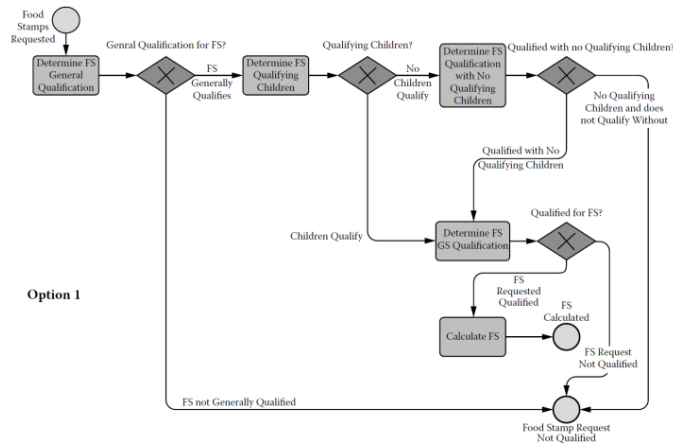


Making Business Rules Operational

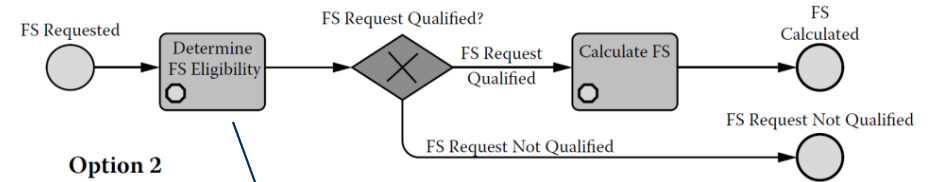
Knut Hinkelmann



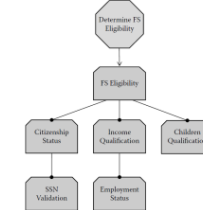
Separating Business Rules from Process Models and Software Systems



