



# Internal Audit Roundtable

Flexible & dynamic internal audit

3 October 2019



# Welcome to our KPMG Internal Audit Roundtable

Welcome & introduction 10:00 – 10:15

Agile Internal Audit 10:15 – 11:00  
An Vanderhulst, Senior Manager Risk & Regulatory

RPA for Internal Audit 11:00 – 11:45  
Ferdie Kriel, Manager Lighthouse  
Gorik Van Den Bergh, Manager Risk & Regulatory

Wrap up 11:45 – 12:00

Networking lunch





# Setting the scene



# Getting to know each other

- Who are you?
- Which company are you working for?
- How would you describe your audit department?
- What are your main challenges?
- What is your experience with the topics of today?



# Which challenges is Internal Audit current facing?

- Doing more with less
- Foresight versus hindsight
- Audits performed at the speed of risk
- Audit workforce development
- .....





Part I

# Agile Internal Audit

3 October 2019



# 1. What is Agile?



## What is Agile?

Agile is an umbrella term for a set of Project Management methods and practices based on the values and principals in the Agile Manifesto. Originally a software development methodology, Agile aims to reduce costs and time to delivery while improving quality. Key characteristics of Agile include delivering tested products in short iterations and involving internal customers during each iteration to refine requirements

4 values of the Agile manifesto:





# KPMG Vote

As Internal Audit Function we should not move too much with the agile trend, the hype will be over in a few years.

A. Agree



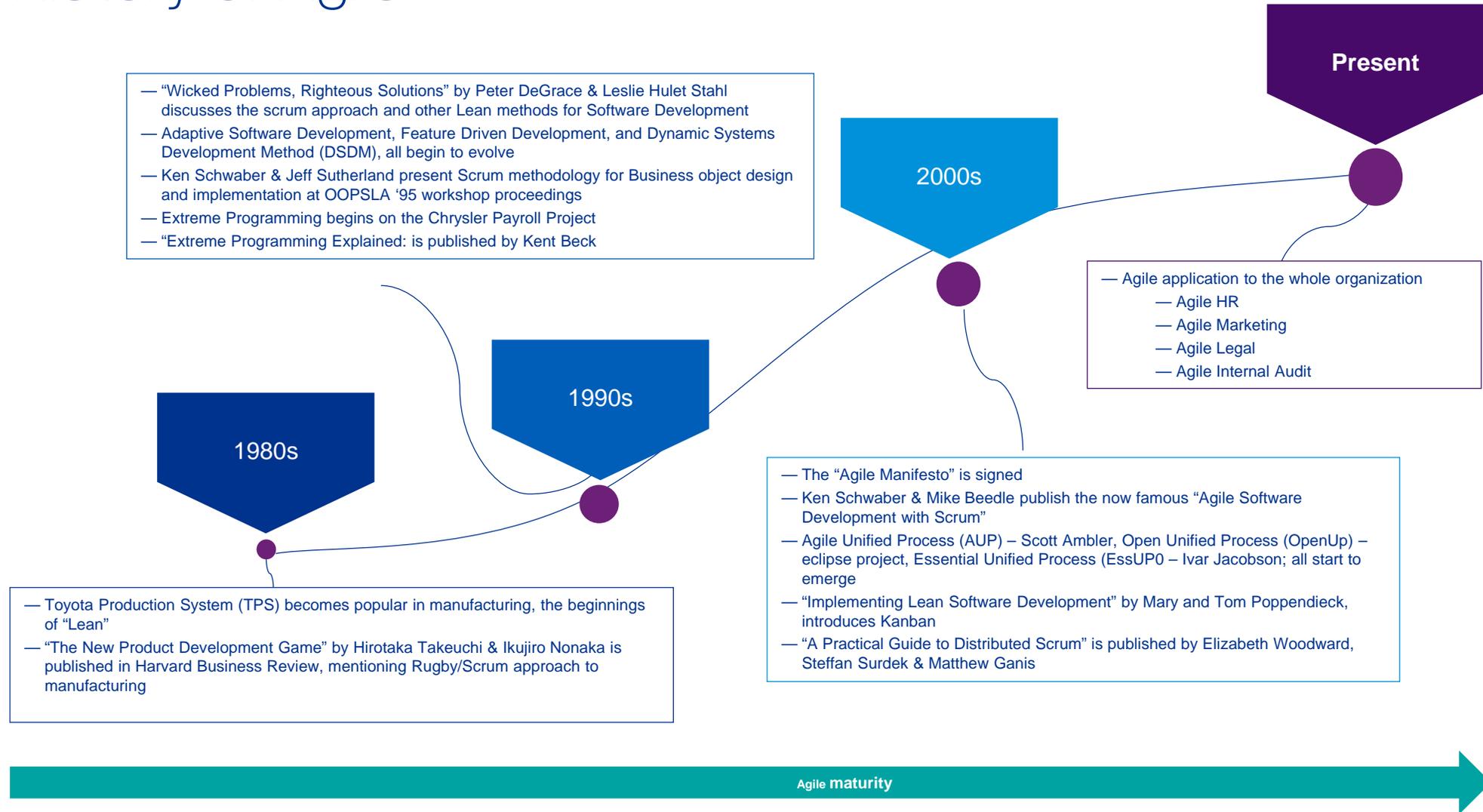
37.5%

B. Don't agree



62.5%

# History of Agile



## 2. What is Agile Internal Audit?



# What is Agile Internal Audit?

Agile Internal Audit is the mindset and method that an Internal Audit Function uses to:

- focus on the needs of stakeholders;
- accelerating the audit cycle;
- to provide timely insight and reduce the waste of resources.

By applying an Agile method the productivity and added value of the Internal Audit Function can be increased and the lead time of an audit reduced.

### KPMG's Agile IA Manifesto

1. **Value creation** for the client by focusing on the (Agile) result
2. Continuous process optimization by **welcoming changes**
3. **Collaboration and multidisciplinary team** as a basis for added value
4. Short iterations as a tool for **timely adjustment** in an audit
5. **Flexible and dynamic internal audit planning** as a result of continuous risk monitoring

# Agile Auditing Principles



**Focus on the business need** in light of the overriding audit objective – to prioritise the scope and approach to deliver the most audit value for the least effort



**Deliver on time** – reviews will always start and finish on time, with realistic delivery plans based on prioritized scope



**Collaborate** – with active business involvement throughout the audit, particularly regarding emerging issues and potential risk mitigations / compensating controls



**Never compromise quality** – the audits will be conducted in line with the appropriate standards and regulatory requirements, maintaining professional independence



**“Build” incrementally from firm foundations** – defining the high level scope of the review and proposed approach up front, with a plan to deliver a reportable increment regularly



**“Develop” iteratively**, evolving the assessment, reporting it frequently and reviewing emerging issues and potential risk mitigations, with timely feedback.



**Communicate continuously and clearly** both within the audit team and to key impacted stakeholders within the business



**Demonstrate control**, evidenced by high level plans and progress, ensuring transparency of all work being performed by the teams

## INSTRUMENTAL SUCCESS FACTORS



1 Embracing the Agile approach



2 Effective Agile Audit team



3 Active and ongoing Business engagement



4 Iterative review, integrated assurance & incremental delivery



5 Transparency

# Benefits of an Agile approach

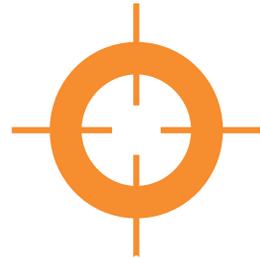
## i

### Agile Project Management values

- *Individuals and interactions*
- *Working software*
- *Customer collaboration*
- *Responding to change*

### Agile Internal Audit Model

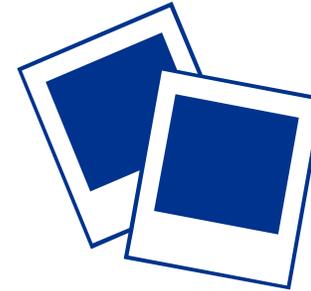
- *Communication*
- *Collaborative*
- *Strategic*
- *Proactive*
- *Focus on stakeholder value*
- *Focus on outcome & results*
- *Link expertise across audit teams*



**Enhanced IA  
planning  
and  
risk identification**



**Accelerated  
audit delivery  
cycles**



**Empowered  
stakeholders**



**More valuable  
insights**



# KPMG Vote

What is the current cycle of your Internal Audit Risk Assessment & Planning?

A. Yearly



B. Twice a year



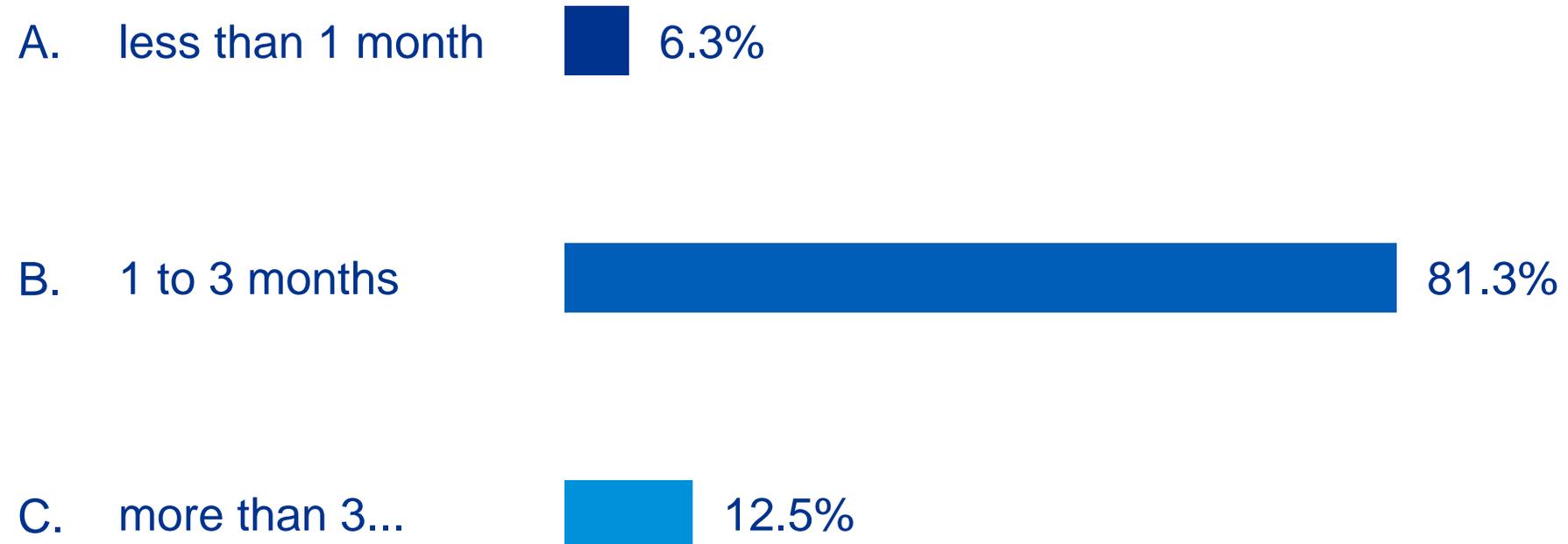
C. Quarterly / Continuously



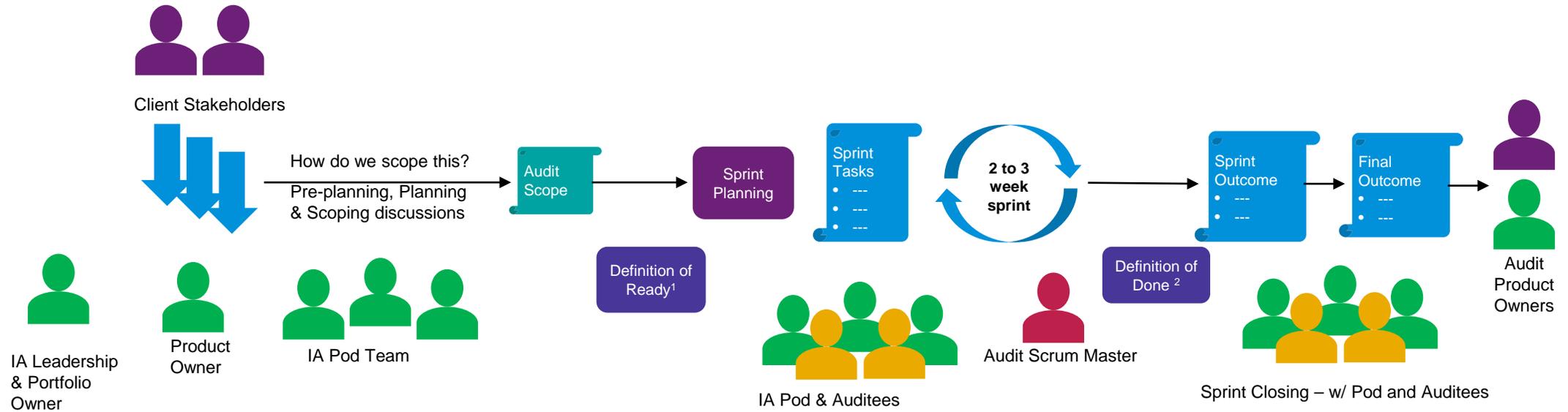


# KPMG Vote

What is in your organisation the average length of an audit assignment (from planning to reporting)?



