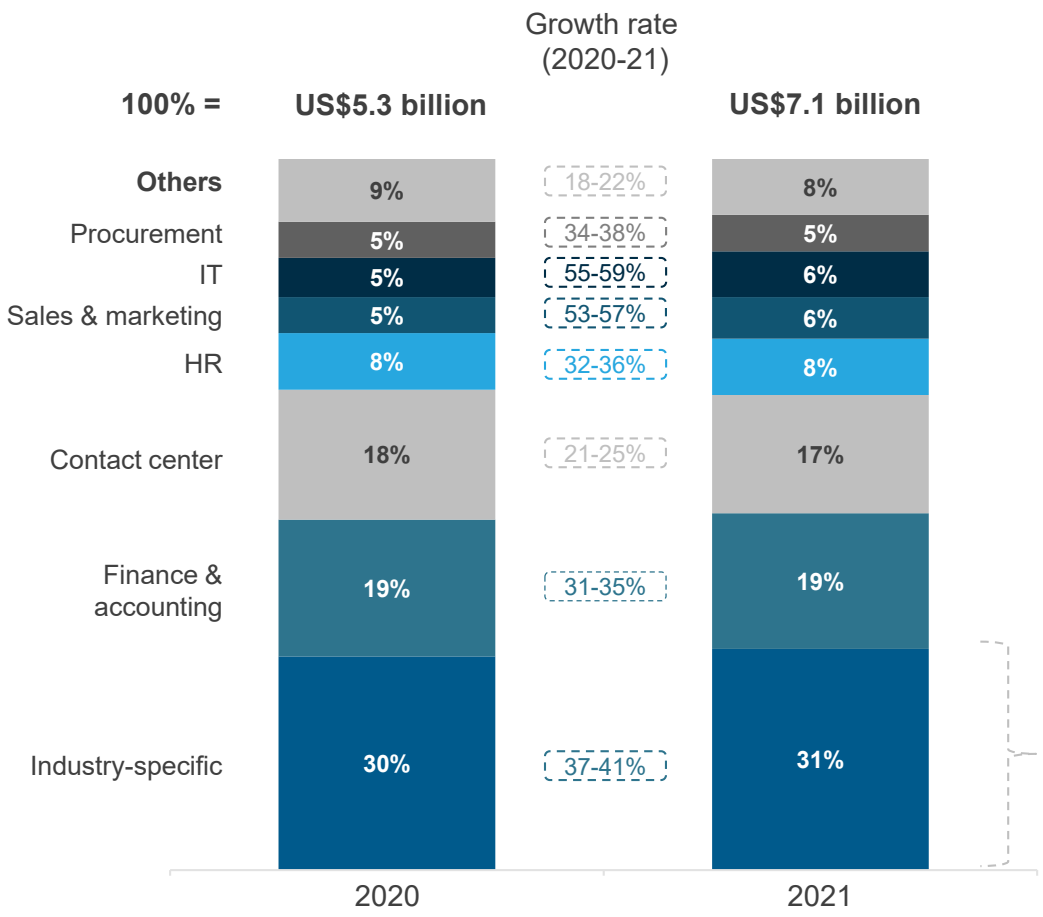


XX Growth rate in 2020-21

- Banking and capital markets industries account for more than one-fourth of the total market adoption. When combined with hi-tech & telecom and insurance, they constitute around 50% of the market for IA adoption among industries. In all these industries, IA solutions catalog are used extensively for both front office and back-office automations, as the processes involves large manual work and mundane tasks
- Healthcare & pharma and manufacturing continued to experience strong growth with adoption growing by more than 40% for both segments. These industries have experienced increased deployment of IA solutions across multiple use cases pertaining to invoices, order forms, change requests, patient onboarding, and health records management, etc.
- CPG & retail and travel & logistics, even though currently under penetrated with combined market size constituting around only 12%, are expected to further move up in their IA adoption journey which is also reflected in their growth rates of around 40% each. This is due to growing need to improve efficiency and reduce reliance on manual processes, given the competitive market
- Government & public sector has seen lower penetration as well as lower growth owing to the variability and complexity of use cases. However, with increasing sophistication the tendency to adopt IA solutions is further expected to increase going forward

IA market characteristics (page 4 of 4)

Adoption of IA across business functions



XX Growth rate in 2020-21

- Industry-specific business functions have seen the highest acceptance of IA and constitute nearly one-third of the total market, with banking and insurance being the biggest adopters. It is also growing quite rapidly at about 40% YoY, and we can expect more demand particularly in industries such as healthcare & pharma, manufacturing, and CPG & retail
- Finance and accounting has experienced the largest adoption of IA solutions among horizontal functions. Apart from F&A, contact center also has seen strong adoption of IA, particularly with high levels of adoption of conversational AI
- Sales & marketing and IT-related functions are seeing the highest growth rates with 55% and 57% YoY, respectively. HR and procurement functions are also growing at healthy rates, owing to the increase in number of organizations adopting IA
- The other segments that include legal, education, and web-based processes are relatively under penetrated, but IA adoption in these functions are expected to increase with greater awareness and increasing sophistication of the IA technologies

