Open Source Process Automation

GETTING STARTED

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Red Hat

AGENDA

Process Automation Manager

Red Hat

Business Central

Drools Kogito jBPM

OptaPlanner

Red Hat

WHAT IS jBPM?
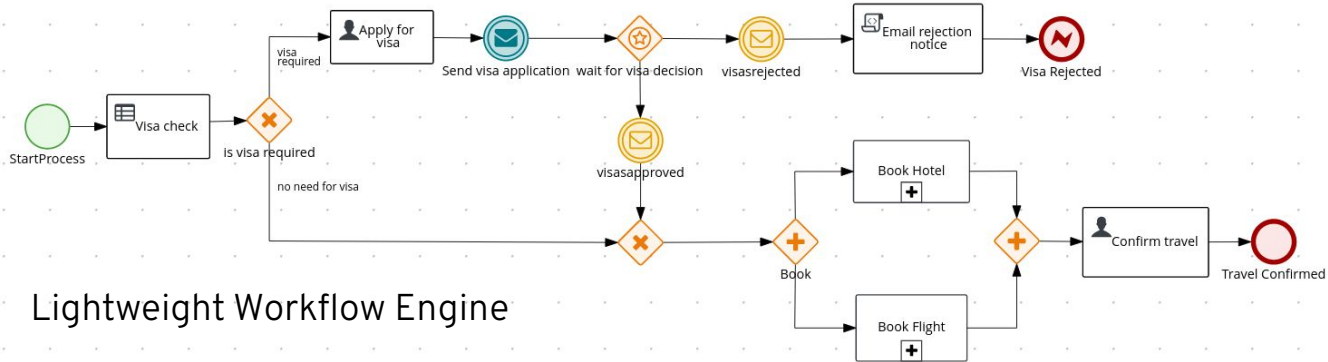
Lightweight Workflow Engine

Modeling

Monitoring

Execution

Management

01
02
03
04

StartProcess
Visa check
is visa required
visa required
no need for visa
Apply for visa
Send visa application
wait for visa decision
visasrejected
Email rejection notice
Visa Rejected
visasapproved
Book
Book Hotel
Book Flight
Confirm travel
Travel Confirmed