Option 1

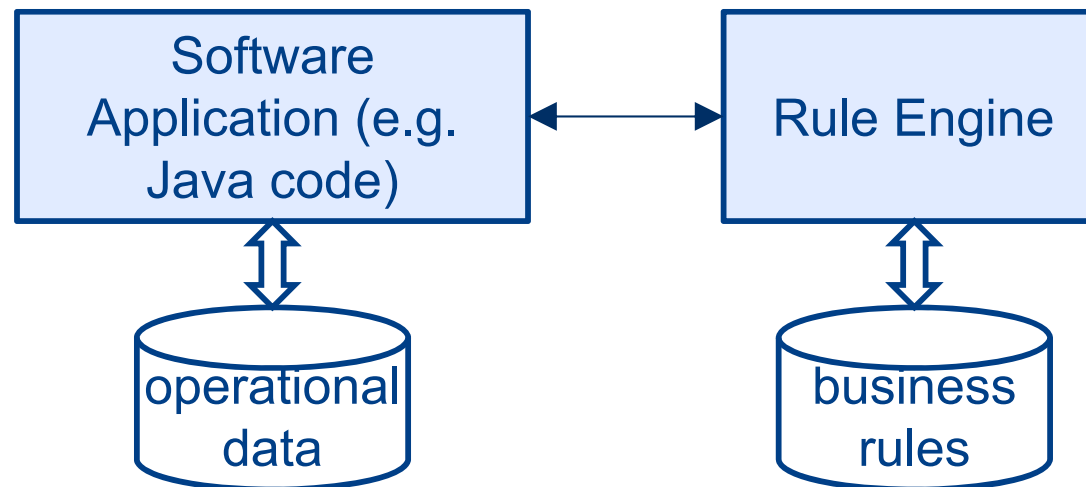


Option 2

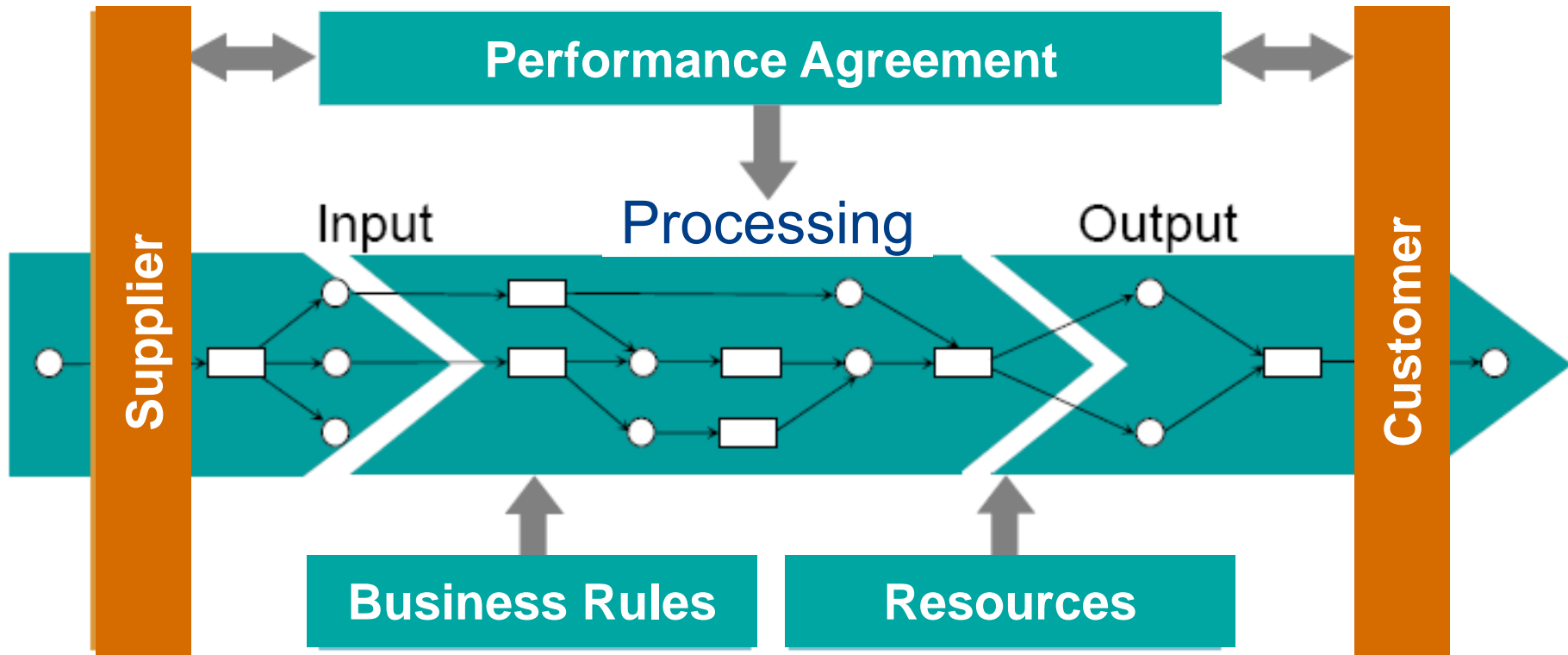


Business Rules

(von Halle & Goldberg 2010, p. 71)



Business Rules and Processes



Source: Rainer Endl (2004): Regelbasierte Entwicklung betrieblicher Informationssysteme, EUL-Verlag, S. 16

