LECTURE 01A.
RPA. UIPATH PLATFORM

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Business Process. Definition

- A **Business Process** is
  - a series of steps or **activities** performed by (a group of) stakeholders to achieve a **meaningful goal**;
- E.g.:
  - generate an invoice;
  - monitor an e-mail account;
  - extract data from PDF files;
  - a tea method making;
  - a specific/favorite dish;
  - etc.
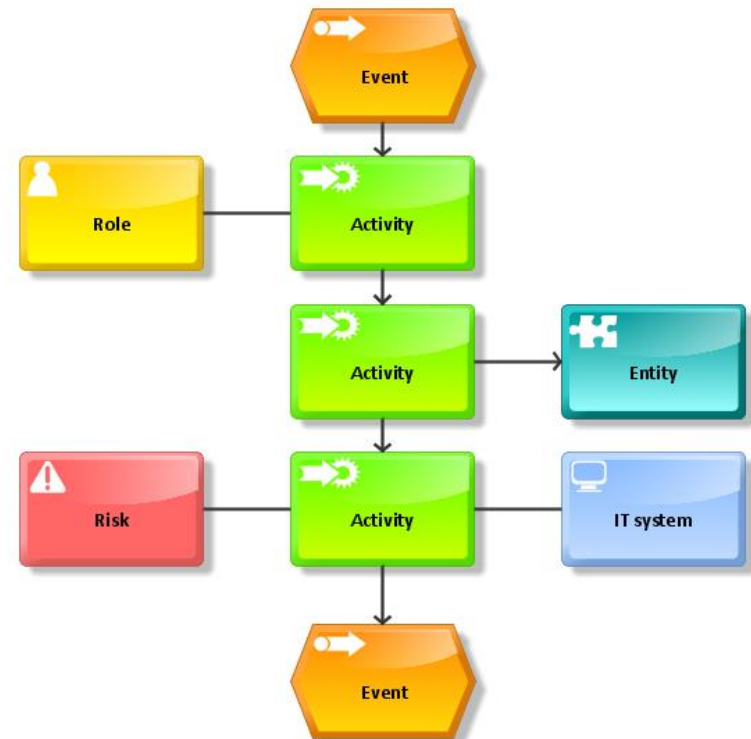
Automated Processes. Characteristics

• Processes that may be automated are:

  • **Highly manual;**

  • **Repetitive;**

  • **Rule-based;**

  • **Low exceptions rate;**

  • **Standard readable electronic input;**

  • **High volume of data;**

  • **Mature and stable.**

Robotic Process Automation. Definition

- **Robotic Process Automation (RPA)**
  - **Robotic -** Robotic entities, i.e., (software) robots, **imitates human actions**;
  - **Process -** a series of actions that lead to significant work or a meaningful result;
  - **Automation -** any activity performed **without human intervention** by a robot.

- **RPA is**
  - **the technology used to automate processes or tasks performed by humans**;

- RPA emerges from business process automation (BPA) technology;
- A **software robot** is
  - a *software the automates software use.*

