

# MASTER OF SCIENCE IN APPLIED INFORMATICS

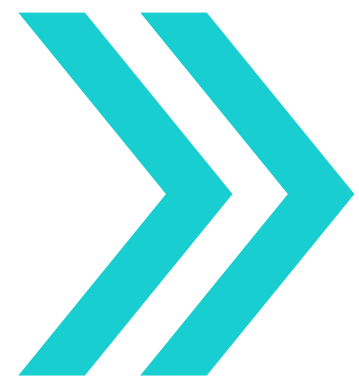
Angelos Avliotis



**Business Process Management  
and Robotic Process Automation:  
Early deployment of a combined approach**

# Contents

- Business Processes
- Robotic Process Automation
- Combined Approach
- RPA deployment to BPM
- Research Findings
- Future Work and Limitations



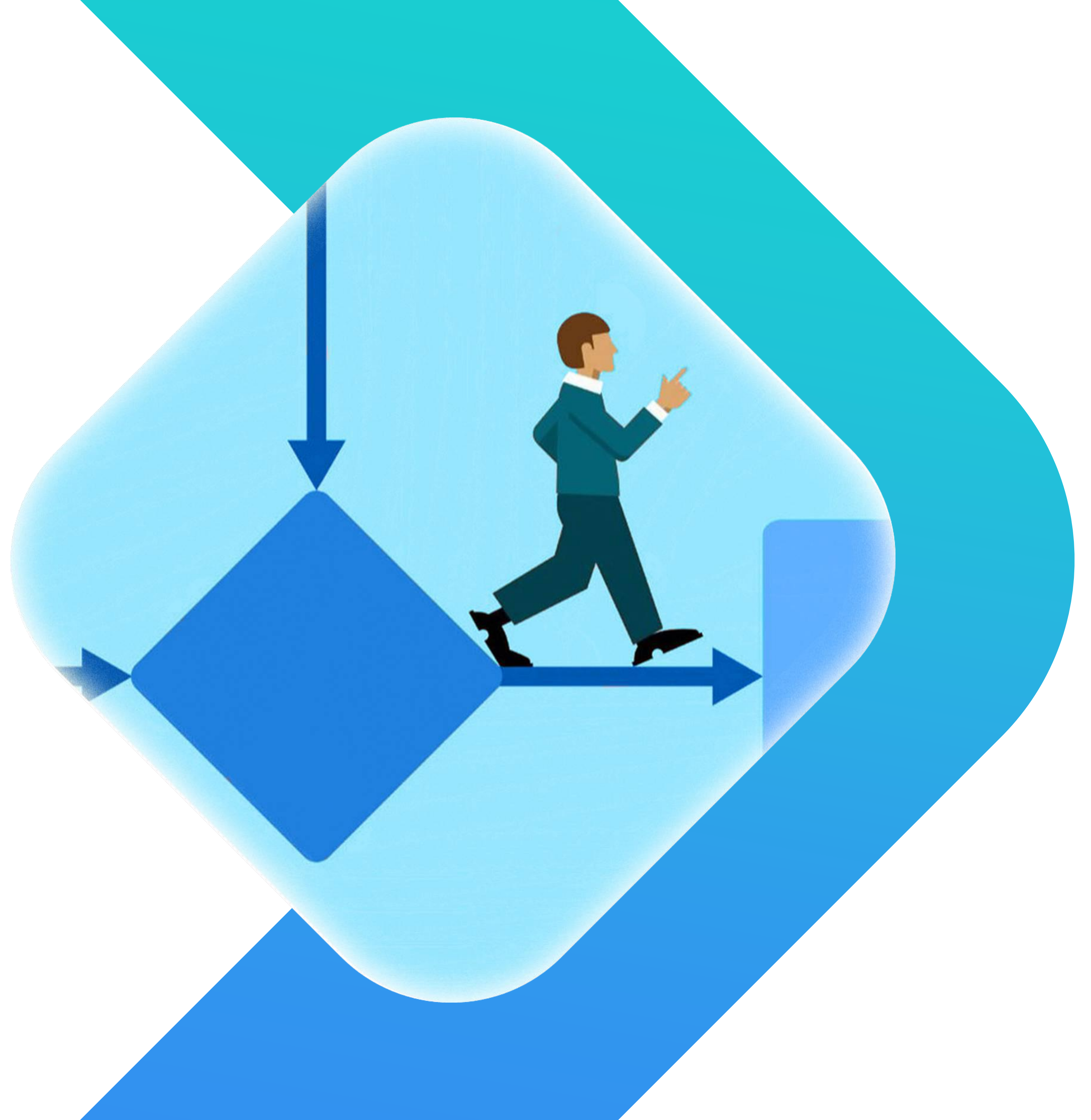


# Business Processes

# What is Business Process

The “chains of events, activities and decisions” that can be included into a process, which is used by a company or an organization in order to serve customers’ needs.