17%	5%	4%	4%	1%
Banking & insurance	Health & pharma	Hi-tech & telecom	Manufacturing	Retail

Everest Group evaluates IA capabilities according to five key components of enterprises' automation journeys

Journey components	Key focus area
Vision & strategy	• Assess the organizational vision for IA and the drivers for its adoption • Evaluate the organization's readiness for IA adoption from process, security, and monitoring perspectives
Organization structure	• Assess the governance model for IA initiatives • Analyze the IA team structure and the COE's roles and responsibilities
Technology	• Assess the extent to which various IA components, such as RPA, IDP, conversational AI, and process mining, are being leveraged • Evaluate the level of sophistication of the IA technologies deployed
Talent management	• Assess the sourcing strategy, training, and education programs for various IA skills, along with the level of sharing/pooling of resources/skills • Evaluate the level of employee awareness and engagement for managing change
Implementation	Evaluate the maturity stage, scale, scope, and speed of IA adoption – in terms of number of processes, users, and business units

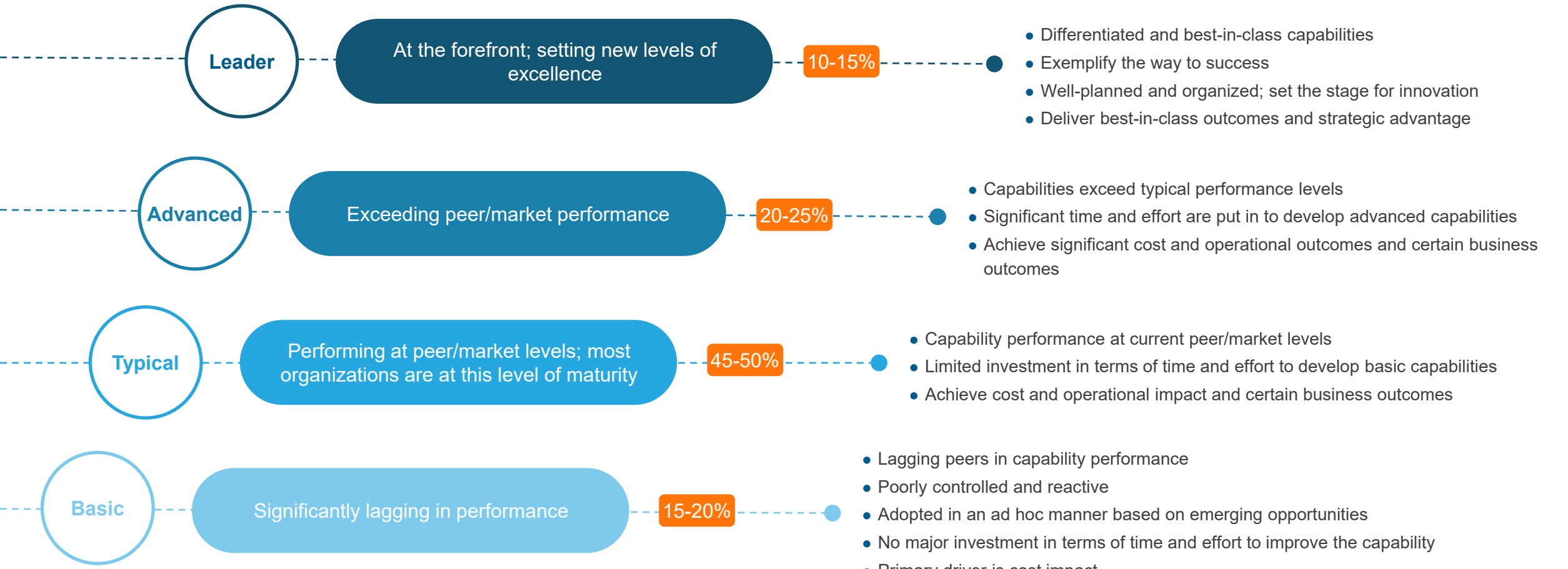
Enterprises' IA capabilities are assessed across 35+ capability elements

Journey components	Capability	
A. Vision & strategy (10 capabilities)	A1. End objectives of IA adoption A2. Funding/sponsorship A3. Project initiation A4. Security & risk preparedness for IA with factors considered A5. IT alignment	A6. Metrics and KPIs to measure the benefits/impact of IA A7. Metrics and KPIs to measure the effectiveness of IA initiatives A8. Targeted process types for IA adoption A9. Process prioritization A10. Process reengineering
B. Organization structure (8 capabilities)	B1. IA team structure and roles B2. Types of IA CoEs B3. Scope of the IA CoE B4. Roles and responsibilities of the CoE	B5. Reusability of automations B6. Focus on tracking/optimizing the effectiveness of the program B7. Focus on tracking/optimizing the benefits achieved B8. Process monitoring
C. Technology (10 capabilities)	C1. RPA C2. IDP C3. CAI C4. Process mining C5. Task mining	C6. Process orchestration / BPM C7. Analytics C8. Pre-built automation templates / accelerators C9. Hosting type C10. Product architecture
D. Talent management (6 capabilities)	D1. Sourcing of IA talent/skills D2. IA training and education D3. Sharing/pooling of IA skills D4. Employee awareness and engagement	D5. Nature of impact on employees D6. Citizen-led development
E. Implementation – scale, scope, and speed (4 capabilities)	E1. Distribution of IA projects by stage E2. Scale of IA adoption E3. Scope of IA adoption E4. Speed of IA adoption	

