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Managing Risk within the Intelligent Automation Lifecycle

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With you Today

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Agenda

Topic
1. Intelligent Automation Overview
2. Intelligent Automation and the Evolving Role of Internal Audit
3. Opportunities to Leverage Intelligent Automation in Internal Audit
4. Getting Started with Intelligent Automation

1. INTELLIGENT AUTOMATION OVERVIEW

Introductory video

www.youtube.com/watch?v=amFe8WZP8DY

The growing landscape of digital

Business process as a service

Blockchain and other distributive ledger/ database systems

Mobility solutions

Cloud services

Social media and collaborative technologies

Business intelligence/ analytical tools and advanced competencies in data science

Robotic process automation

- Basic
- Enhanced

Cognitive automation

Internet of things

Intelligent Automation

Intelligent Automation is happening now

Technology–from robotic process automation to cognitive automation–is advancing at a staggering pace, and is disrupting almost every business and industry.

700%
ROI
in robotic projects for specific tasks.[2]

$12.5 billion
Generated revenue on the Digital Labor marketplace[1]

Smart Machines
Will be a Top 5 investment priority for more than 30% of CIO's[3]

Millennials
Are driving the 4th Industrial revolution[4]

47%
of jobs in America are at risk of being replaced by robots by 2026[5]

85%
of CEOs are concerned about the integration of Digital Labor[7]

100 million
knowledge workers will be replaced by robots[6]

60%
of CEOs say investment in **cognitive technologies will be an area of focus** through 2020[8]

Sources
1- MarketInsights
2- Robotics Industry Insights
3- Gartner
4- Forbes
5- Pew Research
6- McKinsey
7- KPMG US Tech Survey
8- KPMG CEO Outlook Survey

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Intelligent Automation, What is it?

Business Process Automation?

Robotic Process Automation?

Natural Language Processing?

Machine Learning?

Artificial Intelligence?

Cognitive?

Digital Labor?

Some of the Driving Forces for intelligent automation

Cost Efficiency

Estimated ROI:
40-80% cost take out for relevant functions
1 Automated FTE equivalent to 2-7 FTE
Onshore return: -10x Offshore return: -3x

Consistency & Predictability

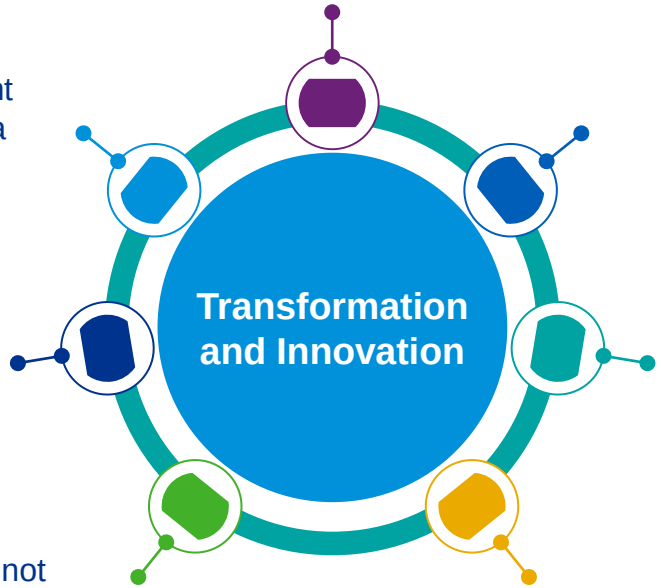
Software robots do not make inconsistent decisions. They are configured to solve a problem the same way every time.

Quality & Reliability

Software robots do what you tell them to do. When property configured they do not make mistakes and thereby eliminate human error

Productivity & Performance

Software robots work 24/7,365. They do not take vacations, get sick, suffer from work/life balance, and perform tasks at digital speed,



Scalability

Cognitive systems can learn from top company performers and quickly transfer learnings other employees. This knowledge scaling is invaluable

Employee Satisfaction

Eliminating repetitive tasks allows employees to focus on more profound strategic initiatives, increasing job satisfaction

Auditability

Software robots keep the perfect audit trail a fie built by the software that documents every action it took and the corresponding result.

