Activiti™

+

Consulting
Developing
Speaking
Coaching
Writing

Main Tasks

Evaluation of Technologies and Products

Requirements Engineering

Enterprise Architecture Management

Business Process Management

Architecture and Development of Applications

Planning and Introduction of SOA

Integration of Legacy Applications

Cloud Computing

Contact

Email: kai.waehner@mwea.de

Blog: www.kai-waehner.de/blog

Twitter: @KaiWaehner

Social Networks: Xing, LinkedIn

What is the Key Message?

MaibornWolff et al

?

?

BPM should be used for optimizing business processes!

BPM should be used for optimizing business processes!

BPM should NOT be used for systems integration!

MaibornWolff et al

?

BPM should be used for optimizing business processes!

BPM should NOT be used for systems integration!

Activiti and Apache Camel are a perfect combination!

MaibornWolff et al

1) Business Process Management (BPM)

1) Activiti

1) Apache Camel

2) Combination of Activiti and Apache Camel

MaibornWolff et al

1) **Business Process Management (BPM)**

1) Activiti

1) Apache Camel

2) Combination of Activiti and Apache Camel

BPM attempts to improve processes continuously.

It can therefore be described as a "process optimization process.“

Wikipedia

MaibornWolff et al

Business-IT-Alignment

increase efficiency

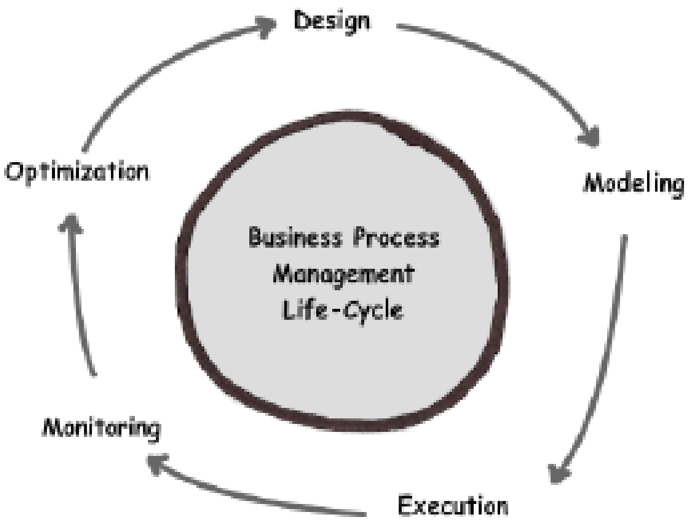
better quality

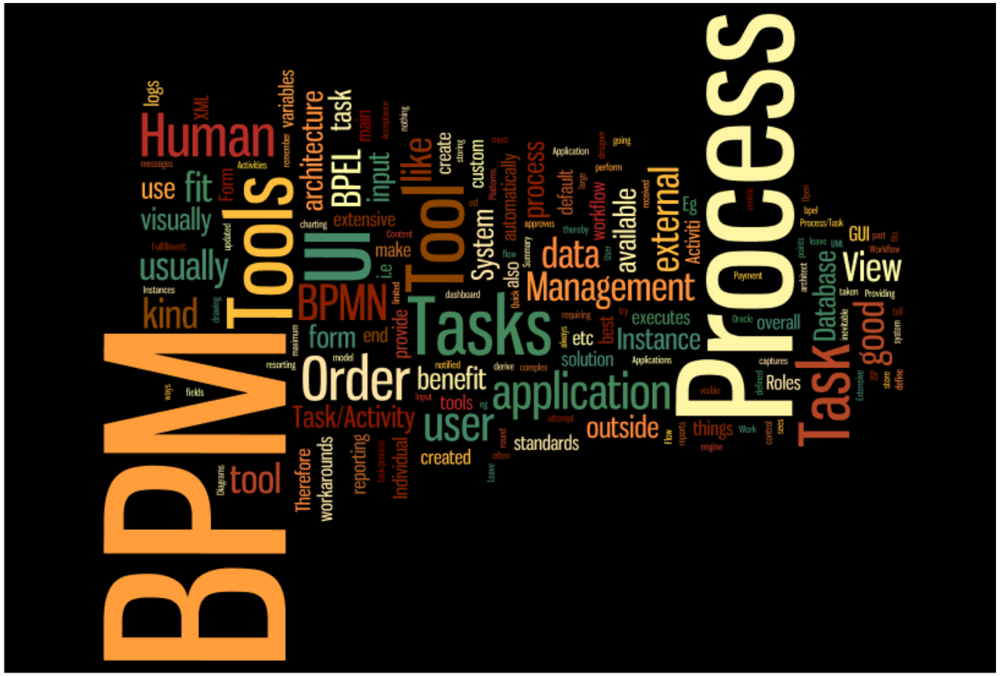
reduce costs

enable new business models

How to do BPM?