RPA. Benefits

- **RPA advantages are:**
  - **Rapid ROI (return on investment);**
  - **Enhanced processed;**
  - **Better customer experience;**
  - **Eliminated repetitive work;**
  - **Improved service delivery;**
  - **Enhanced ability to manage;**
  - **Cost reduction;**
  - **Insights and analytics;**
  - **Non-invasive technology;**
  - **Increased compliance;**
  - **Scalability and flexibility.**
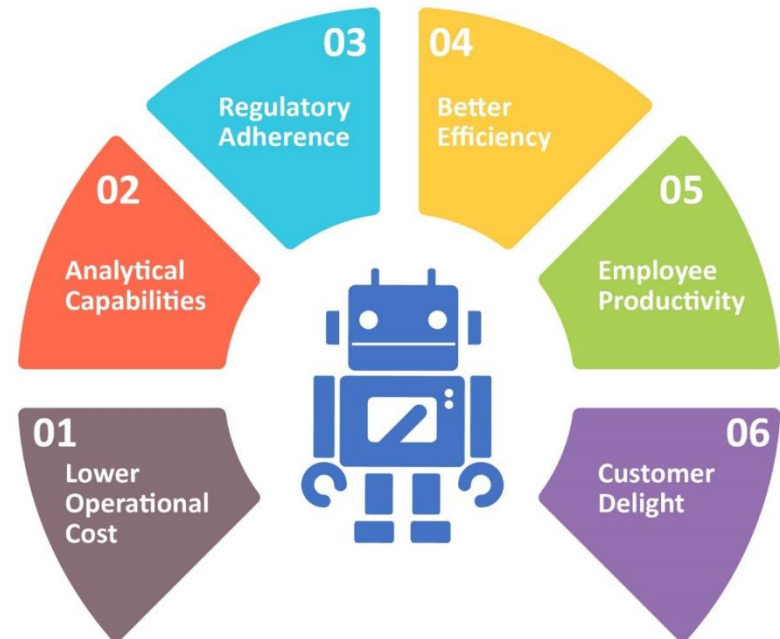
Software robots take over the non-value-added tasks performed manually by humans, while they become virtual managers that monitor the robots and handle the exceptions.
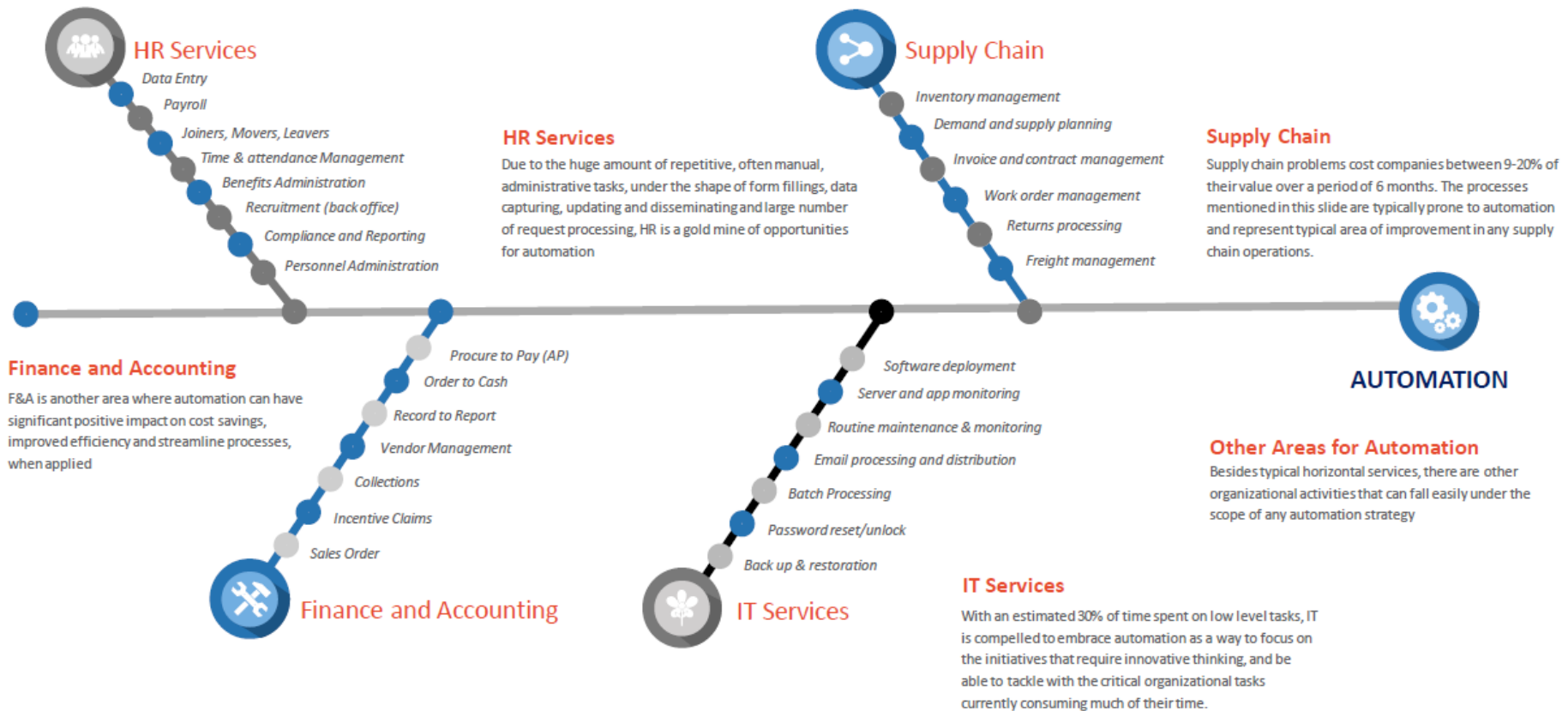
RPA. Applications (1)