Intelligent Automation Spectrum

A spectrum of technology that enables automation

Class 1
Basic Process Automation

Automation of entry-level, transactional, rule-based, & repeatable processes

Key Features					
	Macro-based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
	✓				
	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics

Example: A US-based online bank has used RPA to automate tier 1 inquiries (i.e., address change)

Class 2
Enhanced Process Automation

Technology that enables use of structured and some unstructured data to support elements of self learning

Key Features					
	Macro-based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
		✓	✓	✓	
	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics
		✓		✓	

Example: An energy company utilized all and advanced semantic reasoning to deploy a virtual service desk agent (click to chat) to rapidly understand questions, provide customers with answers, and escalate to humans if needed

Class 3
Cognitive Automation

Decision support and advanced algorithms to allow automation of processes that are more cognitive in nature

Key Features					
	Macro-based	Unstructured Data	Natural Language Processing	Knowledge Base	Adaptive Alteration
		✓	✓	✓	✓
	Predictive Analytics	Machine Learning	Reasoning	Large-scale Processing	Big Data Analytics
	✓	✓	✓	✓	✓

Example: IBM Watson's natural language processing, machine learning, pattern recognition and probabilistic reasoning algorithms are aiding skilled employees with complex decisions

2. INTELLIGENT AUTOMATION AND THE EVOLVING ROLE OF INTERNAL AUDIT

Key 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.

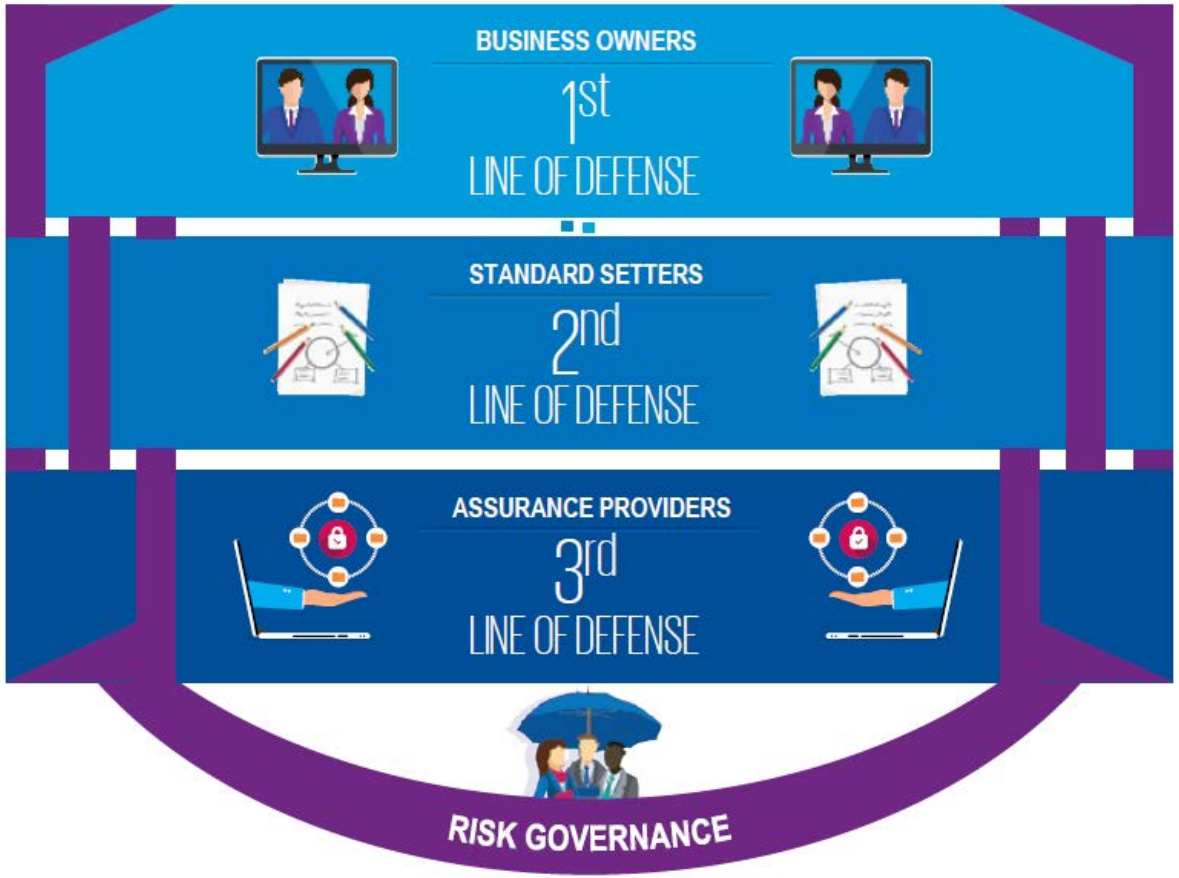
Productivity / Performance

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**.

the Internal Auditor's Role in Supporting Intelligent Automation Across All Three Lines of Defense



What are you seeing in your organization?

- Where and how is your organization considering or implementing intelligent automation?
  - First line activities?
  - Second line activities?
- Is your organization's third party outsource providers considering or implementing intelligent automation?
- Is there an opportunity to leverage an existing platform within the organization for Internal Audit's cost benefit?