- Dumas, 2013



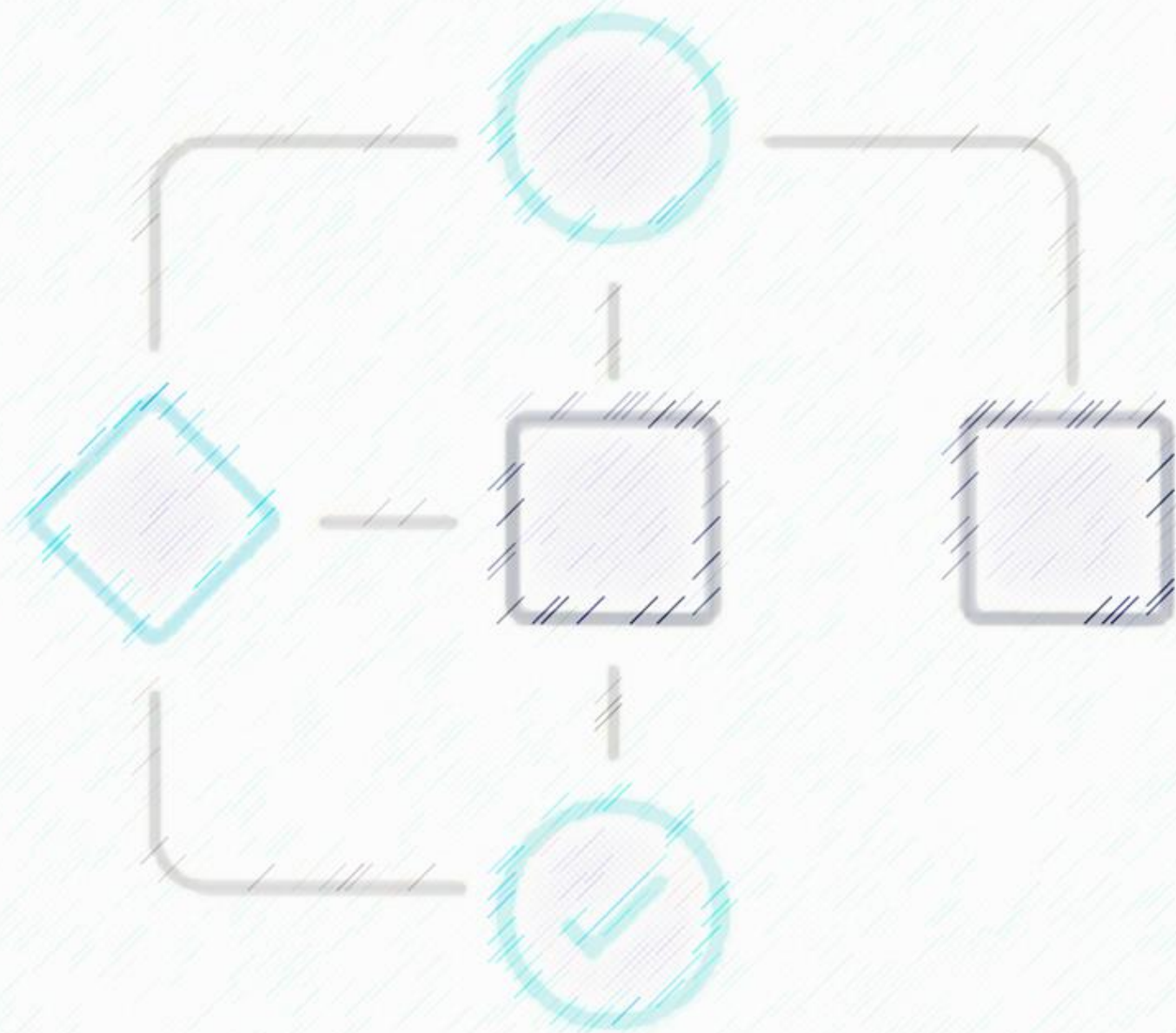
# Business Process Management

Business Process Management (BPM) is a discipline involving any combination of modeling, automation, execution, control, measurement and optimization of business activity flows, in support of enterprise goals, spanning systems, employees, customers and partners within and beyond the enterprise boundaries.





# Workflow



A single-application workflow consists of activities and their causal and temporal ordering that are realized by one common application system.

- Mathias Weske (2007)





# Workflow



## Human Interaction

Effectively support the automated  
parts of business processes

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- Mathias Weske (2007)