Properties

Process

Name
travels

Documentation

ID
travels

Package
org.acme.travels

ProcessType
Public

Version
1.0
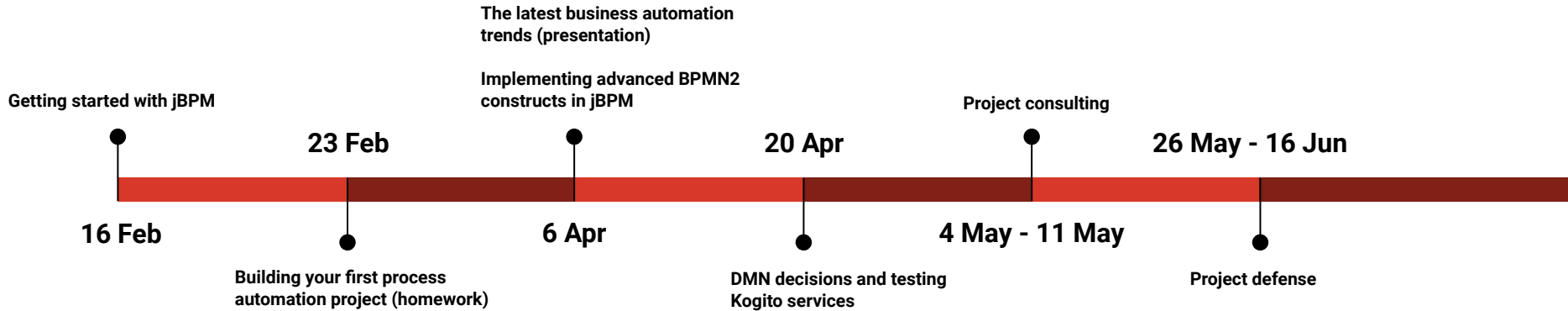
Ad-Hoc

Process Instance Description
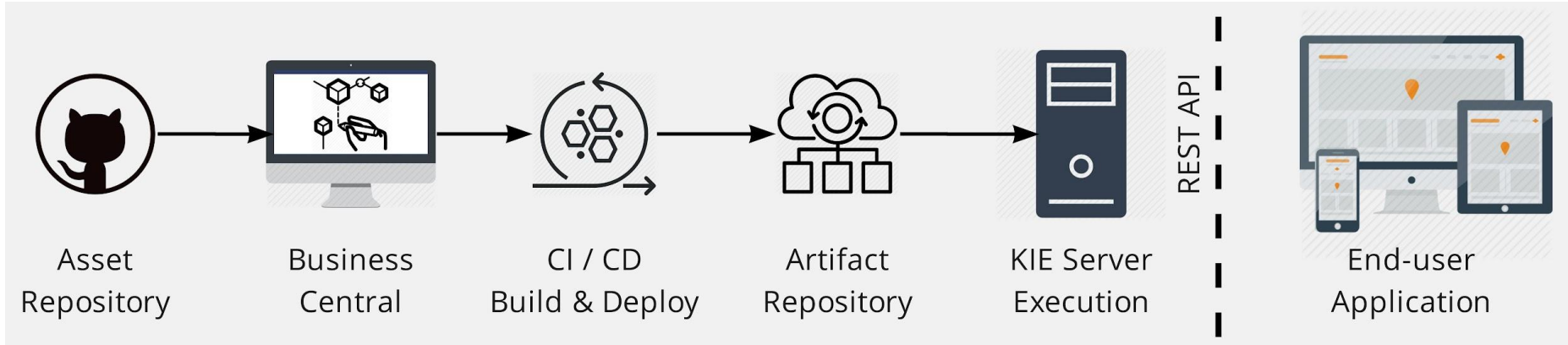
Imports
No imports