MaibornWolff et al





MaibornWolff et al

jPDL

BPEL

BPMN

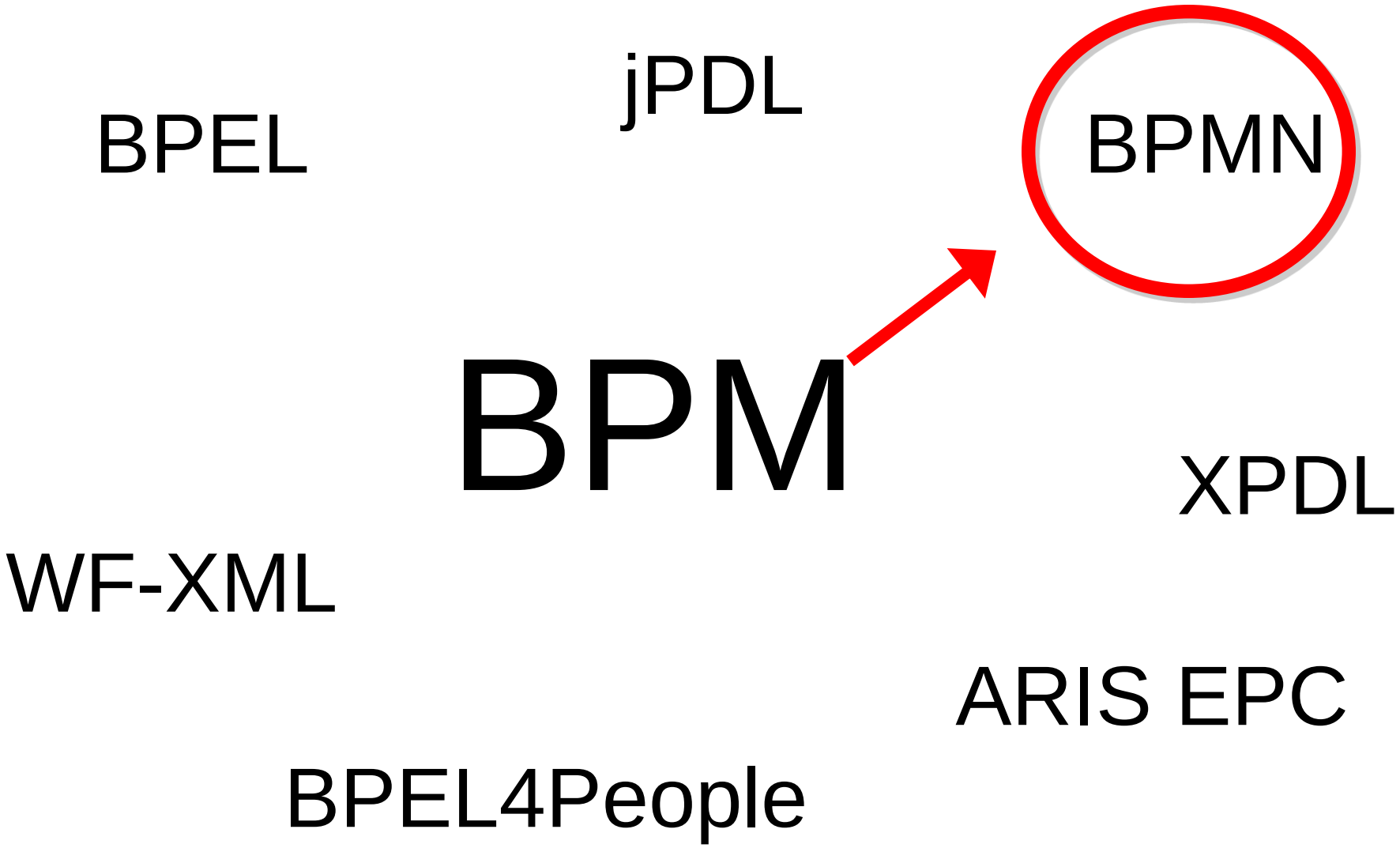
BPM

XPDL

WF-XML

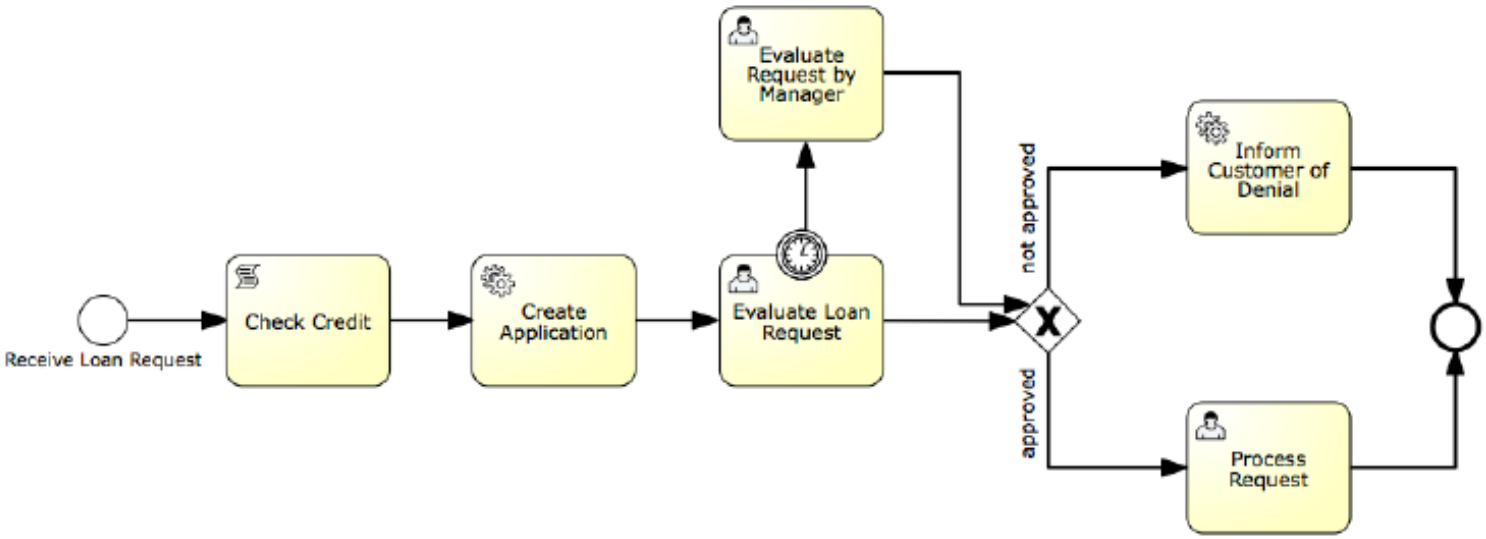
ARIS EPC

BPEL4People


BPEL
jPDL
BPMN
BPM
XPDL
WF-XML
ARIS EPC
BPEL4People

Business Process Model and Notation (BPMN) is a graphical representation for specifying business processes in a business process model.

Wikipedia



- BPMN is a standard notation for designing business processes

  (versus: UML is a standard modeling language best suited for designing and implementing software)

- not just flow charts! sufficient restrictions / constraints => executable!