	FINANCE AND ACCOUNTING	PROCUREMENT	HUMAN RESOURCES	CONTACT CENTER	INDUSTRY SPECIFIC PROCESSES	
BANKING	High	Medium	Medium	Medium	High	Cards activation Frauds claim discovery
INSURANCE	Medium	Low	Low	Medium	High	Claims processing New business preparation
HEALTHCARE	Medium	Medium	Medium	Medium	High	Reports automation System reconciliation
MANUFACTURING	High	Medium	Medium	Low	Low	Bills of Material generation
HI-TECH&TELECOM	Medium	Medium	Low	Medium	Medium	Service order management Quality reporting
ENERGY&UTILITIES	Medium	Medium	Medium	Medium	Medium	Account setup Meter reading validation
	Accounts receivable, Accounts Payable, General Ledger	Invoice processing, from requisition to issue of purchase order	Payroll, hiring, data management	Customer service		

Legend:
RPA
ADOPTION
EXTENT
- High
- Medium
- Low

RPA. Applications (2)

Processes Every Company Should Automate

HR Services
- Data Entry
- Payroll
- Joiners, Movers, Leavers
- Time & attendance Management
- Benefits Administration
- Recruitment (back office)
- Compliance and Reporting
- Personnel Administration

HR Services
Due to the huge amount of repetitive, often manual, administrative tasks, under the shape of form fillings, data capturing, updating and disseminating and large number of request processing, HR is a gold mine of opportunities for automation

Supply Chain
- Inventory management
- Demand and supply planning
- Invoice and contract management
- Work order management
- Returns processing
- Freight management

Supply Chain
Supply chain problems cost companies between 9-20% of their value over a period of 6 months. The processes mentioned in this slide are typically prone to automation and represent typical area of improvement in any supply chain operations.

Finance and Accounting
F&A is another area where automation can have significant positive impact on cost savings, improved efficiency and streamline processes, when applied

- Procure to Pay (AP)
- Order to Cash
- Record to Report
- Vendor Management
- Collections
- Incentive Claims
- Sales Order

Finance and Accounting

- Software deployment
- Server and app monitoring
- Routine maintenance & monitoring
- Email processing and distribution
- Batch Processing
- Password reset/unlock
- Back up & restoration

IT Services

AUTOMATION

Other Areas for Automation
Besides typical horizontal services, there are other organizational activities that can fall easily under the scope of any automation strategy

IT Services
With an estimated 30% of time spent on low level tasks, IT is compelled to embrace automation as a way to focus on the initiatives that require innovative thinking, and be able to tackle with the critical organizational tasks currently consuming much of their time.

RPA. Capabilities

- RPA systems need to provide the followings:
  - **Communication with the other systems:**
    - **screen scrapping or**
    - **API integration;**
  - **Decision making;**
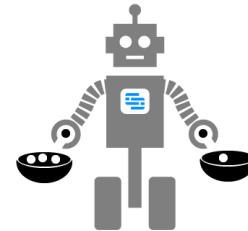 - **Interface to enable robot programming.**
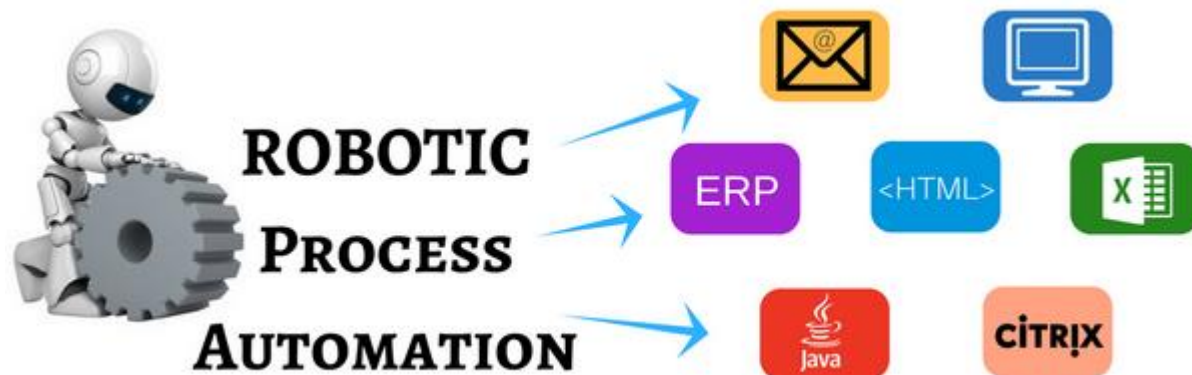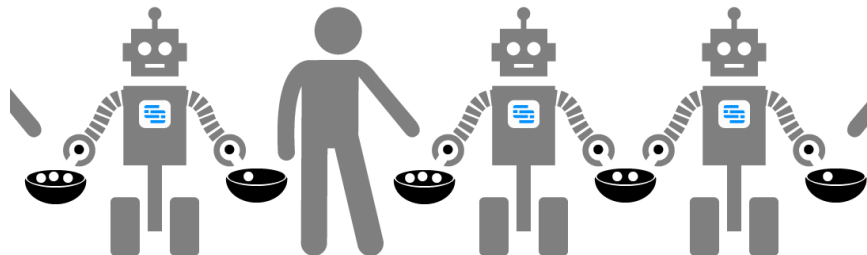
RPA. Type of Robots