# Example Agile Audit Execution Approach



## Planning Phase

- Obtain stakeholder feedback and insights on audit scope
- Prioritizes audits based on both importance and urgency as well as readiness to undertake the work
- Define value up front
- Define & prioritize key risks

## Execution

- Time boxed interval to accomplish specific sprint tasks:
  - Walkthrough & process documentation,
  - Risk & Control Matrix,
  - Test work papers
- Daily discussion amongst the Pod team to determine progress against tasks, are there any impediments to completing tasks, what new information have I gained since yesterday, etc.

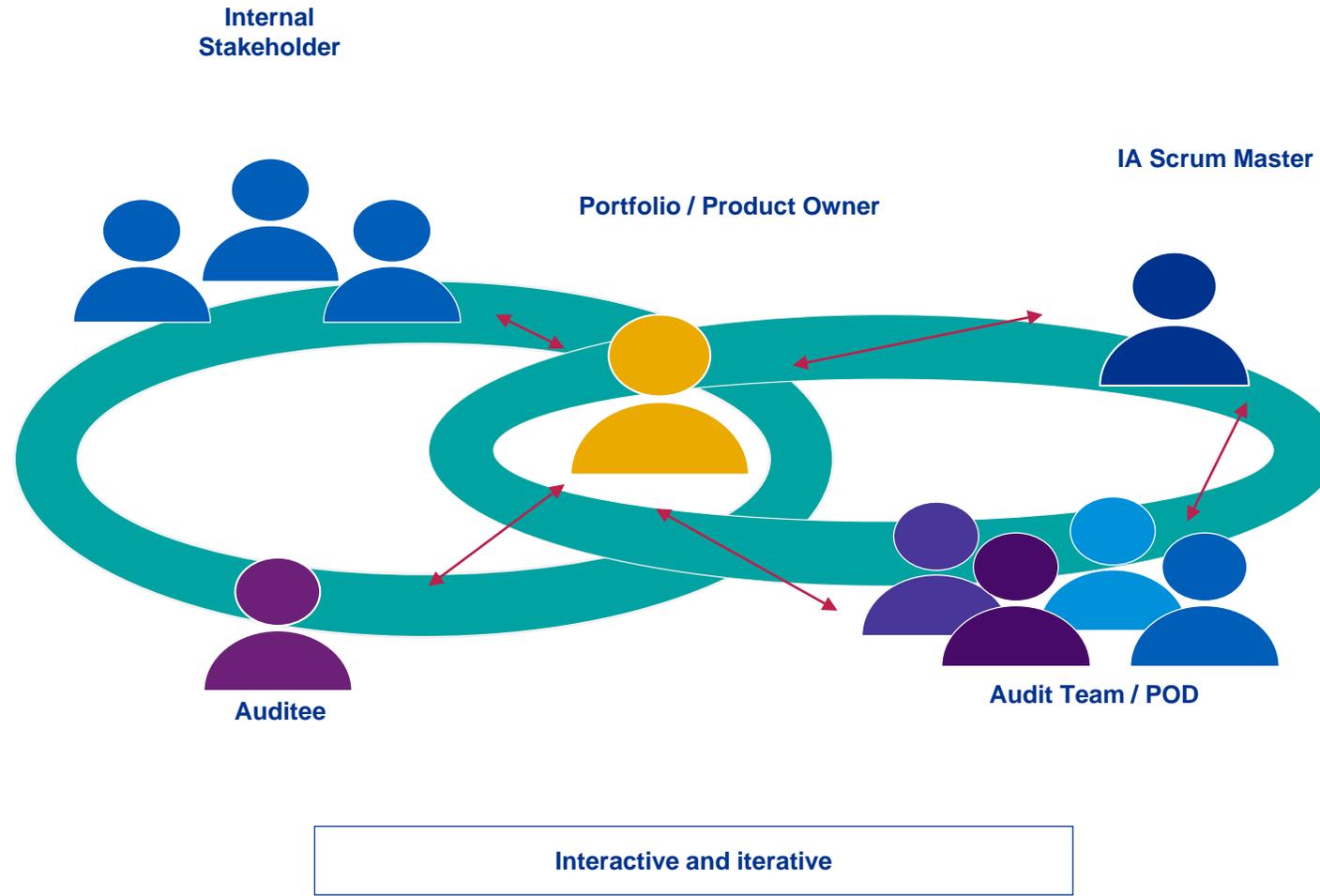
## Close Out

- Formally close out activities & tasks related to the sprint
- Provide insights via the sprint Point of View – condensed understanding of the area with state of risks, controls and any observations which is validated with the auditee
- Final Point of View – includes factual opinion on current state and contains insights to risks and exposures.

<sup>1</sup> – Definition of Ready (“DoR”) - An item on the auditable entity listing has a DoR when the auditable entity owner and stakeholders agree on what will be audited, on the goal of the work and expected value; and requirements for the auditee. When the DoR has been met, the Pod team can begin to work on that audit or project.

<sup>2</sup> – Definition of Done (“DoD”) - A DoD defines the value to be delivered in a sprint. It can be expressed as a level of assurance; a list of identified issues, risks, or recommendations; or a report. DoD helps define when an audit has been completed to the satisfaction of the audit product owner and meets an objective of an audit.

# Agile Internal Audit Team Structure



## TRADITIONAL



## AGILE

- Internal audits are scoped up front and the **scope** is often **fixed**
- **Fieldwork** mostly executed through interviews and documentation reviews.
  - Evidence is largely **retrospective**
  - Interviews take **key stakeholders** out of their daily responsibilities
  - **Data & Analytics** work requires additional management **effort** to provide the raw data
- **Closeout** meetings and **draft reporting** are often the first time **management** has a view of findings, issues and ratings and has a first opportunity to formulate a **response**.
- **Finalisation** of reports can exceed expected timelines due to:
  - Relevant findings being reported from sources outside of the original **scope**
  - **Mitigating factors** that did not emerge during the fieldwork phase, sometimes resulting in additional work and over-runs

- Reviews are **objective –driven**, with **flexible scope** to identify root causes and factor in risk mitigations
- **Fieldwork** is delivered in sprints, **embedded** in the existing operations that correspond with the objectives.
  - Evidence is obtained **pro-actively** in real time
  - Interviews are replaced with **collaboration** on issues at existing management/ governance forums
  - **Data analytics** are collaboratively developed to provide management with continuous monitoring post-audit
- **Reporting** is **continuous** and **pro-active** at all levels of management and governance, highlighting emerging issues.
  - This allows for flexibility in the scope to assess **mitigating** factors
  - **Management** has early insights to critical issues to either build action plans into existing initiatives or pro-actively action key issues
  - Full transparency of the review across all impacted **stakeholders**
- **Finalisation** of a review becomes a **retrospective** of delivery against objectives and **input to future reviews**



# KPMG Vote

Not all audits can be performed applying the agile principles.

A. Agree



B. Don't agree



# Agile Internal Audit and the IPPF

## 1210

- ▶ **Proficiency:** Working through Agile methods requires different knowledge, skills and competences from the internal auditors. For example, when working on a scrum method, at least a specialist (= scrum master) is needed to steer the processes in the right direction. In addition to this role, understanding of other roles and role stability is also very important.

## 1300

- ▶ **Quality Assurance and Improvement Program:** A quality assurance and improvement program is designed to enable an evaluation of the internal audit activity's conformance with the Standards. This can be the biggest challenge for Agile auditing, since every audit must be in order in terms of file creation and an independent reviewer should be able to "reperform" the file. It is important to adequately perform the recording and approval of the work at all times. Agile auditing does not "release" the IAF from its obligation to record a good audit trail.

## 2010

- ▶ **Planning.** Within an agile way of working the goal is predetermined; the way in which this goal will be achieved is not. The options for changing the annual audit plan (or backlog with objects to be audited) require attention from the IAF with regard to risk-based planning so that the prioritization of the audit backlog can be determined.

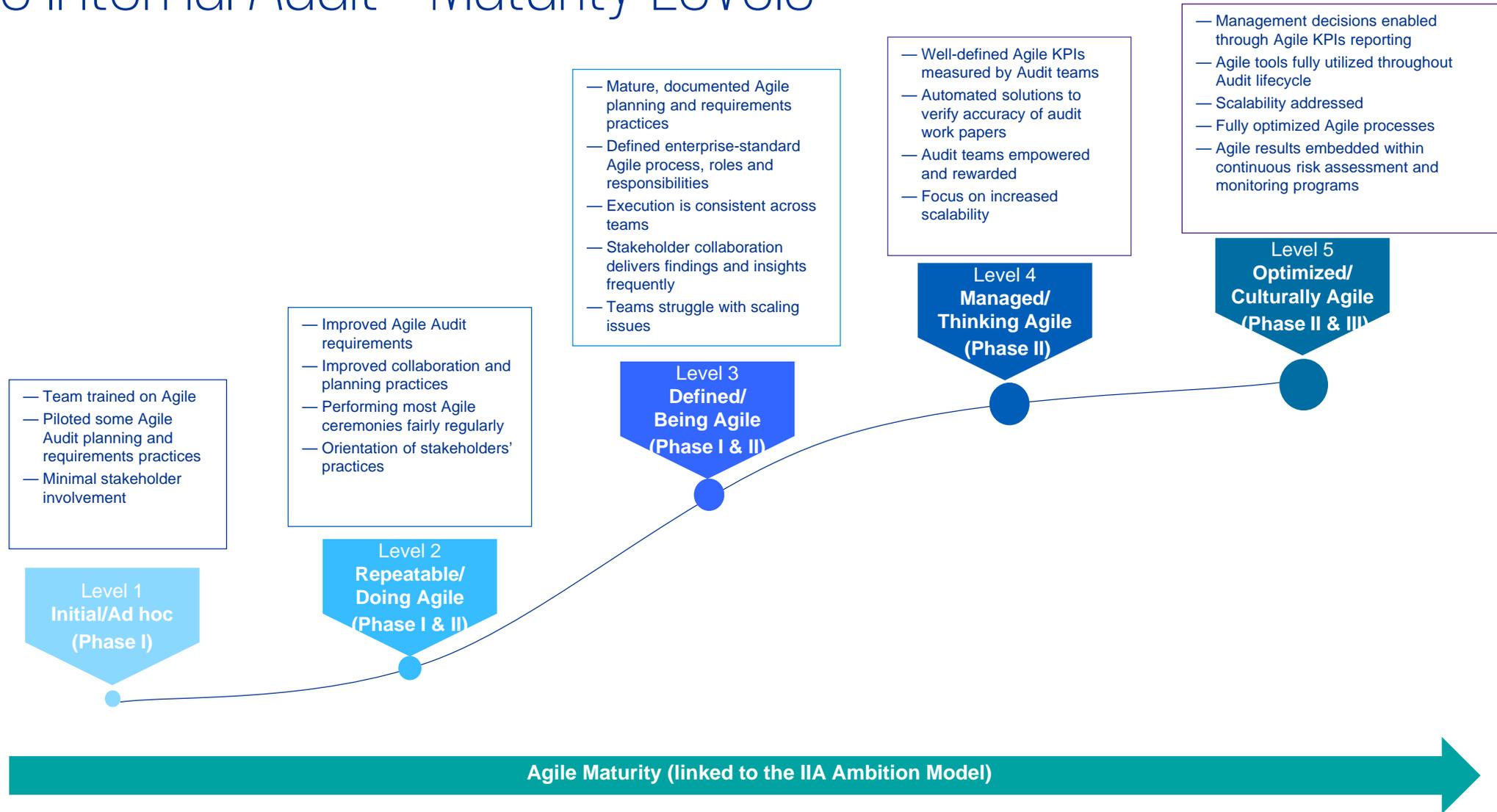
## 2200 / 2240

- ▶ **Engagement planning/ Engagement Work Program.** flexible working method is an important characteristic within an Agile audit. For example, the use of sprints to conduct an audit: splitting the scope into partial products, more interactions & iterations and shorter lead times instead of a fixed sequential planning. Changes to the scope or work program must be approved by the CAE or a delegate.

## 2330

- ▶ **Documenting information:** Performing an audit via Agile means that documents are more efficiently documented showing how the conclusions were reached. To meet the standards, it is important to have at least an audit trail that shows how the findings and the conclusion were reached (see also 1300).