# Process Analysis Models



# Process Analysis Models



## Value-Added Analysis

Value-Adding Processes

Business Value-Adding Processes

Non Value-Adding Processes

# Process Analysis Models



## Value-Added Analysis

Value-Adding Processes

Business Value-Adding Processes

Non Value-Adding Processes

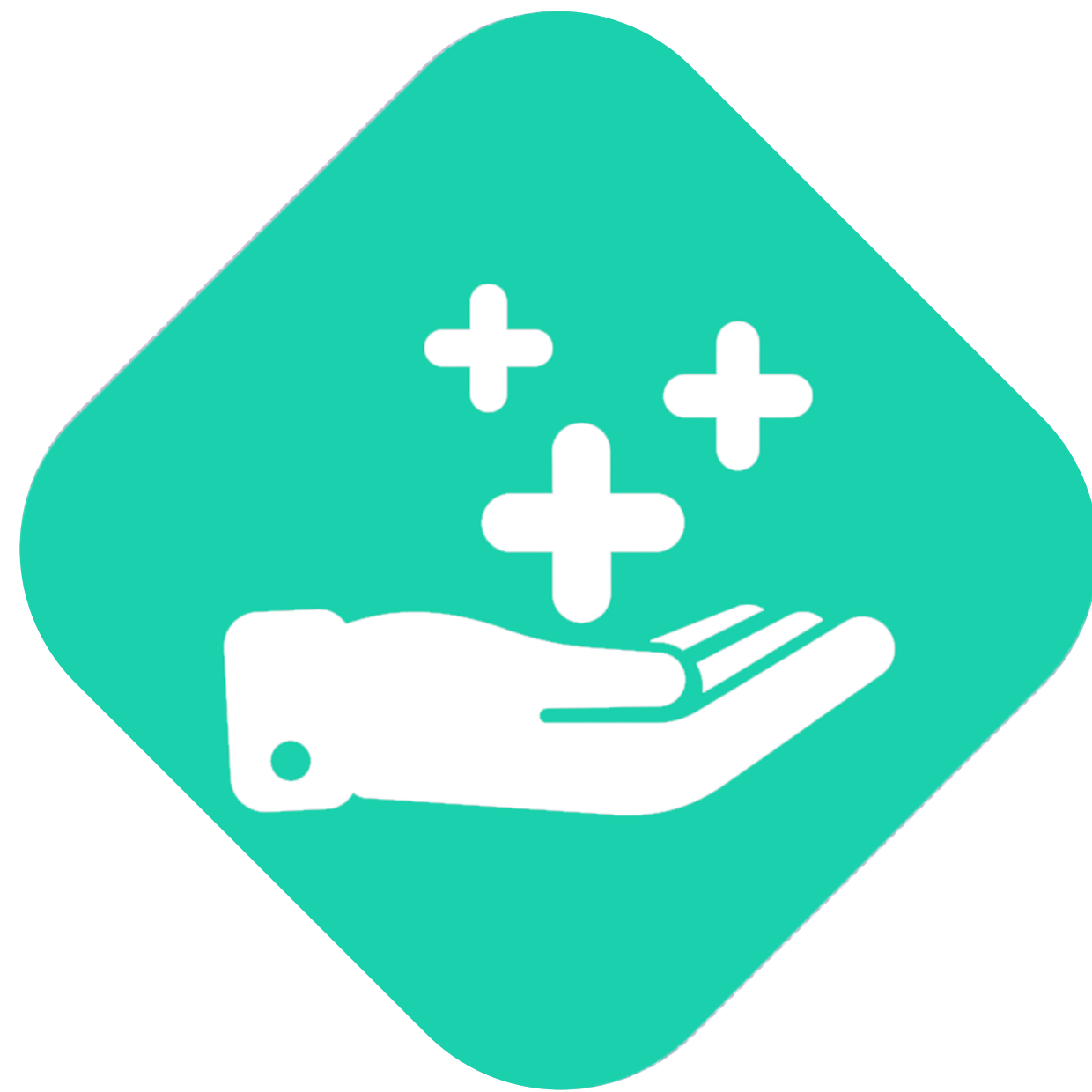


## Performance Dimensions

Time, Cost

Quality, Flexibility

# Process Analysis Models



## Value-Added Analysis

Value-Adding Processes