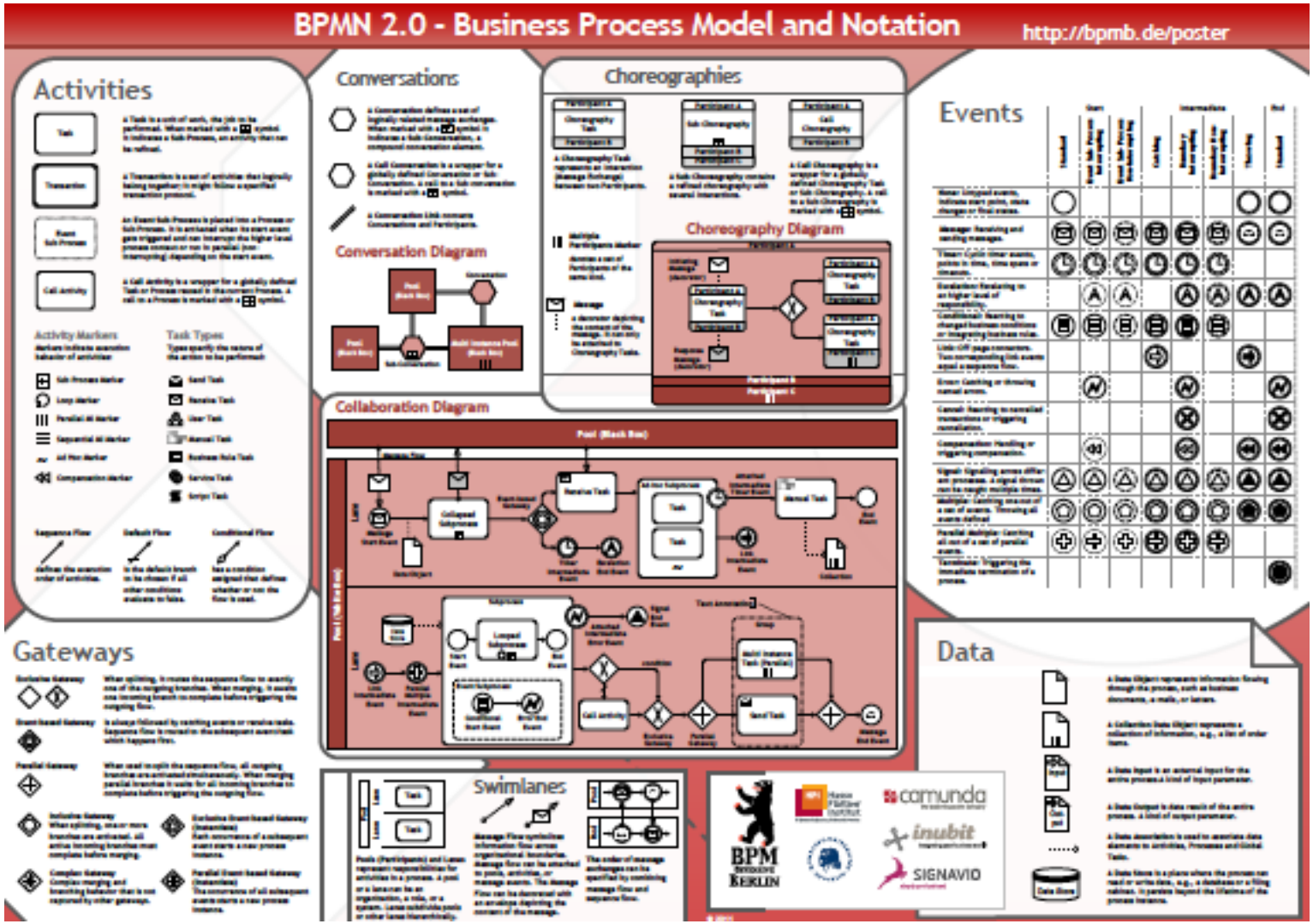
- standardized XML format

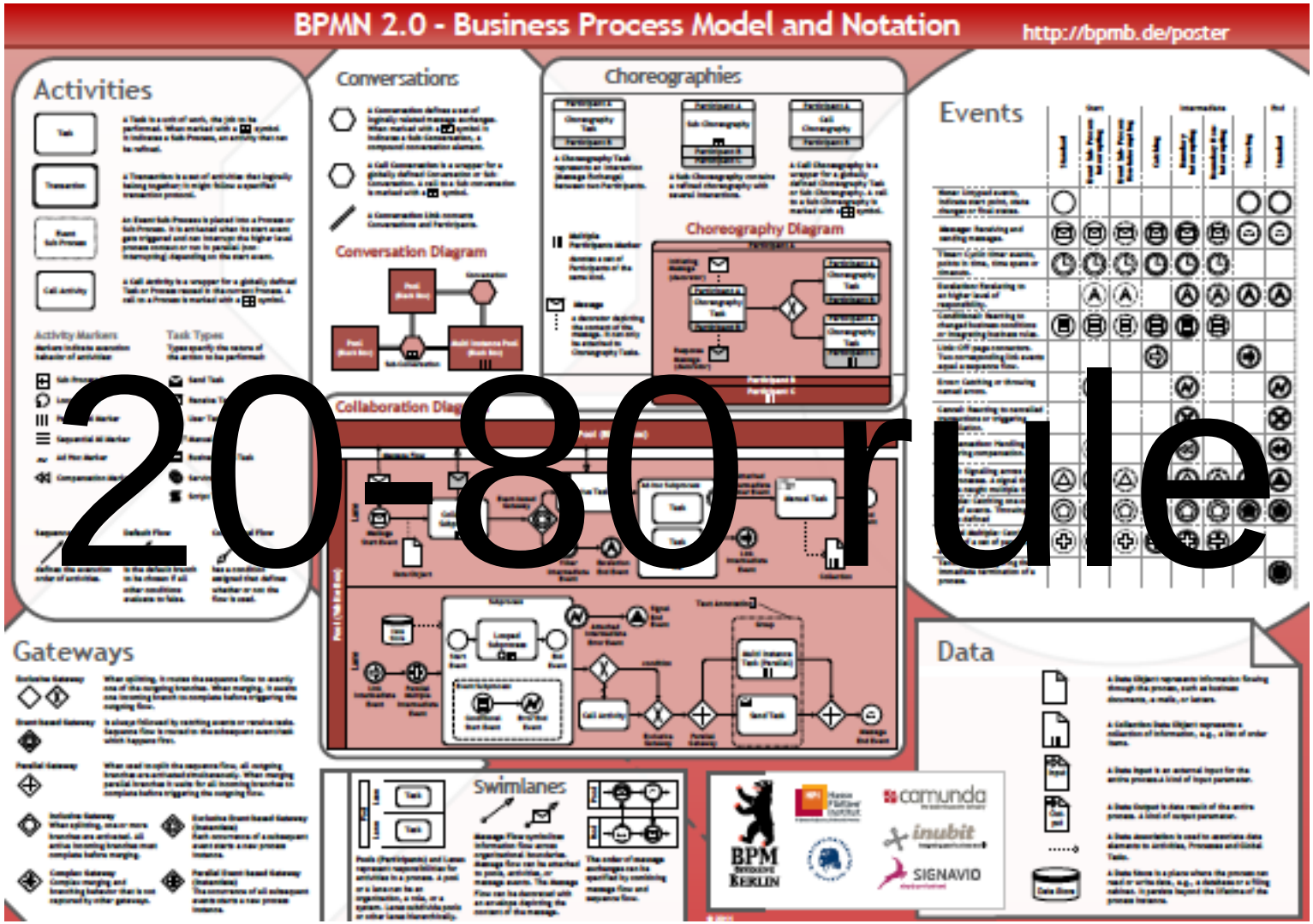
- orchestration and choreography

- extension points => add specific needs without breaking interoperability

- optional mapping of a BPMN subset to BPEL

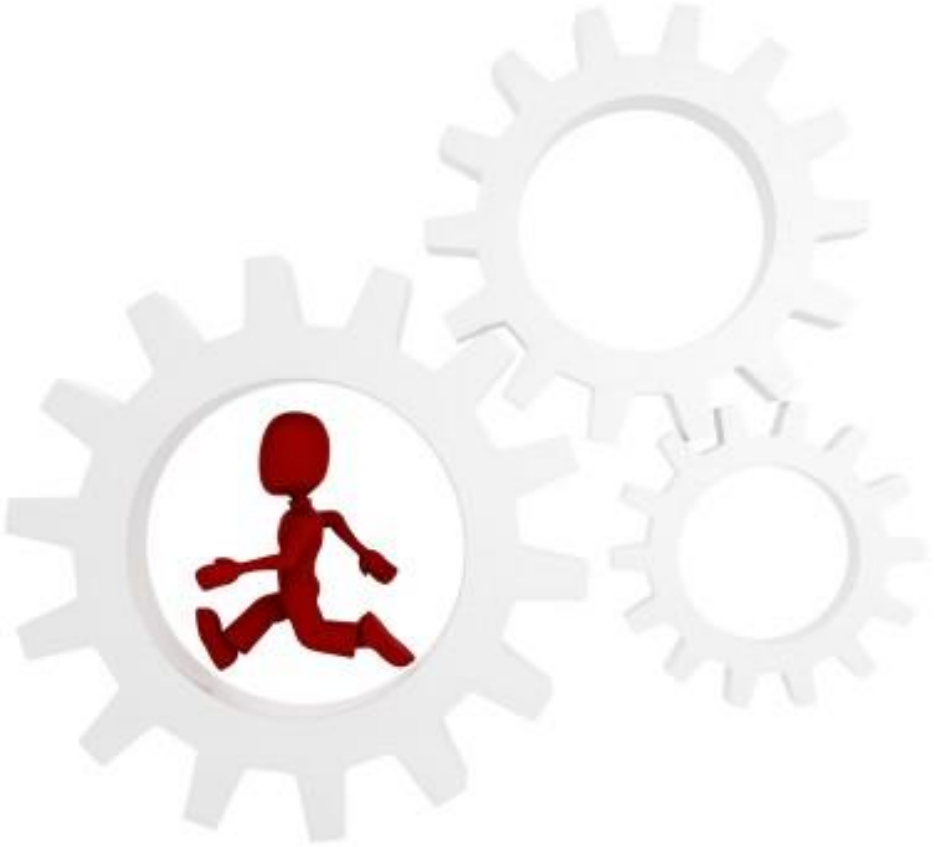
  (restricted to block-structured flows without cycles)