# Agile Internal Audit - Maturity Levels



# Common pitfalls for agile implementation

Challenge	Challenge Description	High Level Recommendation
<p><b>Not defining end state or success factors upfront</b></p>	<p>Not knowing or defining end state vision is the major issue for business or product owner and other senior management.</p>	<p>Choose a particular Audit and set specific goals for Agile. Identify and establish measures of success.</p>
<p><b>Underestimating efforts required for change management</b></p>	<p>Moving from traditional plan-based methodology to Agile is a huge change in team members' mindset and overall culture of the organization. If this change is not managed well, efficiencies supposed to be brought on by Agile implementation might not be realized or efficiencies could even significantly deteriorate.</p>	<p>Initiate Audit pilots and evaluate the required change impact.</p>
<p><b>Unrealistic timeline for implementing Agile</b></p>	<p>Are you looking to implement Agile throughout IA or a few teams within IA. Are the organizations have already operationalized Agile processes?</p>	<p>Initiate Pilot Audits and estimate the required timelines.</p>
<p><b>Implementation approach</b></p>	<p>Trying to implement Agile as a 'big bang' approach for geographically dispersed teams.</p>	<p>Start small in one or a few pilot Audits. Then, when success is achieved in those Audit pilots. go the big bang way.</p>
<p><b>Senior management expectation on Agile Audit reporting not set upfront</b></p>	<p>Planning in the Agile world could be very different and it would require different mindset, not only for the IA team but also for the executives and teams being audited. Expectations have to be set upfront with other stakeholders on reporting level and contents post Agile implementation.</p>	<p>Get management buy in. Educate about the reporting needs.</p>



Thank you

Q&A



# Intelligent Automation in Internal Audit

October 3, 2019



# Agenda

Who is Who

KPMG Lighthouse – Setting the scene

What is RPA?

RPA and 3 roles of IA

IA as a Business Leader

IA as a Business Advisor

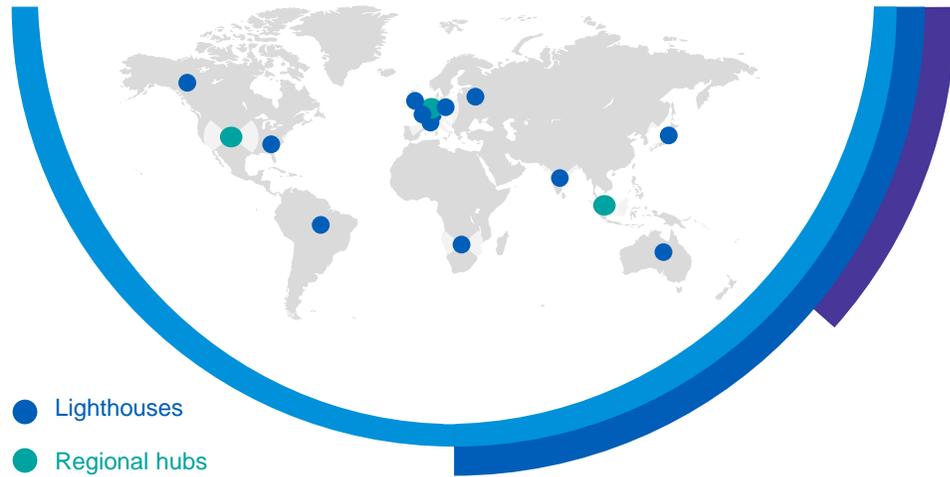
IA as an Assurance Provider

Wrap up



# KPMG Lighthouse

## Centre of excellence for data-driven technologies



The **KPMG Lighthouse** network combines our data-driven technologies and capabilities with our deep-rooted domain expertise to accelerate innovation, drive speed and relevance and ensure global scale for data-driven solutions.

**KPMG Lighthouse** teams leverage data, analytics and artificial intelligence technologies to build and deliver solutions that transform the business of our clients.

<b>3bn+</b>	<b>12,500+</b>	<b>7,000+</b>	<b>1,700+</b>	<b>600+</b>	<b>8</b>	<b>4</b>	<b>3</b>
USD global revenue	KPMG experts around the world	delivered client engagements per year	data scientists	pre-built solutions	Insights Centres	strategic partnerships with Google, IBM, Microsoft and Oracle	global platforms <ul style="list-style-type: none"> <li>• KPMG Ignite</li> <li>• KPMG Sofy</li> <li>• KPMG Signals Repository</li> </ul>



Belgium.

- Advanced data management
- Data engineering
- Data mining
- Big data

### Data and analytics

- Data visualization
- Smart data transformation
- Analytical modelling
- Analytical enterprise
- Advanced analytics
- Deep learning
- Algorithm assurance

Pattern recognition

### Intelligent Automation

- Virtual agents
- Cognitive automation

### Artificial Intelligence

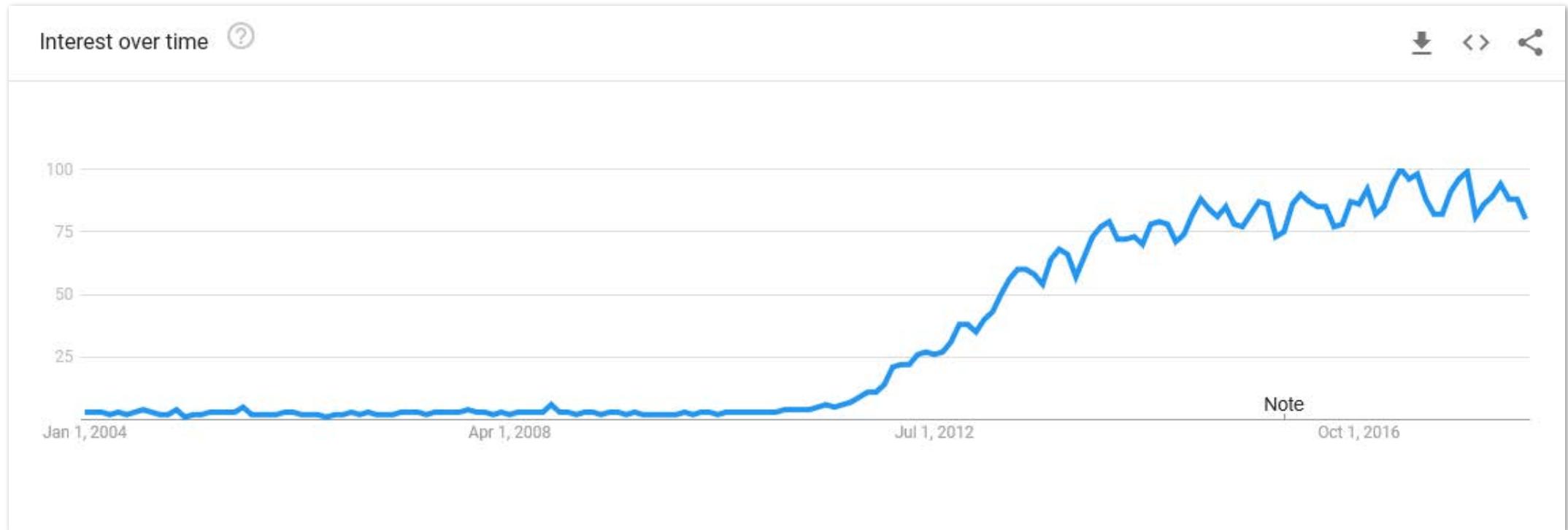
- Optimization and simulation
- Knowledge-based systems
- Natural language processing
- Voice / image recognition
- Reasoning
- Machine learning
- Robotic process automation
- Decision modelling

# KPMG Belgium - Lighthouse Capabilities

A critical fundament to deliver “Trusted Analytics”, in line with regulatory & compliance requirements

Data & Information Management	BI & Analytics	Advanced Analytics & Artificial Intelligence	Intelligent Automation & New Technology
<p>Creating a <b>vision</b> for D&amp;A that is aligned with business goals.</p> <p><b>Building trust</b> in the data, how it is managed and stored, as well as confidence in reporting.</p> <p>Help <b>generate sustainable value</b> from <b>data governance</b> related initiatives.</p>	<p><b>Enabling businesses and people</b> with analytical platforms, tools, governance and processes.</p> <p><b>Deliver actionable insights</b> to help inform, improve and drive business decision making. (“<i>from data to action</i>”)</p> <p><b>Defining the right KPIs</b> to effectively monitor and steer performance</p>	<p>Leveraging <b>advanced analytics</b> to solve our customers’ most complex problems.</p> <p>Enabling companies to <b>understand the strengths and limitations</b> of such techniques, to help them gain confidence, and <b>maximize return</b> from analytics and AI initiatives.</p> <p>Ensuring <b>architecture</b> is scalable, reliable and flexible to business change.</p>	<p>Create the <b>strategy</b> and <b>operating model</b> for successful automation programs and <b>sustainable human/robot co-existence</b>.</p> <p>Help <b>rethink the way clients work</b> through radical innovation and leveraging new technologies. Deliver <b>trusted automation</b> projects, maximizing efficiency, limiting human error or bias.</p>
<ul style="list-style-type: none"> <li>— Data &amp; Information Strategy &amp; Governance</li> <li>— Architecture</li> <li>— Data Quality Management</li> <li>— Master Data Management</li> <li>— Data Migration</li> </ul>	<ul style="list-style-type: none"> <li>— KPI / Performance Management</li> <li>— BI Platform &amp; Infrastructure</li> <li>— Dashboarding &amp; visualization</li> <li>— ERP Analytics Process Mining</li> </ul>	<ul style="list-style-type: none"> <li>— Predictive &amp; Prescriptive Modelling</li> <li>— Machine Learning (Artificial Intelligence)</li> <li>— Big Data architecture</li> </ul>	<ul style="list-style-type: none"> <li>— Robotics Process Automation (RPA)</li> <li>— OCR integration</li> <li>— BPMN Automation</li> <li>— Cognitive Automation Chatbot / Digital Assistant</li> </ul>
			
<p><b>Digital Solution Architecture</b></p>			

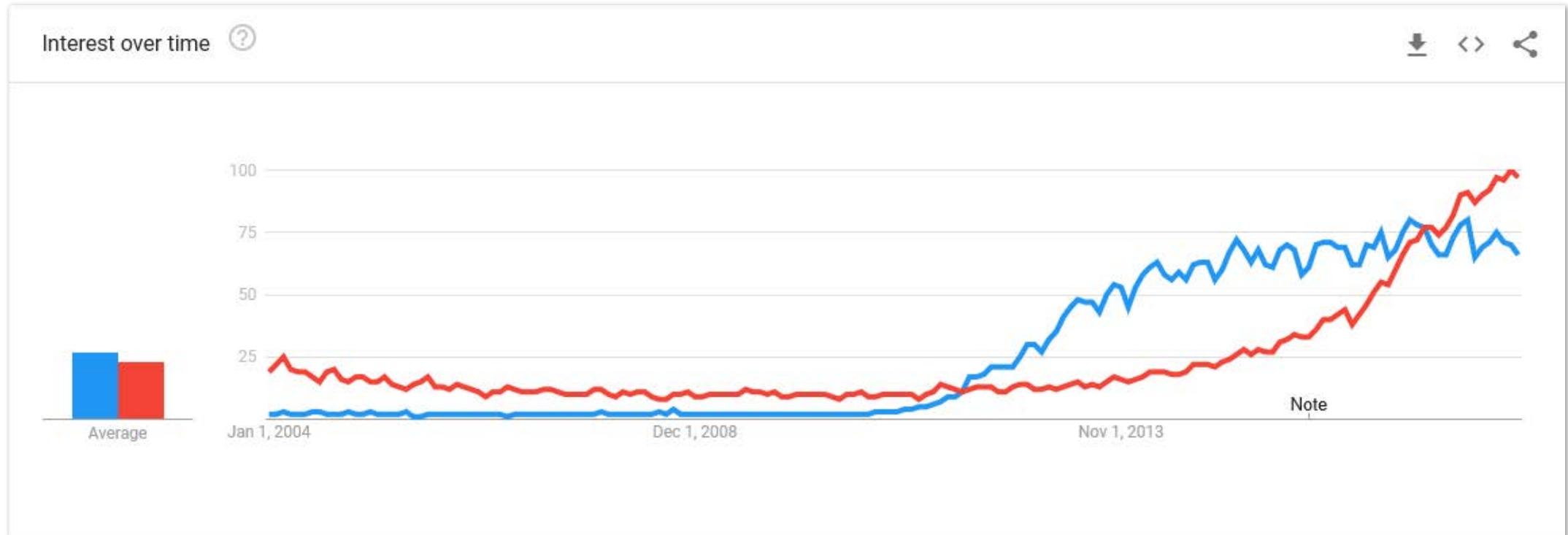
# Popularity check: Big data hype is over



Search term: "Big Data"