Business Value-Adding Processes

Non Value-Adding Processes



## Performance Dimensions

Time, Cost

Quality, Flexibility



## Simulation

Hypothetical Instances

Of Processes



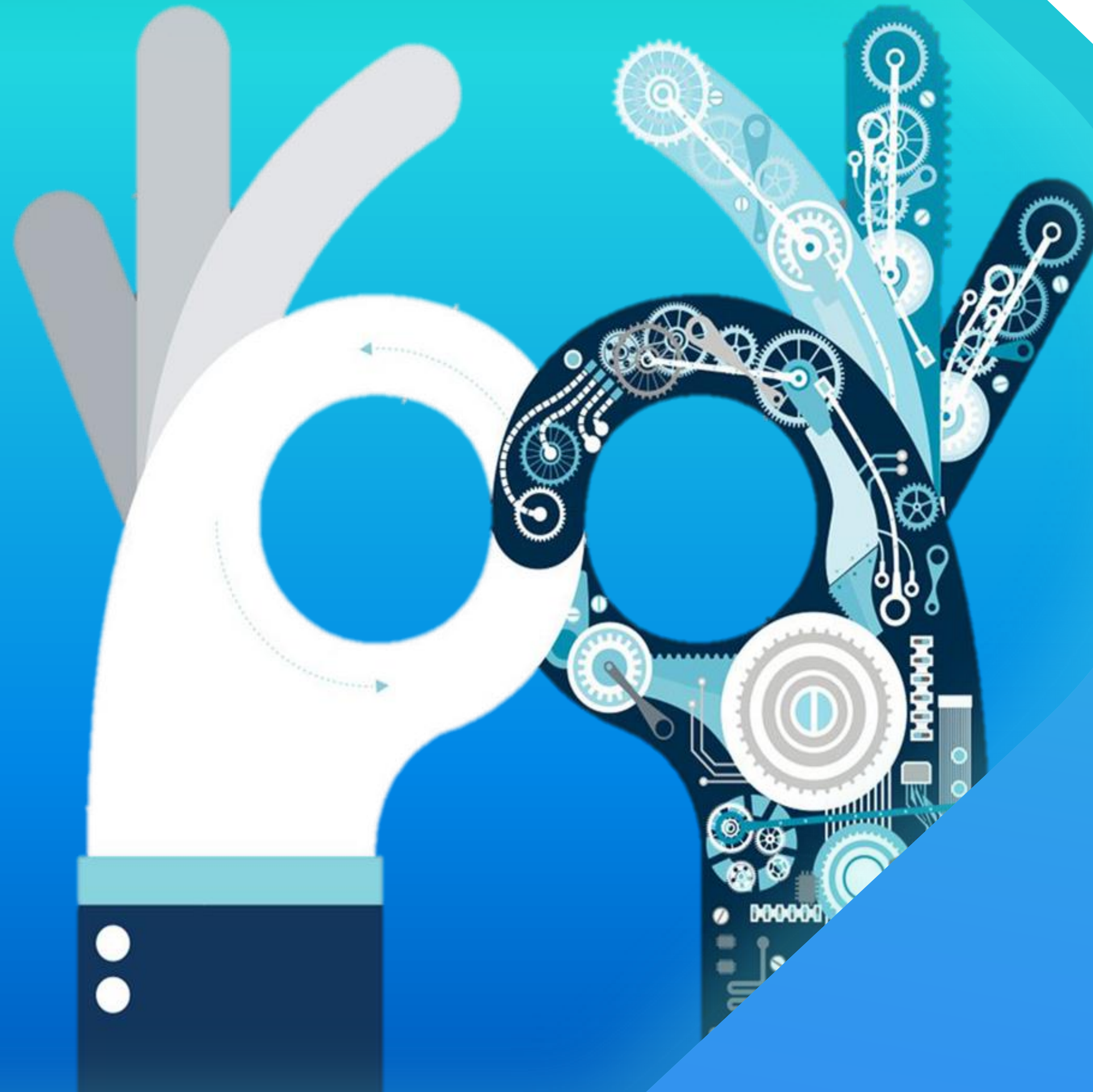


# Robotic Process Automation

# Automation

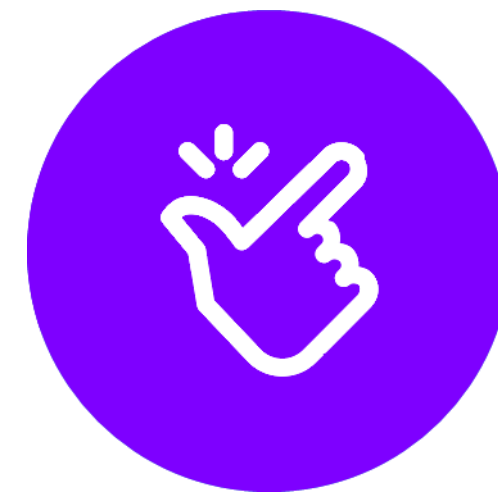
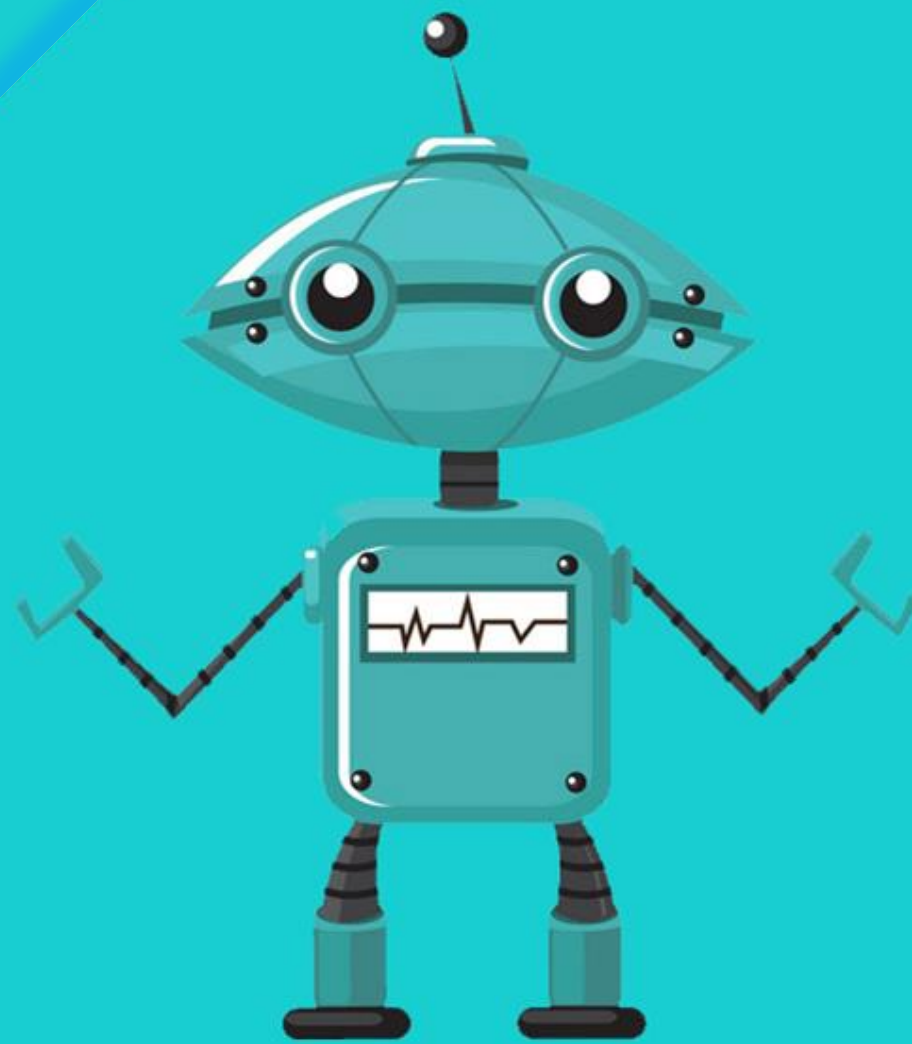
Automation is the technique of making an apparatus, a process, or a system operate automatically.

