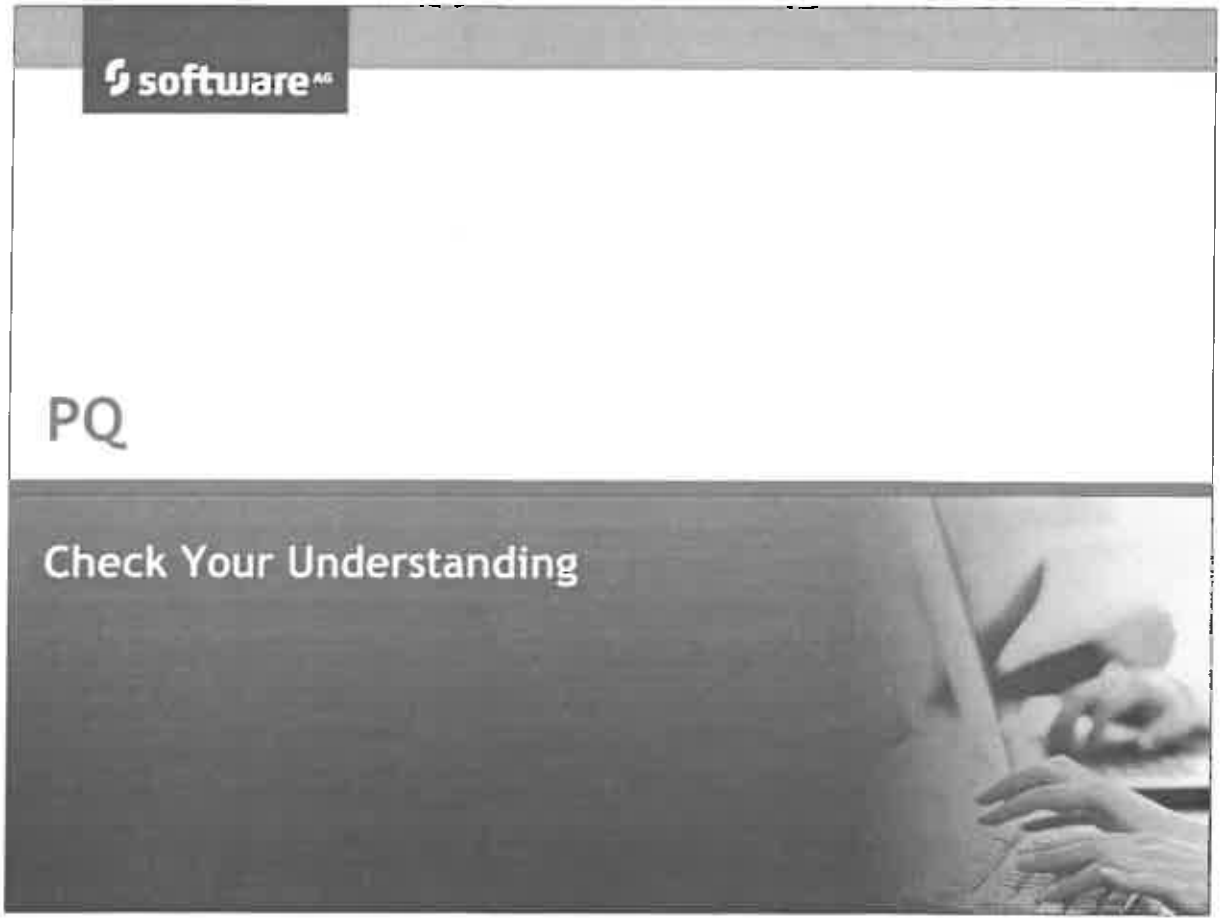


Notes:

 

## Check Your Understanding - Chapter 1-4

- What are the six administration tasks you should undertake before starting development for the first time?

- Name four benefits of the Software AG Designer:



Notes:

## Check Your Understanding - Chapter 1-4

- What is a workspace?

- Compare and relate a perspective and a view:



Notes:

 

## Check Your Understanding - Chapter 1-4

- Where do you configure integration Server connectivity in Designer?
- What is the Server Runtime and Configuration used for?
- Which webMethods servers can be monitored in Designer's Servers view?



Notes:

 

## Check Your Understanding - Chapter 1-4

- The Palette in Designer's Process Development perspective provides you with BPMN icons grouped in five folders. One of them is a folder named Activities containing all Activity types. Name the other four:

- Describe the purpose of a Start Message Event:

- Why must you configure Integration Server names?