Google Trends

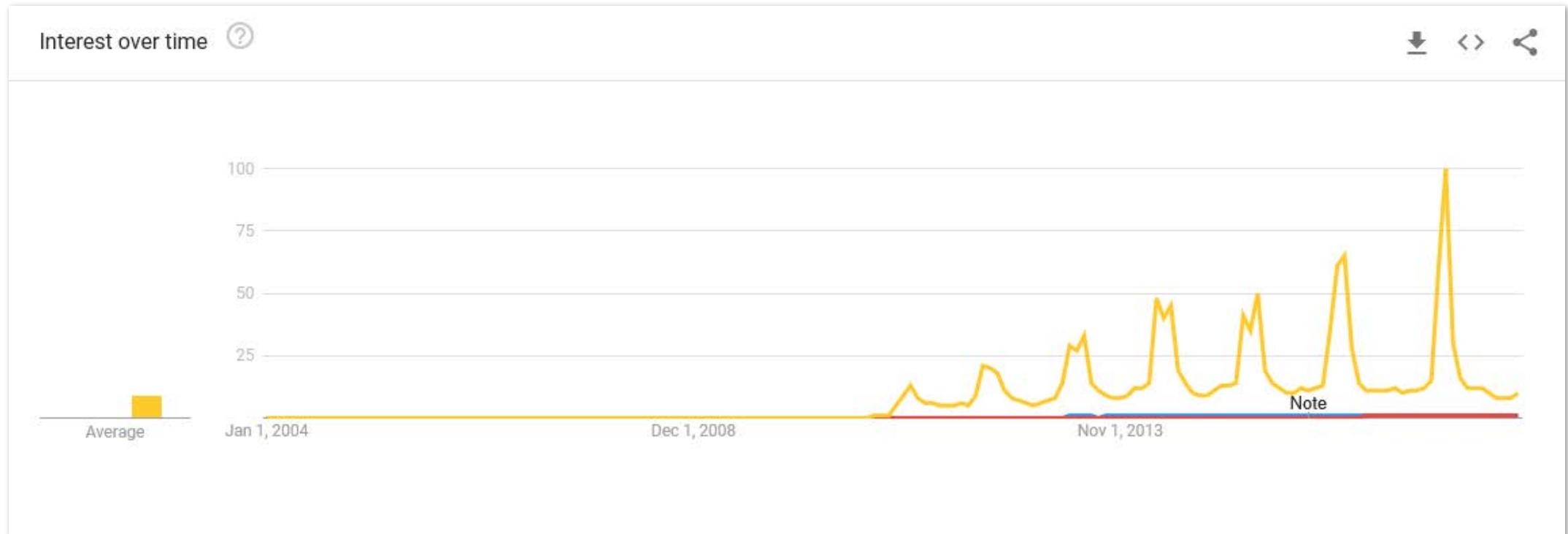
# Popularity check: The rise of the machines



Search term: "Big Data" ; "Artificial Intelligence"

Google Trends

# Popularity check: ...But peanuts compared to our favorite series



Search term: "Big Data" ; "Artificial Intelligence" ; "Game of Thrones"

Google Trends

# The pace of change

“ **2/3** rds

**of CEOs believe that the next 3 years will be more critical than the previous 50... ”**

KPMG CEO SURVEY

# What's driving the disruption?

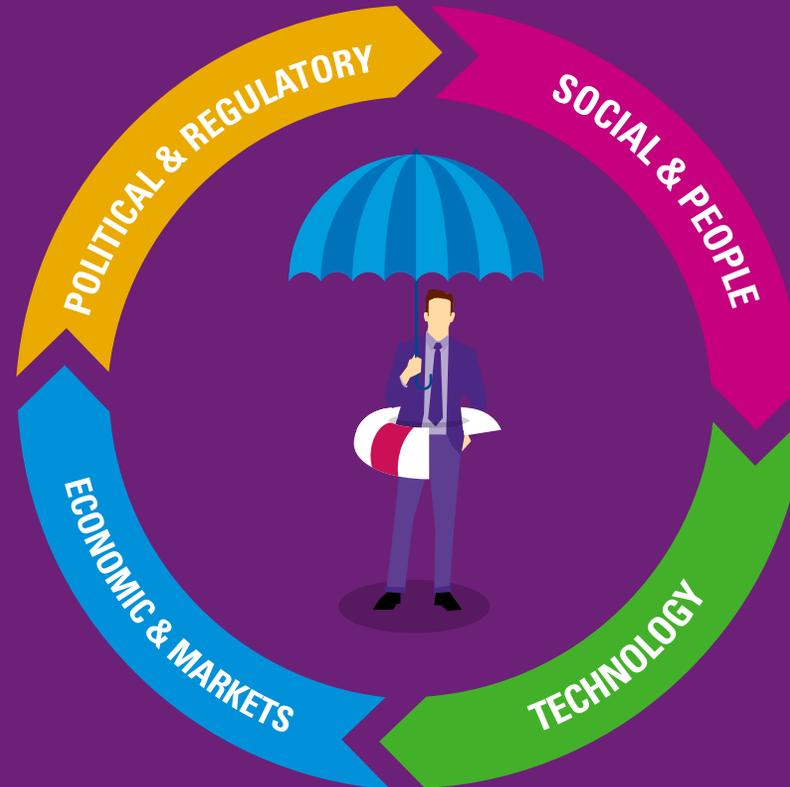
**In a rapidly changing business environment, companies face a variety of market forces.**

## Regulations & Policies

Designed to protect the way the world worked in the 20<sup>th</sup> century, regulations have not evolved to today's world.

## Business Models & Strategies

Those developed in the 'Industrial Age' are being challenged by companies that leverage technology and agile business models to meet the demands of today's marketplace and customers.



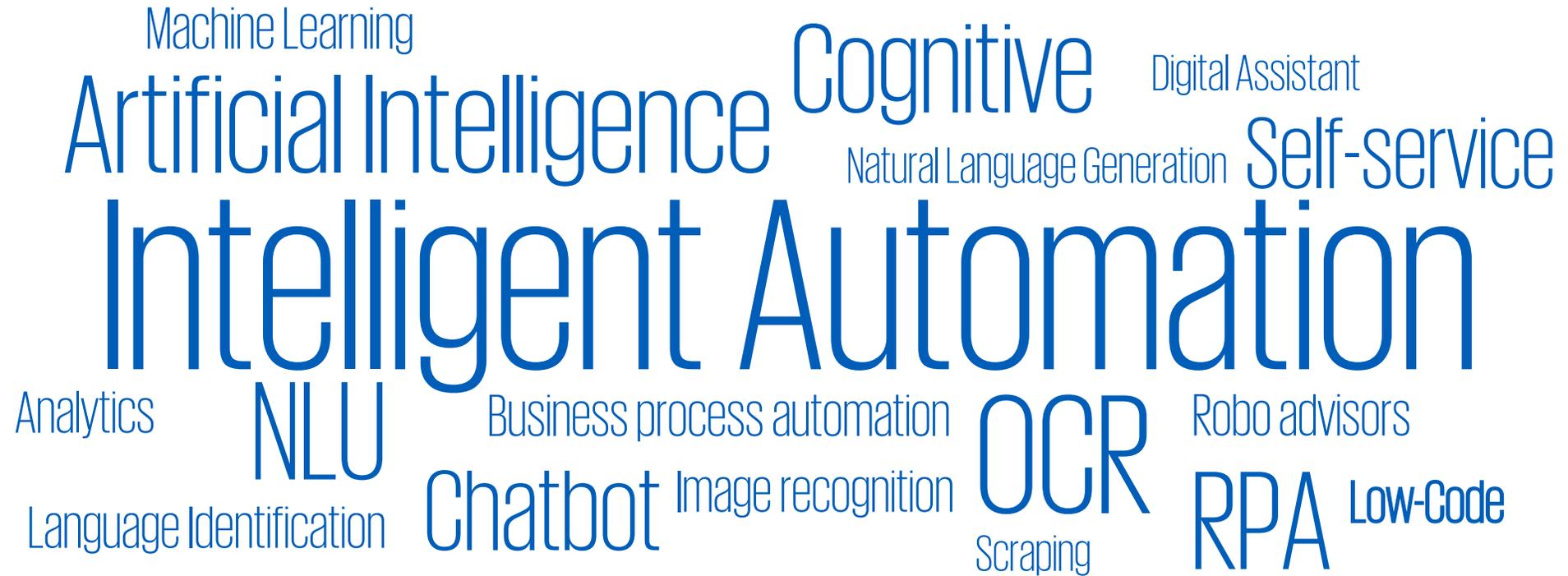
## Changing demographics

Changing customer and employee demographics, behaviors and expectations are accelerating the impacts of technology change.

## Innovative Technologies

Companies are struggling to implement technology and drive adoption to meet changing demand, often remaining dependent on legacy IT systems.

# Defining Intelligent Automation



# Intelligent Automation (IA)

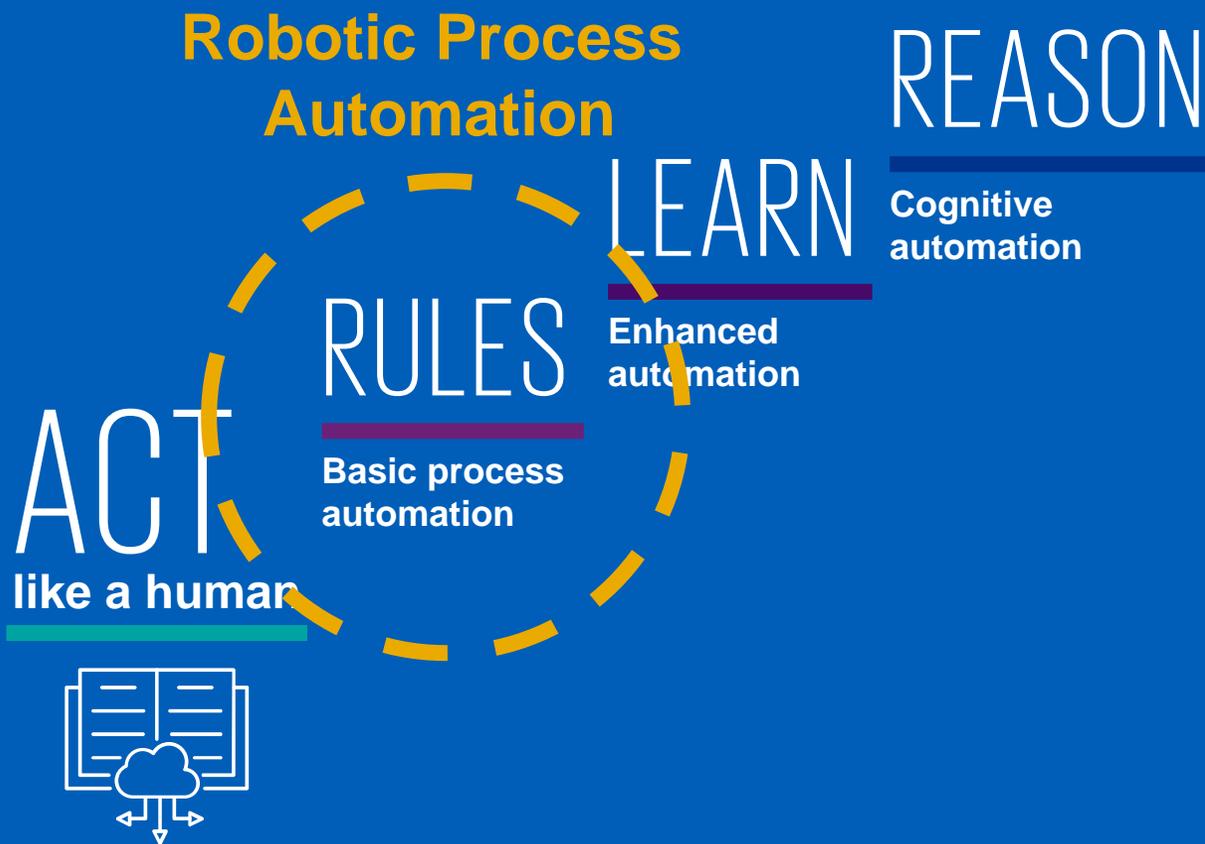


Software that can not only automate a human task but also augment human expertise

Based on rules, but also algorithms that learn and improve as it gets exposed to data