- RPA systems need to provide the followings:
  - **Attended** – require human intervention while performing the automated process;
  - **Unattended** – possess decision-making capabilities.
  - **Hybrid RPA** – have combined capabilities of both attended and unattended robots.
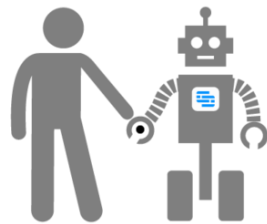
Attended Bot Automation

Unattended Bot Automation

Hybrid Automation

RPA. Tools

- Tools used in RPA:
  - **UiPath;**
  - **Blue Prism;**
  - **Automation Anywhere;**
  - **Inflectra Rapise;**
  - **Pega;**
  - **Contextor;**
  - **Nice Systems;**
  - **Kofax;**
  - **Kryon;**
 - **Softomotive.**

RPA. Implementation Scenarios

- RPA implementation scenarios:
  - **Tool focused:**
    - *License/tool* – the **client purchase the RPA tool license**;
    - *Implementation* – led by the client;
    - *Support* – technical for the RPA tool (optional);
  - **Assisted implementation:**
    - *License/tool and implementation* – the client can involve a **consultancy partner** to provide a seamless RPA implementation;
    - *Support* – for organizational transition and knowledge transfer (KT) is ensured;
  - **As a Service:**
    - *License/tool, implementation and support* – the client buys the **RPA solution as a service**; the service provider takes the responsibility of the entire implementation;
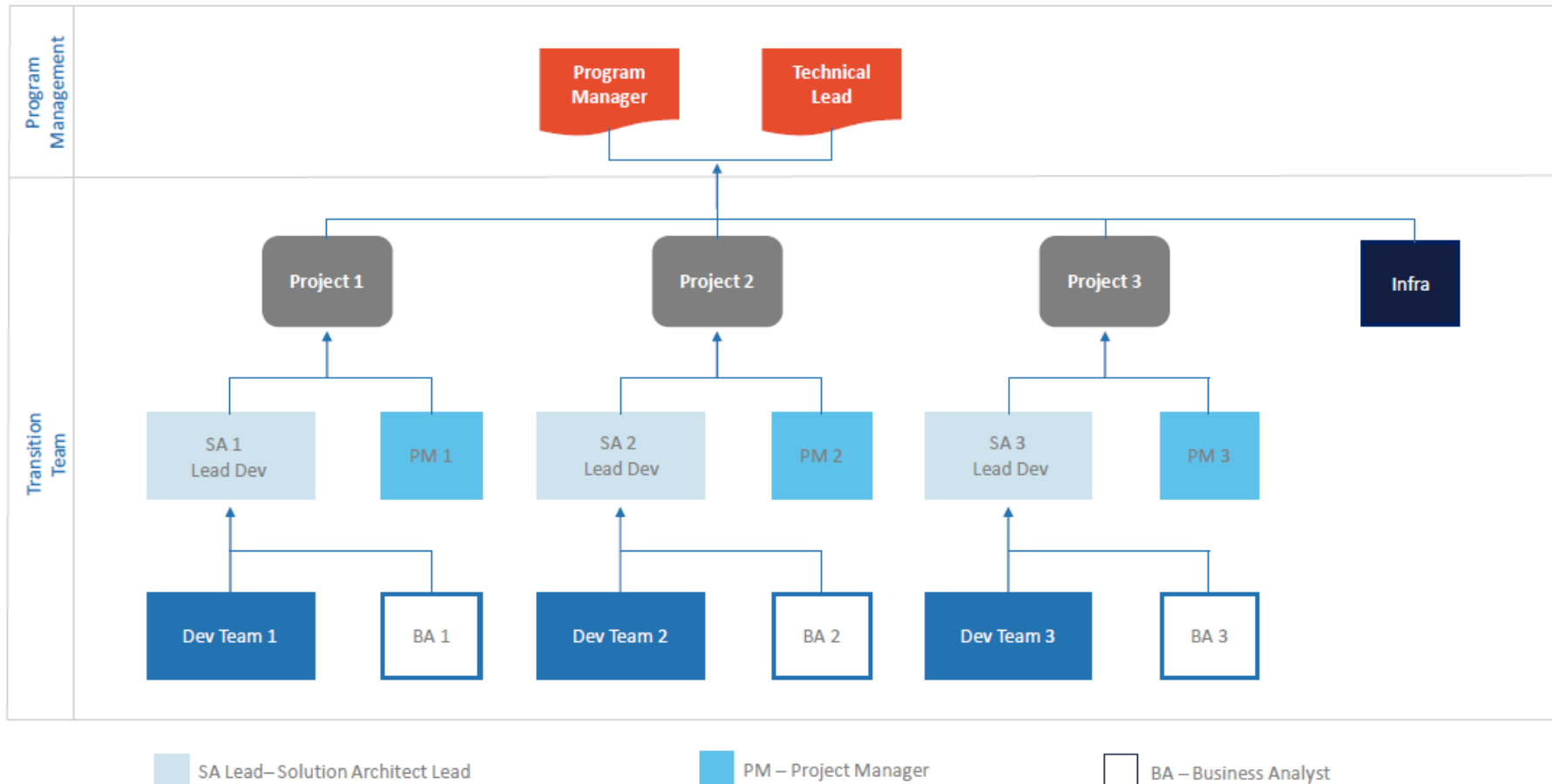   - **The client focuses on the business value added by using the RPA solution.**
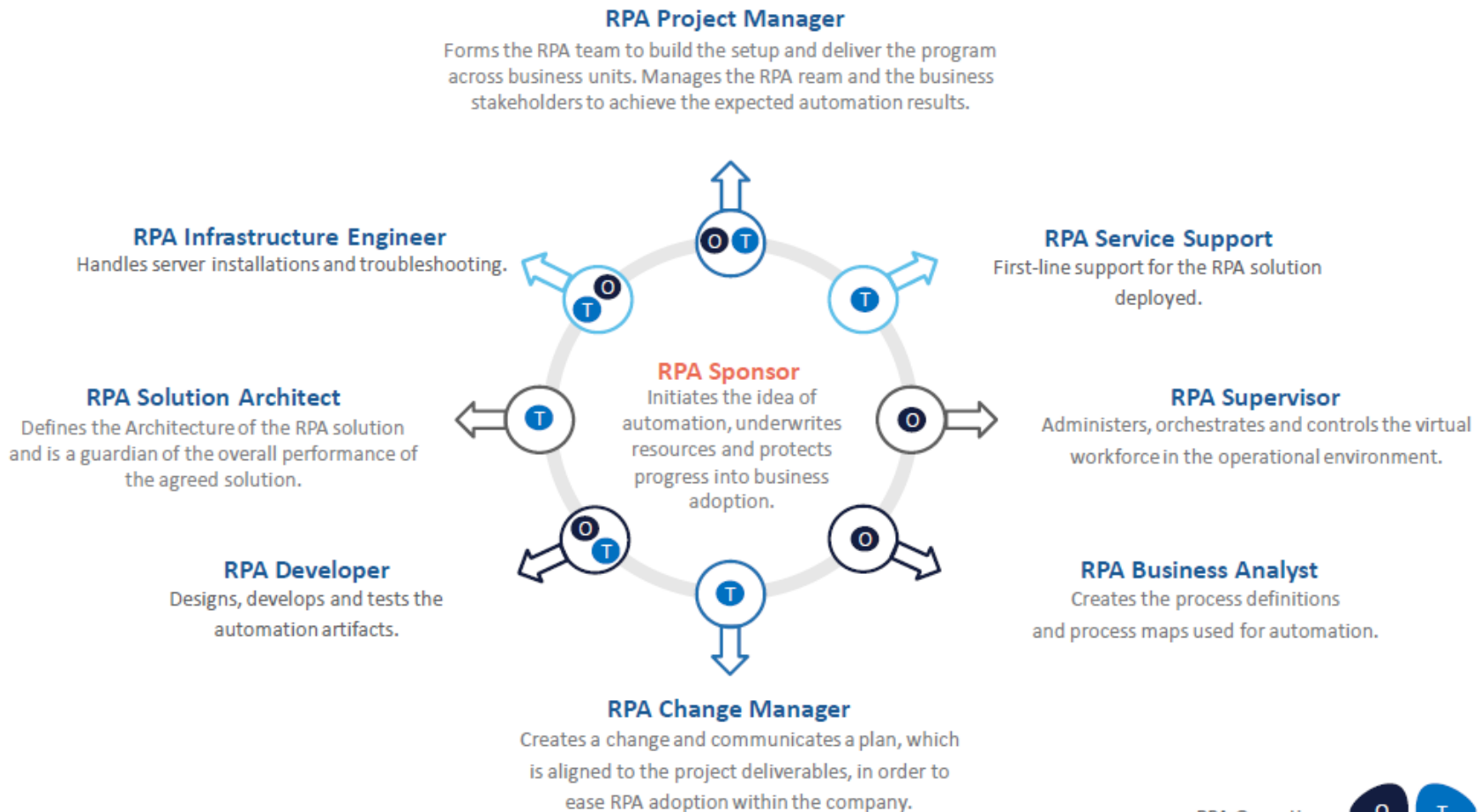
RPA. Challenges for Implementation
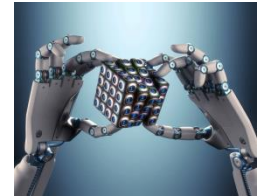