Automation includes the processing capability of any system. Integrating people and systems to achieve automation is not a simple matter. Human factors, especially the cognitive aspects, are often misunderstood and neglected in system design.



# Robotic Process Automation

RPA tools and platforms deal with structured data, rule-based processes and deterministic outcomes



easy to configure



non-invasive

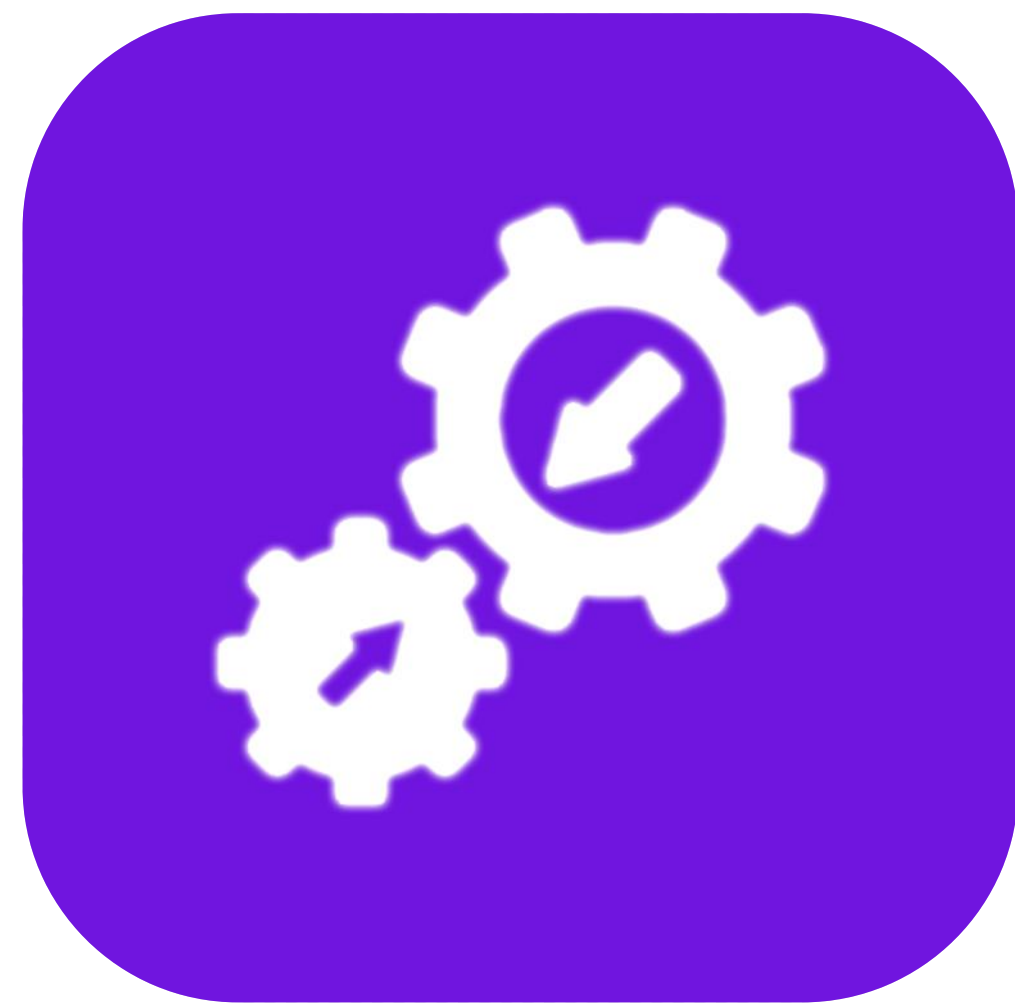


enterprise safe



# RPA Capabilities

# RPA Capabilities



Integrating with  
Enterprise Tools

# RPA Capabilities



Integrating with  
Enterprise Tools



Data Processing



# RPA Capabilities



Integrating with  
Enterprise Tools

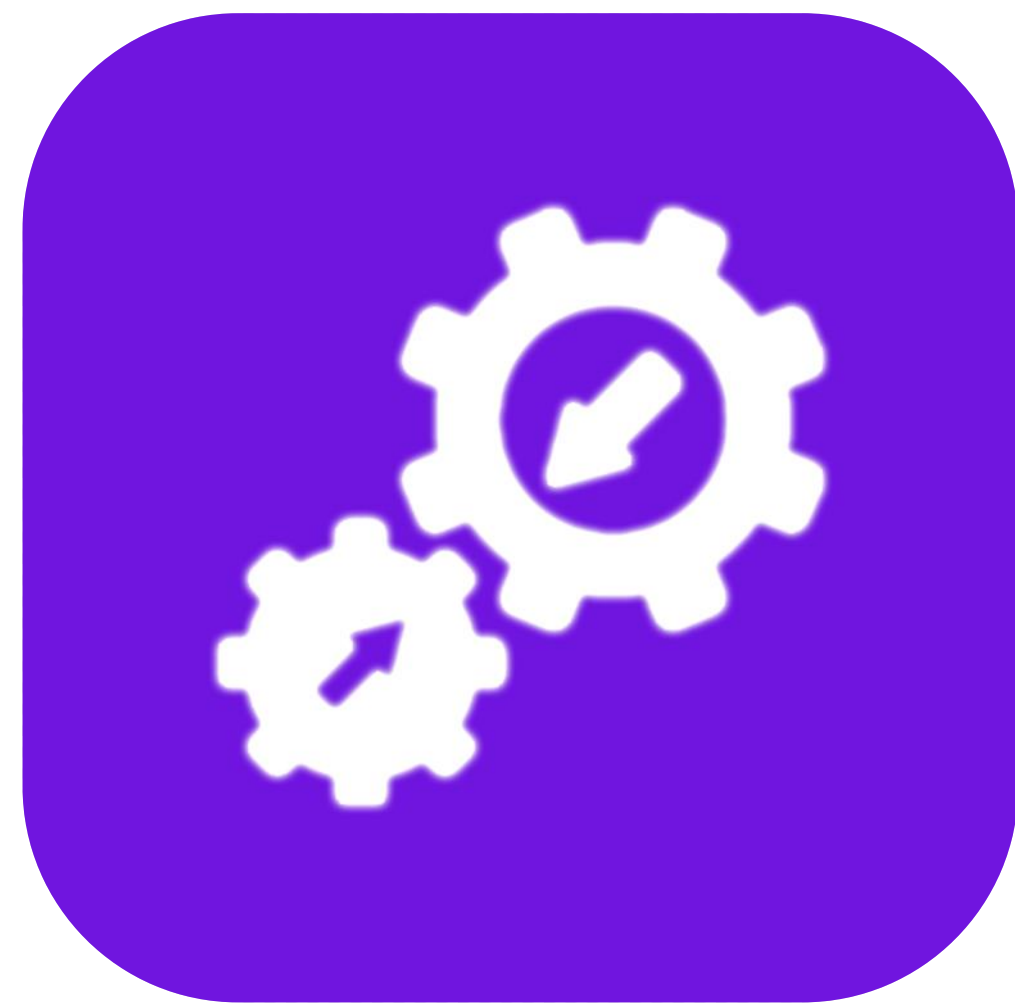


Data Processing



Launching Various  
Application

# RPA Capabilities



Integrating with  
Enterprise Tools



Data Processing



Launching Various  
Application



Augmenting Data



**Combined Approach**



# Workflow



## Human Interaction

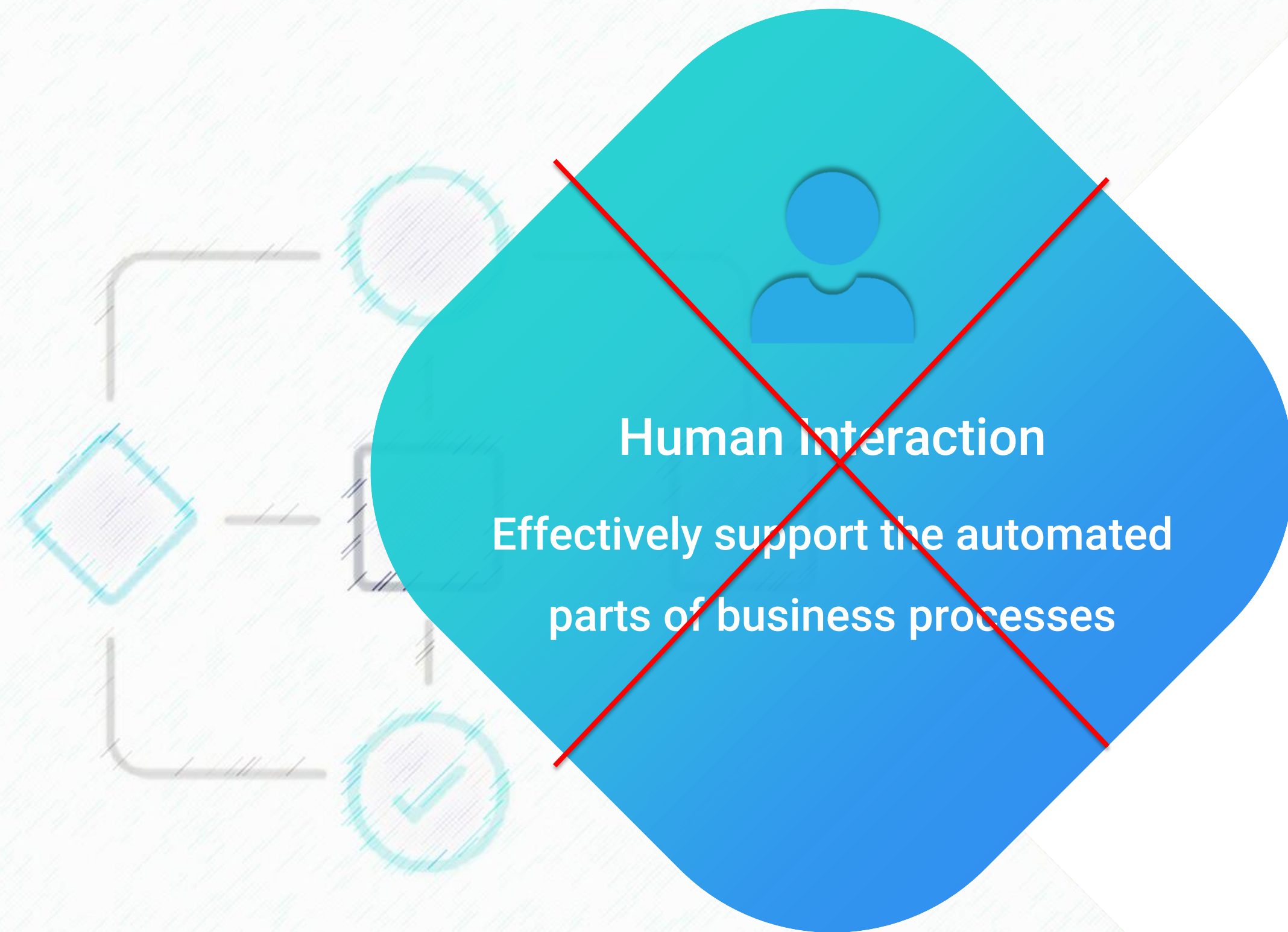
Effectively support the automated  
parts of business processes

Workflow is the automation of a business process in whole or in part, during which documents, information, or tasks are passed from one participant to another for action, according to a set of procedural rules.