Software AG Training | PQ - 5

Notes:

 

## Check Your Understanding - Chapter 1-4

- Describe briefly what happens when the build and upload button is pressed in the Process Development perspective:

- How would you generate a documentation report from a process model?

- Briefly describe the purpose of a User Task Activity:



Notes:

## Check Your Understanding - Chapter 5-8

- What is the Process Audit Database used for?

- Is setting the process logging level in Designer a sufficient configuration to allow step resubmission?
  If not, what else is required?



Notes:

## Check Your Understanding - Chapter 5-8

- What is the meaning of the Express Pipeline setting?
- What is the meaning of the Optimize Locally setting?
- Name the four Join types:



Notes:

## Check Your Understanding - Chapter 5-8

- Compare a Subprocess, a BPMN Callable Process and a webMethods Referenced Process:



Notes:

## Check Your Understanding - Chapter 5-8

- Briefly describe the concept of correlation and how to implement correlation in webMethods BPMS:



Notes:

## Check Your Understanding - Chapter 5-8

- Explain what happens when the Process Engine transitions to a User Task Activity?

- Can a Java type be used as an input to a User Task?

- If a User Task needed to be re-factored such that the Business Data type is changed, what steps would you need to undertake while refactoring the User Task?



Notes:

## Check Your Understanding - Chapter 9-11

- What do you call the components you put on a User Task UI?
- Describe an Action within a User Task:
- Describe an Event within a User Task:



Notes:

## Check Your Understanding - Chapter 9-11

- Name the three Distribution Management options of a User Task :
- What is the meaning of a Task Control Set?
- Which console would you use to define a Business Calendar?



Notes:

## Check Your Understanding - Chapter 9-11

- Name the nine User Task Management buttons:
- How do you delete all the User Task instances of a User Task Type?
- How do you delete User Task Types?
- Name the three types of principals that can be used in Permissions Management?

Notes:

 

## Check Your Understanding - Chapter 9-11

- Which possibilities do you have to specify a process timeout?

- Briefly explain the main difference between an interrupting and a non-interrupting Boundary Timer Event.

- Name the three Exceptional Transition types:



Notes:

 

## Check Your Understanding - Chapter 12-15

- What is the main reason for using a Rule Task Activities instead of a Service Task Activity?

- What is the difference between a Rule Maintenance Console (RMC) and a Rule Maintenance Application (RMA)?



Notes:

## Check Your Understanding - Chapter 12-15

- How can you start a business process instance:



Notes:

 

## Check Your Understanding - Chapter 12-15

- An example of a built-in Validator is Credit Card.
  Name at least three others:

- If you wanted to auto populate a drop down or radio button group on a UI from the result of a Web Service call, what steps would you implement?



Notes:

software

## Check Your Understanding - Chapter 12-15

- Compare the Local and Shared Metadata:

- What are advantages of sharing metadata?

- When publishing your BPM assets from Designer, which Organization will your assets be registered?

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Notes:

## Check Your Understanding - Chapter 12-15

- What are advantages of using a VCS?

- Where do you maintain the version number of a process model?



Notes:

## Check Your Understanding - Appendix A-B

- Give three examples of KPIs:

- If you have an external process, where do you send process state when coding the process "hooks"?



Notes:

## Check Your Understanding - Appendix A-B

- What perspective should you use when running process simulations?
- How would the process developer determine how traffic volume will proceed through the model.
- In what format are simulation reports generated?



Notes:

# Appendix A

## Business Activity Monitoring (BAM)

Notes:

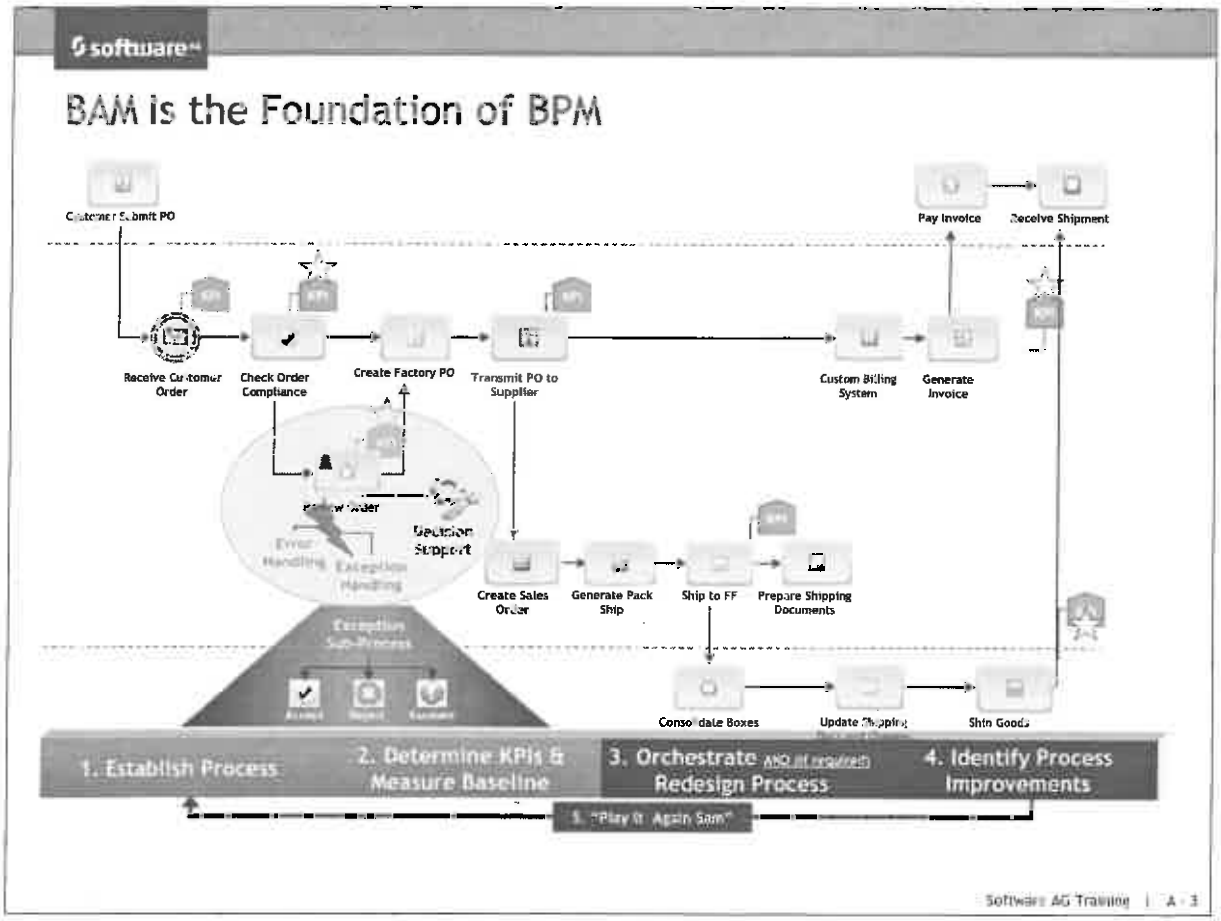
## Objectives

- At the end of this section, you will be able to
  - Describe key concepts and terminology of Business Activity Monitoring
  - Understand the architecture and components of webMethods Optimize for Process
  - Describe the role of Key Performance Indicators (KPIs) in achieving a realistic BAM solution
  - Use Optimize for Process to monitor and optimize webMethods and non-webMethods processes

Software AG Training | A - 2

Notes:




Notes:

## What is Business Activity Monitoring?

- "Business Activity Monitoring is the means of providing real-time access to critical business performance indicators to improve the performance & effectiveness of the business" - *Gartner*
- "Business Activity Monitoring gives the business and IT the actionable insight to identify where the existing errors are occurring so they can address them immediately" - *webMethods*
  - Real-time process analytics provide insight into the most opportune areas within the overall process to improve.



Notes:

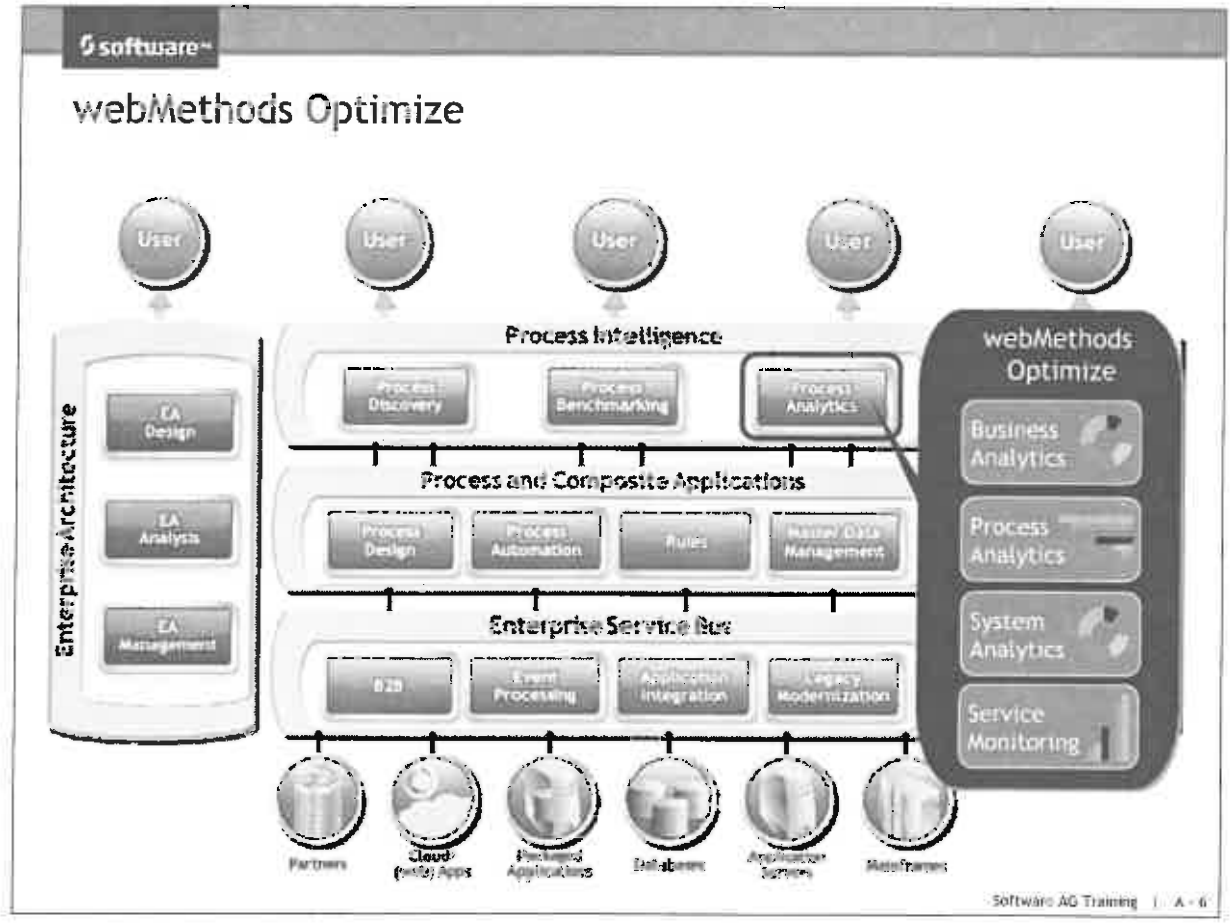
## BAM's Main Measurement Categories

- **Volumes** - how many, how much?
  - Counts of events, quantities, any numeric- based KPI
- **Velocities** - how fast, how long?
  - Cycle-times, time remaining till a deadline, any time based KPI
- **Errors** - how good?
  - Systems, sequence, duplicates, timeouts, matching, content based defects
- **Special conditions** - how "normal"?
  - Events of interest, confluences of KPIs, complex pattern recognition



Notes:




## Notes:

## webMethods Optimize

- Core component of webMethods BPMS and webMethods suite
- Analyzes real-time information and provides actionable data and insight through
  - Key Performance Indicators to define vital information to gather
  - Analysis to learn normal behavior and correlate data
  - Rules to represent conditions, alerting, and corrective action
  - Prediction to find potential problems before they happen
- These capabilities are offered through the Optimize products:
  - Optimize for Process
  - Optimize for Infrastructure
  - Optimize for B2B
  - Optimize Mainframe Edition
  - Optimize for SAP

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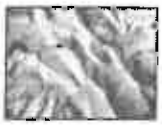
Notes:

## What is so special about webMethods BAM?



- **Linked to the "Business Topography"**
  Follows the landscape of your business process, more than just a point to point measurement, includes key "in-between" steps to help establish visibility

- **Allows Intelligent Self-learning**
  Monitors KPIs and builds a knowledge base of performance statistics based on time-centric criteria (e.g. time-of-day / time-of-week ) which generate statistical boundaries based on historical patterns

- **Supports Six Sigma Analysis**
  Tracks automatically problems and exceptions to enable Six Sigma analysis and Pareto (80/20) charts. Intelligent prioritization drives faster process improvements with fewer resources

- **Provides Fingerprinting and Predictive alerting**
  Compares current and historical activity to anticipate exceptions.
  Proactively notifies BAM users of exceptions (alert via email, web services or SNMP traps).
  Enterprise can react before situation becomes critical.