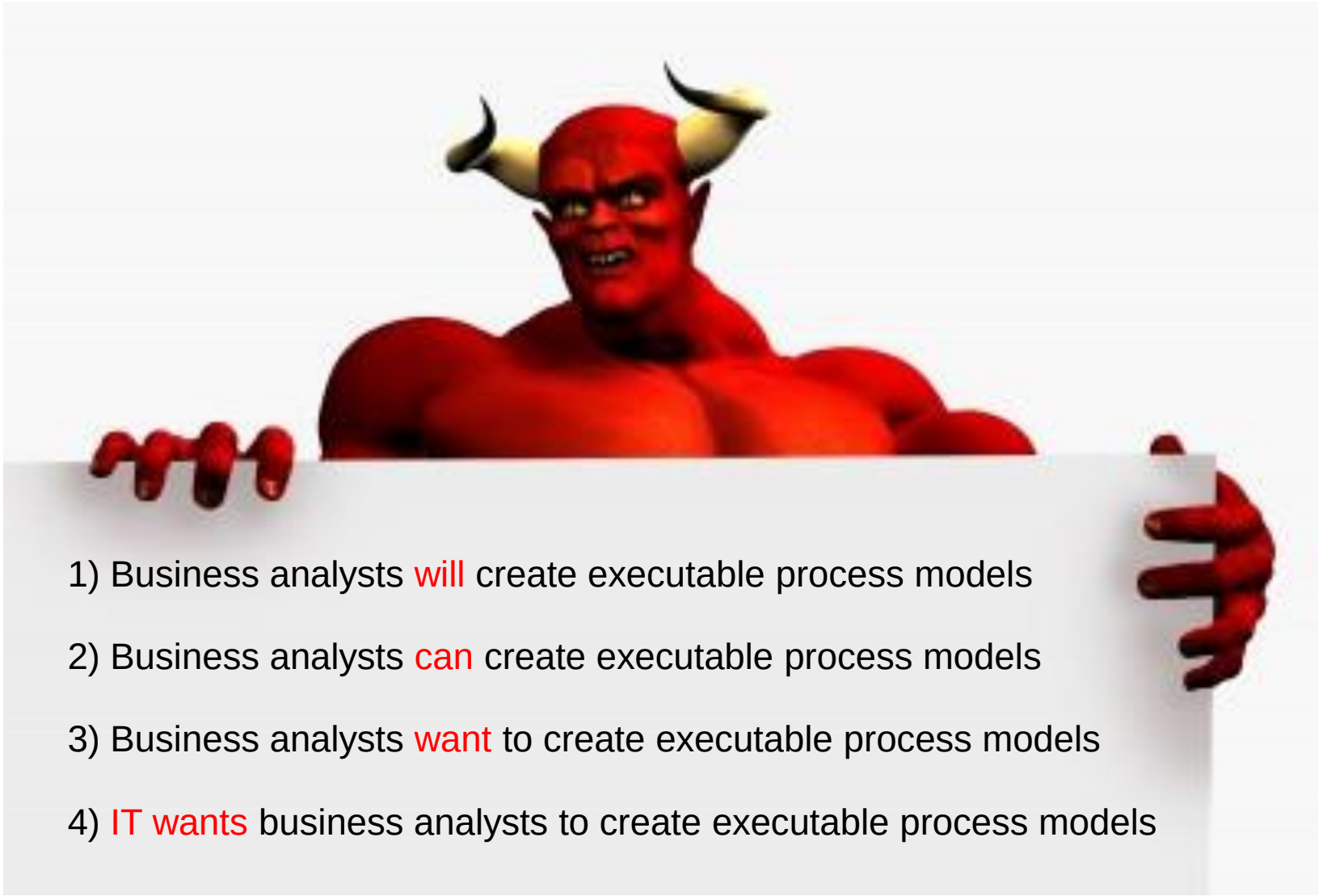

BPMN 2.0 - Business Process Model and Notation
http://bpmb.de/poster
Activities
Conversations
Choreographies
Events
Gateways
Swimlanes
Data
Conversation Diagram
Choreography Diagram
Collaboration Diagram
BPM Berlin
camunda
inubit
SIGNAVIO


BPMN 2.0 - Business Process Model and Notation
http://bpmb.de/poster
Activities
Conversations
Choreographies
Events
Gateways
Swimlanes
Data
20-80 rule

MaibornWolff et al

- long-running stateful workflows
- frequently changing processes
- human interaction





http://www.activevos.com/blog/soa/the-four-myths-of-bpm-projects-what-it-project-teams-need-to-know/2011/01/18/

MaibornWolff et al

1) Business Process Management (BPM)