Enterprises' IA capabilities are assessed across four maturity levels

The four capability maturity levels

XX% Approximate share of enterprises at each maturity level



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Vision & strategy

Capability element	Basic	Typical	Advanced	Leader
End objectives of IA adoption	No formal business case; focus on achieving tactical benefits such as cost savings, quality, and efficiency in specific projects	Business case focused on improving employee productivity, process efficiency & quality, governance & compliance, and cost savings	Business case focused on improving employee and customer experience, along with other cost and operational factors	Business case focused on disrupting the market, digital transformation, top-line growth, and employee & customer experience, along with various cost and operational factors
Funding/sponsorship	Primarily sponsored/funded by the IT budget	Primarily funded by the global shared services budget	Primarily funded by global business units' budgets	Primarily funded by the central enterprise budget (sponsorship from CXO) or local/regional business unit budget
Project initiation	Siloed approach with no CoE support	Projects are initiated by local/regional business/IT units with basic/limited support from the CoE	Projects are initiated by global business/IT functions or global shared services; a multi-pronged approach with substantial CoE support	Projects are initiated by corporate or global business/IT functions or global shared services; a multi-pronged approach with robust CoE support

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Vision & strategy

Capability element	Basic	Typical	Advanced	Leader
Security and risk preparedness for IA with factors considered	• No major changes made to security and risk policies; work around existing policies to accommodate the changes required for IA projects • Factors including audit trail for IA and infrastructure & system requirements considered	• Some changes made to security and risk policies to accommodate IA environments and scenarios • Factors such as role-based user access, compliance, active directory integration, audit trail for IA, and infrastructure & data confidentiality/residency requirements considered	• Proactively evaluated and planned for mitigation of the security and compliance risks associated with IA deployments • Set up unique risk management protocols and controls for IA deployments • Strict governance and compliance of AI decision-making and infrastructure requirements	• Included security and risk leaders in IA evaluation and projects to proactively plan for mitigation of security and compliance risks and the unique requirements essential for IA deployments • Set up unique risk management protocols and controls for IA deployments • Granular user access control, ensuring governance and compliance, unique firewall, and other security and risk features
IT alignment	Led by operations/ business team with limited support from IT	Led by operations/business teams and supported by local IT for integration, implementation, and other relevant services	• Enterprise IT is brought on board to set standards and support security, infrastructure, and business continuity requirements • Revising standards and practices to be conducive to deploying IA at scale	• Enterprise IT is an end-to-end partner for all IA initiatives for setting standards and supporting security, infrastructure, and business continuity • Revising standards and practices to be conducive to institutionalizing IA

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Vision & strategy

Capability element	Basic	Typical	Advanced	Leader
Metrics and KPIs to measure the benefits/impact of IA (across cost, operational, and strategic impacts such as cost savings, ROI, process quality and speed, productivity, customer experience, time-to-market, and revenue growth)	The organization does not use any well-defined metrics to measure the returns from IA investments; the metrics used are ad hoc, poorly controlled, and reactive/chaotic	The organization uses some basic cost and efficiency metrics / existing IT metrics, which are repeatable in projects to measure returns from IA investments	The organization has defined new metrics, along with basic cost and efficiency metrics, which are repeatable in projects; the metrics are standardized across the organization to track the returns on IA investments	The organization has defined a robust value realization framework and reviews it regularly to continuously monitor and optimize the impact of IA investments
Metrics and KPIs to measure the effectiveness of IA initiatives (e.g., speed and TCO of implementation, license utilization, STP rate, and number of tasks/processes automated)	The organization does not use any well-defined metrics to measure the effectiveness of IA initiatives; the metrics used are ad hoc, poorly controlled, and reactive/chaotic	The organization uses some basic metrics, such as number of robots, alongside existing IT metrics, which are repeatable in projects to measure the effectiveness of IA initiatives	The organization has defined new metrics that are standardized across the organization to track and measure the effectiveness of IA initiatives; the defined policies, procedures, and practices are driven by flexibility to accommodate the unique aspects of different business units	The organization continuously optimizes the metrics, policies, procedures, practices, roles, and responsibilities to measure and optimize the effectiveness of IA initiatives

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Vision & strategy

Capability element	Basic	Typical	Advanced	Leader
Targeted process types for IA adoption	Simple processes targeted for IA adoption; transactional, rules-based tasks with structured data flow (data in enterprise databases, well-organized data sets in excel workbooks, etc.)	Content-centric processes, along with simple processes, targeted; transactional, rules-based tasks with significant semi-structured data flow (such as PDF documents, email, Microsoft Word, and scans, without much variance in templates)	Customer-centric processes, along with content-centric processes and simple processes, targeted; high volume, judgment-based, and interactive tasks with unstructured data flow (chat, voice, data from social media, etc.)	Domain-centric processes, along with customer-centric, content-centric, and simple processes, targeted; highly judgment-based / decision-making tasks requiring critical thinking (large multi-page documents such as legal contracts, handwritten documents, checks, etc.)
Process prioritization	Processes selected and prioritized based on know-how of SMEs; typically the low-hanging fruits selected	Processes evaluated for prioritization at the local BU level on an ad hoc basis using non-standard metrics	Processes evaluated for prioritization at the local BU level using a defined framework employing standard metrics	Process prioritization framework followed at organization- or centralized CoE-level to evaluate processes based on factors such as impact potential and IA potential
Process reengineering	No meaningful changes to business processes	Significant changes to a few business processes	Simplified and reengineered business processes to leverage IA initiatives	Defined future state for all business processes and then reengineered business processes