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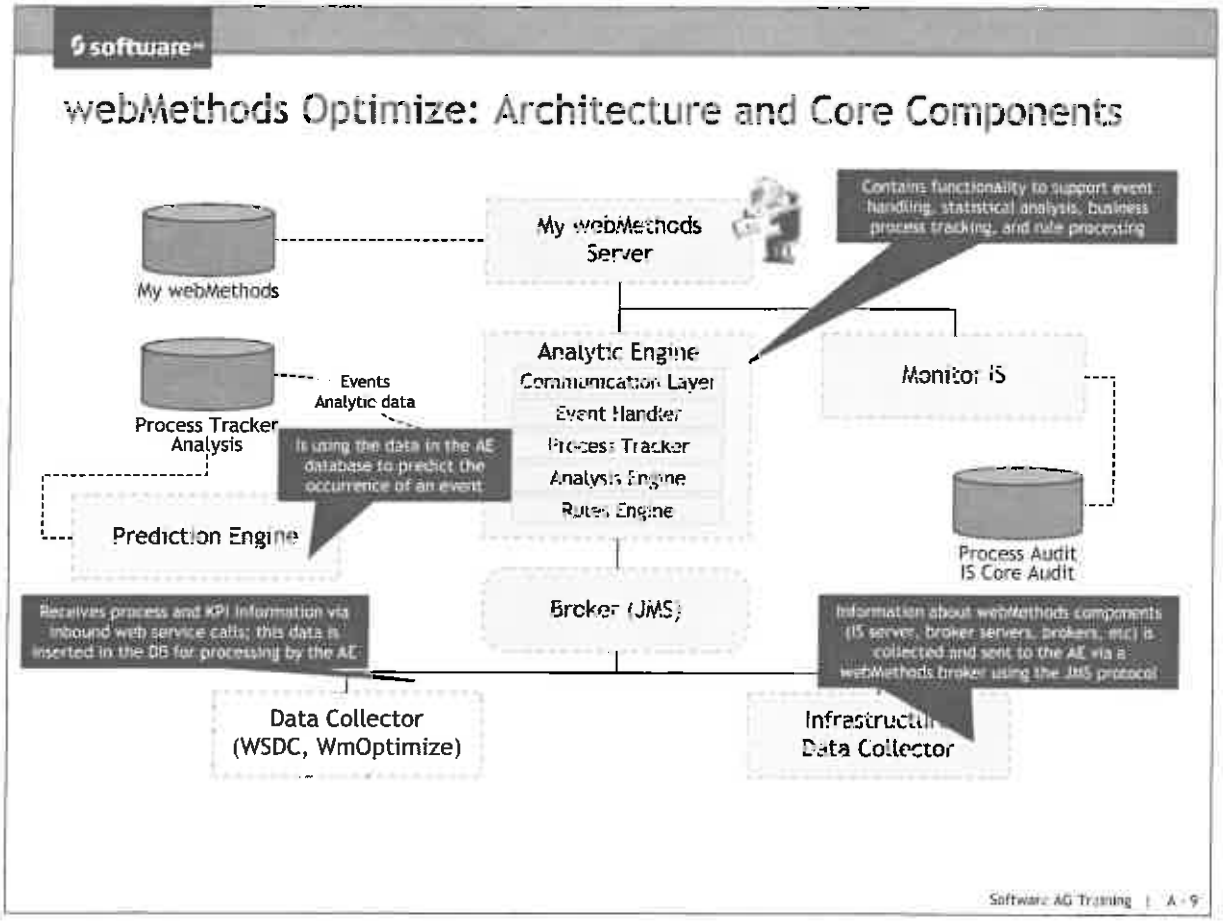
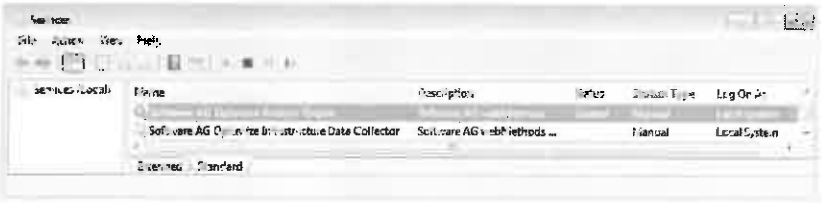
Notes:




## Notes:

## Analytic Engine



Analytic Engine
Communication Layer
Event Handler
Process Tracker
Analysis Engine
Rules Engine