# Workflow



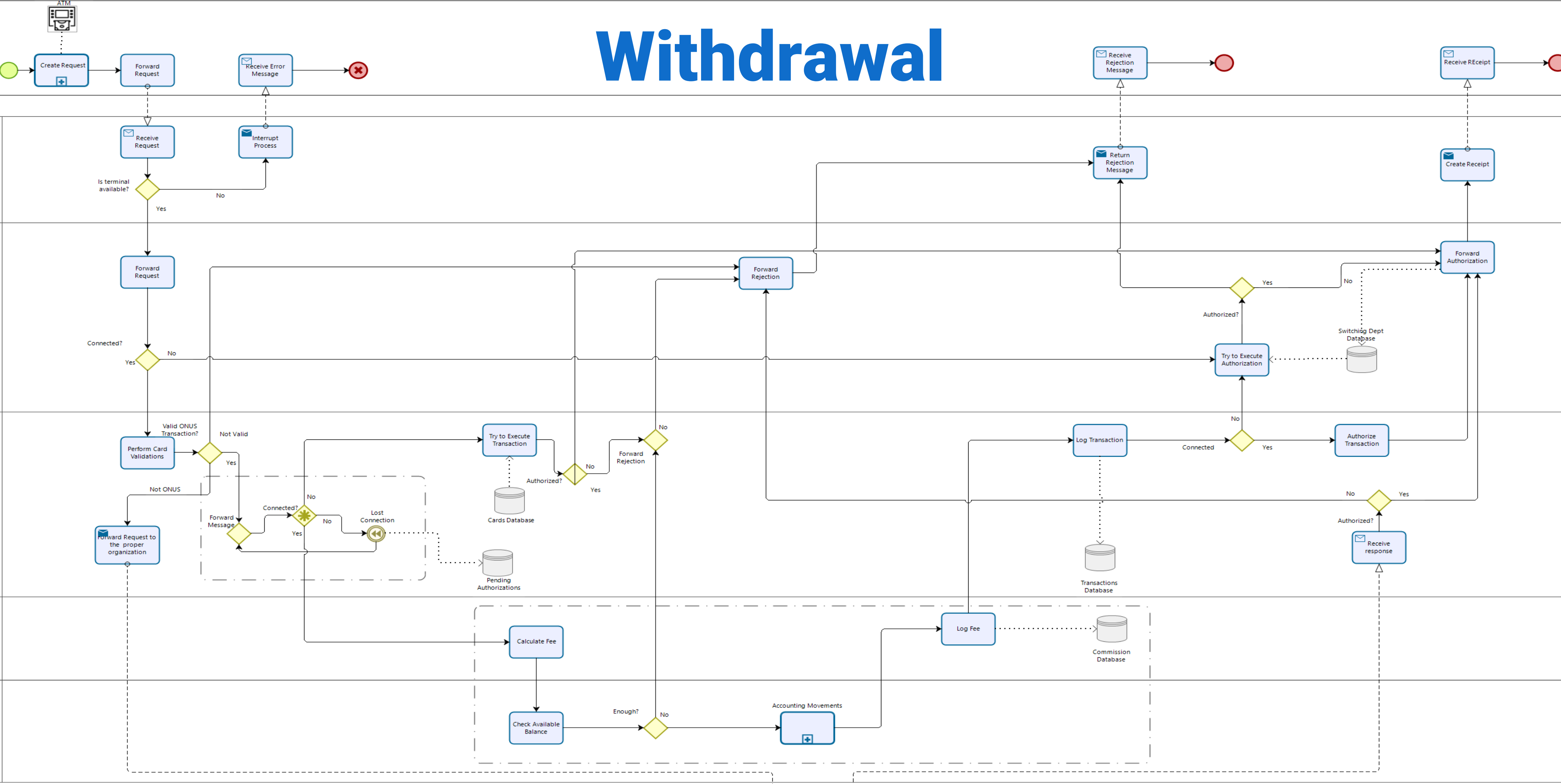
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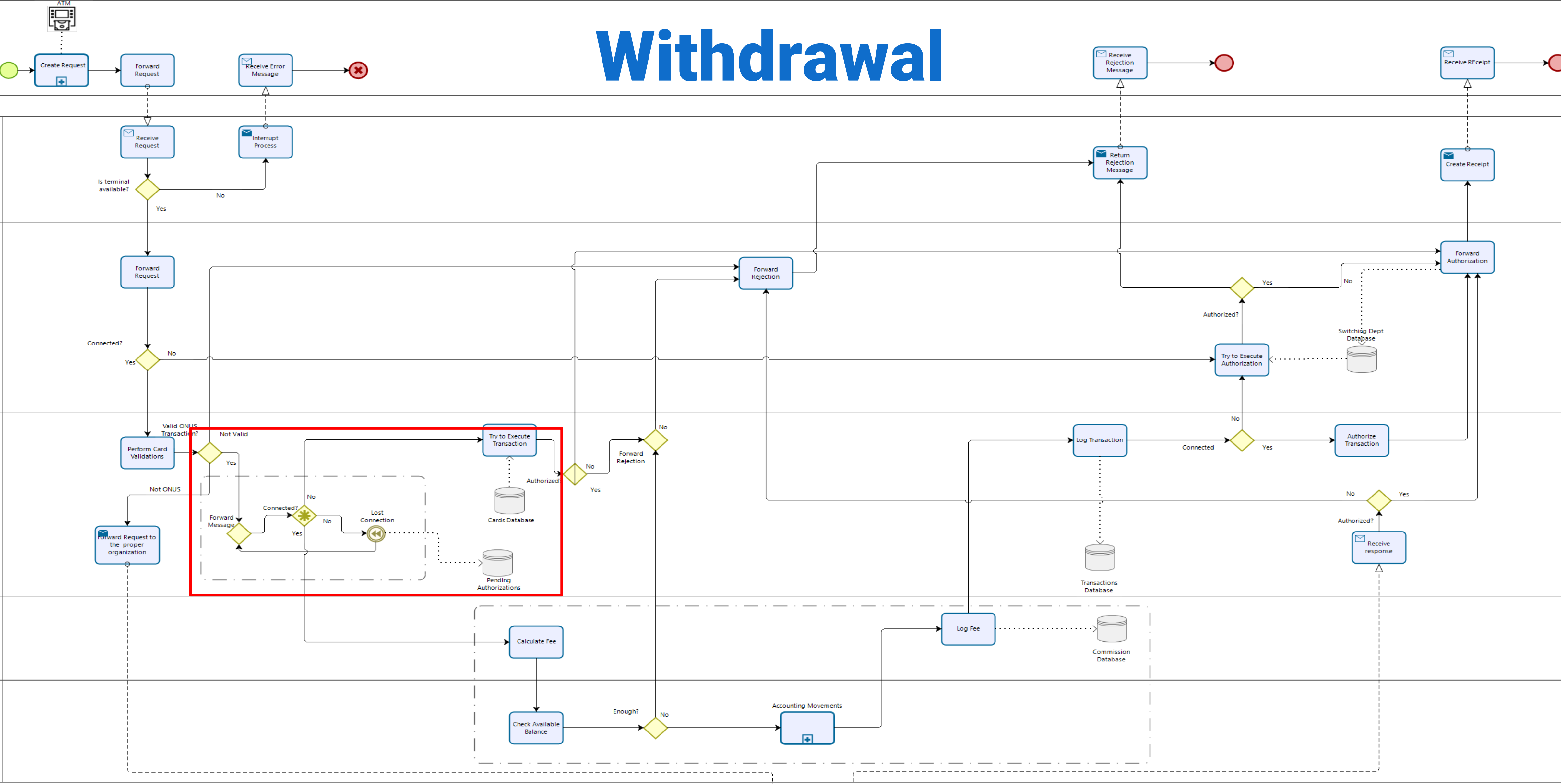
**RPA deployment to BPM**