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Organization structure

Capability element	Basic	Typical	Advanced	Leader
IA team structure and roles	• No dedicated IA team within the organization • Largely shared talent from IT and operations • Lack of well-defined roles	• Decentralized structure • The business unit forms a dedicated team for IA initiatives when required • Few well-defined roles (e.g., business analyst, process specialist, and developer)	• A centralized dedicated IA team that defines and implements IA for the entire organization • Well-defined roles, such as project leader, business analyst, process specialist, and developers & testers	• Hybrid IA operations • Decentralized IA teams from business units work closely with a central team to implement IA initiatives • Well-defined roles consisting of project leader, business analyst, process specialist, IT support, developers & testers, and data scientists & ML engineers
Types of IA CoEs	• No formal CoE setup for IA initiatives • Process excellence and IA project teams work in a siloed manner	• Specialized CoE is set up for some specific IA initiatives • Ad hoc collaboration between IA and process excellence or digital transformation teams	• A centralized CoE for all IA initiatives within the organization • Deeper collaboration between IA and process excellence or digital transformation teams	• A hub & spoke CoE model with a presence across business units to drive IA initiatives • The CoE is a merged entity combining IA and process excellence / digital transformation teams
Scope of the IA CoE	The CoE governs less than 40% of the IA projects	The CoE governs 40-60% of the IA projects	The CoE governs 60-80% of the IA projects	The CoE governs more than 80% of the IA projects

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Organization structure

Capability element	Basic	Typical	Advanced	Leader
Roles and responsibilities of the CoE	• Roll out and implement IA projects and ensure coordinated communication with relevant stakeholders • Loosely defined roles, responsibilities, and skill sets	• Ensure quality and compliance through well-defined standards, procedures, and guidelines • Roll out and implement IA projects and ensure coordinated communication with relevant stakeholders • Some key roles and responsibilities are well-defined	• Identify new opportunities and use cases; lead PoCs, testing, and maintenance; and approve all IA procedures before they are put into production/deployment • Ensure quality and compliance through well-defined standards, procedures, and guidelines owned and developed by the CoE for broader digital initiatives • Ensure coordinated communication with relevant stakeholders • Well-defined roles, responsibilities, and skill sets	• Educate business units on IA benefits; approve all IA procedures before they are put into deployment • Provide IA training and education programs to develop talent • Identify new opportunities and use cases; and lead PoCs, testing, and maintenance • Ensure quality and compliance through well-defined standards, procedures, and guidelines owned and developed by the CoE • Roll out and implement IA projects • Well-defined roles, responsibilities, and skill sets
Reusability of automations	Does not have a library of reusable automations	Locally developed libraries of reusable automations but not shared across business units / regions	Developed libraries of reusable automations and shared across some business units / regions	Developed a central library of reusable automations that are shared across the organization globally

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Organization structure

Capability element	Basic	Typical	Advanced	Leader
Focus on tracking/optimizing the effectiveness of the program	Collection and usage of performance data are ad hoc, sporadic, and uncoordinated	Performance data is regularly (monthly/weekly) collected to produce reports and dashboards with some useful information	Performance is monitored in near real-time and performance data is collected and used in a coordinated fashion to gain new insights that improve operational decision-making	Performance is monitored in near real-time and performance data is collected and used in a coordinated fashion to make operational and strategic decisions and develop strategic foresight and predictions for the future
Focus on tracking/optimizing the benefits achieved	Collection and usage of impact data are ad hoc, sporadic, and uncoordinated	Impact data is regularly (quarterly) collected to produce reports and dashboards with some useful information	Impact data is regularly (monthly) collected and used in a coordinated fashion to gain new insights that improve operational decision- making	Impact data is regularly collected/monitored 24X7 and used in a coordinated fashion to make strategic and operational decisions as well as to develop strategic foresight and predictions for the future
Process monitoring	Monitoring performance of automation assets and applications	Monitors utilization of available resources, refines/updates automated workflows to reduce exceptions, and collects training data for AI	Performs continuous process monitoring to finds gaps in existing processes to optimize/reengineer/streamline them and make them more efficient	Performs continuous process monitoring; predicts future trends in demand and customer behavior to develop/refine future capacity planning / business strategies