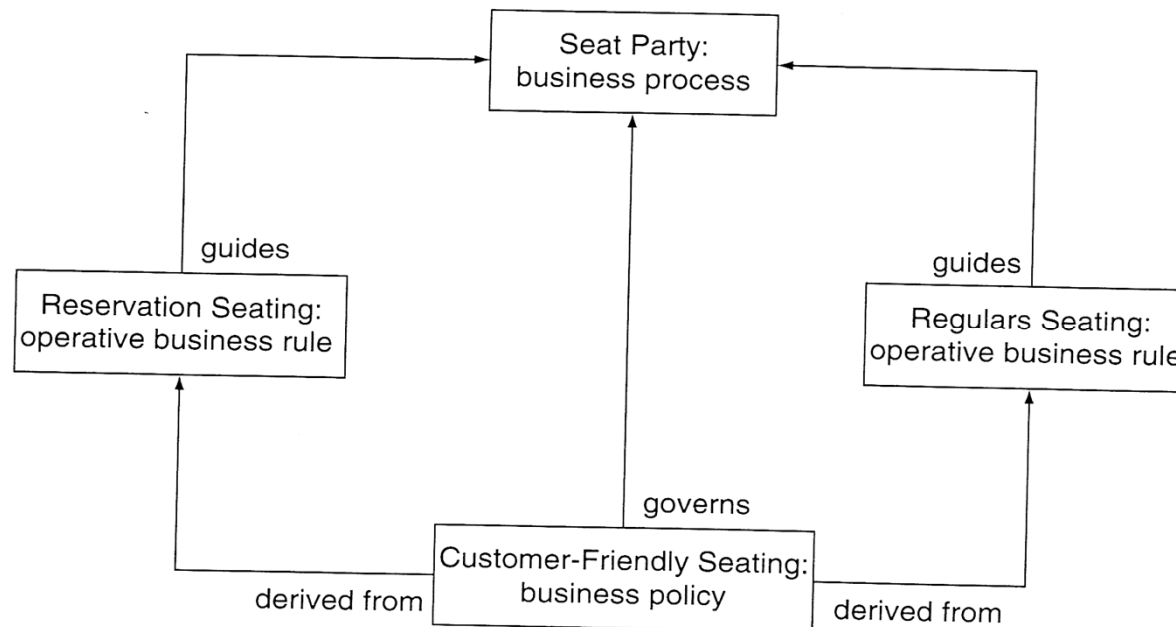
siehe auch:

R. Endl: Modellierung von Geschäftsprozessen. http://www.brportal.org/German/vertInformationen/Regelbasierte_Prozessmodellierung.pdf



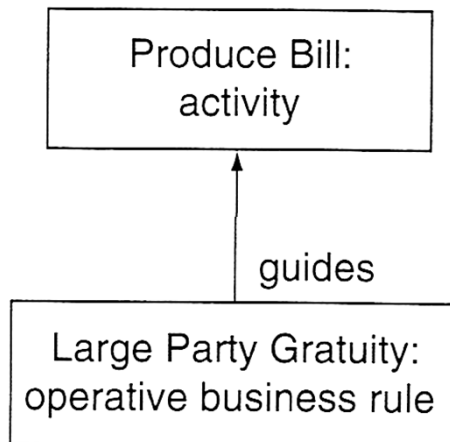
Business Processes and Business Rules

- Business Policies govern Business Processes
- Business Rules guide the Business Process by specifying how the work is to be done



Business Rules guiding Activities

- An activity is guided by a business rule when the business rule helps the person performing the activity do his or her work.
- Example: The business rule **Large Party Gratuity** is used by a server when she performs the activity **Produce Bill**.
 - ◆ If it is a manual activity, the server might include a line item on the bill for the mandatory gratuity
 - ◆ If a software application is used to produce the final bill, the application must be aware of the **Large Party Gratuity** rule.