# Withdrawal





# Withdrawal



# Withdrawal

- Effective at Online Process
- Easy to Deploy
- Database Handling
- Exceptions Handling
- Response Time
- Accuracy
- Application Launching

The image shows a screenshot of a SQL client interface with three panels, each with a database icon and a title bar. The first panel is titled 'Connect' and contains a 'Configure Connection...' button. The second panel is titled 'Execute Non Query' and contains a 'Configure Connection...' button, a text input field with a double quote character, and an 'Edit Query...' button. The third panel is also titled 'Execute Non Query' and contains a 'Configure Connection...' button, a text input field with the query 'insert Into [dbo].[problematic\_authoriza]', and an 'Edit Query...' button. Downward-pointing triangles are located between the panels.

Connect

Configure Connection...

Execute Non Query

Configure Connection...

"

Edit Query...

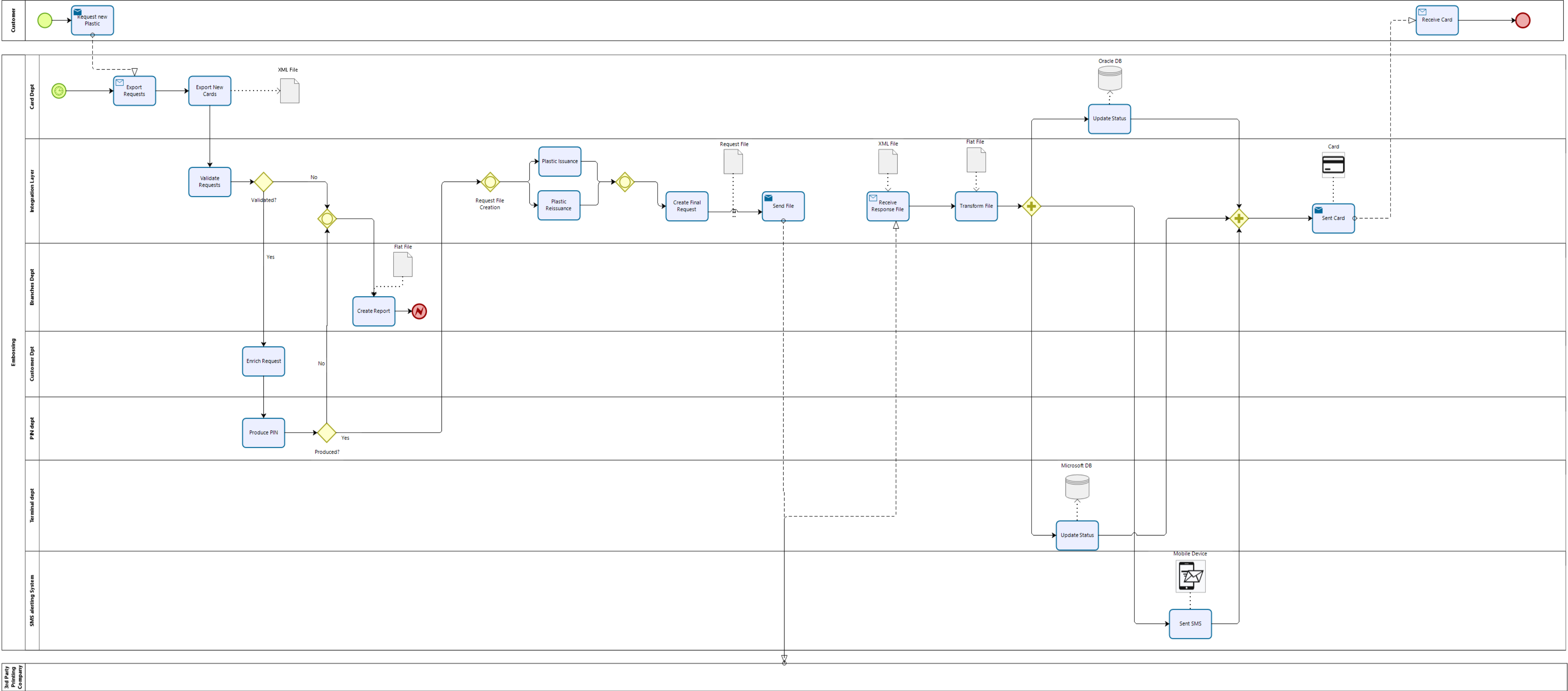
Execute Non Query

Configure Connection...