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Technology

Capability element	Basic	Typical	Advanced	Leader
RPA	Primarily attended RPA / RDA	Attended RPA / RDA and unattended RPA for batch processes	Autonomous RPA with human-in-the-loop for near real-time exception handling and user interaction	RPA-as-a-service; autonomous RPA with human-in-the-loop for near real-time exception handling and user interaction
IDP	Basic OCR for digitizing content; typed text; does not have the ability to automatically classify documents	OCR- and ML-based; document classification, data capture, and extraction using ML and validation; block letters (typed) and tables	OCR, auto ML, and NLP; document classification, data capture, and extraction using near real-time / active learning, auto ML, NLP, intent analysis, and validation; block letters (typed or handwritten), checkboxes, bar codes, and logos	OCR, domain ontology, deep learning, auto ML, and NLP; document classification, data capture, and extraction using near real-time / active learning, intent analysis, and validation; block letters (typed or handwritten), checkboxes, bar codes, logos, stamps, charts, signatures, and cursive writing
CAI	Simple and rules-based chatbots	CAI robots leveraging ML and NLP for training and intent recognition	CAI robots leveraging ML and NLP for training, intent recognition, and sentiment analysis; also providing omnichannel experience to users	CAI robots leveraging deep learning, ML, NLP, and contextual & domain ontology for training, intent recognition, and sentiment analysis; offering AI-enabled agent-assist capability

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Technology

Capability element	Basic	Typical	Advanced	Leader
Process mining	• Manually collating, transforming, and loading event logs data from enterprise systems • Capturing/discovering as-is processes and variances	• Ad hoc integration with but no pre-built connectors for enterprise systems • Siloed view into either process optimization (e.g., conformance checks, root-cause analysis) or automation (e.g., identifying automation opportunities, triggering alerts or automations)	• Built-in/integrated ETL functionalities for event logs; pre-built connectors for a few leading enterprise systems such as SAP • Identifying/prioritizing optimization and automation opportunities in a combined manner to design the to-be state of processes	• Pre-built connectors for a wide range of modern/legacy enterprise systems; robust/standardized ETL procedure for integration with custom-built applications • Continuous monitoring of processes and the impact of transformation initiatives; identifying improvement opportunities on an ongoing basis; triggering actions (e.g., notifications, automation) based on IA outputs
Task mining	• Computer vision- or DOM-/COM-based recorders are used to capture user actions across multiple desktops • Offers basic reporting/analytics insights and generates PDDs	• A combination of computer vision- and DOM-/COM-based recorders are used to capture user actions • Generates PDDs for discovered process maps with process steps and process information; offers descriptive reporting capabilities and identifies automation potential of processes at a micro-level	• Context-aware object IDs, along with granular metadata and screenshots, are collected for every user action • Generates PDDs, provides application-level insights, and determines the amount of cost savings for automation opportunities to help prioritize identified tasks for automation	• AI/ML algorithms are leveraged to analyze the metadata-rich data, classify tasks into processes, and generate aggregated process maps automatically • Also leverages of AI/ML to run multiple simulations (what-if analysis) to aid business decisions; auto-generates automation workflows based on the identified use cases

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Technology

Capability element	Basic	Typical	Advanced	Leader
Process orchestration / BPM	Does not use any process orchestration tool / BPM; leverages manual orchestration to manage the flow of work across applications, systems, and human & digital workforce	• Leverages orchestration tool for unattended RPA tasks • Simple forms and workflows handled/managed using process orchestration software	• Process orchestration software used for hybrid (human + digital) workforce management and exception handling tasks • Low to medium complexity workflows handled using the software	• Process orchestration software used for hybrid (human + digital) workforce management, exception handling tasks, and intelligent workload balancing • The software is leveraged for holistic process management – designing, executing, and monitoring long-running processes • High complexity workflows and applications created to interact with multiple systems and applications
Analytics	Reporting analytics	Descriptive analytics, including reporting analytics	Predictive analytics, including reporting and descriptive analytics	Prescriptive analytics, including reporting, descriptive, and predictive analytics

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Technology

Capability element	Basic	Typical	Advanced	Leader
Pre-built automation templates / accelerators	None	• Process-/industry-neutral templates and automation activities/subtasks (for example login, logout, and currency conversion) • Data management accelerators; e.g., Extract Transform Load (ETL) tools	• Horizontal function-specific templates & automation assets (F&A, HR, CXM, etc.) and process-/industry-neutral templates and automation activities/sub-tasks (for example login, logout, and currency conversion) • Robot code generators (for code generation and review) and data management accelerators	• Horizontal function-specific templates & automation assets (F&A, HR, CXM, etc.) and process-/industry-neutral templates and automation activities/sub-tasks • Robot code generators, data management accelerators, and cognitive accelerators (e.g., pre-built AI/ML models)
Hosting type	Physical desktop-based; SaaS	On-premise server-based; SaaS	Private or public cloud-based; SaaS	Hybrid model, combining on-premise, private cloud, or public cloud deployments; SaaS
Product architecture	Traditional/monolithic architecture of most of the IA products leveraged	Most of the IA products employ a partial microservices-based architecture	Most of the IA products employ a partial microservices-based architecture and some are deployed in containers	IA products employ fully microservices-based and containerized architecture

