Hyperautomation and Autonomous Driving Network

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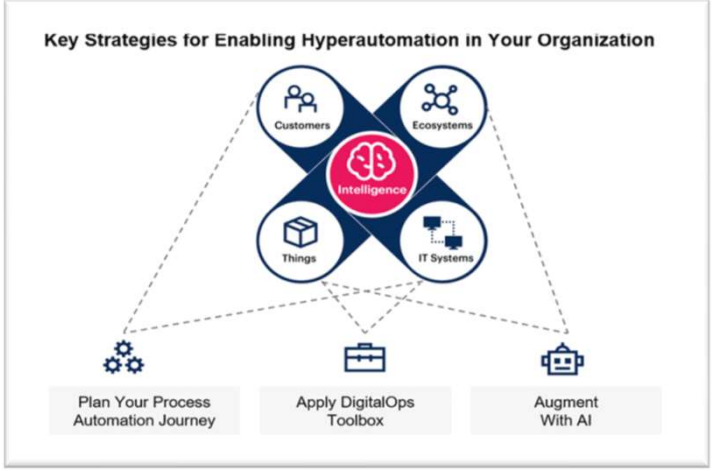
08/24/2020

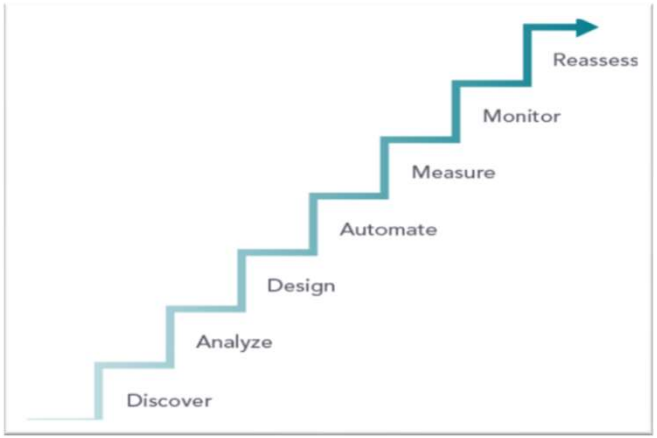
Outline

- What is Hyperautomation ?
- Why Hyperautomation becomes a buzz word
- Hyperautomation technology components
- How ADN relate to Hyperautomation
- How to utilize Hyperautomation for ADN MO promotion.

What is Hyperautomation?

- #1 in Gartner's list of Top 10 Strategic Technology Trends for 2020.
- Hyperautomation is a defined strategic approach to maximize the potential for automation in any enterprise.
  - Gartner predicts by 2024, organizations lowers OPEX by 30% because hyperautomation.
- Hyperautomation is also being viewed as the description of the next-generation of automation using AI, machine and deep learning to mimic more human-like decision-making.



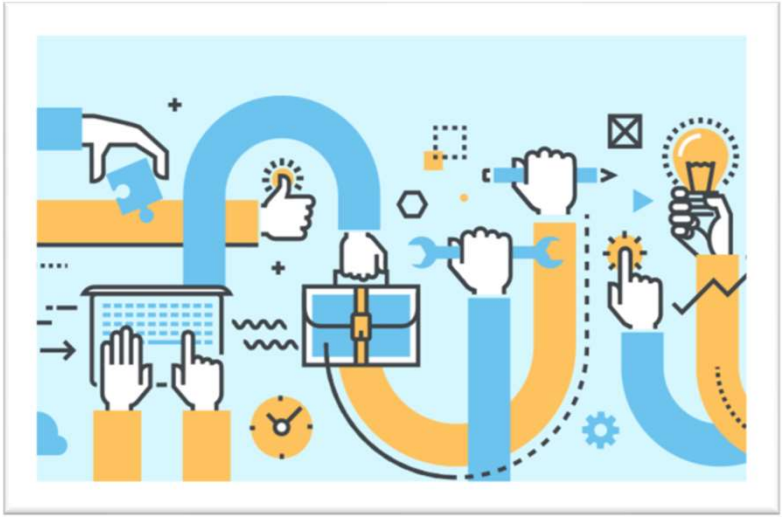


Compare with automation, hyperautomation

- Promotes more strategic and holistic approach for automation
- Has more breadth
  - More automation scenarios
  - Even for the cases that required no-structure data and decision making.
- Has more depth
  - Higher automation levels
  - Bigger end-to-end closed loop