Intelligent Automation Opportunities for the 1st and 2nd Lines of Defense

Enterprise functions

Human resources

- Employee on-boarding and off-boarding
- Payroll
- Time recording and compliance
- Repeatable tasks in ERP
- Email notifications
- Populating/aggregating employee information

Sales and marketing

- NLP enabled analytics
- Social media mining/ monitoring
- Predicting high value sales leads
- Manual CRM updates
- Virtual sales agents

Customer support

- Virtual agents (chat bots)
- Call center “agent assist”
- Task execution

Finance and accounting

- Month-End reporting
- Invoice processing/ exceptions
- AP/AR actions
- Close and reconcile sub-ledgers
- Asset depreciation and impairment
- Fixed asset reporting
- Financial forecasting
- Invoice validation and processing
- Tax filings

Legal/compliance

- Research/document review
- Document preparation
- Controls automation

Supply chain

- Order flow through
- Inventory Mgmt.
- Exceptions/fallout

Procurement

- Process Purchase Order
- Spend Analysis & Report.
- SLA Reporting
- Employee T&E Setup

What about risk?

- What risks do you see with your organization's intelligent automation initiatives?
  - What about your organization's third party outsource providers?
- How is Internal Audit helping management to assess these risks?

Common risk pitfalls of intelligent automation programs

As organizations implement intelligent automation programs, there are common pitfalls related to the emerging governance, risk, and control considerations related to such programs.

Understanding these potential pitfalls—and why they matter to the success of the program and organization—can help the organization develop a plan to mitigate, or even prevent, such issues.

- Undefined ownership of intelligent automation program
- General lack of oversight of risk
- General lack of program oversight
- Lack of consistent and secure development and management of bots.

- Varying skill levels and inconsistent developer training
- Lack automated alerting tools for error handling and resolution
- General lack of controls around "is the bot doing what it is supposed to be doing"

- Lack controls for proper ownership of Bot ID and effective integration of the Bot IDs with applications.
- Lack of bot accountability relating to security, privacy, and compliance requirements.
- Improper bot access provisioning and password management.

- Lack of formal process for assessing how source application changes affect Bots that access them.
- Lack formal and consistent process for requesting and implementing changes to Bots.
- Lack of segregation of RPA development and production.

Governance and Risk Management Considerations for the intelligent automation lifecycle

PLAN THE BOT – CONSIDERATIONS

- Ownership and accountability of bots
- Identification of impacted regulatory requirements and privacy considerations
- Risk and governance committees
- Organizational and people change management
- Program management

BUILD THE BOT – CONSIDERATIONS

- Understanding the nature of the data the bots access and their interaction with applications
- Helping ensure bots are developed to specified requirements and secure coding practices and tested
- Principles of “least privilege” for logical access/layered security model
- Secured authentication and encrypted communication channels
- Skills, capabilities, and training

MANAGE THE BOT – CONSIDERATIONS

- Business continuity and disaster recovery
- Monitoring and error handling
- Auditing, logging, and traceability
- Processing integrity
- Skills, capabilities, and training
- Vendor risk management

3. OPPORTUNITIES TO LEVERAGE INTELLIGENT AUTOMATION IN INTERNAL AUDIT

Examples of Scoping Areas for Internal Audit

- **Risk Assessment**
- **Planning and scoping**
- **Testing**
- **Reporting**
- **Remediation monitoring**
- **Audit management/PMO**
- **Engagement administration**

Automating the Internal Audit Methodology

Example Areas for Automation Opportunity:

Strategic Analysis	▪ Automated strategic analysis reports ▪ Monitoring of strategic KPIs		
Risk Assessment	▪ Continuous Risk Assessment ▪ Control Self-Assessment		
Planning	▪ SOX Scoping ▪ Process flowchart and narrative creation and updates	▪ Lead sheet generation ▪ PBC management & reporting	
Execution	▪ A/R Aging ▪ Bank reconciliations ▪ Account reconciliations ▪ Credit card account reconciliations (Banking) ▪ Nightly settlement reports (Banking) ▪ Financial and disclosure statement tie-out ▪ Monthly consolidation and elimination entries ▪ Franchise and management fee audits	▪ Records management audits ▪ Data analytics-enabled applications ▪ Sales and use tax processing ▪ Officer expense reviews ▪ Cash transfers ▪ IPE / spreadsheet testing ▪ Lease to rent rolls & percent rent re-calculation (Real Estate)	▪ Borrowing reconciliations ▪ Loan reviews (Banking) ▪ SOC1 report evaluation ▪ Multi-location audits ▪ Automation monitoring ▪ Contract compliance ▪ Vendor audits
Reporting and Continuous Improvement	▪ Visual-based audit report and findings generator ▪ Status reporting ▪ GRC tool integration		

Intelligent Automation impact to SOX

Understanding intelligent automation in SOX

Increased focus on internal controls over financial reporting is intersecting with the increase of automation. Companies are continually looking for ways to automate formally manual, time intensive, arduous processes tasks or controls. As automation increases, companies need to think through:

1	Does my scoping of key financial systems include tools/transformation technologies ?
2	How are underlying, general IT controls changing to address new technology platforms ?
3	How is automation impacting business process controls and reports relied upon by management ?
4	If new automated controls are identified has the company identified the appropriate test procedures to address and understand the system complexity and logic?