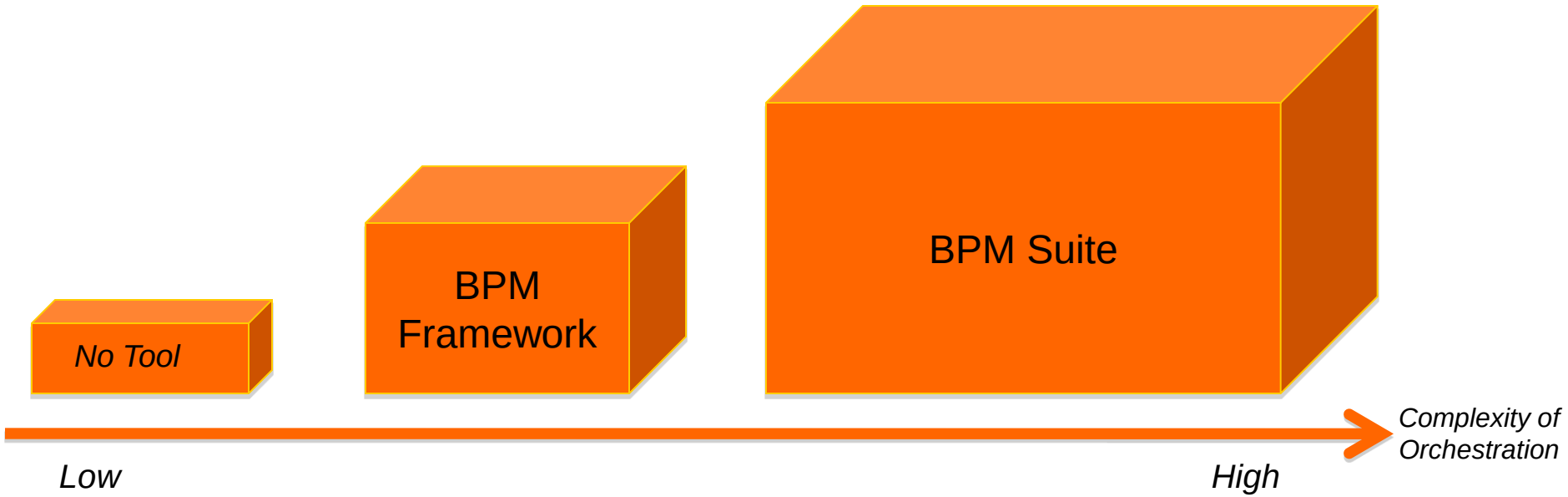
1) Activiti

1) Apache Camel

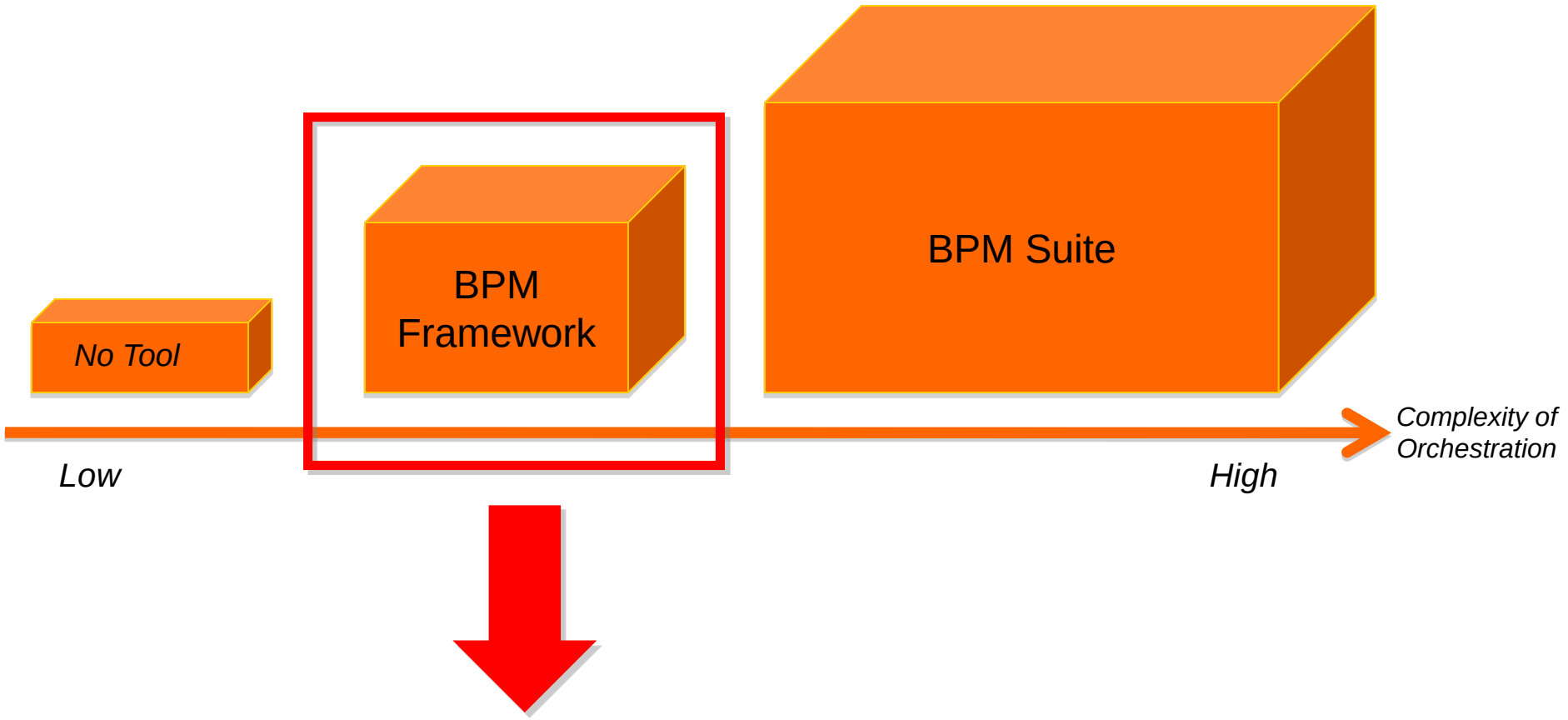
2) Combination of Activiti and Apache Camel

Alternatives for BPM

MaibornWolff et al



MaibornWolff et al



Activiti vs. JBoss jBPM vs. Bonita vs. ProcessMaker

- open source
- BPMN 2.0 process engine
- lightweight
- easy to use
- Java API
- developer-focused
- embeddable

Activiti Modeler

Activiti Designer

Process Engine

camunda fox style

Activiti Explorer

- BPMN 2.0 process engine
- state machine with one active state
- execution progresses via transitions
- most BPMN 2.0 elements are implemented as a state
- states are connected with leaving and arriving transitions (called sequence flows)
- every state (i.e. its corresponding BPMN 2.0 element) can have a piece of logic attached (executed when the process instance enters the state)

Services

RuntimeService

TaskService

FormService

HistoryService

IdentityService

ManagementService

RepositoryService

Service Tasks (BPMN Standard)

Web Service Task

Script Task (e.g. Groovy or JavaScript)