Why Hyperautomation becomes a buzz word

1. **We have problems**
   - Enterprise automation journey stuck because :
     - Horizontally
       - Difficult and time consuming to find suitable automation scenarios.
       - Difficult to scale up quickly
     - Vertically
       - High value automation cases not be able to automate
       - Semi-structure and No-structure data
       - Required intelligent decisions.
   - Slow ROI due to piece meal automation approach.
   - Change Management
     - Too rigid to meet the demand of dynamic business requirements.
2. **We need a solutions that can automate**
   - More processes,
   - More rapidly
   - Better result
   - More ROI
   - Better HMI (Human Machine Interface)



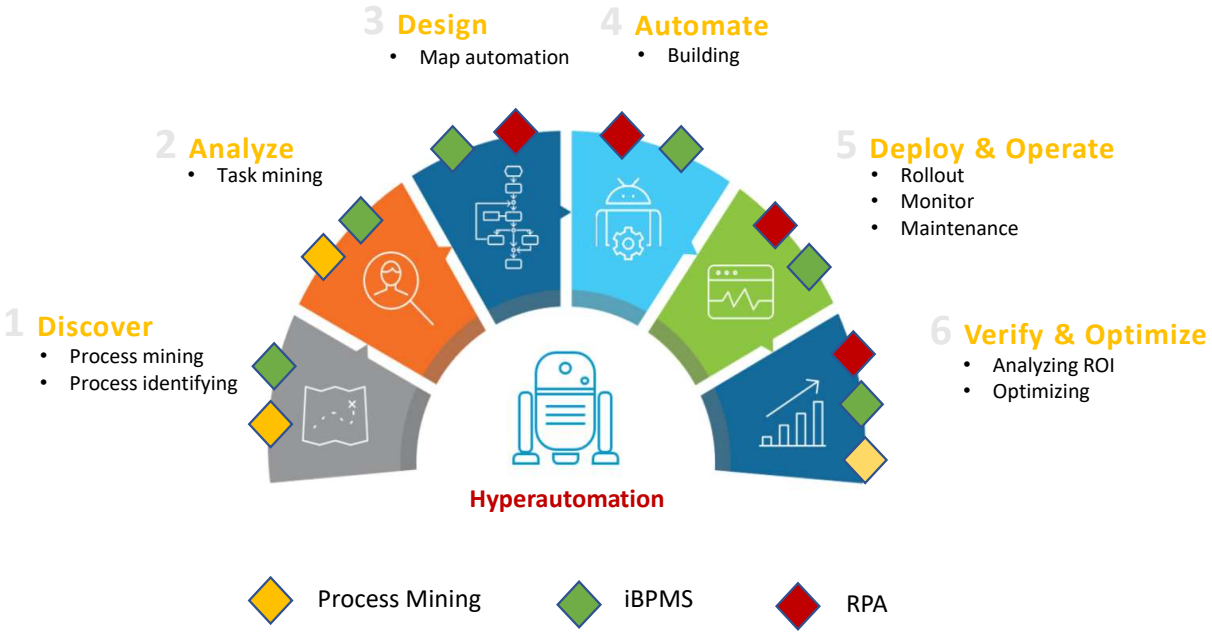
No single tool can meet the requirement. Need to brining different tools, technologies and techniques together

3. **The solution --- Integrated Platform**
   - Technology + People + Processes collaboration
   - AI/ML infusion
   - Technology collaboration in various stage of automation journey

Hyperautomation Technology Component Overview

Hyperautomation Technology Components:

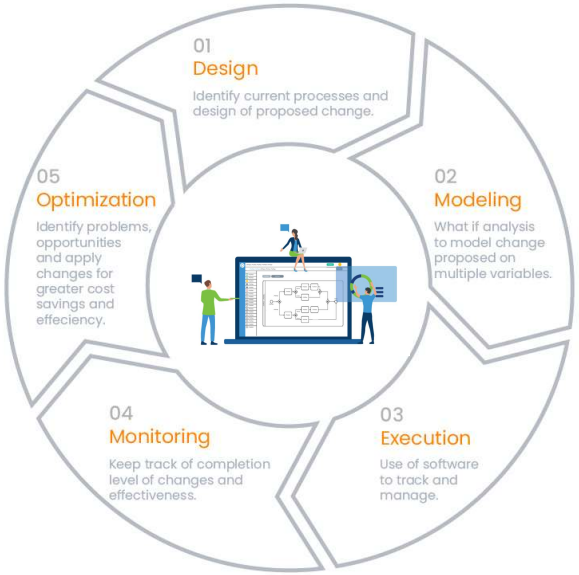
- Process automation tool
- Process discovery tool
- AI
  - Computer vision
  - OCR (Optical character recognition)
  - NLP (Nature Language Processing)
  - Sentiment Analysis
  - Pattern Recognition
- Empower everyone to get involved and benefits from it
  - SME
  - IT teams
  - Business Analysts
  - User
- Human-machine collaboration
  - Augment human ability with software robots
    - Repetitive tasks
    - Intelligent level
  - Robot Delegation to Human
    - Streamline the process
- Continue improvement effort
  - Powerful insight
    - Actual process flow
    - Heatmap
    - Gap identification