- Event handler
  - Processes all business data oriented events, such as system data or business process data
- Process tracker
  - Takes measurements of executing business processes, such as wait time or completion time
- Analysis engine
  - Runs algorithms against collected data to diagnose trends and deviations
- Rules engine
  - Handles implementation of rules based on KPIs, events, and statistics
- Communications layer
  - Web services interaction with My webMethods Server for presentation
  - Router for interacting with JMS Broker message queues

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Notes:

 

## Key Concepts and Terminology

- **Key Performance Indicator (KPI)** is the measurement of a specific activity important to business success
- **Dimension** is a way of slicing a fact into categories
- **Dimension Hierarchy** allow data to be aggregated into more specific sub divisions
- **Error** is a problem related to a business process, including process, step, and custom
- **Rule** is a condition under which a business process requires attention and allow the "automation" of monitoring KPIs
- **Event** is the container of Optimize data
- **Event Map** contains/describes how Optimize is using the event data

Software AG Training | A - 11

Notes:

 

## Event Map

- **Fact** - data that is to be measured (e.g. quantity, dollar amount, megabyte used, temperature, etc.)
- **Dimension** - Data that can be used to divide a fact into slices or categories (e.g. region, customer, time)
- **Transaction** - information that is neither measurable nor can be used to categorize; transactional data is carried along for informational purposes but cannot be aggregated or measured (e.g. order number, invoice date, etc.)

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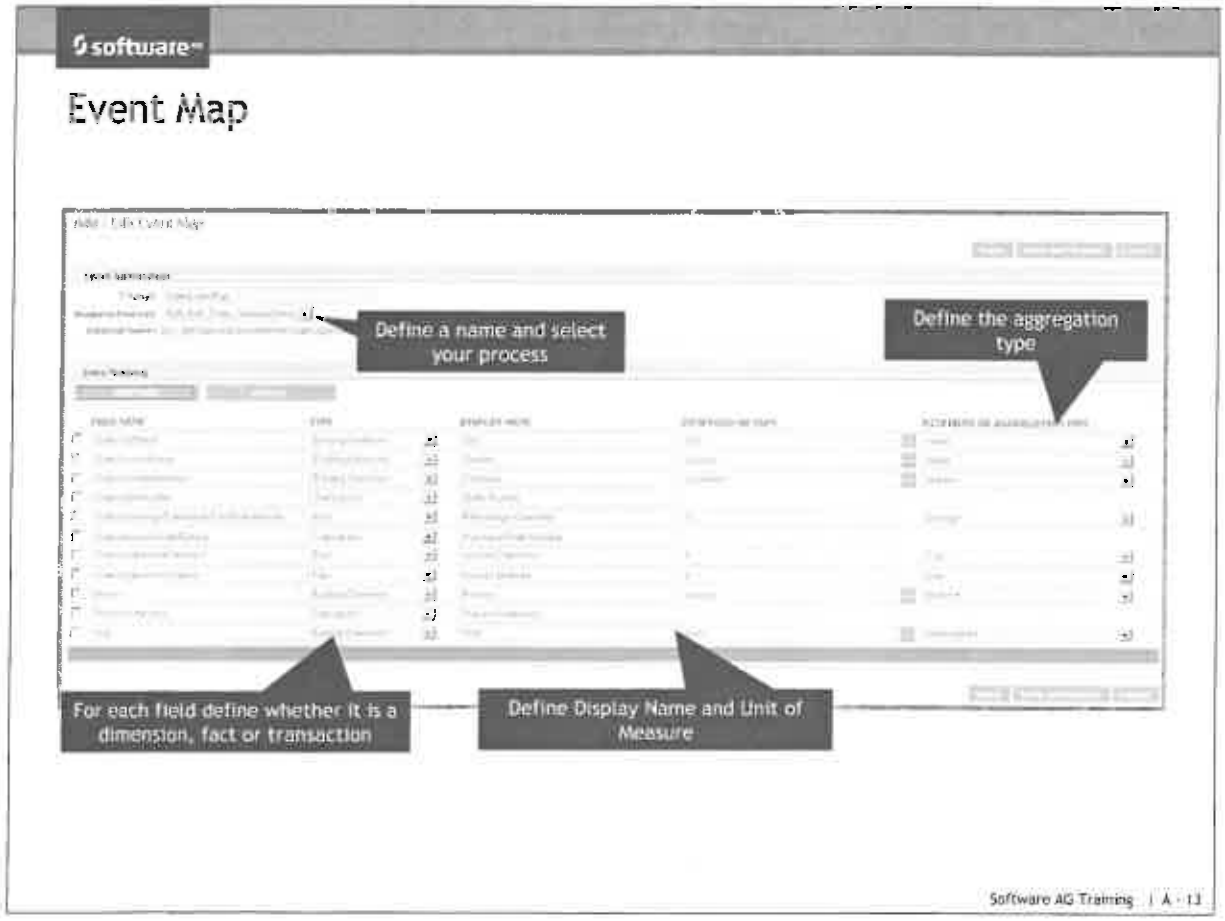
Notes:

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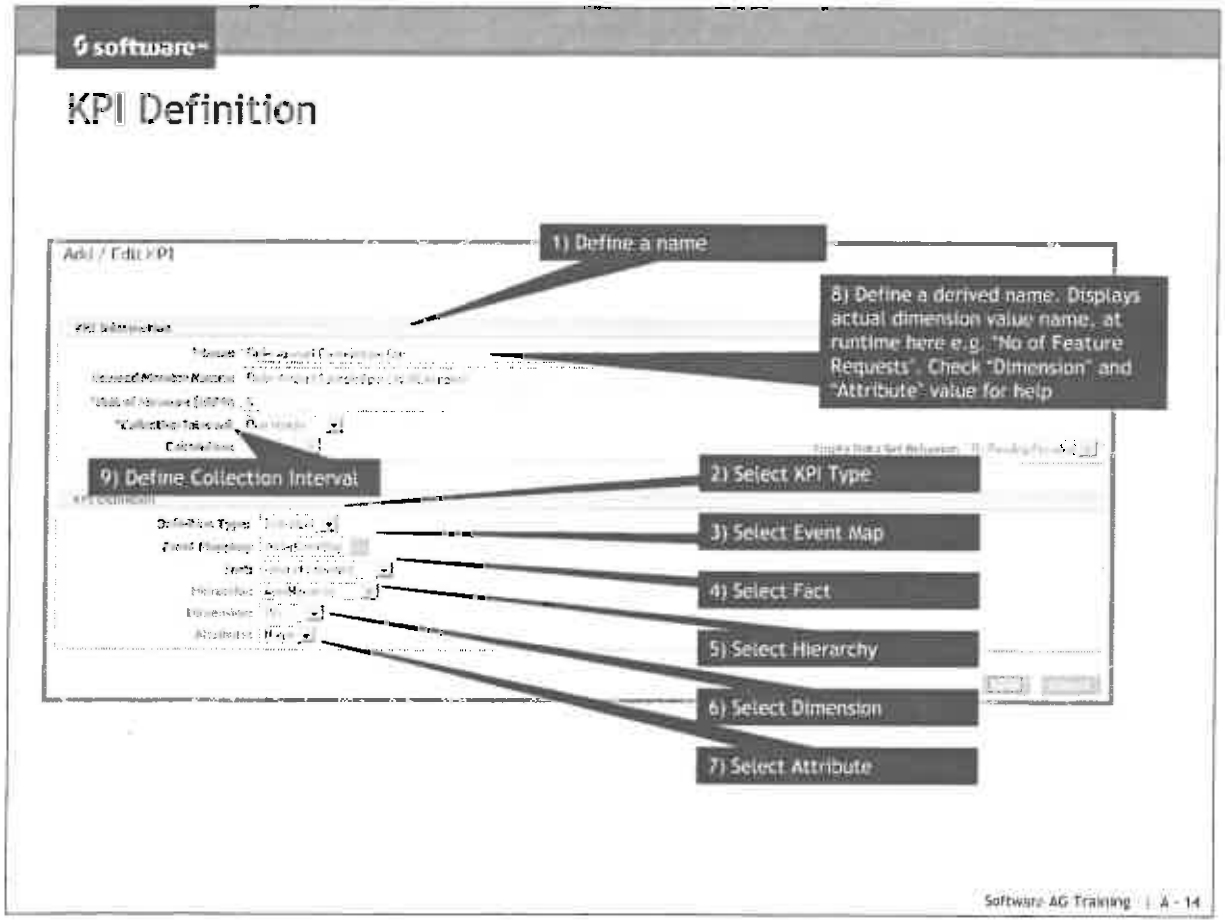
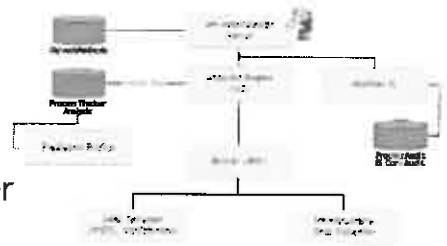