Executable

SLA Due Date

Process Data

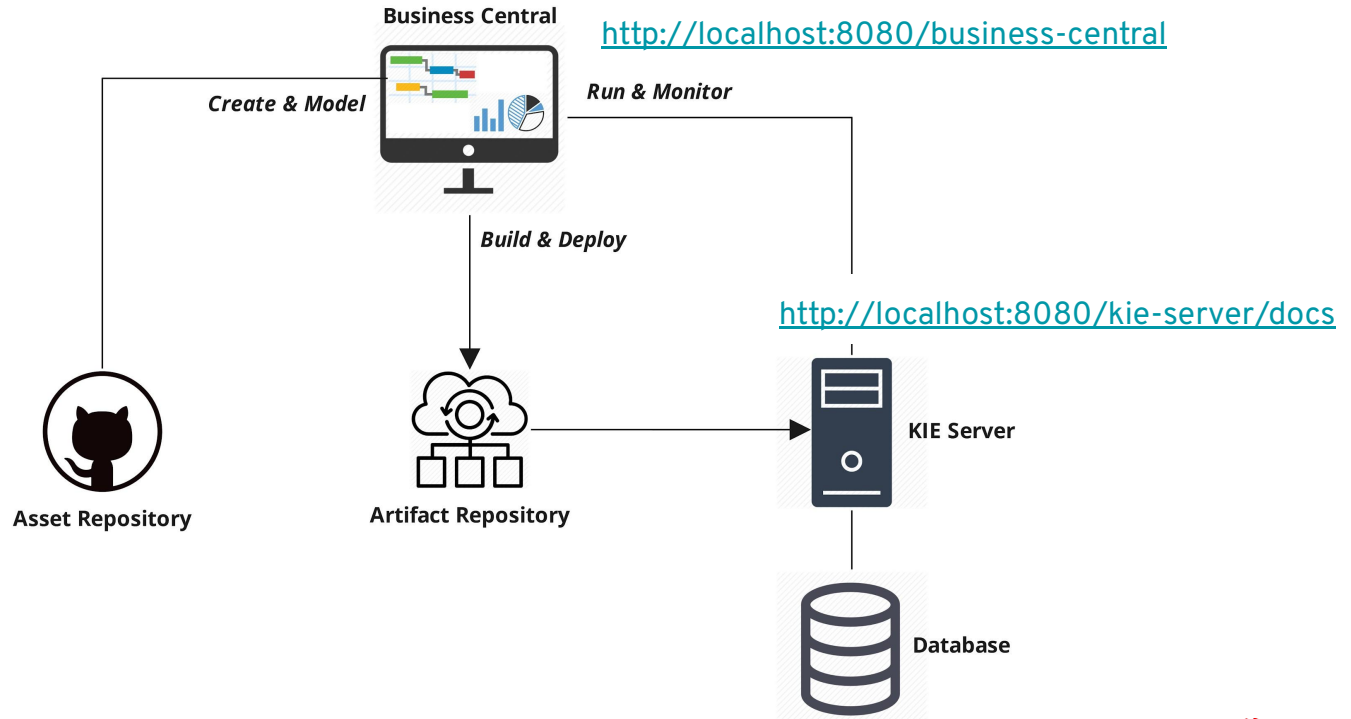Advanced

jBPM LABS

The latest business automation
trends (presentation)

Implementing advanced BPMN2
constructs in jBPM

Getting started with jBPM

Project consulting

23 Feb

20 Apr

26 May - 16 Jun

16 Feb

6 Apr

4 May - 11 May

Building your first process
automation project (homework)

DMN decisions and testing
Kogito services

Project defense

Red Hat

FROM A MODEL TO PRODUCTION

Asset
Repository

Business
Central

CI / CD
Build & Deploy

Artifact
Repository

KIE Server
Execution

REST API

End-user
Application

Red Hat

MINIMAL VANILLA ARCHITECTURE

Business Central

http://localhost:8080/business-central

Create & Model

Run & Monitor

Build & Deploy

http://localhost:8080/kie-server/docs

KIE Server

Asset Repository

Artifact Repository

Database

SETUP - THE FIRST STEPS

❏ Download and install OpenJDK 11.0.15+10 (*Oracle JDK 8 and 11 will work too if you have already installed them before*)
  ❏ JDK 11 must be the specific version
  ❏ JDK 8 can be the latest
❏ Configure JAVA_HOME environment variable
❏ Download and unzip the single zip distribution
❏ Run from inside the jbpm-server directory:

  ./bin/standalone.sh   (Unix / Linux)
  ./bin/standalone.bat   (Windows)

❏ Log in using wbadmin/wbadmin
❏ Add users and groups
❏ Use H2/MySQL/PostgreSQL database (optional)
❏ More info in Getting Started Guide

SETUP - DISABLE JAEGER WARNINGS

❏ Open **<jbpm-server-dist>/standalone/configuration/standalone.xml**

❏ Change **sampler-param="1.0"** to **sampler-param="0.0"** in

```
<jaeger-tracer name="jaeger">
          <sampler-configuration sampler-type="const" sampler-param="1.0"/>
</jaeger-tracer>
```