Becoming better faster and cheaper at an exponential pace

# Overcoming business complexities through different levels of Intelligent automation



# THINK

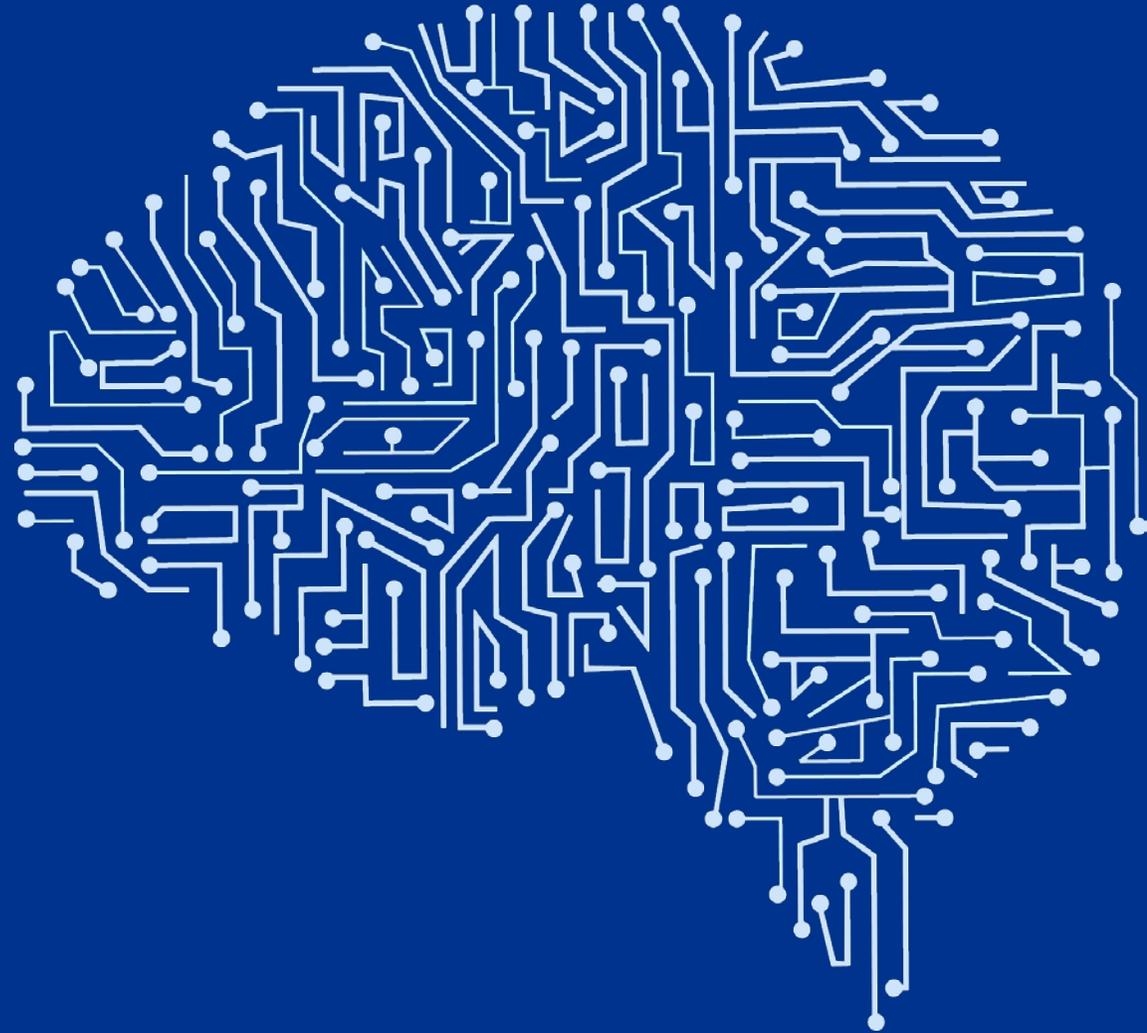
like a human





# Introduction to automation

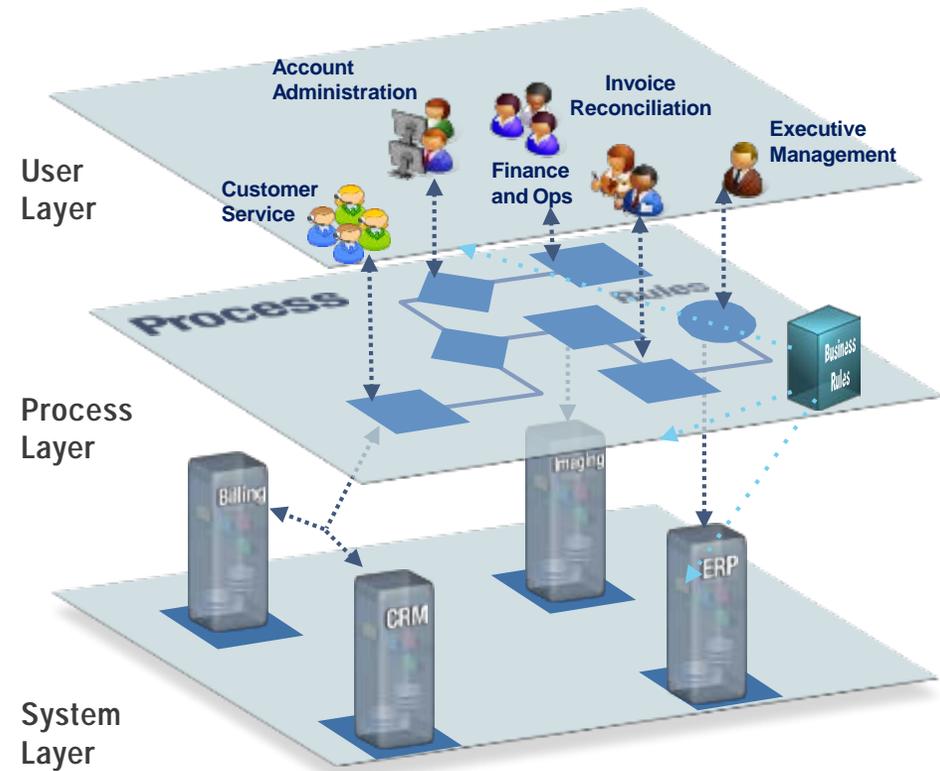
## What is RPA?



# What is Robotic Process Automation (RPA)?

**Robotic Process Automation** is the application of technology that enables computer software to partially or fully automate human activities which are manual, repetitive and rule-based.

RPA sits at the User Layer, on top of a company's IT infrastructure, and can therefore be easily implemented without altering existing infrastructure and systems.



# Business implications of IA

## Efficiency

Robots always follow the rule-based business processes in many scenarios leading to a **100% accuracy rate**

## Cost reduction

A software robot is approximately **1/3 of the cost** of an offshore FTE.

## Increased agility

Intelligent Automation allows companies to **quickly pivot and adapt to changing markets** and customer demands. .

## Scalability

Intelligent Automation allows to cope with **peak-moment requests** without expanding the back-office department.

## Quality & Reliability

Expect **reductions** in **mistakes, accidents, regulatory violations** and fraud.

## Increased insights

Intelligent Automation provides **valuable logging** which can be used for key process and execution **insights**.

## Employee Satisfaction

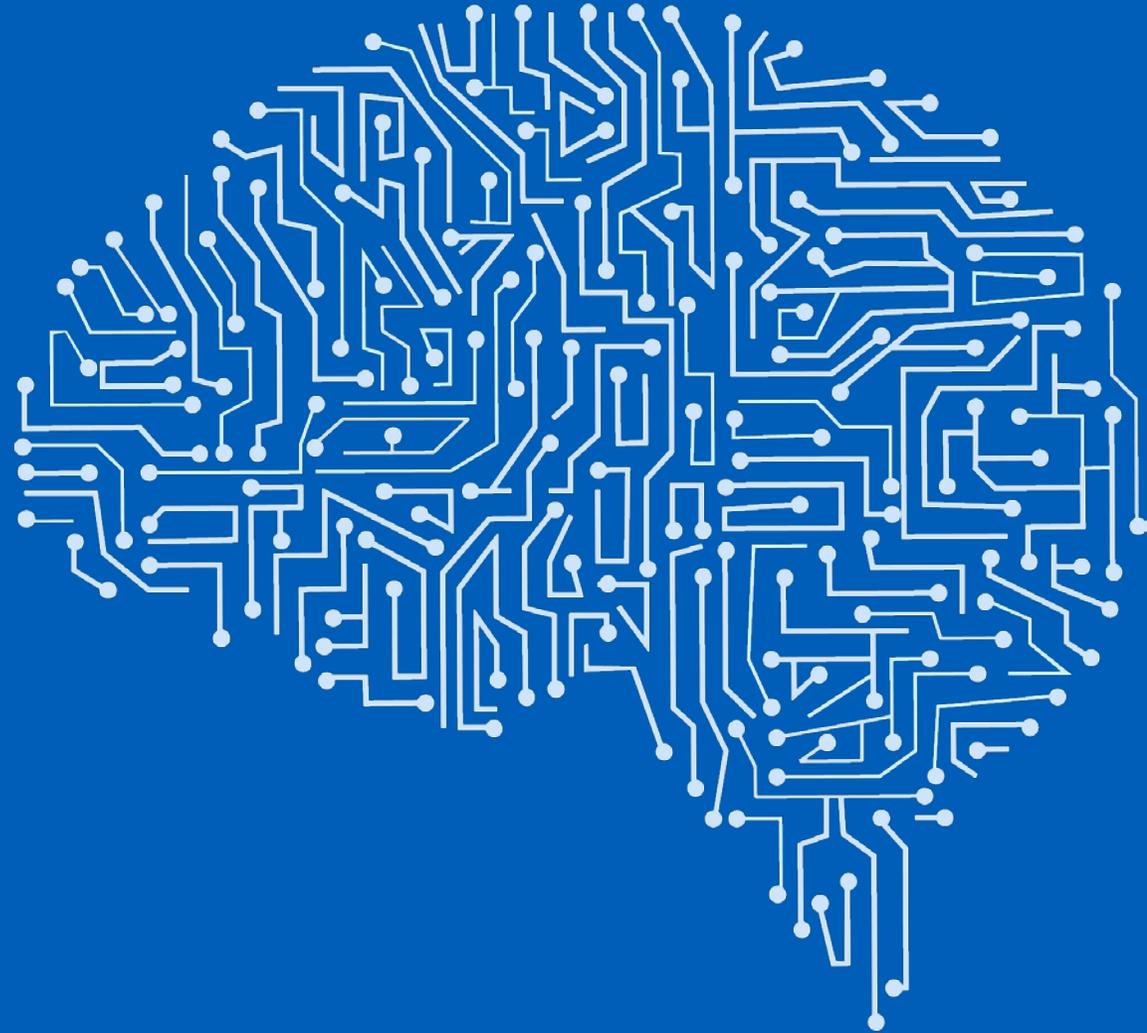
Internal employees are **freed up from routine and repetitive tasks** – allowing them to refocus on the more complex, creative and strategic work

## Consistency & predictability

Robots are **available 24/7** without stop. They **perform the actions** they were programmed to do exactly **on the times** they are expected to do them.



# Roles of Internal Audit related to RPA



# How can internal audit help the organization?



**In a business environment that's changing at a faster rate than ever before, internal auditors play an increasingly important role.**

With the vast uncertainties presented by an onslaught of disruptive forces, the internal audit function must keep pace to help the organization understand and manage the associated risks, achieve expected results from automation, and continue to innovate to add value.

**Key opportunities for internal audit within intelligent automation initiatives include the following:**

Internal Audit can help to integrate **governance, risk and controls** considerations throughout the automation program life cycle as an organization establishes and implements its program.



Internal Audit as an independent assurance provider

Internal audit can help the organization identify opportunities to **embed automation-enabled control activities within the impacted business processes and functions.**



Internal Audit as a business advisor

Finally, the internal audit organization can capitalize on intelligent automation innovations to **increase the efficiency and effectiveness of its own activities.**