- RPA implementation roadblocks:
  - **Service delivery:**
    - *poor service quality*, i.e., weak RPA solution implementation and lack of performance management;
    - service providers resistant to change;
    - *solution:* organizational management procedures may overcome this challenge;
  - **Culture:**
    - *Resistance to change from employee* - the existing fear among employees that robots may eliminate them and take over their jobs;
    - **Automation is perceived as de-personalization of a service;**
    - *Solution: employee sensitivity and cultural specifics needs to be addressed at management level;*
    - Employees need to be self aware of the importance of automation that will allow them to perform more value-added services and eliminate repetitive tasks;
  - **Documentation:**
    - *organization relies on highly manual processes and processes are not standardized and optimized;*
    - processes may not be well documented;
    - exceptions not mentioned and their handling steps and rules are not mentioned ==> their **automation is difficult** and **time-consuming**;
    - *solution:* operational management procedures may overcome this challenge;
  - **Lack of buy-in:**
    - *no key stakeholders to buy the RPA implementation;*
    - *Solution:* the need to institutionalized sponsor to drive the RPA within the organization;
    - *poor knowledge on automation from the client perspective ==> low benefits from the RPA solution bought.*
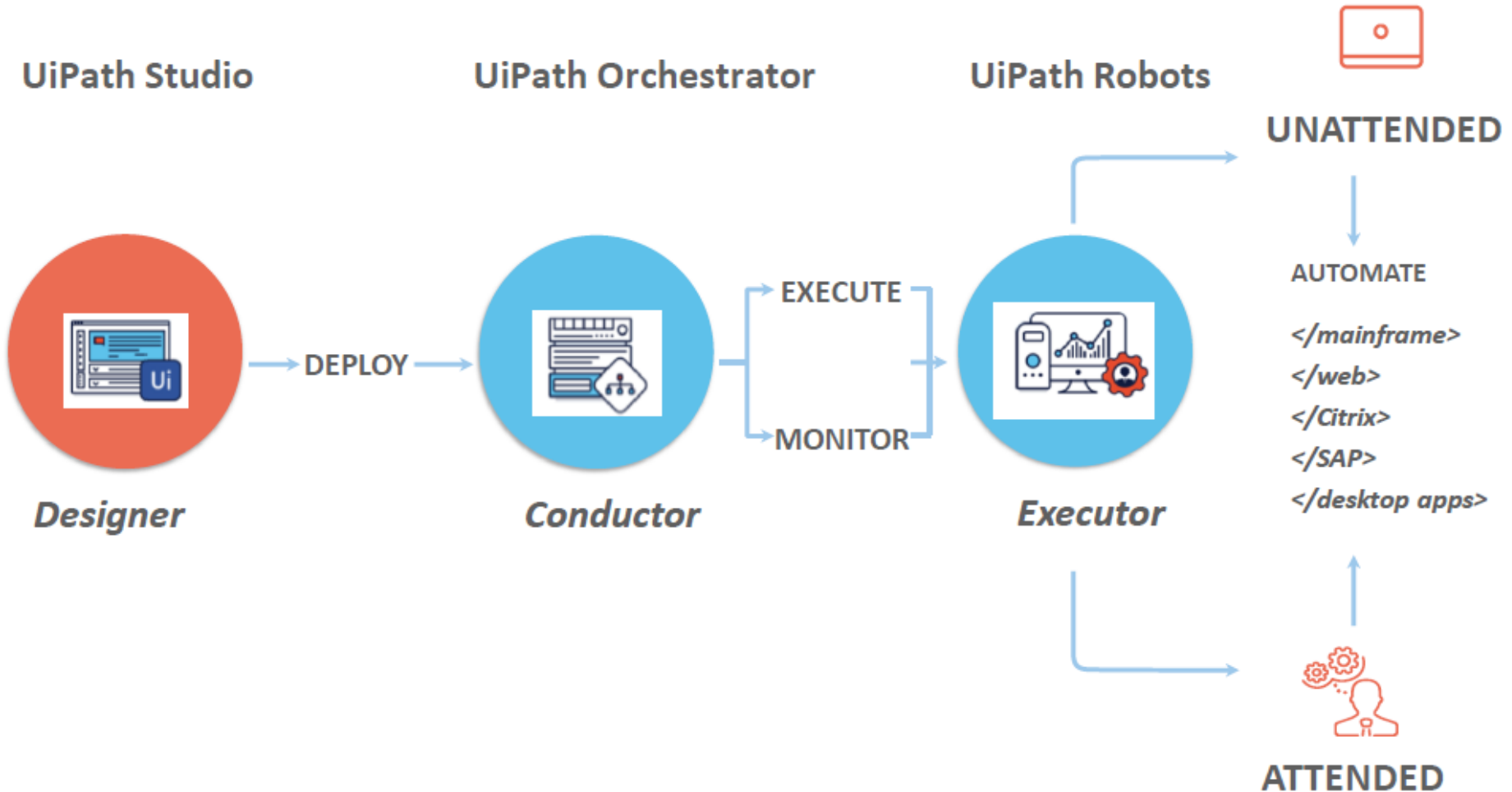
RPA. Project Team Structure