User Task

Business Rule Task

Service Tasks (Activiti Extension

Java Tasks

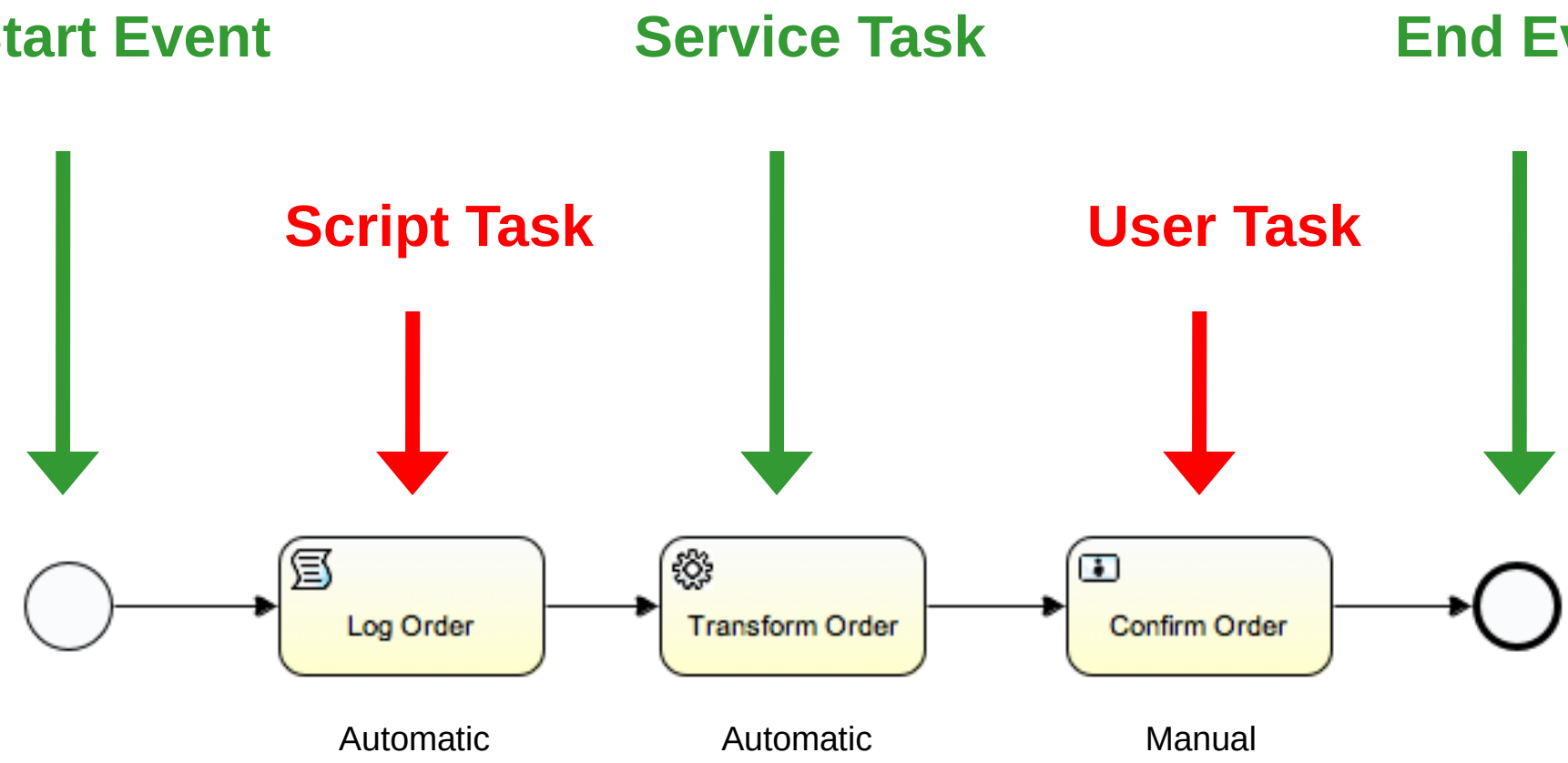
Spring Service Task

... more

```
<process id="bookorder" name="Order book">
    <startEvent id="startevent1" name="Start"/>
    <sequenceFlow id="sequenceflow1" name="Validate order"
                  sourceRef="startevent1" targetRef="scripttask1"/>
    <scriptTask id="scripttask1"
                name="Validate order“ scriptFormat="groovy">
      <script>out:println "validating order for isbn " + isbn;</script>
    </scriptTask>
    <sequenceFlow id="sequenceflow2" name="Ending process"
                  sourceRef="usertask1" targetRef="endevent1"/>
    <endEvent id="endevent1" name="End"/>
  </process>
```

```
ProcessEngine processEngine = ProcessEngineConfiguration
        .createStandaloneInMemProcessEngineConfiguration()
        .buildProcessEngine();
RuntimeService runtimeService =
        processEngine.getRuntimeService();
RepositoryService repositoryService =
        processEngine.getRepositoryService();
repositoryService.createDeployment()
        .addClasspathResource("bookorder.simple.bpmn20.xml")
        .deploy();
ProcessInstance processInstance =
runtimeService.startProcessInstanceByKey(
        "simplebookorder");
assertNotNull(processInstance.getId());
System.out.println("id " + processInstance.getId() + " " +
processInstance.getProcessDefinitionId());
```

MaibornWolff et al



MaibornWolff et al

Activiti in Action

MaibornWolff et al

1) Business Process Management (BPM)

1) Activiti

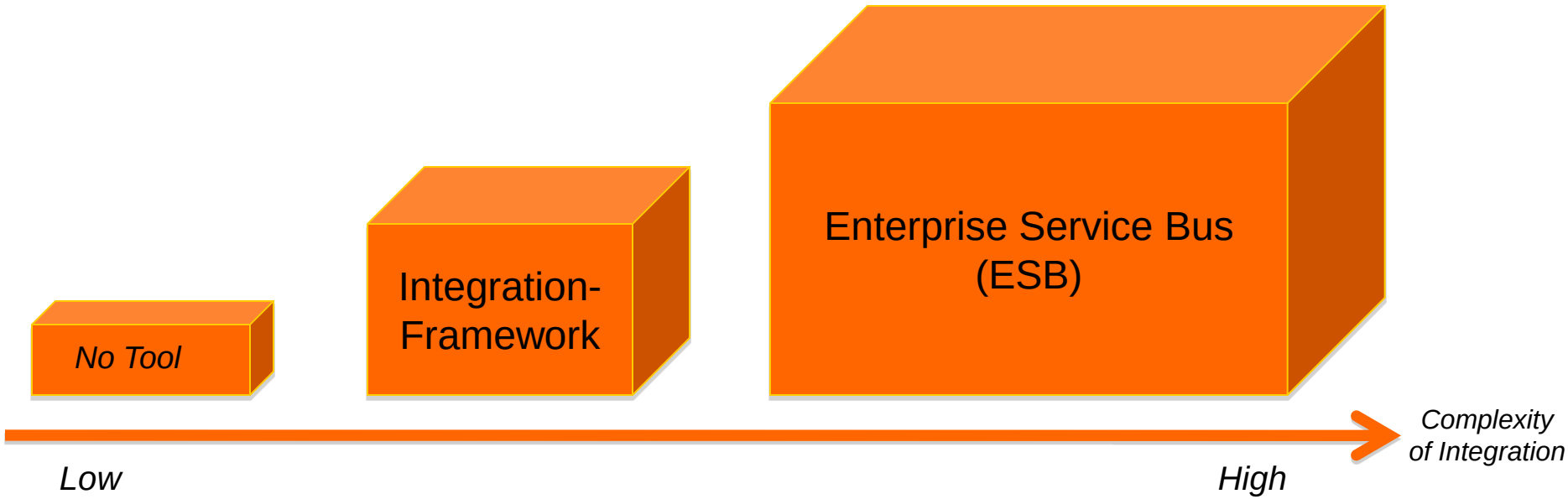
1) Apache Camel

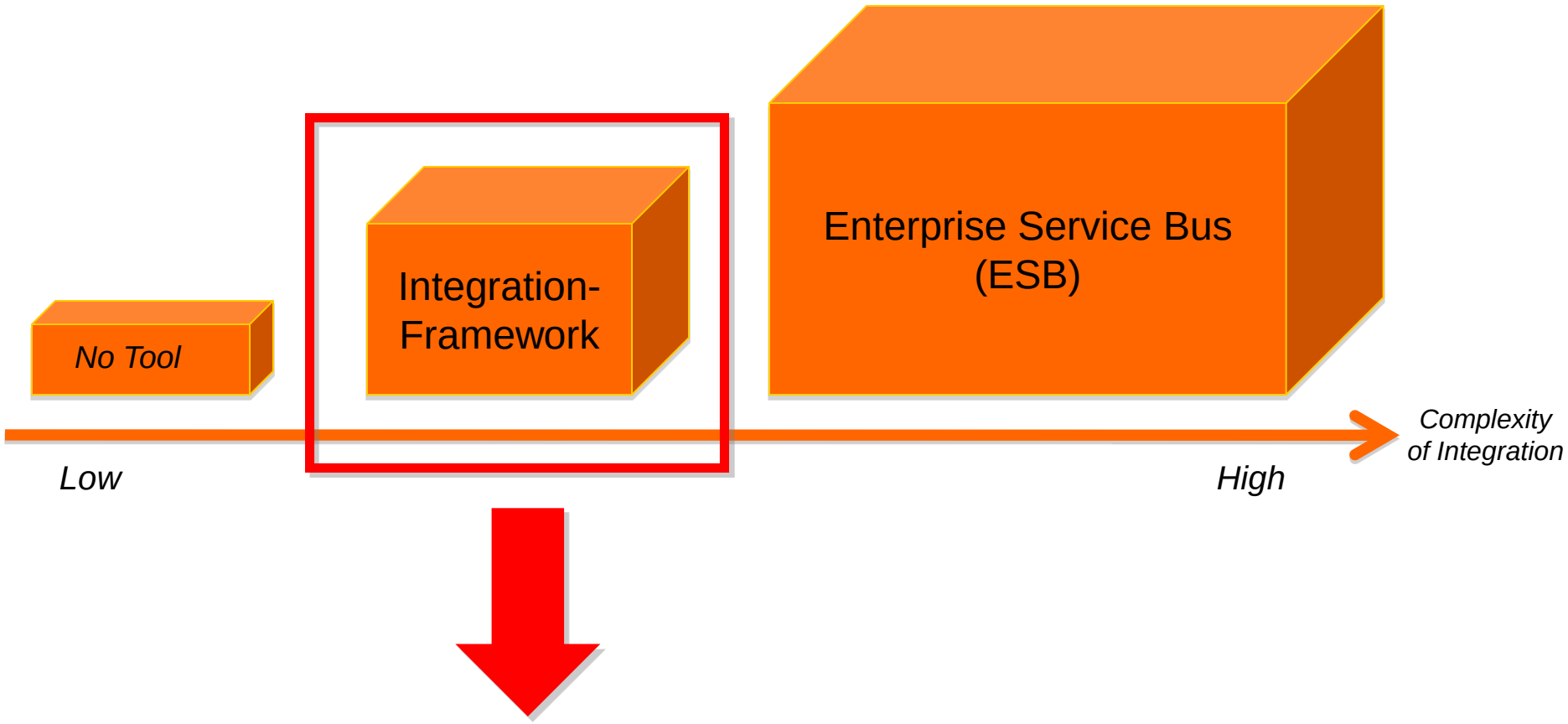
2) Combination of Activiti and Apache Camel