❏ This will remove unnecessary messages in the server log

NEW PROJECT IN BUSINESS CENTRAL

- ❏ Based on Maven and stored in Asset repository (GIT)
- ❏ Try Samples
- ❏ SNAPSHOT development version
- ❏ Add assets
  - ❏ Data Object
  - ❏ Business Process
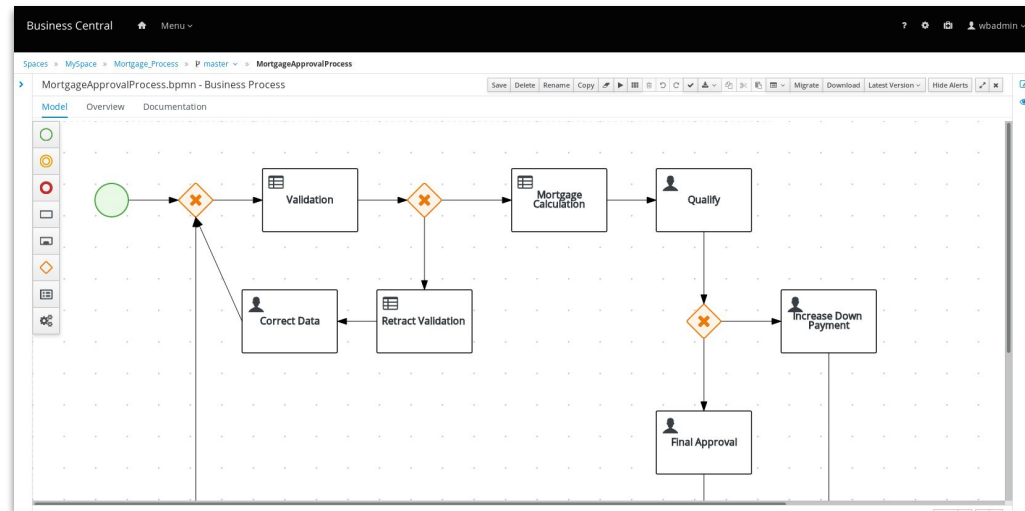 - ❏ Form
 - ❏ DMN Model
  - ❏ Test Scenarios
- ❏ Build and Deploy

DATA MODELING

PROCESS MODELING

❏ BPMN2 support
❏ Focus on execution semantics
❏ Data I/Os
❏ Human tasks
❏ Decisions and calculations
❏ External calls
❏ Catching and triggering events
❏ Form generating
❏ Export to PNG, PDF, SVG, BPMN2