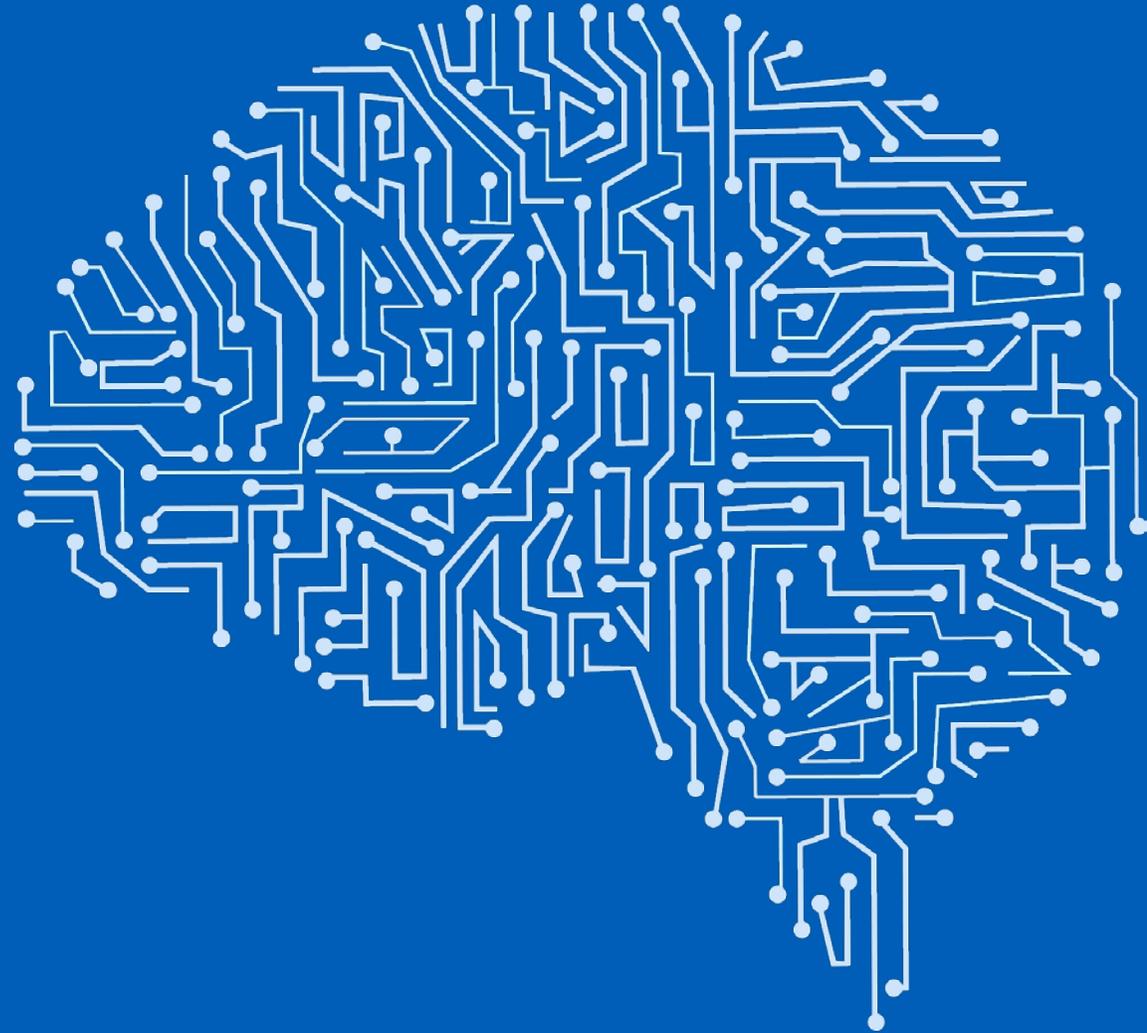


Internal Audit as a business leader

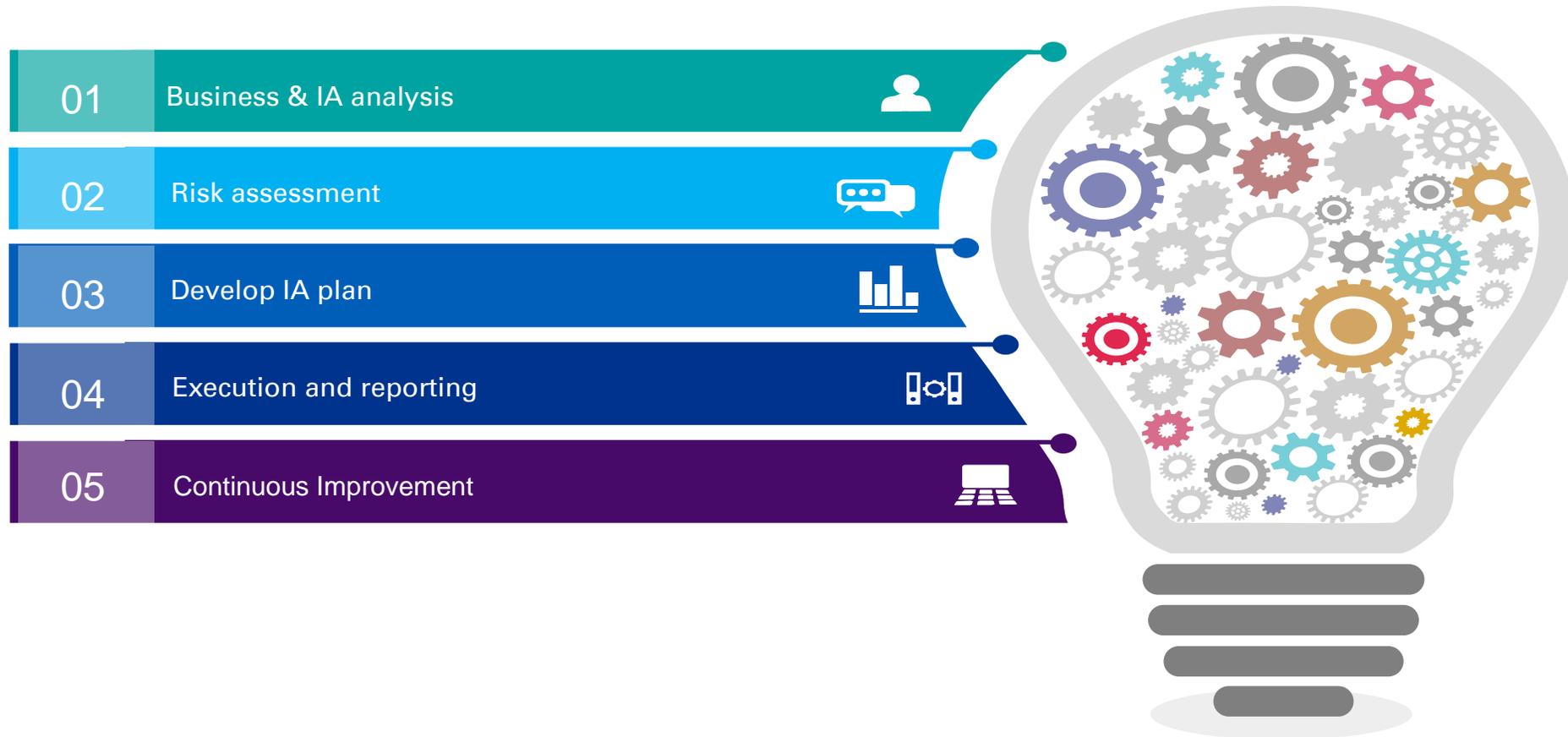


# Internal Audit as a Business Leader

Capitalizing on intelligent automation innovations



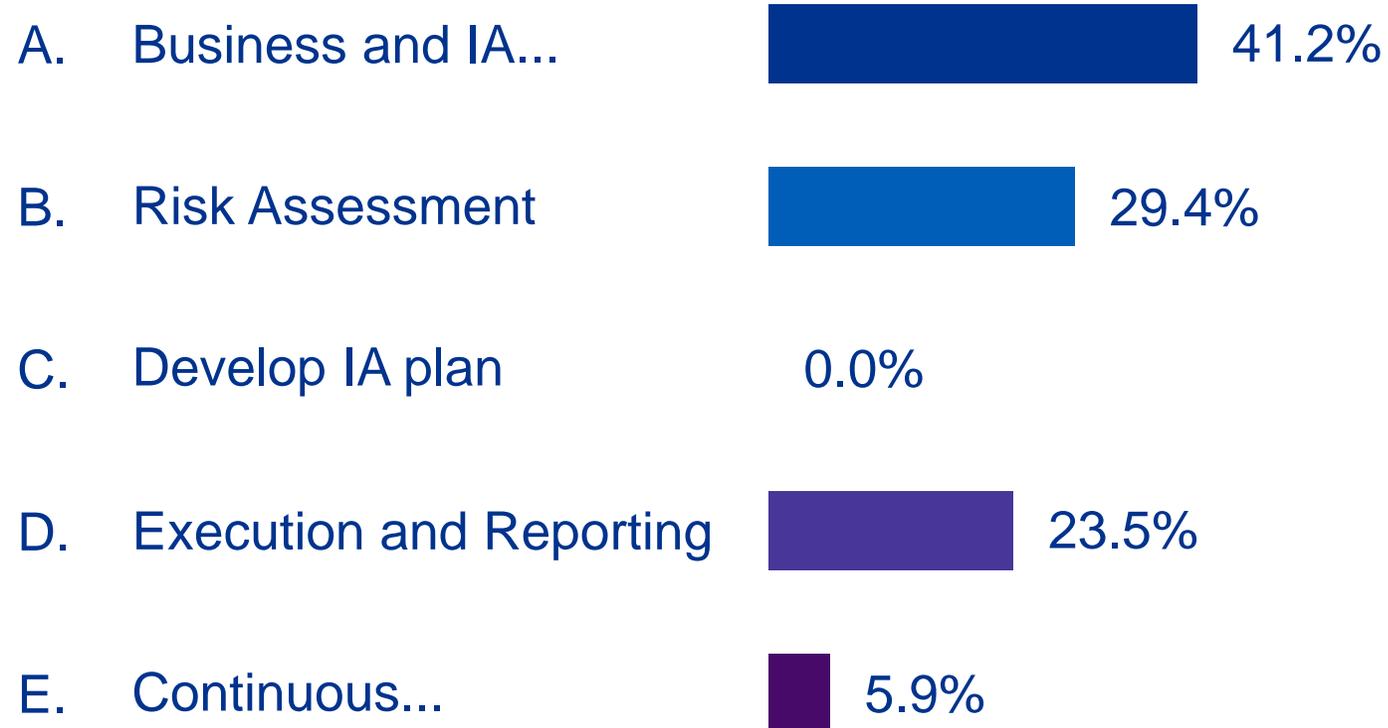
# Internal Audit phases





# KPMG Vote

In which audit phase do you see the most opportunities to leverage on RPA as an Internal Auditor?



# Example areas of automated solutions for control testing

## Business process testing – Automated testing of manual and automated controls

### Manual

- Reconciliations
- A/R Aging
- Cash Transfers
- Journal Entry Analysis
- Fee Audits
- Loan Review
- Nightly Settlement
- Contract Compliance



### Automated

- Edit Checks
- Validations
- Calculations
- Interfaces
- Reports



### Other Control Testing

- Compliance testing
- Cyber security testing
- Payments reconciliations



## IT controls testing – Automated testing of IT general controls by platform and/or ERP

### Change Management

- Changes are Authorized
- Changes are Tested
- Changes are Approved
- Dev Access to Production



### Logical Access

- Passwords
- New Users
- Periodic Review
- Terminations
- SOD



### Computer Operations

- Incident Management
- Backups
- Job Scheduling
- Physical Security



# RPA cases

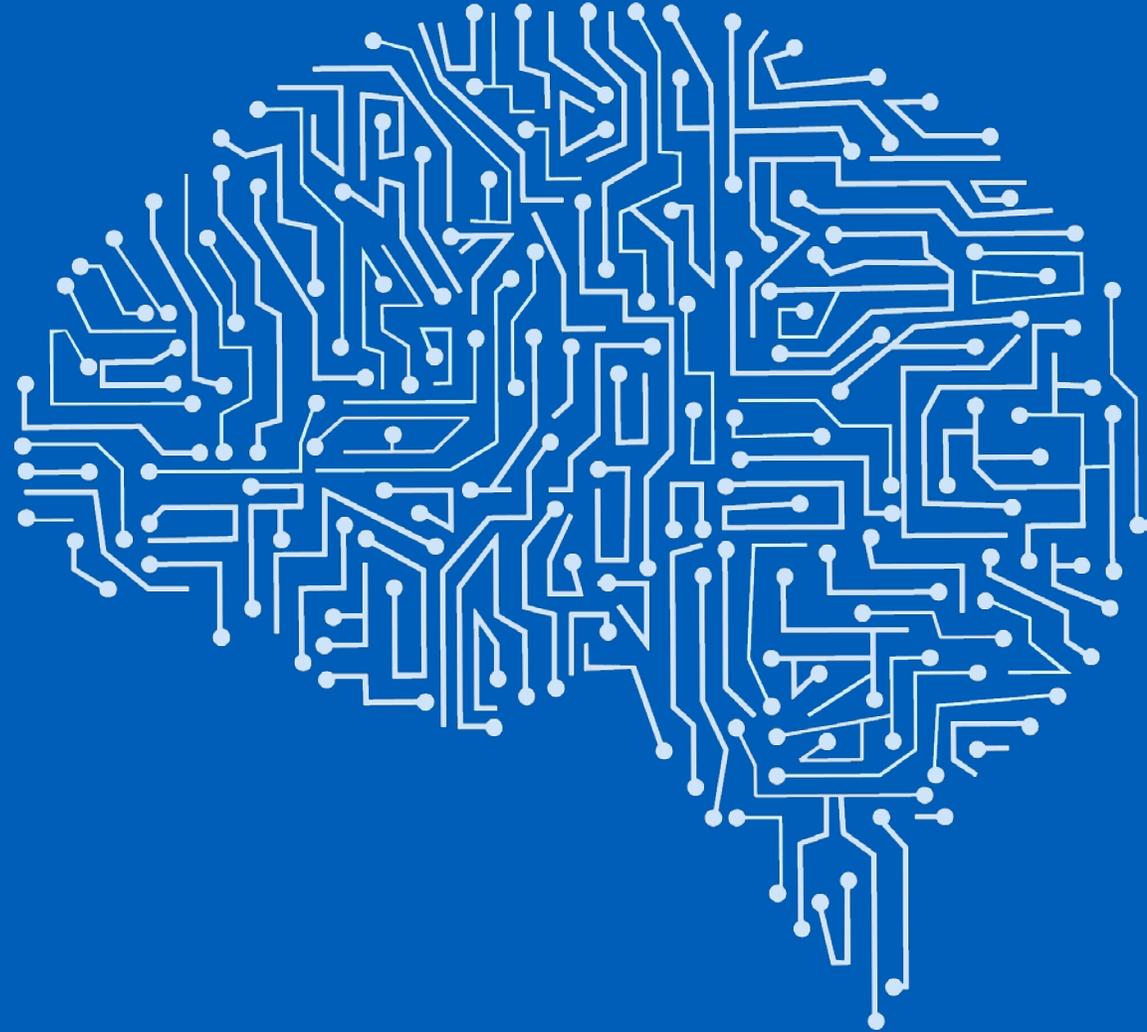
- Identity Access Management:  
<https://vimeo.com/251834861>
- Automated Reconciliation  
<https://vimeo.com/245262470>
- Lead Sheet Generation:  
<https://vimeo.com/230876812>
- Change management review:  
<https://vimeo.com/245274992>





# Internal Audit as a Business Advisor

Natural progression of automation opportunities within the organization





# KPMG Vote

Has anyone implemented RPA?