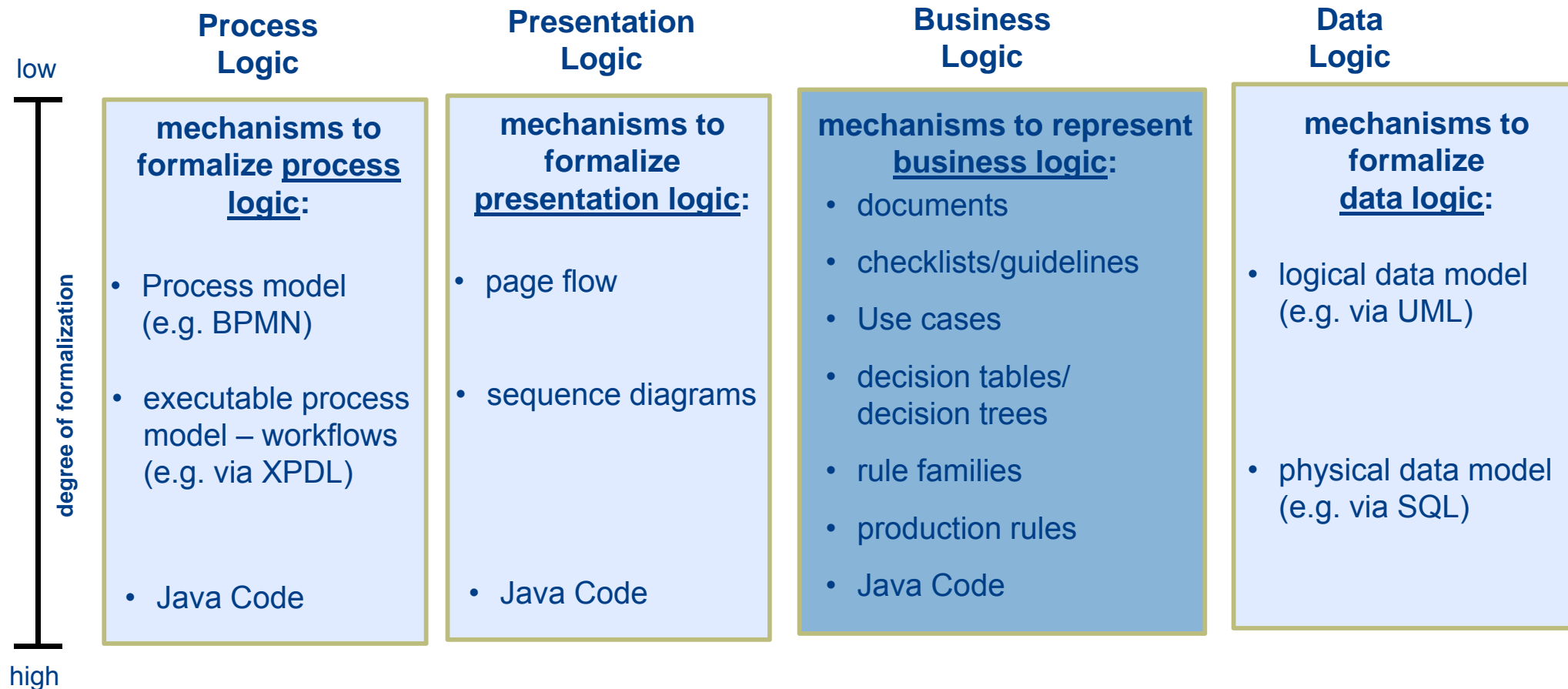


Large party gratuity: It is obligatory that the gratuity is at least 15% if the gratuity is applied to a bill and the bill is incurred by a party and the party is greater than 7 people.

Realizing Business Rules

- There are various approaches to operationalize rules, e.g.
 - ◆ Rule engines: specialized programs designed to execute rules
 - ◆ Program code: encapsulating a rule or rule set in a function
 - ◆ Databases: business rules could implement integrity constraints, stored procedures, or triggers
 - ◆ Workflow Management Systems: rules are mostly associated with branching points

Representations of Process, Business and Data Logic



adapted from (Küng 2010)