FORM MODELING

❏ Generate forms for
   ❏ Data objects (reusable)
   ❏ Process start form
   ❏ Task form
❏ Widget library able to bind different types of data (TextBox, DatePickers, Checkboxes, ListBox, Nested Forms...)
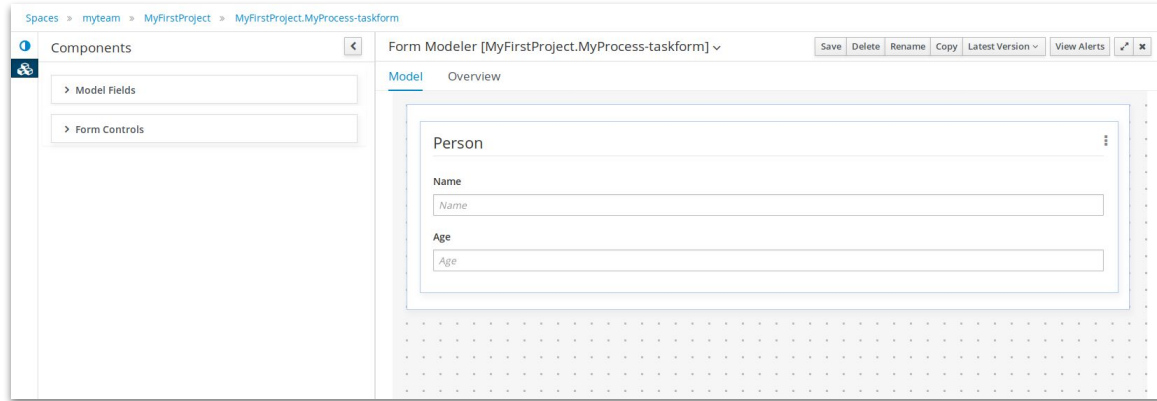