Come on, guys! We are a

Alternatives for Systems Integration

MaibornWolff et al





Apache Camel vs. Spring Integration vs. Mule ESB

http://www.kai-waehner.de/blog/2012/01/10/spoilt-for-choice-which-integration-framework-to-use-spring-integration-mule-esb-or-apache-camel

- Standardized Modeling
- Efficient Realization
- Developer-focused
- Automatic Testing
- Many Components
- Several DSLs
- Awesome Community

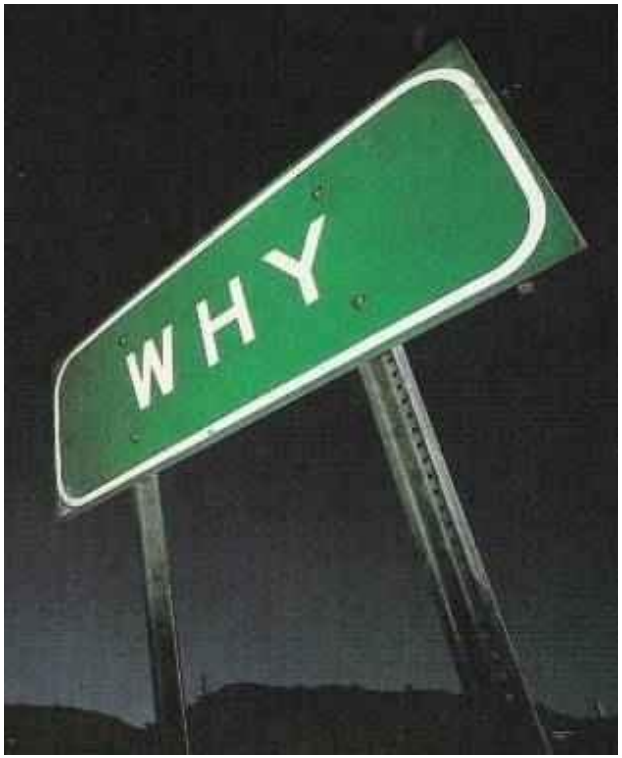
MaibornWolff et al

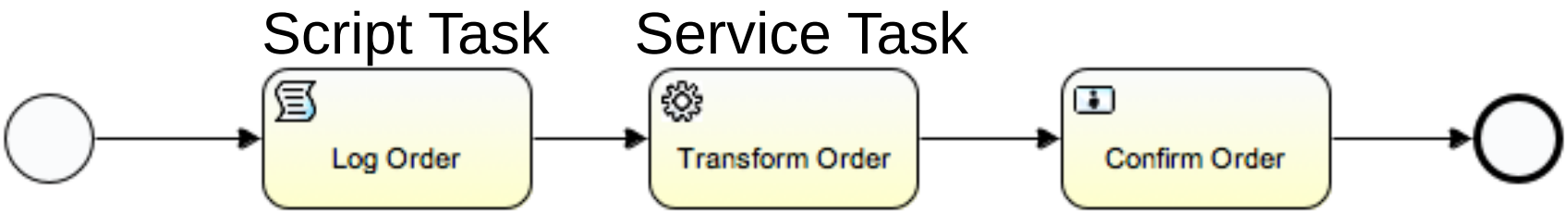
1) Business Process Management (BPM)

1) Activiti

1) Apache Camel

2) Combination of Activiti and Apache Camel


WHY



Groovy
JavaScript
etc.

Java
SOAP Web Service

Everything
(from Cobol to Ruby)

All Roads lead to Rome!

Separation of Concerns

MaibornWolff et al

Overlappings?

MaibornWolff et al

Both can realize processes. Both can integrate services.

Both can realize processes. Both can integrate services.

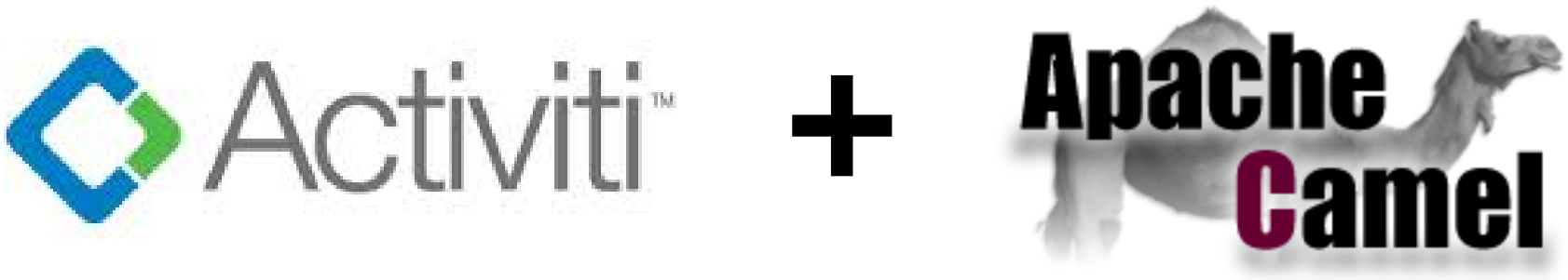
- Support for long running stateful processes
- Human workflow integration

Both can realize processes. Both can integrate services.

- Support for long running stateful processes
- Human workflow integration

- Connectivity / Adaptors to connect to externa systems using a variety of different protocol
- Predefined EIP for message routing

http://www.pleus.net/blog/?p=1028



Both ...

- ... are lightweight
- ... are open source
- ... are developer-focused
- ... offer combination out-of-the-box

BPMN - Java Service Task

```
<serviceTask id="myServiceTask"
        activiti:delegateExpression="${camelBehaviour}" />
<sequenceFlow sourceRef="myServiceTask" targetRef="myUserTask" />
```

BPMN Process Instance

Spring Bean

```
<bean id="camelBehaviour" class="org.activiti.camel.CamelBehaviour">
    <constructor-arg index="0">
        <list>
            <bean class="org.activiti.camel.SimpleContextProvider">
                <constructor-arg index="0" value="activitiCamelProcess" />
                <constructor-arg index="1" ref="camelContext" />
            </bean>
        </list>
    </constructor-arg>
</bean>
```