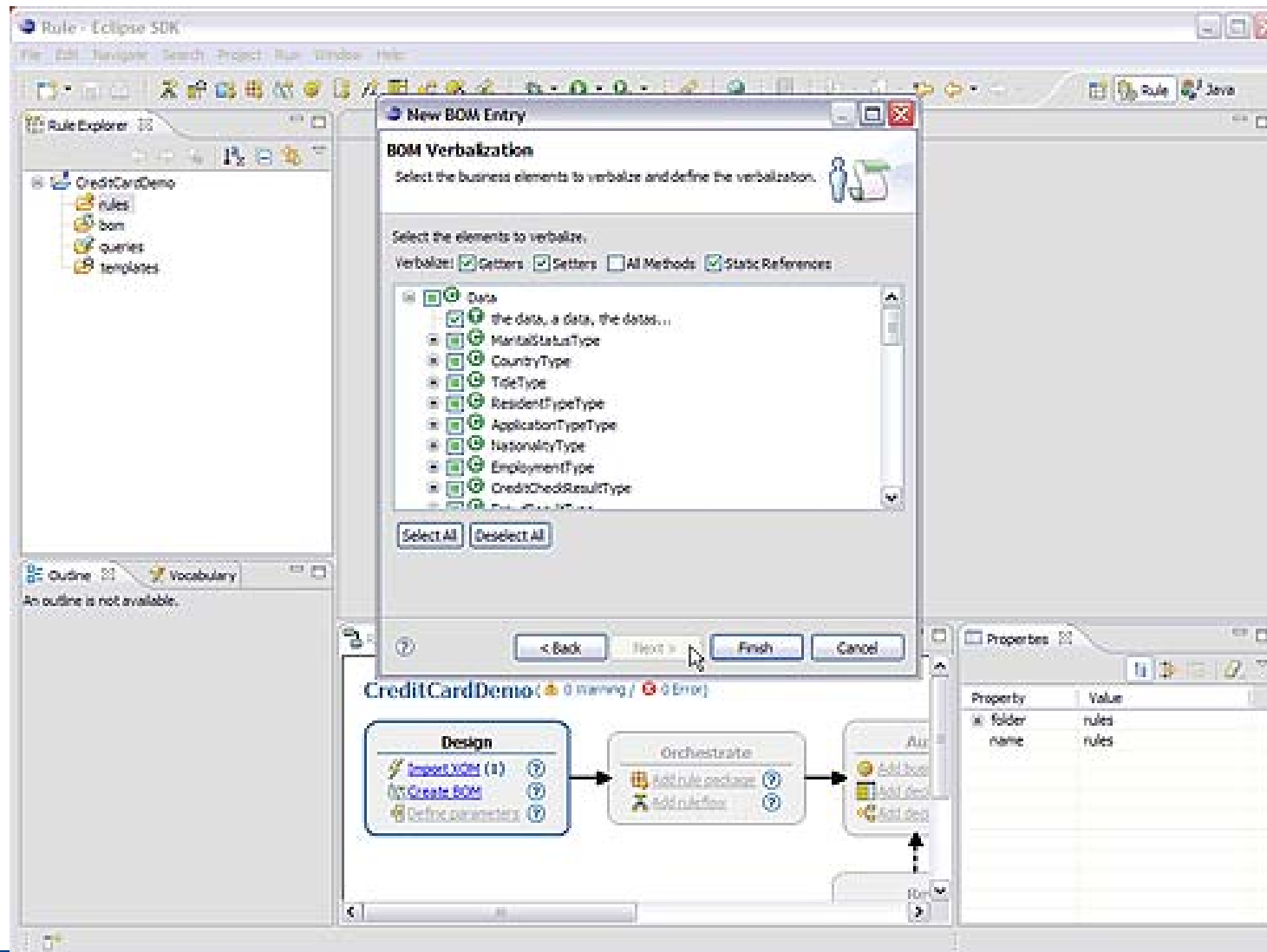
Business Rules Technology

There are different types of Business Rules technology

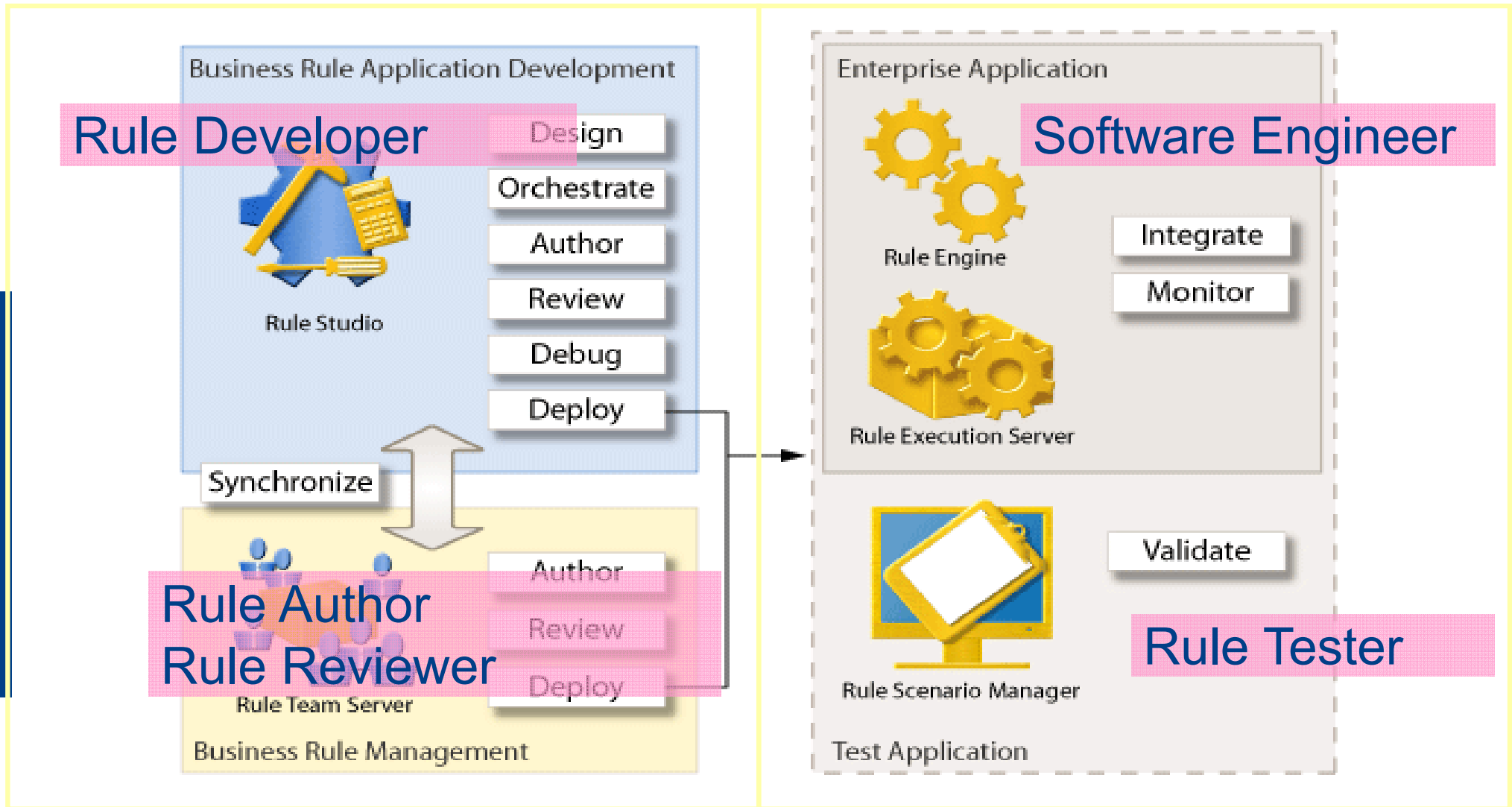
- **Business Rules Management System (BRMS):** a software system used to define, deploy, execute, monitor and maintain business rules. It includes
 - ◆ A **repository**, allowing business rules to be stored
 - ◆ A **business rules engine**, allowing applications to invoke business rules and execute them in a runtime environment
 - ◆ **Maintenance tools**, allowing both technical developers and business experts to define and manage business rules, e.g. supporting simulation, testing, quality checking
- **Business Rules Discovery:** Automatically finding rules (e.g. in form of decision trees, decision tables) by using data mining techniques