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Talent management

Capability element	Basic	Typical	Advanced	Leader
Sourcing of IA talent/skills	Leverage provider / external partner resources or existing resources with limited/no training	Leverage provider / external partner resources and existing shared resources with relevant training on IA	Leverage existing dedicated resources with proper training and/or new hires with relevant IA skills	• Leverage existing well-trained/experienced dedicated resources • A well-documented approach to source resources from across the enterprise as per the required bandwidth
IA training and education	No formalized IA training and education program	External training of resources, primarily leveraging the training and certification programs offered by technology/service providers	Formal internal IA training program plus initial training by technology/service providers, primarily for technical skills related to various IA components	• Well-structured internal and external IA training programs, which are integrated with broader training programs that are regularly reviewed and optimized • Focused on leading enterprise-wide IA initiatives
Sharing/pooling of IA skills	No sharing/pooling of IA skills	Sharing/pooling of IA skills within regional business units/functions	Sharing/pooling of IA skills within business functions across geographies	Organization-wide sharing/pooling of IA skills across most business functions and geographies

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Talent management

Capability element	Basic	Typical	Advanced	Leader
Employee awareness and engagement	• Limited training and awareness programs with no involvement or support from technology or service providers • Few people proactively engaging in some IA initiatives	• Informal awareness programs made available to a focused group of stakeholders to educate them about usage and benefits of various IA products/tools • Limited consultation with technology or service providers • More believers who engage in IA initiatives	• Organization-wide education and awareness programs, with a formal structure, to address any employee apprehensions • Engage frequently with the customer support teams of technology or service providers • Organization-wide employee engagement, with some internal experts to facilitate engagement • Develop a culture of innovation and design thinking	• Organization-wide awareness programs to educate stakeholders on the capabilities and benefits of IA • Proactively address employee concerns and involve technology or service providers to create awareness • Front-end of the CoE comprises internal experts set up across the organization for employee engagement • A rewards system for contribution (e.g., automation/optimization use cases) • Integrated culture of innovation and design thinking

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Talent management

Capability element	Basic	Typical	Advanced	Leader
Nature of impact on employees	No attempt to redeploy/reskill/upskill employees released due to IA initiatives	Modest attempts, with minimal investment and management commitment, made to redeploy employees released due to IA initiatives in other areas	Significant attempts made to reskill and redeploy employees released due to IA initiatives by providing alternate career paths (such as education program set up for reskilling)	Significant attempts made to reskill/upskill employees released due to IA initiatives to do higher value work and provide alternate career paths (for example, education program set up for reskilling and upskilling)
Citizen-led development	• Business/operations resources do not contribute to opportunity identification or automation development • No formalized structure, including tool or training, present to support citizen-led development	• Business/operations resources contribute to automation opportunity identification and/or business case creation • Ideas are collected from resources on an ad hoc basis	• Business/operations resources contribute to automation opportunity identification, business case creation, and automation development • Limited focus toward training of business/operations resources who could contribute to citizen-led development	• Business/operations resources contribute to automation opportunity identification, business case creation, and automation development • Dedicated trainings and products, including crowd sourcing platforms and no-code development tools, leveraged to institutionalize citizen-led development

Intelligent automation CMM (page 15 of 15)

Implementation
(scale, scope, and speed)

Capability element	Basic	Typical	Advanced	Leader
Distribution of IA projects by stage	Most IA projects are in the planning stage	Most IA projects are in the pilot stage	Most IA projects are being scaled up from the pilot stage	Most IA projects are in steady-state implementation stage
Scale of IA adoption	Up to 50 use cases, wherein IA is deployed	51 to 200 use cases with IA	201 to 600 use cases with IA	More than 600 use cases with IA
Scope of IA adoption	Upto three business functions/units	Four to five business functions/units	Six to seven business functions/units	More than seven business functions/units
Speed of IA adoption	Planning to robot deployment takes more than seven months	Planning to robot deployment takes five to six months	Planning to robot deployment takes three to four months	Planning to robot deployment takes less than two months