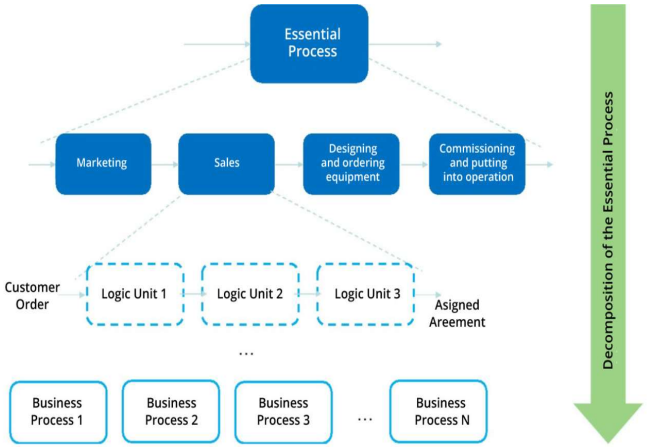


All the business process involved :

- all the actions taken by the people involved,
- all of the data moving through the systems involved.

iBPMS (Intelligent Business Process Management Suite)





Market leaders: Pegasystems, Appian, IBM

BPMS creates, edits, analyzes and optimize core business process.

iBPM is extension of BPM with extension of
- Strong Analytics and AI/ML Infusion
- Cloud
- Mobile

Technologies and delivers
- Ease of use
- Enterprise-grade performance
- Agility for dynamic business environment

Artificial Intelligence (AI) and/or like cloud and mobile capabilities.

Roles in Hyperautomation

1) Consolidate integration services, decision management, process orchestration, ad-hoc processes and advanced analytics into a single platform.
2) Many business operations already been modeled by BPMS
3) Top level operation process that integrate tasks, human, resources. Especially important for bigger loop end to end process automation.

Process Mining -- Leveraging Data to Understand Processes

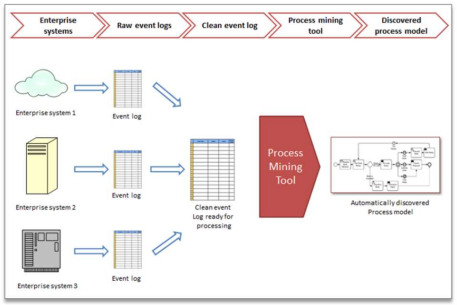
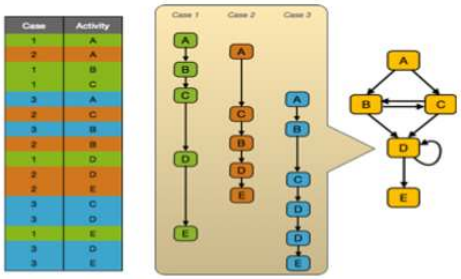


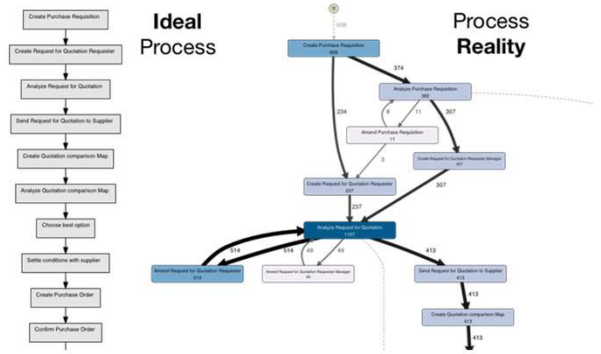
Figure 1: Process discovery from events logs

Process mining allows you to analyze business processes according to an event log.