A. No, not yet



B. Yes, we have done a PoC



C. Yes, we already automated some processes in production



# Processes fit for Automation

Not all processes are suitable for automation. Below are some guiding principles to determine process fit.

Criteria	Typical examples and questions
<b>Manual</b>	<ul style="list-style-type: none"> <li>Which processes require a high degree of manual intervention?</li> </ul>
<b>Rules-based</b>	<ul style="list-style-type: none"> <li>Which processes can be defined in terms of unambiguous business rules?</li> <li>Are there any processes that do not require human judgment?</li> </ul>
<b>Standardization</b>	<ul style="list-style-type: none"> <li>Which processes have clearly defined standards, with little exceptions in execution?</li> </ul>
<b>Stability</b>	<ul style="list-style-type: none"> <li>Which processes are stable with no frequent upstream or downstream changes?</li> </ul>
<b>Data Volume / Transactional</b>	<ul style="list-style-type: none"> <li>Which processes involve a high volume of transactions?</li> <li>Are there processes that experience fluctuations in transaction volume?</li> </ul>
<b>Cross-System Application</b>	<ul style="list-style-type: none"> <li>Are there processes that work across 2+ platforms?</li> <li>Does the data extracted require manual validation?</li> </ul>
<b>Flexibility</b>	<ul style="list-style-type: none"> <li>Are there processes that need to accommodate changes in transaction volumes or service levels without workforce surges?</li> </ul>
<b>Customer-facing</b>	<ul style="list-style-type: none"> <li>Which processes are customer-facing (immediate brand impact for failure to execute)?</li> <li>Which processes can improve customer-facing SLAs?</li> </ul>
<b>Associate Pain Point</b>	<ul style="list-style-type: none"> <li>Which processes create critical pain points?</li> </ul>
<b>Risk</b>	<ul style="list-style-type: none"> <li>Which processes have the greatest magnitude of risk associated with execution error?</li> </ul>

# What activities are better candidates for basic process automation?

Inputs files are natively digital, e.g. structured data csv files, excel files in defined formats, system generated PDFs

There are clearly defined business rules with limited or no exceptions.

Processes outcomes are standardized and clearly defined and predictable



Input data are self-contained, i.e. they don't need access to other systems or files. API's are the best scenraio

Required outputs are clearly defined with respect to content and structure, e.g. a list or table

Automation would result in significant time savings, i.e. 100's vs. 10's of hours

Bear in mind that there may be multiple tasks that are substantially the same and could be automated as a group, e.g. the same system access test is performed for ten separate systems

# What activities are not ideal candidates for basic process automation?

Poor quality images, e.g. scanned documents or pictures.

Interpreting Handwritten information

Unstable frequently changing processes (not optimized)

Process requiring high-level of cognitive tasks (complex rules or require subject matter expertise)

Unstructured data i.e. e-mail, non-standard contracts

Process with insignificant / low business impact

New system implementations are on the horizon. System unstable.

# Identifying automation use cases

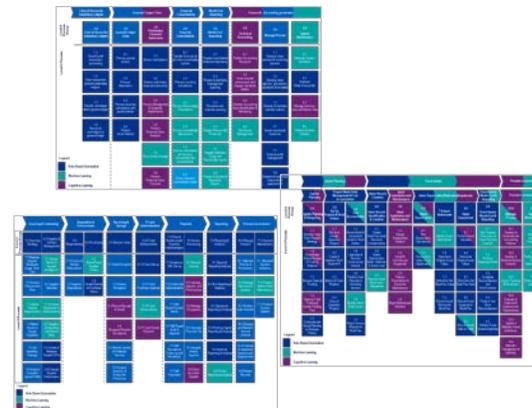
Utilizing a structured approach and tools, KPMG helps clients and Internal Audit functions advise the business around Intelligent Automation use cases discovery and selection, proactively managing related risks.

## Criteria supporting use case discovery:

- Process decomposed – **discrete and repeatable steps**
- Unambiguous business rules **with limited human interpretation**
- Analysis of **structured data** in various formats (e.g., PDFs)
- Process prone to errors, inconsistent, or have fluctuating demand
- High **transaction volumes with repetitive steps**
- Process “swivel chair” access with users **retrieving and entering data into multiple unintegrated systems and applications**
- Known **risk levels** with existing reliable control strategies

## Process-specific opportunity heat-maps

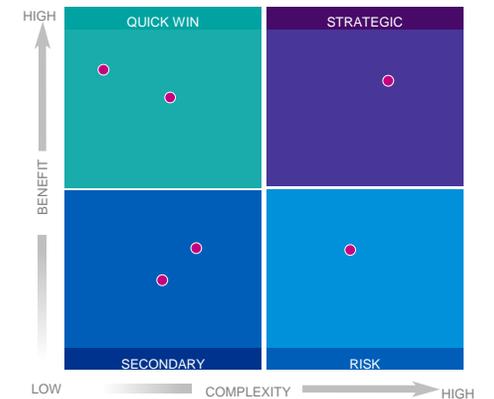
To assist clients in evaluating Intelligent Automation in the business process, **KPMG facilitates with a library of heat-maps** showing typical areas of opportunity.



## Intelligent Automation opportunity assessment

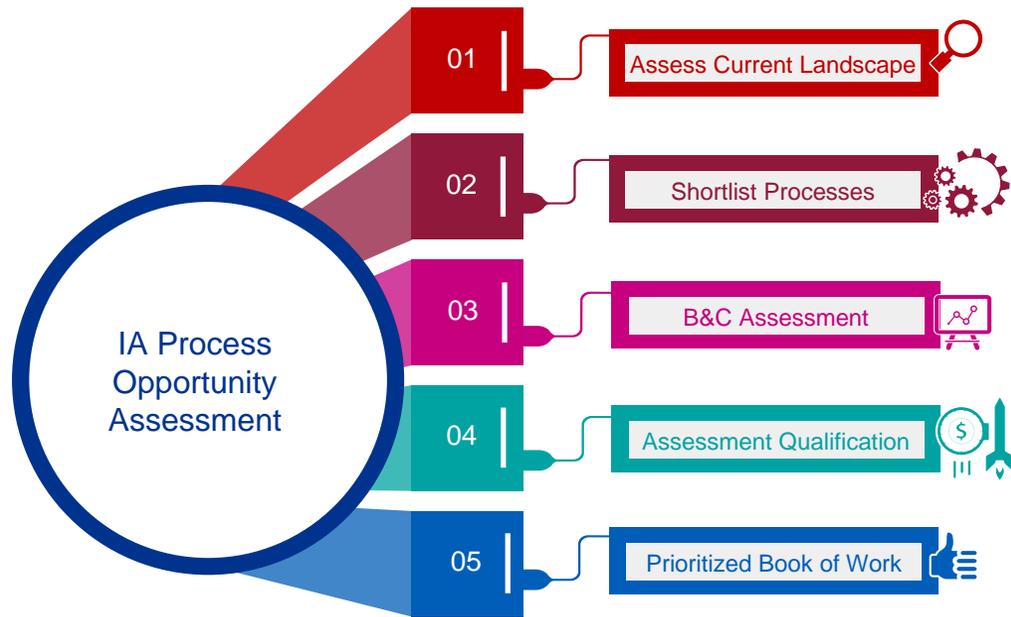
To evaluate business process areas, KPMG uses an **IA Opportunity Assessment** based on **complexity and benefit**

	Process complexity	IA Opportunity	Process volume and frequency	Process error rate	Process risk level
Process A	High	High	High	High	High
Process B	Medium	Medium	Medium	Medium	Medium
Process C	Low	Low	Low	Low	Low
Process D	High	Low	High	High	High
Process E	Medium	High	Medium	Medium	Medium
Process F	Low	High	Low	Low	Low
Process G	High	Medium	High	High	High
Process H	Medium	Low	Medium	Medium	Medium
Process I	Low	Low	Low	Low	Low
Process J	High	High	High	High	High
Process K	Medium	Medium	Medium	Medium	Medium
Process L	Low	Medium	Low	Low	Low
Process M	High	Low	High	High	High
Process N	Medium	High	Medium	Medium	Medium
Process O	Low	Low	Low	Low	Low
Process P	High	High	High	High	High
Process Q	Medium	Medium	Medium	Medium	Medium
Process R	Low	High	Low	Low	Low
Process S	High	Low	High	High	High
Process T	Medium	Low	Medium	Medium	Medium
Process U	Low	Low	Low	Low	Low
Process V	High	High	High	High	High
Process W	Medium	High	Medium	Medium	Medium
Process X	Low	Low	Low	Low	Low
Process Y	High	Low	High	High	High
Process Z	Medium	Medium	Medium	Medium	Medium

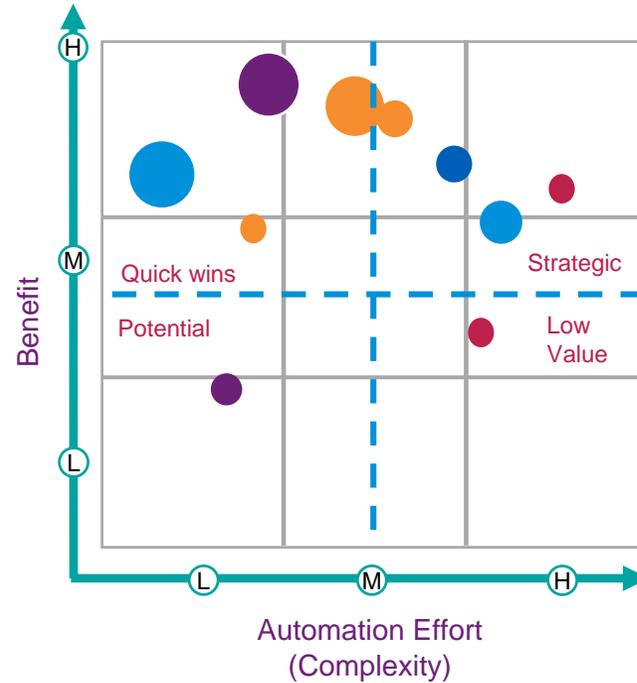


# Identify and assess automation opportunities

1



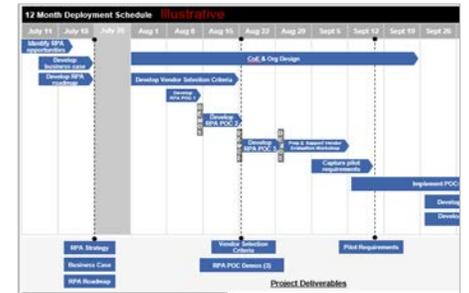
2



Assessment matrix help us identify the following process opportunities:

- **Quick Wins** – processes that would yield quick ROI with little effort.
- **Strategic** – Long term strategic process i.e. End to end.
- **Potential** – Would some return with little effort
- **Low value** – Effort spent not worth the potential returns