RPA. Robotic Operating Team

RPA Project Manager
Forms the RPA team to build the setup and deliver the program across business units. Manages the RPA ream and the business stakeholders to achieve the expected automation results.

RPA Infrastructure Engineer
Handles server installations and troubleshooting.

RPA Service Support
First-line support for the RPA solution deployed.

RPA Solution Architect
Defines the Architecture of the RPA solution and is a guardian of the overall performance of the agreed solution.

RPA Sponsor
Initiates the idea of automation, underwrites resources and protects progress into business adoption.

RPA Supervisor
Administers, orchestrates and controls the virtual workforce in the operational environment.

RPA Developer
Designs, develops and tests the automation artifacts.

RPA Business Analyst
Creates the process definitions and process maps used for automation.

RPA Change Manager
Creates a change and communicates a plan, which is aligned to the project deliverables, in order to ease RPA adoption within the company.

RPA Operations O T RPA Transitions

UiPath Platform. Components

UiPath Platform. UiPath Studio

- **UiPath Studio:**
  - a design tool that allows to create the diagrams of business processes;
- it is similar to Microsoft Visio;
- it combines:
  - **.NET platform** (stable, highly flexible, modular) and
  - **Microsoft Workflow Foundation**
    - for fast and reliable process automation;

- it allows to create workflows by drag-and-drop actions;
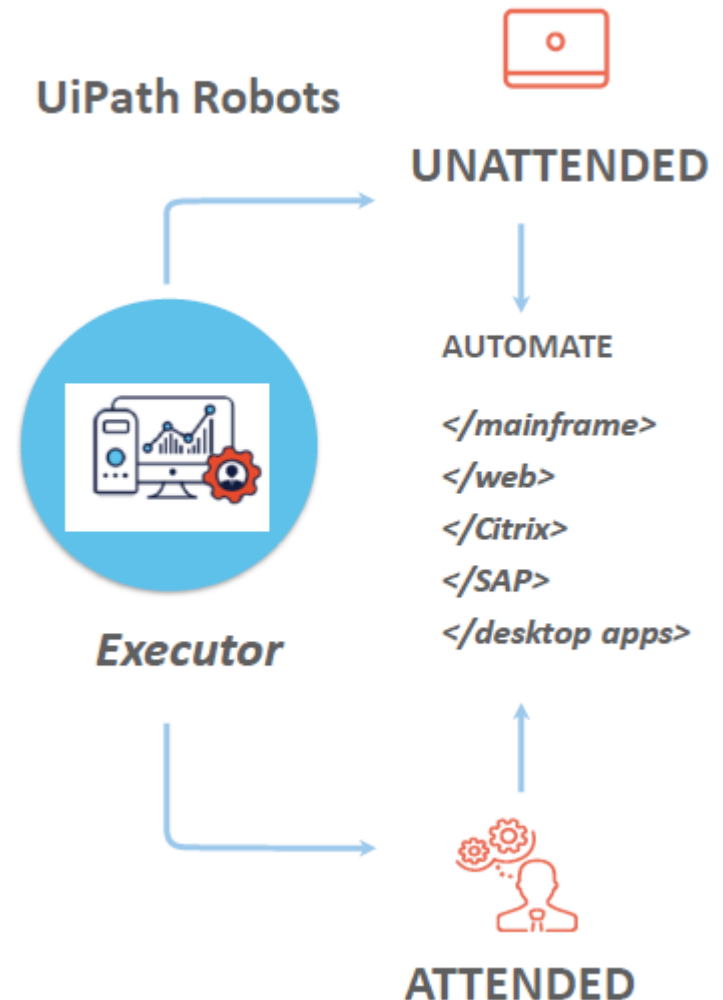- the projects are executed locally by using the **Start** button.

UiPath Studio

Designer

UiPath Platform. UiPath Robots

- **UiPath Robots:**
  - allows to perform the processes designed in UiPath Studio, similar to a human user in the real world;
- **two type of robots:**
  - **attended;**
  - **unattended;**

UiPath Robots

UNATTENDED

AUTOMATE

</mainframe>
</web>
</Citrix>
</SAP>
</desktop apps>

Executor

ATTENDED

UiPath Platform. Types of Robots

ATTENDED ROBOT

- Assists human operators.
- Triggered manually and running locally.
- Fit for manual, repetitive, rule-based activities, requires human intervention.
- Communication with Server: bi-directional (restricted).
- - Robot to Server: Execution logs,
- automated process upload.
- - Server to Robot: Automated process
- version deployment ONLY.

Features:
- Process management (automatic process update/rollback)
- Agent assisted mode
- Centralized logging, reporting and auditing tools.

FO

UNATTENDED ROBOT

- Doesn't require human intervention.
- Triggered and running remotely.
- Fit for manual, repetitive, rule-based back office activities NOT requiring human intervention.
- Communication with Server: bi-directional (unrestricted).
- - Robot to Server: Execution logs,
- automated process upload, robot status
- - Server to Robot: Automated process
- version deployment, schedule, start,
- reset
-

Features:
- Process management (automatic process update/rollback)
- Asset management
- Centralized logging, reporting and auditing and monitoring

BO

UiPath Platform. UiPath Orchestrator

- **UiPath Orchestrator:**
  - performs the **management** and the **scheduling** of **attended robots**;
- it is a web-based management platform which provides:
  - remote robot control and monitoring capabilities;
  - release management and centralized scheduling methods for robots and processes;
- the centralized **work queues** functionality facilitates

the *human-robot collaboration* and *business exception handling*.

UiPath Orchestrator

Conductor

References

- UiPath Academy - https://academy.uipath.com
  - **Awareness Training;**
  - **Level 1 – Foundation Training;**
- UiPath Docs - https://docs.uipath.com/studio