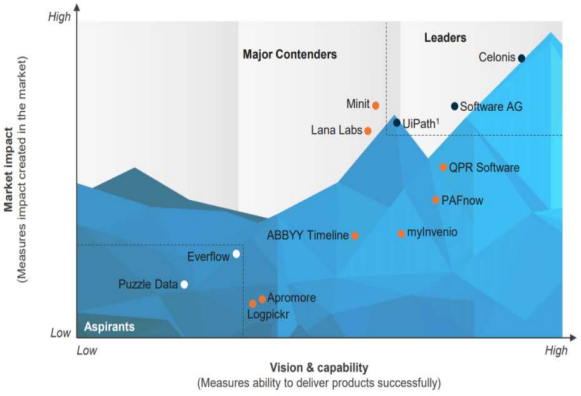
3 Product purchase process example :
A—order, B—pay, C—ship, D—invoice



Applies data mining algorithms to the data in this registry to identify patterns and trends.



Process mining shows the process reality based on actual data.



Source: Everest Group Process Mining Products PEAK Matrix Assessment 2020

- Market Leaders: Celonis, Software AG, UIPath
- Provides a digital visualization of the operations
- Both cloud and on-premise
- Can handle 100+mil events
- Ready-to-use process analysis templates

Roles in Hyperautomation

1) Quickly broaden automation scenarios.
2) Identify the gap between ideal process and reality for improvement and optimization.

Task Mining – Leverage User Interactions to Understand Process

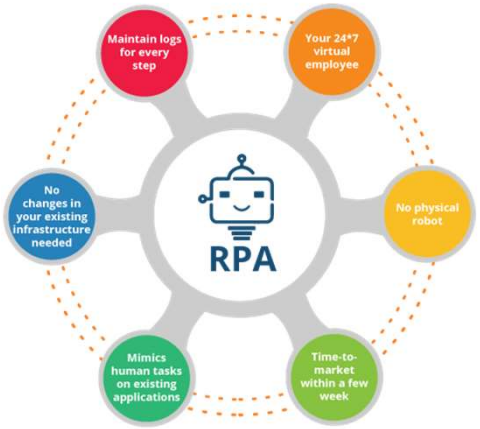
- Capture user interaction data and analyze the data in the context of the business process.
- Process mining + Task mining provide a full picture how a process being completed and the interaction with involved system.
- Process software normally combines both capabilities.

Roles in Hyperautomation

1) Details the operation process execution with user interaction details. Provide details of operation process visualization.
2) Identify scenarios for RPA automation

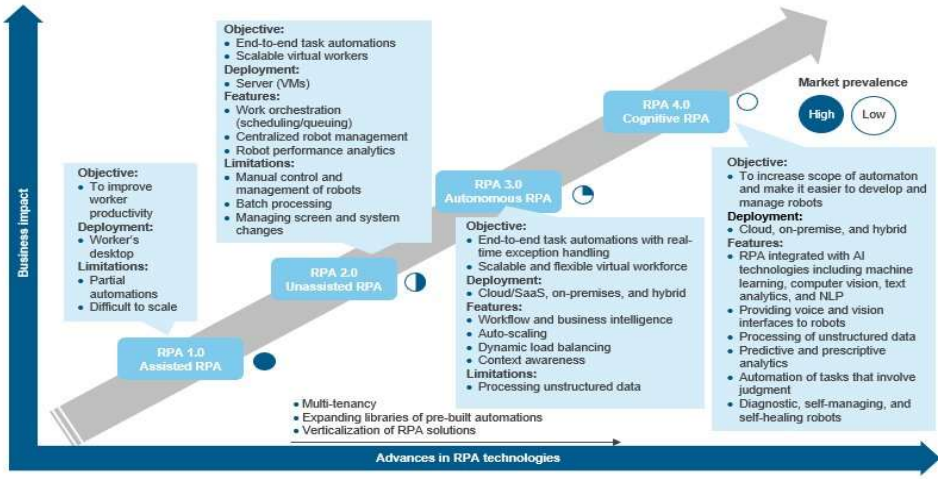
RPA (Robotic Process Automation) – Automate via GUI Interactions

Software bot automates GUI operation steps by mimicking human, and completes the same task without human intervention .



Market leaders: Automation Anywhere, UiPath, Blueprism

Rank	Overall HFS Top 10 position	Execution				
		Scale	Functionality and ease of use	Implementation, service, and support	Security, governance, and controls	Overall execution
#1	Automation Anywhere	blueprism	KRYON	blueprism	blueprism	blueprism
#2	UiPath	Automation Anywhere	UiPath	UiPath	Automation Anywhere	UiPath
#3	blueprism	UiPath	Automation Anywhere	Automation Anywhere	UiPath	Automation Anywhere
#4	WorkFusion	PEGA	blueprism	WorkFusion	edgeverve	WorkFusion