3

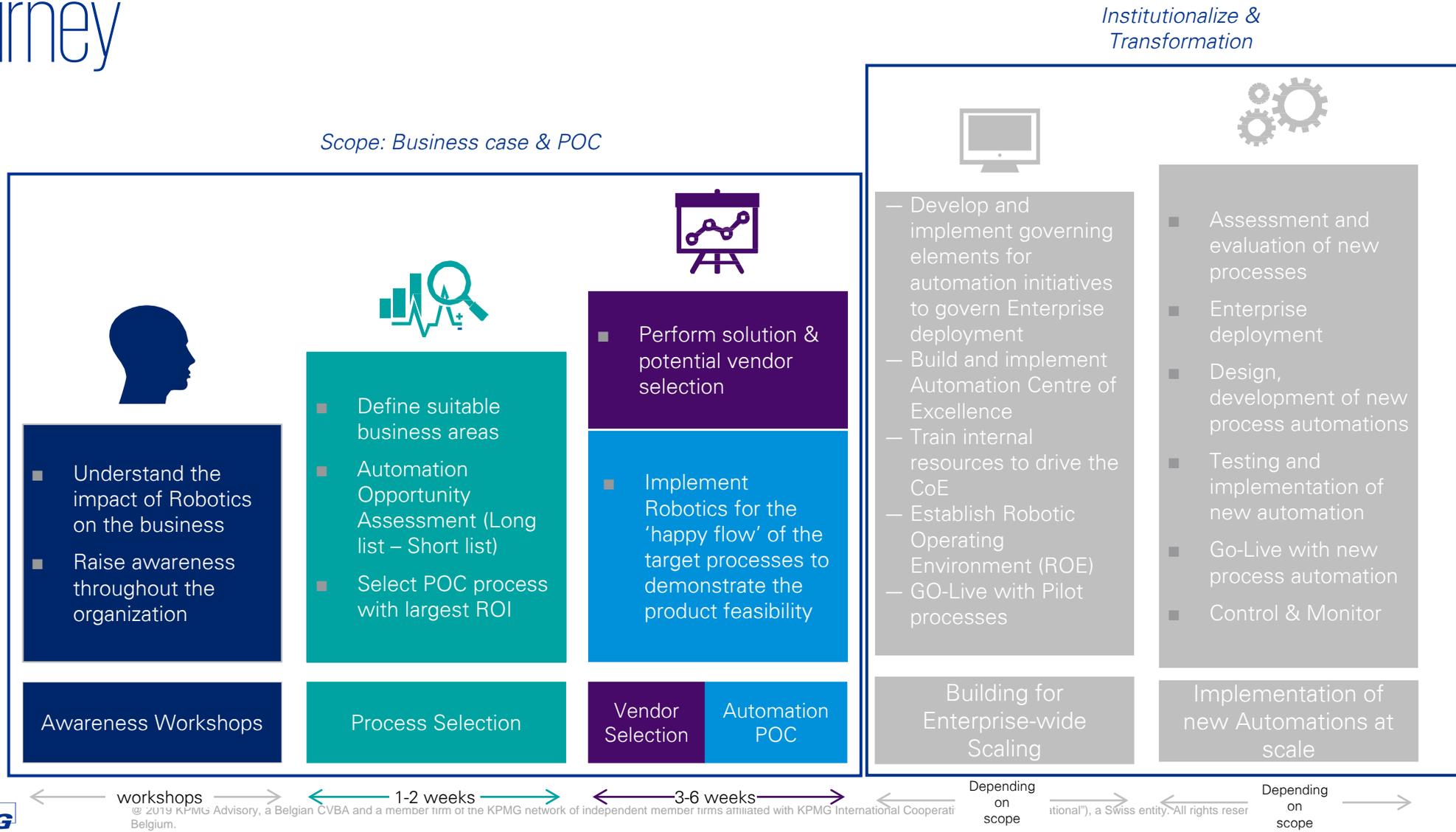


**OUTCOME: Prioritized process book of work**

# Decisions to be taking before starting your automation journey

- **Align with existing organizational automation capabilities on process, tools, governance.**
- **Establish clear goals and success criteria.**
- **Think about strategy and process first – then consider task-level automation.**
- **Don't “pave the cow path” – consider improving the process first, then automating.**
- **Talk with your team about goals and opportunities for automation & involve your IT department as early as possible**

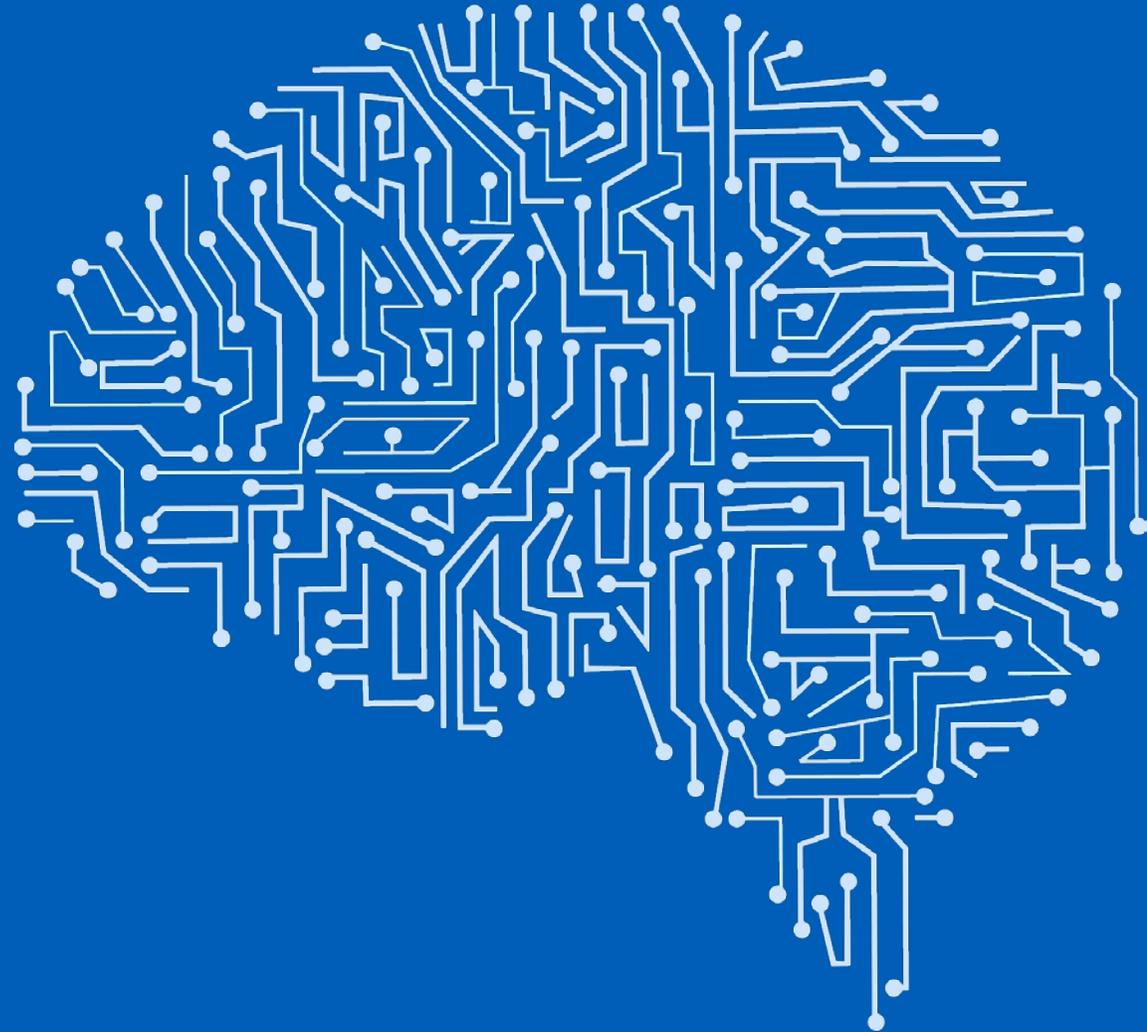
# The first steps in your enterprise Intelligent Automation journey





# Internal Audit as an Assurance Provider

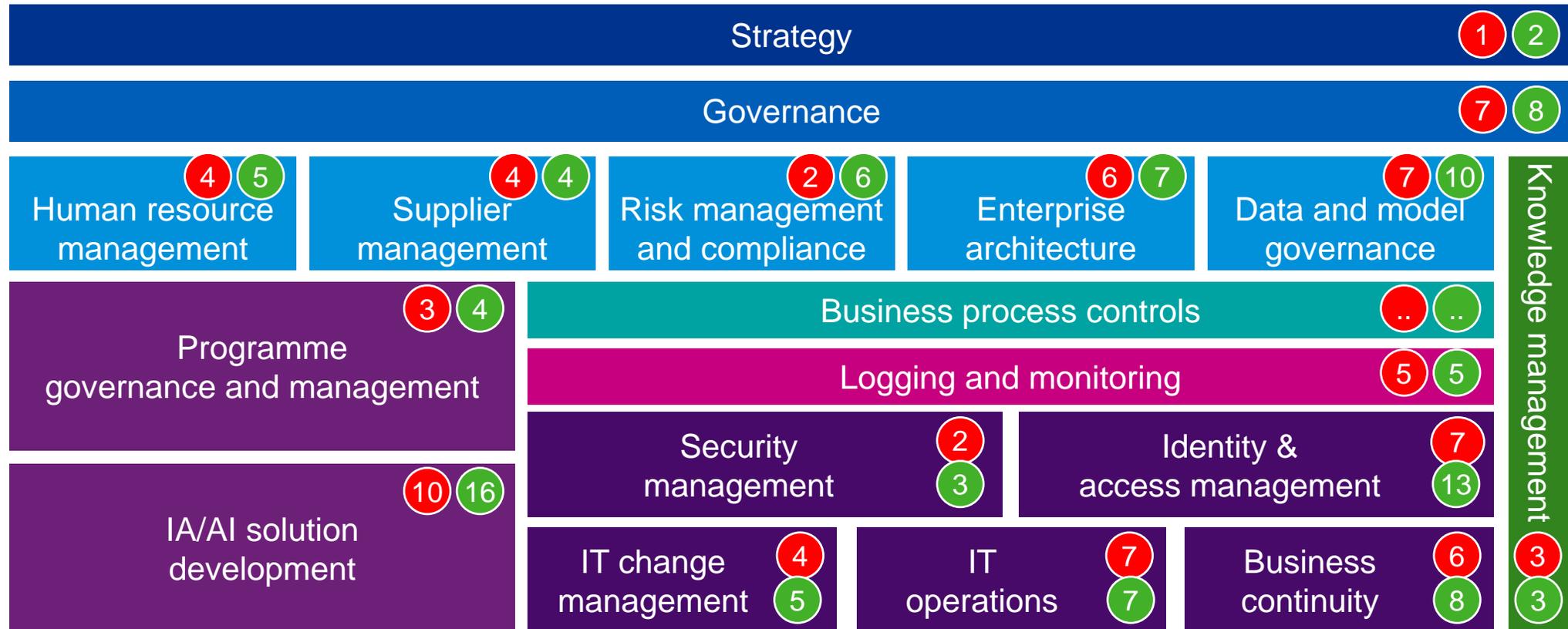
Governance and risk management considerations:  
automation lifecycle



# IA/AI Risk & Controls framework

17 categories for managing risks and controls for Intelligent Automation solutions

We developed a Risk and Controls framework for IA/AI solutions, e.g. solutions that include machine learning capabilities, mapped against the 37 COBIT processes and each risk assessed for 'IA/AI specificity'.



**R** # of risks identified, 78 in total

**C** # of controls identified, 106 in total

# Common bot-specific risks associated with automation

Governance and strategy	Design	Configure and test	Deploy	Operate and optimize
<ul style="list-style-type: none"> <li>— Incorrect Process identified for automation</li> <li>— Inadequate bot oversight and governance setup</li> <li>— Insufficient staff skills and capabilities</li> <li>— RPA negatively impacting existing employees</li> <li>— Incorrect 3rd party selection</li> <li>— Non-compliance with regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>— Incorrect assignment of privileges to bot</li> <li>— Ineffective technology architecture</li> <li>— Inaccurate translation of requirements</li> <li>— Incorrect privacy risk and impact assessment</li> <li>— Inadequate system capability</li> <li>— BOT specific procedures not defined</li> <li>— Lack of review of underlying logic/algorithm</li> <li>— Lack of understanding of existing process</li> </ul>	<ul style="list-style-type: none"> <li>— Insufficient testing of BOT</li> <li>— Inadequate encryption mechanism</li> <li>— Insufficient load/regression testing</li> <li>— Lack of segregation between QA and production</li> <li>— New vulnerabilities might not be detected</li> </ul>	<ul style="list-style-type: none"> <li>— Inadequate bot ownership</li> <li>— Unauthorized deployment to prod</li> <li>— Bot developer having access to deploy into prod</li> <li>— Error due to incorrect integration</li> <li>— Inadequate business segregation of duties</li> </ul>	<ul style="list-style-type: none"> <li>— Inadequate 3rd party activity monitoring</li> <li>— Over-reliance on tool</li> <li>— Changes to application</li> <li>— Logging and monitoring not enabled</li> <li>— Inadequate bot monitoring</li> <li>— Inadequate incident management</li> <li>— Inadequate technology resilience planning</li> </ul>

# Conclusion : Opportunities for Internal Audit

## Governance Risk and Controls

Internal Audit can help to **integrate governance, risk, and controls considerations** throughout the automation program lifecycle as an organization establishes and implements its intelligent automation program.



## Productivity / Performance

Internal Audit can help the organization **identify opportunities to embed automation-enabled control activities** within the impacted business processes.



## Cost Efficiencies

Internal Audit can capitalize on intelligent automation labor innovations to increase the **efficiency and effectiveness of its own activities**.





Thank you

Q&A

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