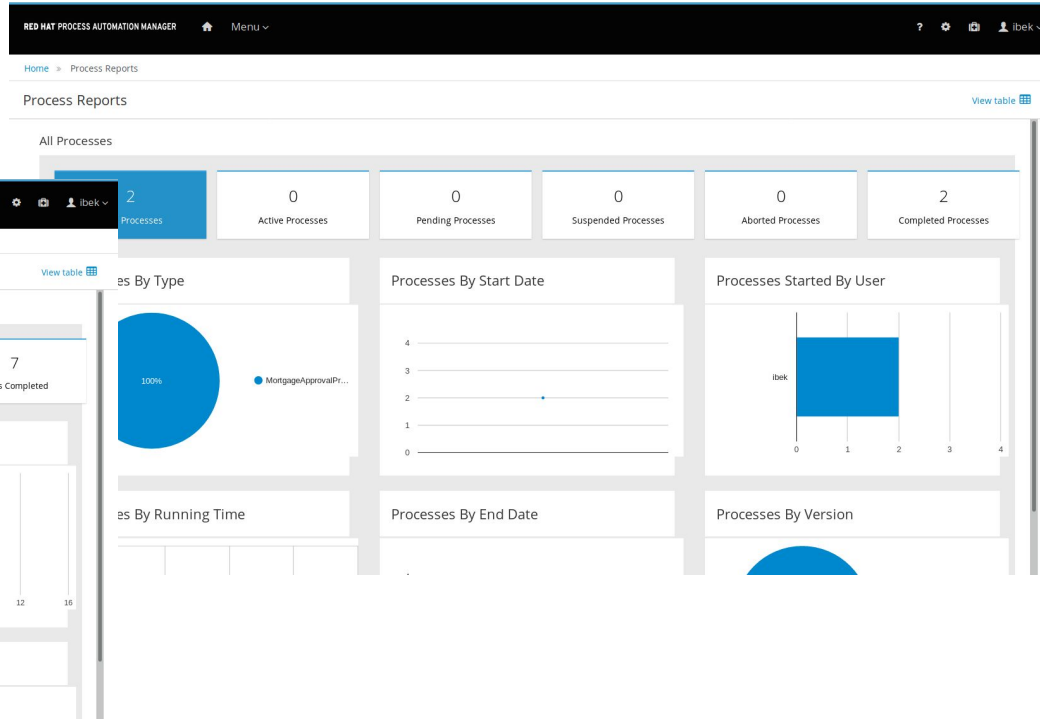
PROCESS ADMINISTRATION

❏ Quick access to:
  ❏ Process Definitions
  ❏ Process Instances
  ❏ Tasks
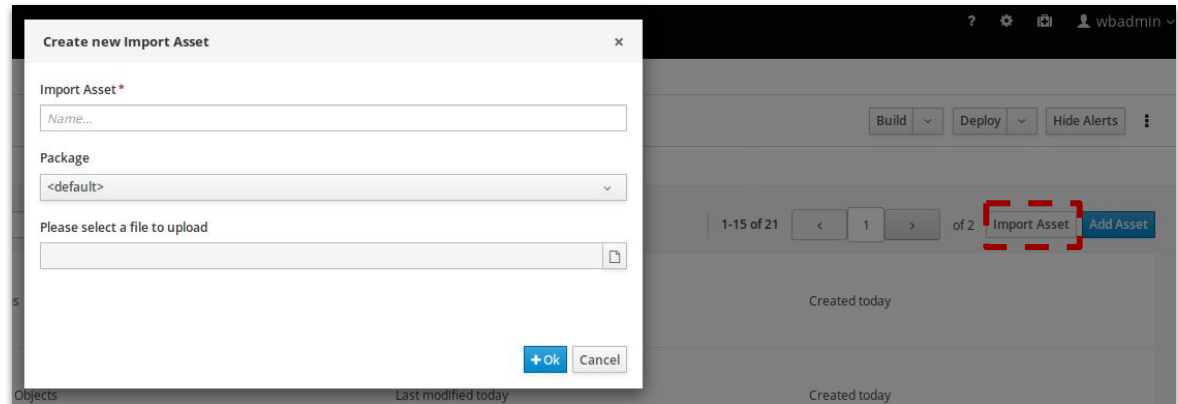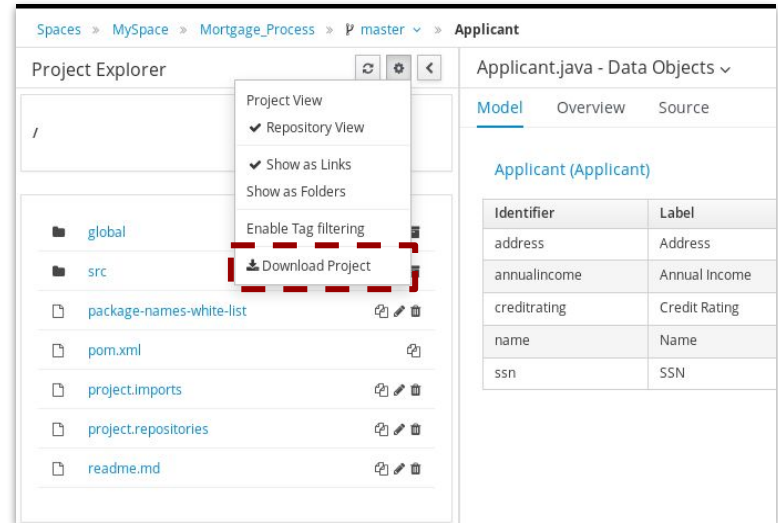 ❏ Execution errors
  ❏ Jobs
❏ Filtering