4. GETTING STARTED WITH INTELLIGENT AUTOMATION

How should a Leader begin the automation journey?

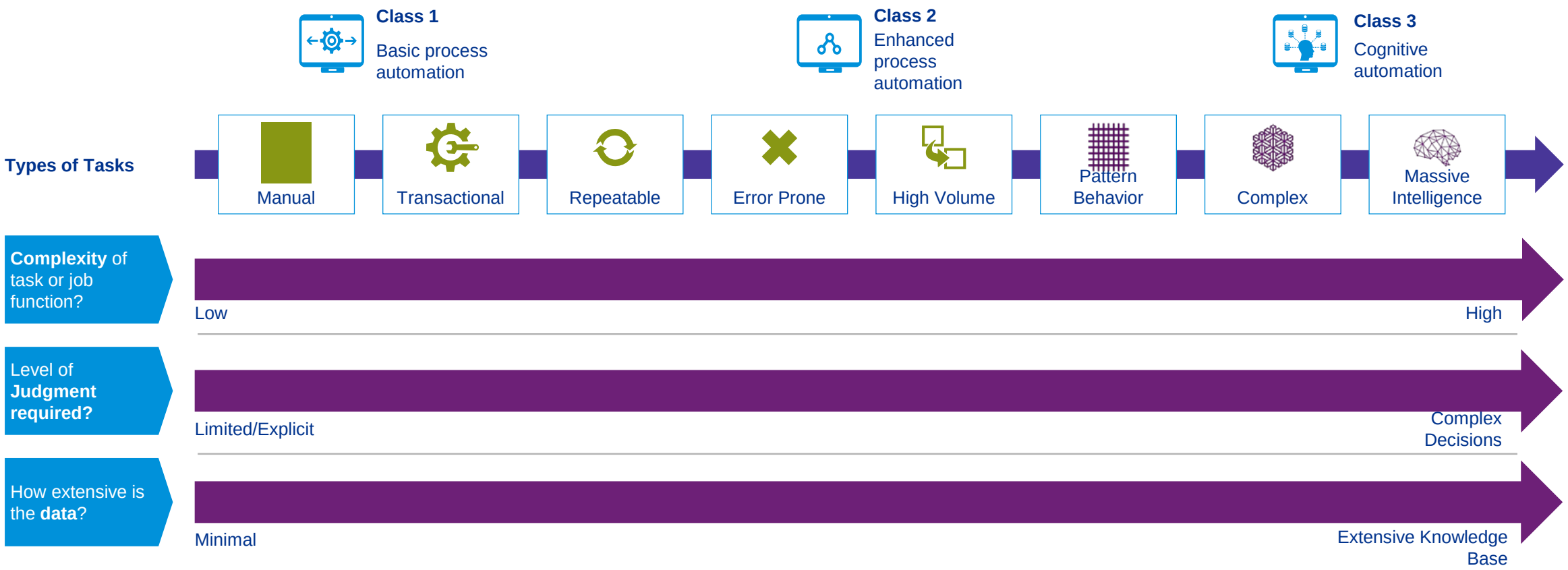
Outlined below is a high level guide a leader can utilize to begin the automation journey.

- **Identify and prioritize the potential use cases for automation**
- **Develop a multifaceted strategy and roadmap for implementing automation in the organization**
- **Select the right providers and partners to assist with the automation journey and roadmap**
- **Establish a governance strategy (risk security and compliance) to help oversee the automation program and ensure benefits expected are realized**
- **Establish a change management strategy to ensure effectiveness of adoption of automation throughout functions**

Possible factors to consider for use case identification

- Maturity level and complexity of existing Risk Assessment, Planning, Testing, Reporting and Project Management processes
  - Existing audit tools in use
- Types (structured, unstructured, semi-structured), quality (paper, electronic, digital) and access to data to be used by Internal Audit?
- Maturity and complexity of the control environment
  - Total number of controls
  - Entity level versus process level
  - IT versus Business Process controls
  - Number of manual, semi-automated, automated
  - Controls stability level
  - Languages used in documentation / evidence
- Complexity and stability of business processes
- Number and complexity of IT systems

Identifying Intelligent Automation Use Cases



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QUESTIONS AND ANSWERS?

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Thank you St. Louis ISACA!

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