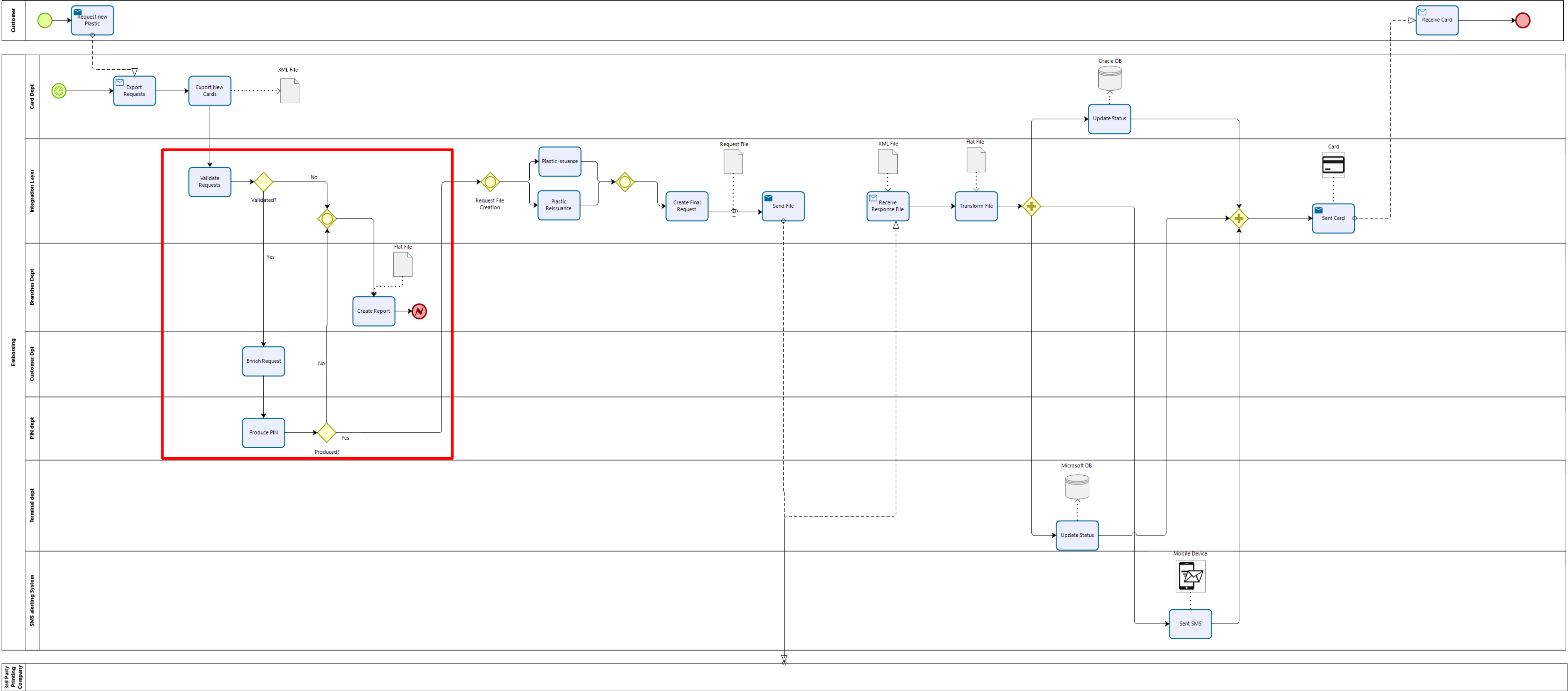
insert Into [dbo].[problematic\_authoriza]

Edit Query...

# Embossing

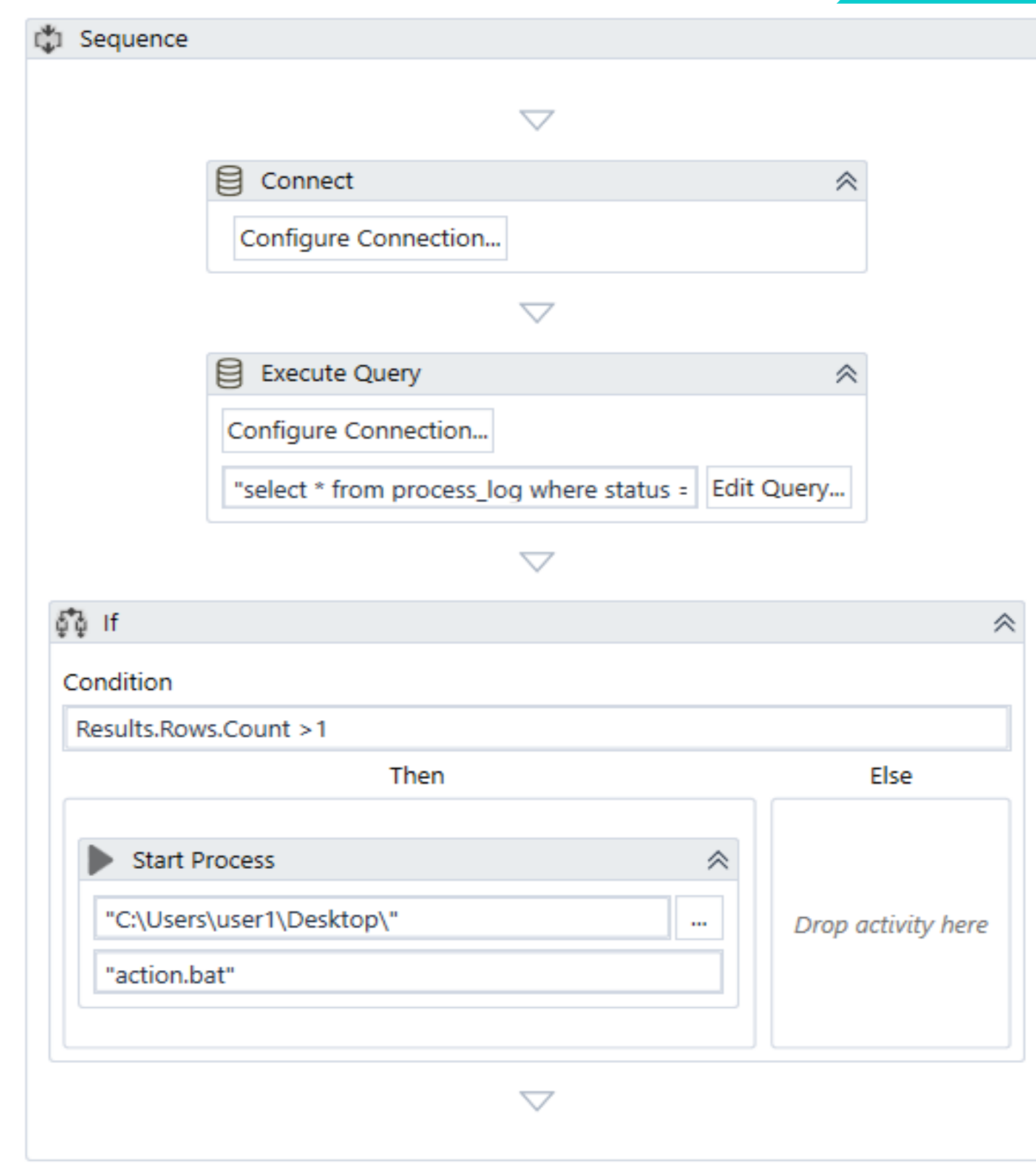


# Embossing



# Embossing

- Effective at Batch Process
- Easy to Deploy
- Database Handling
- Exception Handling
- Response Time
- Accuracy
- Process Orchestration
- Taking Advantage of Legacy Code





# Integration

Process integration is the sharing of events, transactions and data between business processes, typically in real time.

**Point-to-Point  
Integration**

**Technical  
Challenges**

**Hub-and-Spoke  
Integration**



# Findings

- RPA complements BPM
- RPA returns quick impact
- RPA can act as an API for legacy applications
- It is not always easy to identify the right process to implement RPA
- Lack of RPA documentation
- Difficult project estimation

# Limitations

- Early Approach
- The processes were identified correctly
- BPM was the proper discipline

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- Early Approach
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# Future Work

- RPA to assist human experience (Chatbot)
- RPA to undertake smarter and more difficult tasks (DBA)
- RPA to be embraced as part of end-to-end automation (Regression Test)

Thank you  
for your attention