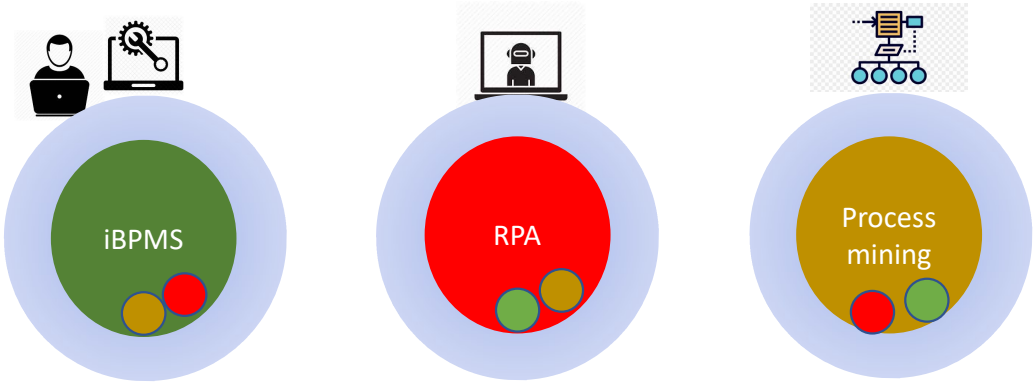
Roles in Hyperautomation

1) Able to automate steps via GUI interactions
2) Minimum impact to existing systems.
3) Quick to show result
4) With AI infusion, can handle semi-structure and no structure data.

Process mining + Task mining + RPA Examples

- Use process mining to find RPA automation candidate example
- Use processing mining optimize RPA example

Everybody Wants to be the “Integrated Platform”.



Recent acquisitions

	RPA	Process Discovery
IBM	WDG Automation	
Microsoft	Softomotive	
SAP	Contextor SAS	
Appian	Novayre Solutions	
UiPath		Process Gold
Celonis	Banyas	

HFS Predicts: RPA is dead. Long live Integrated Automation Platforms

How AN Relates to Hyperautomation

Perspective 1: Hyperautomation as the higher automation level enabled by AI

Coverage:

- Hyperautomation has broader range, covers the automation for all aspects of an enterprise.
- AN focuses on automation in the network service production, commerce and collaboration areas.
- AN enables enterprise-wise hyperautomation.

Automation level definition:

- Hyperautomation has no clearer definition of automation level.
- AN has clearer definition with 6 levels of automation levels.
- AN tries to achieve higher automation level than general hyperautomation because its autonomy concept. Autonomy emphases the "observe-react" capability which is beyond simple workflow.

Perspective 2: Hyperautomation as an approach and technology stack to achieve higher level automation.

Methodology:

- Hyperautomation methodology directly applies to AN development.
  - Holistic view
  - End to end

Technology stack:

- Hyperautomation technology stacks compliment with AN technology stacks.

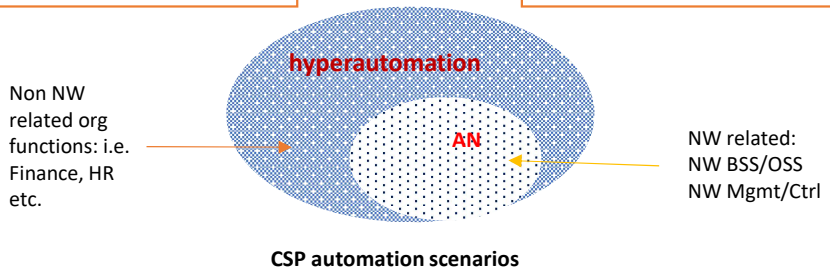
  RPA for AN : Actuator, inter-system integration, increase AN level.

  Process Mining for AN: Identify and Optimize Network O&M automation scenario candidate

  iBPMS for AN: Orchestration of large closed-loop, human interaction.

  AI: semi-structure and no-structure data.

AN will be achieved faster and better with for the organization with hyperautomation technology stacks.



CSP automation scenarios

Utilize Hyperautomation for AN MO promotion

- For CSP, No Hyperautomation without AN.
- AN Enables CPS Hyperautomation
- Hyperautomation approach and technology stack accelerates the realization of AN.
- Hyperautomation is paramount steppingstone for AN.
- A Hyperautomation-ready CSP has more chance to achieve higher level of AN.
- AN a fundamental building block to build hyperautomation loop that involved network.

ANWare Needs to Be Hyperautomation-ready

- RPA plug-ins for easy automation process discovery
- Workflow based actuator actions
- Interfaces to Hyperautomation tools.
- Cloud base

Discussion