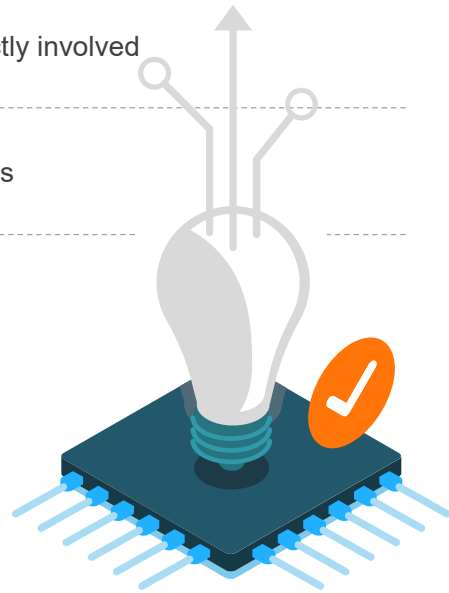
Environmental determinants

Organization structure	Highly centralized, with little independent decision-making	Partially centralized, with parts of decision-making federated to BUs	Largely federated decision-making – BUs have a large degree of freedom to make their own decisions
People centricity	Culture is people-driven relying on process knowledge residing with individuals. Processes are loosely defined	Middle-ground organization with focus on the skills of people as assets, with efficiency also playing a role	Efficiency- and process-driven organization achieving strategic objectives in a procedural manner; processes are well-defined and mapped
Initiating stakeholder(s)	Operations-driven initiatives – driven by business units trying to make their respective unit employees more productive	IT-driven initiatives for organization-/BU-wide training or change management / innovation scenarios	Centrally-driven, typically by the C-suite or one level below, with all BUs and IT falling in line
Risk appetite	Low risk appetite – need to have multiple layers of checks and balances for any initiative	Medium risk appetite – willing to take risks in select scenarios, especially when dictated by the market	High risk appetite – willing to take risks in the hope of market leadership and payoff
Technology savviness	Highly technology savvy – IT plays the role of innovation leader	Moderate level of technology savviness – IT supports most initiatives and spearheads a few	Low level of technology savviness – IT plays a supporting role in innovation
Sensitivity to change	Very sensitive to change – even the slightest change can disrupt the organizational workforce	Willing to accept smaller incremental changes but not large systemic changes	Progressive mindset to change – workforce is receptive and accepting of even transformative change
Existing IA partnerships	No existing IA partnerships	Existing early-stage partnerships with IA providers	Existing IA partnerships and deployments
Availability of event logs	Low penetration of information systems (e.g., ERP, CRM, SCM) and availability of event logs	Moderate penetration of information systems (e.g., ERP, CRM, SCM) and availability of event logs	High penetration of information systems (e.g., ERP, CRM, SCM) and availability of event logs

Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 1 of 4)

Planning

Steps		Determinants	Path options
1	Identify and prioritize processes using the prioritization framework	• Risk appetite • Sensitivity to change • Availability of event logs	• Implement one process at a time • Implement logical groups of processes sequentially • Big bang implementation
2	Plan implementation timelines, governance, and skill development for IA	NA	NA
3a	Align with IT for IA implementation	• Organization structure • Technology savviness • Initiating stakeholders	• IT minimally involved • IT co-creates • IT takes the lead
3b	Obtain the operations team's, particularly process owners', buy-in	• Sensitivity to change • People/process centricity	• Open communication with the entire team • Selective communication with process owners and those directly involved • Selective communication with only process owners
4	Select appropriate IA provider(s) based on the capabilities required to achieve the desired outcome	• Existing IA partnerships • Risk appetite	• Leverage existing relationships • Evaluate other providers when leveraging existing relationships • Evaluate the entire provider landscape afresh
5	Obtain management buy-in and budget	• Organization structure • Initiating stakeholders	• Buy-in and budget at BU level • Buy-in and budget at IT level • Buy-in and budget at central level



Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 2 of 4)

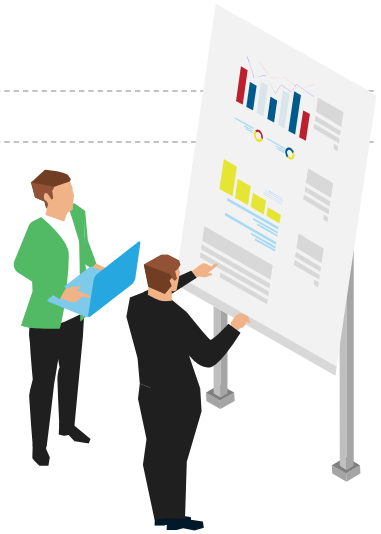
Piloting

Steps		Determinants	Path options
6	Initiate continuous communication as part of change management	• Sensitivity to change • People/process centricity	• Low to no communication • Medium frequency of communication • Frequent communication
7a	Initiate talent development	• Technology savviness	• Develop talent in-house • Use a combination of in-house and provider/consulting talent • Use mostly external talent and/or outsource/partner
7b	Initiate training of resources for IA skills	• Technology savviness	• Train resources using internal experts within the organization • Leverage the provider or external third-party resources for training • A hybrid approach involving internal experts and external sources for training
7c	Initiate a governance mechanism	• Risk appetite • Organization structure	• A standard set of metrics for tracking, limited to the immediate use cases • Comprehensive governance, with a robust value realization framework
7d	Initiate reskilling of impacted employees	• People centricity	• No reskilling/upskilling – impacted FTEs maybe downsized or reassigned • Upskilling only for high performing employees, rest reassigned/downsized • Reskilling/upskilling for all employees
8	Develop a pilot for prioritized processes	• Risk appetite • Sensitivity to change • Availability of event logs	• Pilots are created and deployed for identified processes in a phased manner • Pilots are created and deployed for all identified processes simultaneously
9	Cut to production with human supervision until automation achieves desired efficiency	• Risk appetite	• Always employ a human in the loop • Employ a human in the loop for verification for highly sensitive processes only • Allow STP where possible, with only exceptions requiring human intervention
10	Continuously monitor and report on metrics/KPIs	NA	NA
11	Repeat the journey with the next process in the priority list	NA	NA

Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 3 of 4)