CamelContext

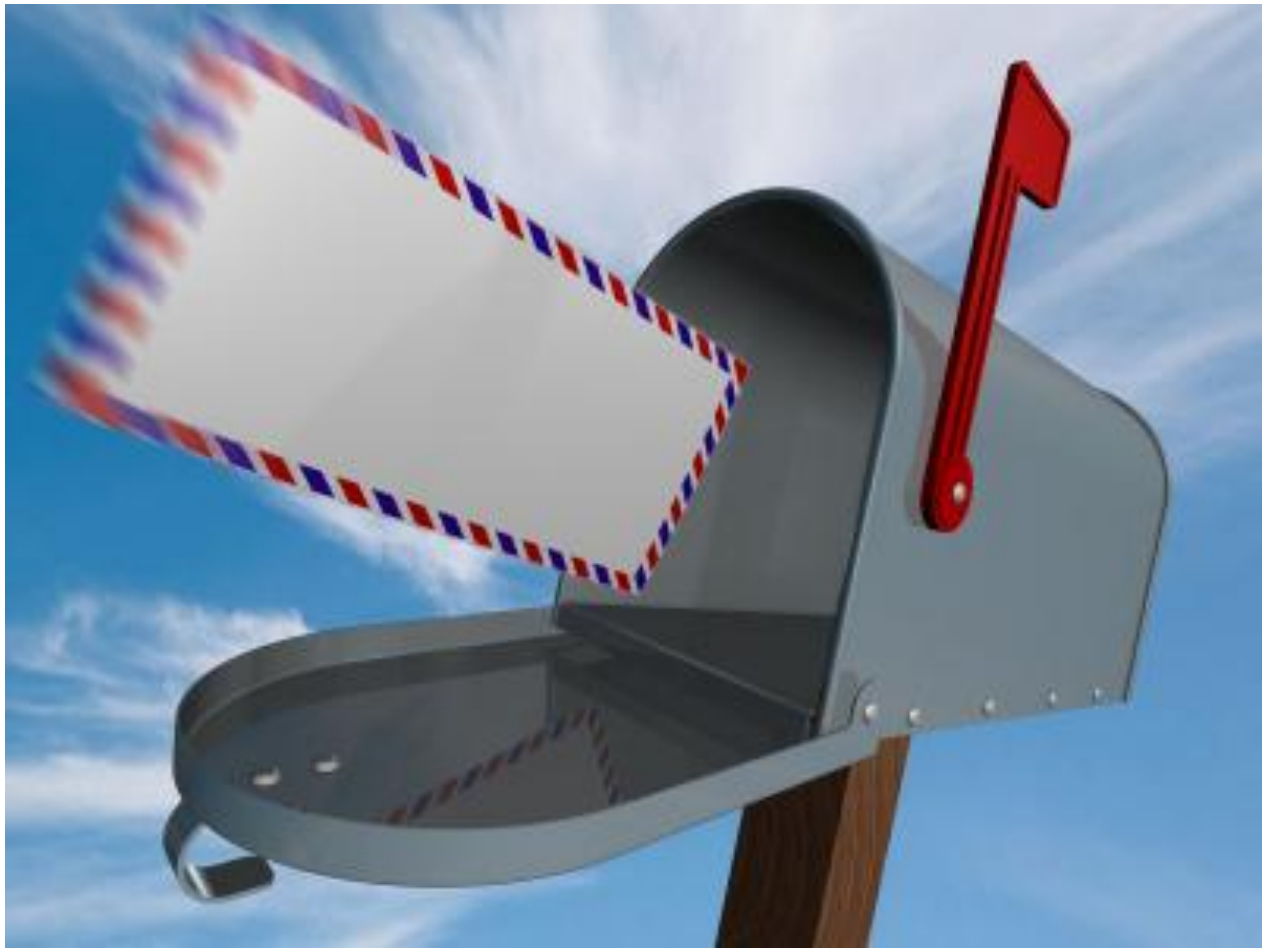
MaibornWolff et al

```
// Producer => Call Activiti process from Camel
from("direct:start")
        .to("activiti:myProcess");

// Consumer => Get called from Activiti process
from("activiti:myProcess:myServiceTask")
        .log(LoggingLevel.INFO, "Received message on service task ${property.var1}")
        .setProperty("var2").constant("world")
        .setBody().properties();
```

Activiti and Apache Camel combined ...

Did you get the Key Message?



MaibornWolff et al

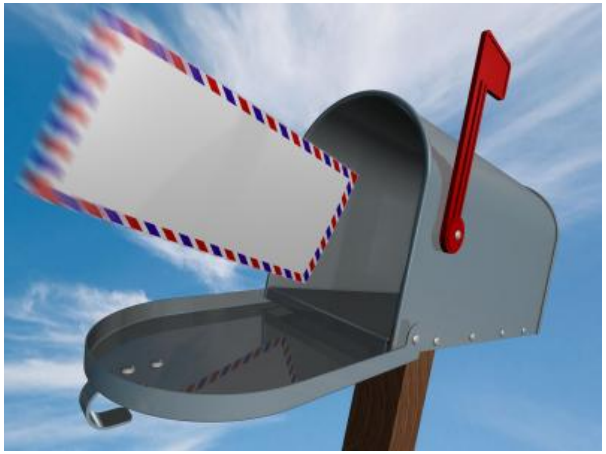
?

BPM should be used for optimizing business process

BPM should NOT be used for systems integrati

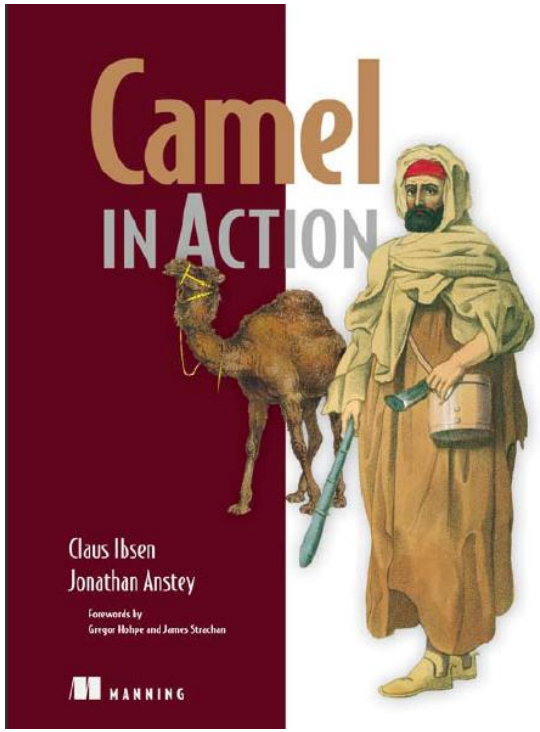
Activiti and Apache Camel are a perfect combinatic

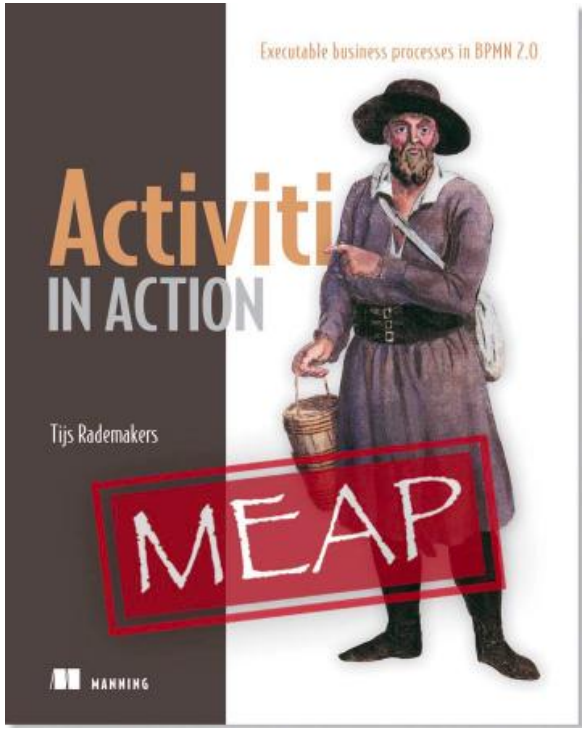
Did you get the Key Message?



Whet your appetite?

MaibornWolff et al





Become a Part of the Open Source Community!

MaibornWolff et al

Thank you for your Attention. Any Questions?

MaibornWolff et al

Activiti + Apache Camel = BPM beyond Web Services

Kai Wähner

MaibornWolff et al:
www.mwea.de

Email: kai.waehner@mwea.de

Twitter: @KaiWaehner

Blog: www.kai-waehner.de/blog