Business Rules Management Systems

Editing JRules in the RuleStudio



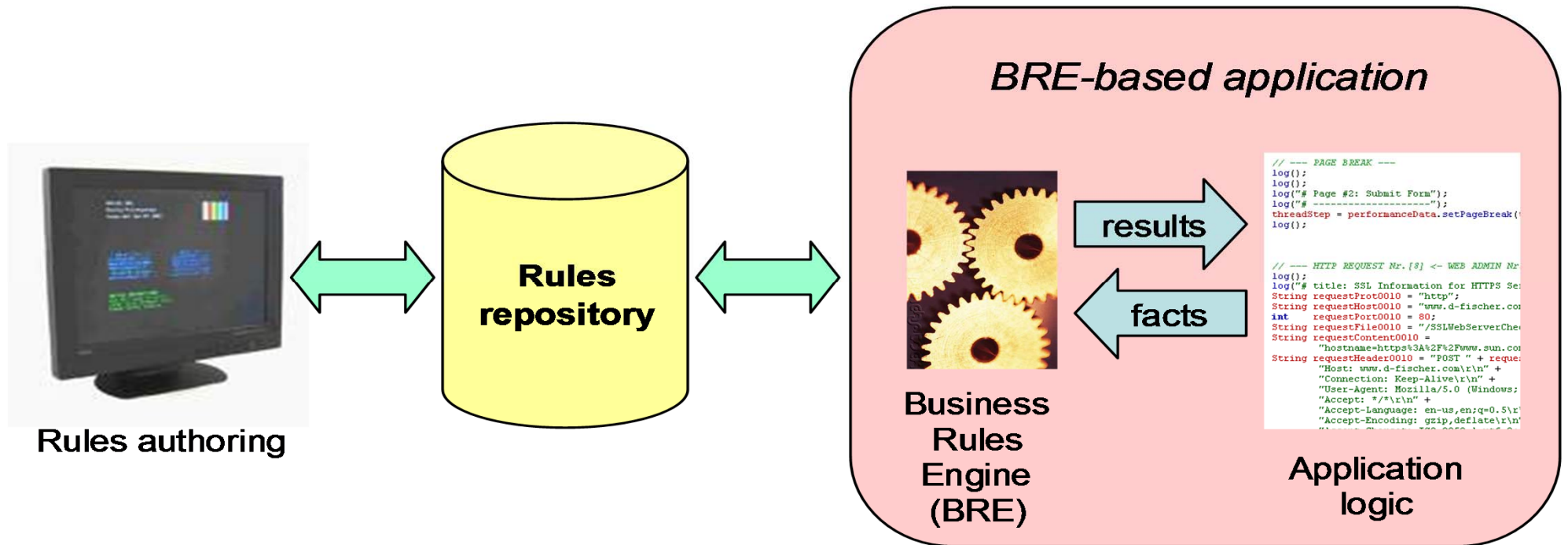
Components and Roles for Business Rules Mgmt (JRules, v6.7)



Source: P. Küng (Credit Suisse)

Making Business Rules visible

- Business Rules are extracted from applications, stored in a repository, and processed by a BRE.