Scaling up

Steps		Determinants	Path options
12a	Evaluate the CoE's location	• Organization structure • Initiating stakeholders	• Independent IA CoE (e.g., corporate IT, shared service, business function) • Embedded IA CoE (e.g., process excellence CoE, digital transformation CoE)
12b	Build the CoE's structure	• Organization structure • Initiating stakeholders	• Centralized CoE • Hub & spoke CoE model
12c	Evaluate and refine the IA talent strategy	• Technology savviness • Risk appetite	• Leverage external resources / IA provider resources • Use a combination of in-house and provider talent • Develop talent in-house
13	Set up enterprise standards and best practices based on learnings	NA	NA
14	Set up a team to evaluate opportunities in other areas	Organization structure	• Centrally nominated and controlled • Centrally controlled, with nominations from business units • Truly cross-functional, nominally centralized
15a	Scale up and run operations	NA	NA
15b	Continuously monitor and report on metrics/KPIs	NA	NA



Environmental determinants, along with the current/target outcome and capabilities, lead to differences in organizations' execution paths (page 3 of 4)

Steady state

Steps		Determinants	Path options
16a	Templatize opportunity evaluation and monitoring	NA	NA
16b	Create development standards and reusable code libraries	NA	NA
17	Create awareness via various channels – newsletters, online portals, etc.	NA	NA
18a	Scale up further	NA	NA
18b	Continuously monitor and report on metrics/KPIs	NA	NA
19	Rationalize effort and integrate a culture of improvement and innovation across the organization	NA	NA

Glossary (page 1 of 2)

Activity clustering	Forming clusters or groups of activities that are closely related to each other, based on analysis
Artificial Intelligence (AI)	Ability of machines to use cognitive computing to mimic human intelligence, such as visual perception, speech recognition, decision-making, and language translation
Association rule mining	Rules-based machine learning method to discover relation between variables in a large dataset
BPMN 2.0	Business Process Model and Notation (BPMN) 2.0 is a graphical representation for specifying business processes in a business process model. It helps to determine clearly the flows and business processes designed in a process diagram
Business Intelligence (BI)	Technologies, applications, and practices for collection, integration, analysis, and presentation of business information
Business Process Management (BPM)	BPM is a software product that helps business users design, manage, and monitor end-to-end business processes. It should be able to orchestrate the flow of work across human workers, digital workers (such as RPA, IDP, and conversational AI), and enterprise applications in long-running workflows. Alternative term for process orchestration
Buyer	The company/entity that purchases outsourcing services from a provider of such services
Computer vision	A technology that uses AI to enable automatic extraction, analysis, and understanding of useful information from digital images
Conversational AI	Conversational AI is a computer-generated virtual character that can have a conversation with human customers and take decisions. Alternative term for chatbots or virtual assistants
Deep learning	A subfield of machine learning concerned with algorithms and inspired by the structure and function of the brain called artificial neural networks
FTE	A way to measure a worker's productivity and/or involvement in a project. An FTE of 1.0 is equivalent to a full-time worker
Horizontal business processes	Those processes that are common across the various departments in an organization and are often not directly related to the key revenue-earning business, such as procurement, finance & accounting, and human resource management
KPI	Key performance indicators for processes, services, products, or solutions

Glossary (page 2 of 2)

Machine Learning (ML)	A type of artificial intelligence that provides computers with learning capabilities without explicit programming
Natural Language Processing (NLP)	A machine's ability to interpret human languages
Optical Character Recognition (OCR)	A technology within computer vision that involves the recognition of printed characters using computer software
Personally Identifiable Information (PII)	PII is any information that can be used to identify, contact, or locate a specific individual. It includes IP address, phone number, e-mail address, credit card number, date of birth, Social Security number or any other unique identifier
ROI	Returns attained from an investment
Semi-structured data	Semi-structured content is one that does not conform to the pre-defined structure of content, but nonetheless, contains tags / other markers to separate semantic elements and enforce hierarchies. In short, it has a self-describing structure. The placeholders of the content can be in varied sequences
Sequence mining	Identifying sequential pattern of activities that occurred during a process
Software-as-a-Service (SaaS)	SaaS is a software licensing and delivery model wherein the software is hosted centrally by a third-party provider and is made available to customers over the internet. It is also referred to as on-demand software
Structured data	Structured content is one that conforms to the pre-defined structure in terms of tags to separate semantic elements and enforce hierarchies of records and fields. Moreover, the placeholders for the content have a pre-defined sequence
Unstructured data	Unstructured content refers to information that either does not have a pre-defined data model or is not organized in a pre-defined manner. Unstructured information is typically text-heavy, but may contain data such as dates, numbers, and facts as well
Workforce intelligence	Refers to tracking and analysis of employee behavior by gathering insights from workforce data such as the time spent on production, usage of applications, and working pattern to make proactive resource management decisions

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With you on the journey

Everest Group is a research firm focused on strategic IT, business services, engineering services, and sourcing. Our research also covers the technologies that power those processes and functions and the related talent trends and strategies. Our clients include leading global companies, service and technology providers, and investors. Clients use our services to guide their journeys to maximize operational and financial performance, transform experiences, and realize high-impact business outcomes. Details and in-depth content are available at **www.everestgrp.com**.

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Dallas (Headquarters)
info@everestgrp.com
+1-214-451-3000

Bangalore
india@everestgrp.com
+91-80-61463500

Delhi
india@everestgrp.com
+91-124-496-1000

London
unitedkingdom@everestgrp.com
+44-207-129-1318

Toronto
canada@everestgrp.com
+1-416-388-6765