PROCESS MONITORING

❏ Process reports
❏ Task reports

TEAM COLLABORATION

❑ How to work on a project as a team without any complex setup of the infrastructure (git hooks, central git repository, …)

1. Split the work between the team members
2. Export project
3. Share your assets with your team
4. Import assets to your local instance

TEAM COLLABORATION VIA GIT

- ❏ Requires only basic Git skills
- ❏ Pull your business assets from Business Central
  1. git remote add business-central ssh://wbadmin@localhost:8001/<spaceName>/<projectName>
  2. git pull business-central master
  3. password wbadmin
- ❏ Push your business assets for example to GitHub
  1. git push github master
- ❏ Import your business assets to another Business Central either by pushing to it or by cloning whole repository from UI
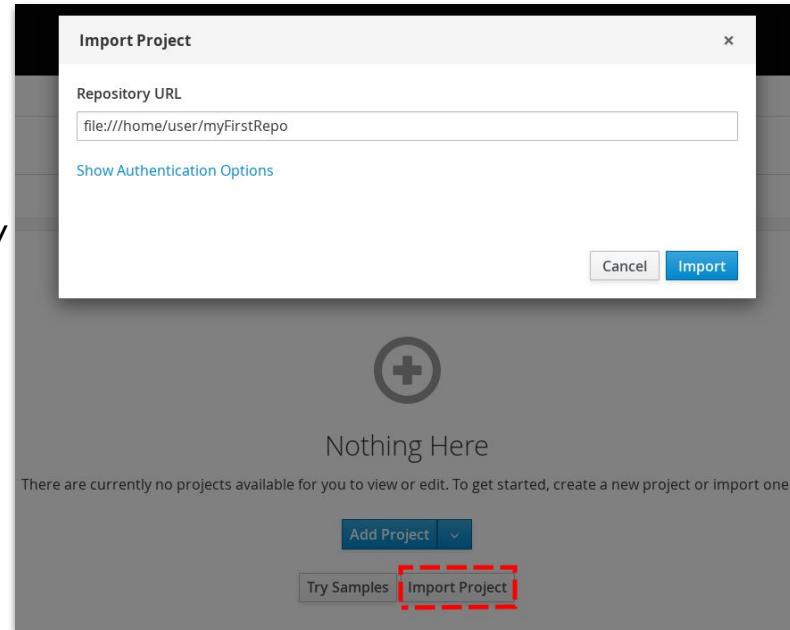
BONUS: EASY ACCESS TO BPMN EDITORS

❏ [Red Hat Business Automation Bundle](#) Visual Studio Code extension
❏ [bpmn.new](#) website

THANK YOU

linkedin.com/company/red-hat

youtube.com/user/RedHatVideos

facebook.com/redhatinc

twitter.com/RedHat

Red Hat

BUSINESS PROCESS MANAGEMENT

the way a company manages and improves business processes

"A business process is a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer. A business process has a goal and is affected by events occurring in the external world or in other processes."
Hammer, M. and Champy, J.