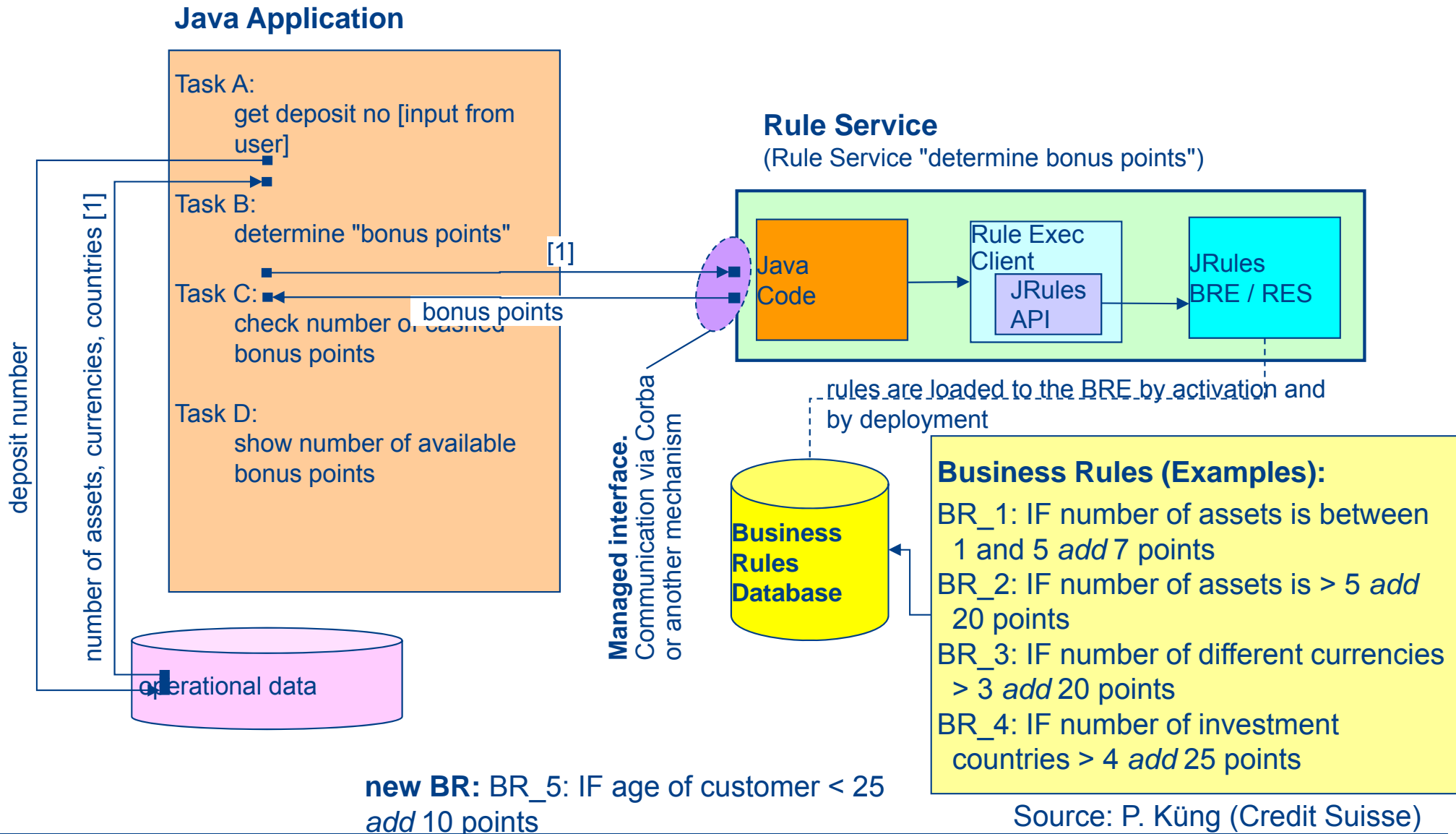


Positioning of BRMS in Credit Suisse

In Credit Suisse IBM WebSphere JRules has been declared as BRMS standard enterprise wide license

Source: P. Küng (Credit Suisse)

Interaction between Java Code, BRE-based Rule Service, and BR Database (a simplified example)



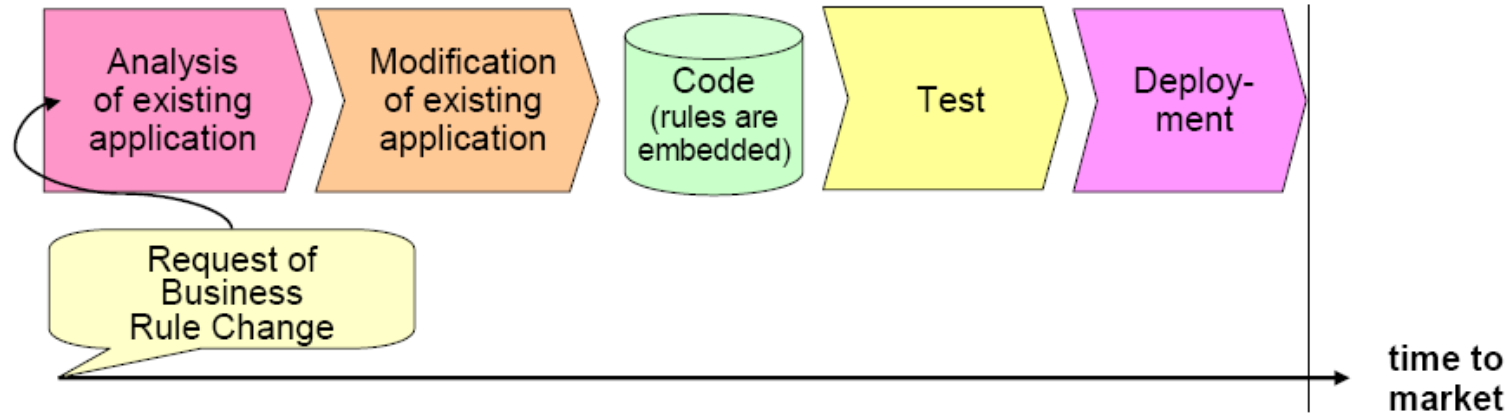
Source: P. Küng (Credit Suisse)



Business Rules and Software Validation

Assumption: An existing BR has to be changed

Option 1: Rules are embedded in application software



Option 2: Rules are managed and executed via a BRE (code remains unchanged)