- approval process
- payment process
- employee onboarding
- loan/mortgage application
- Manufactoring / assembly line

- service requests
- rent car process
- vacation approval
- media publish process
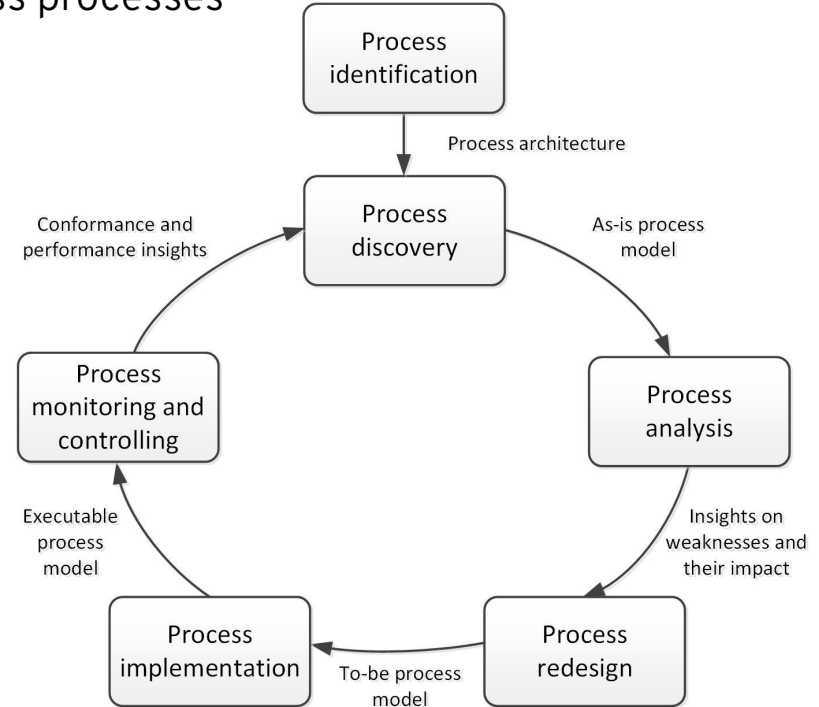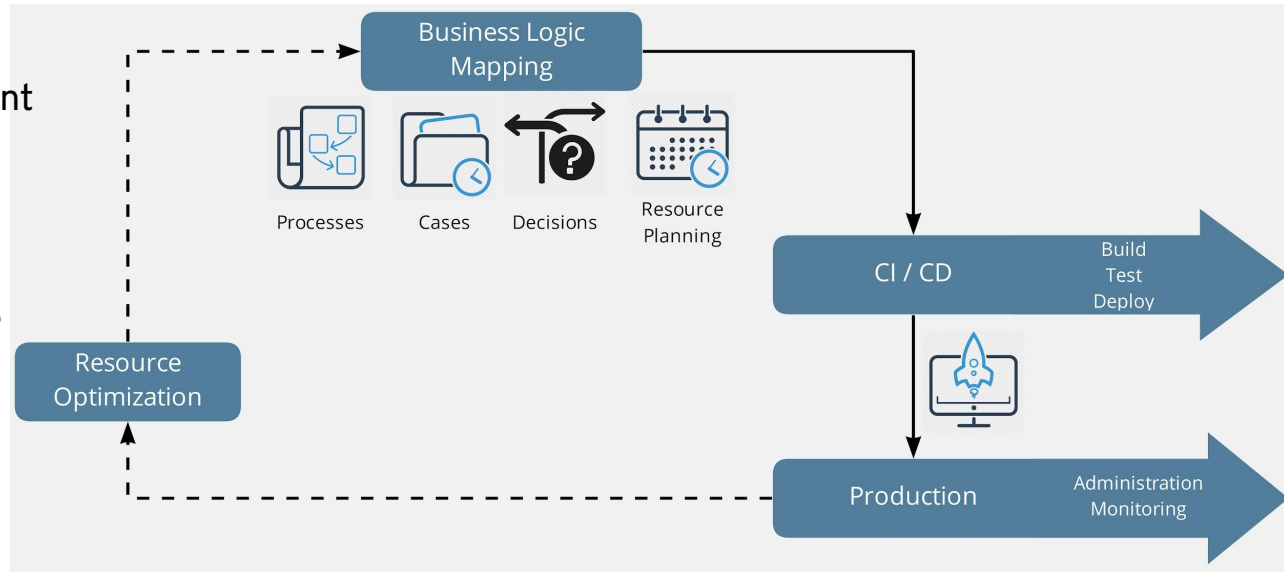
RETURN ON INVESTMENTS (ROI)
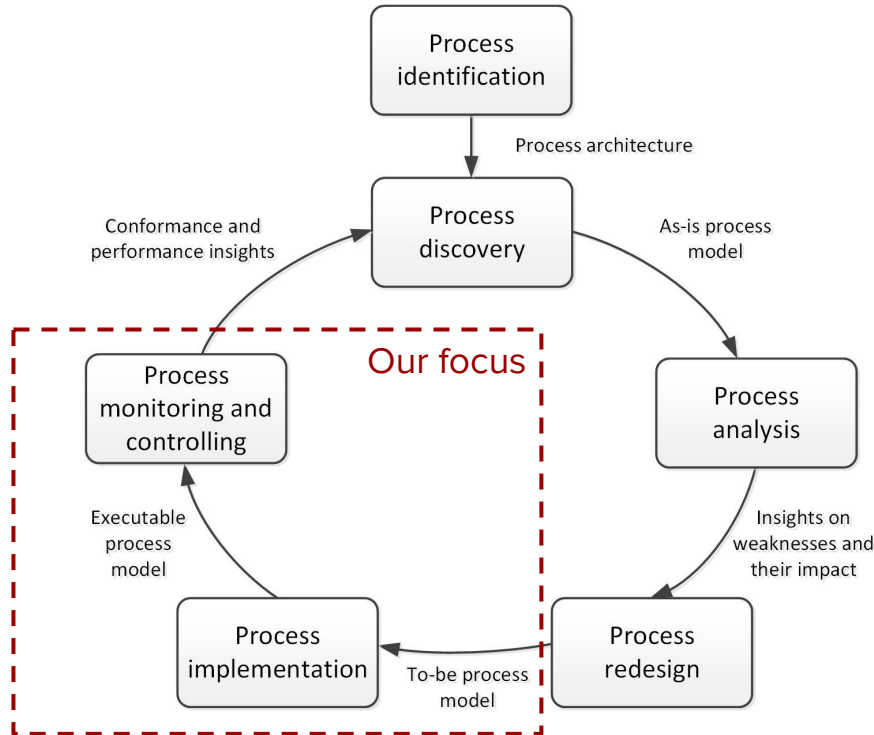
Frequency
Size and complexity
Diversity (actors, systems, rules)
Speed (SLAs)

Time (spent on a single manual task) x
Frequency (of performing a task per month) x
Cost (per hour) x 12 (months) = **Yearly Savings**

BUSINESS AUTOMATION

- ❏ BPM
- ❏ Decision Management
- ❏ Case Management
- ❏ Resource Planning
- ❏ Robotic Process Automation (RPA)
- ❏ AI, XAI, and Machine Learning

Business Logic Mapping

Processes

Cases

Decisions

Resource Planning

CI / CD — Build Test Deploy

Resource Optimization

Production — Administration Monitoring

See BPM in context