## Notes:

## Optimize Data Flow

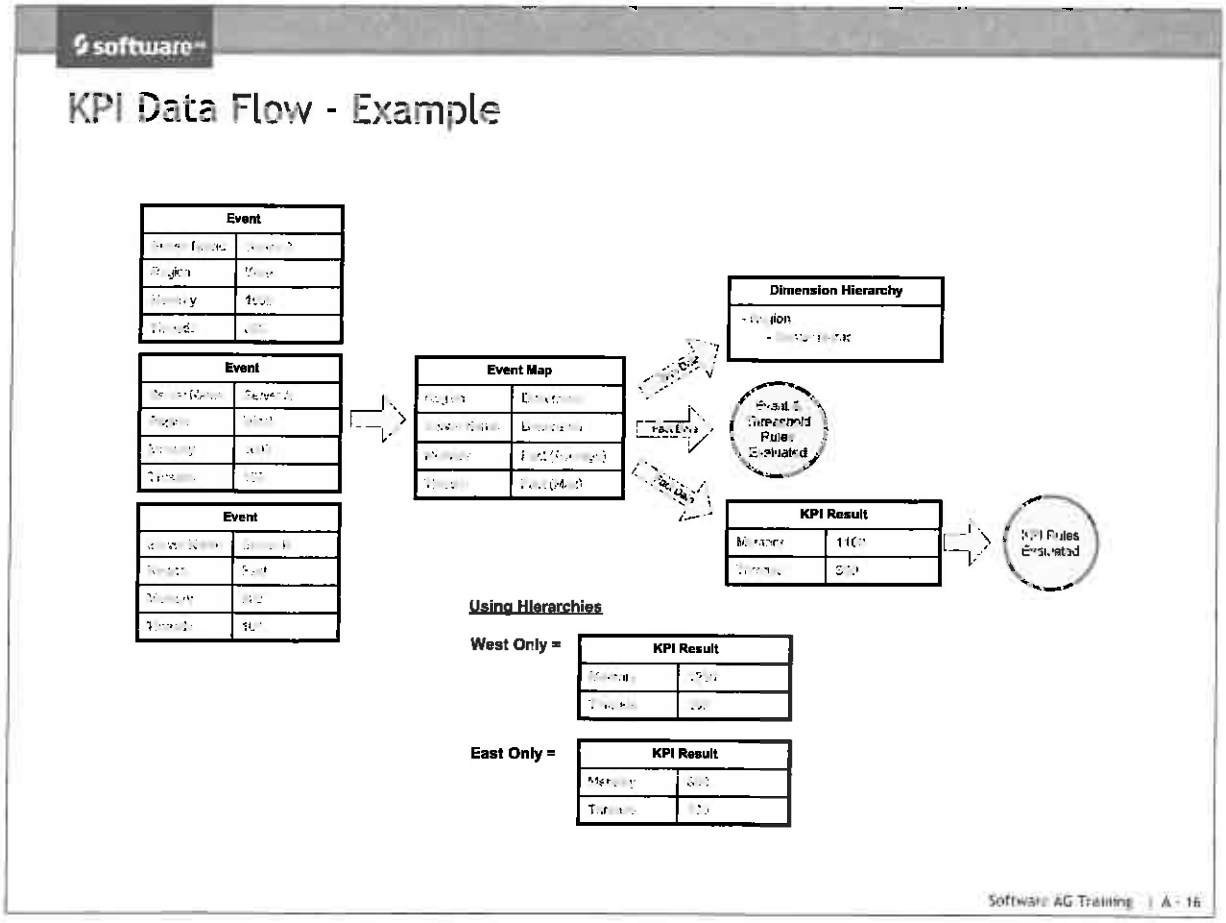


- Business processes/applications/systems send data via data collection components
- Data collectors send the data to the Broker
- Analytic engine pulls events from the Broker
- Events are associated to and treated according to the event map
- On an interval (configured in the KPI), the data from the recently persisted events are aggregated (summed, averaged, etc.)
- The result from this aggregation is persisted and used for two functions
  - displayed in MWS in the System Overview, or Business Overview page
  - passed to the rule engine for analysis

Software AG Training | A - 15

Notes:




## Notes:

## Optimize Rules

Rule Types:

- **KPI Rules** evaluate a KPI at the KPI's collection interval
- **Event Rules** evaluate data points as they are collected rather than waiting for a KPI collection interval
- **Threshold Rules** evaluate a single collected data point when it is collected; Optimize does not maintain state for threshold rules - it will fire any actions or alerts every time an event is received that violates the rule

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Notes:

 

## Defining Rules and Alerts...


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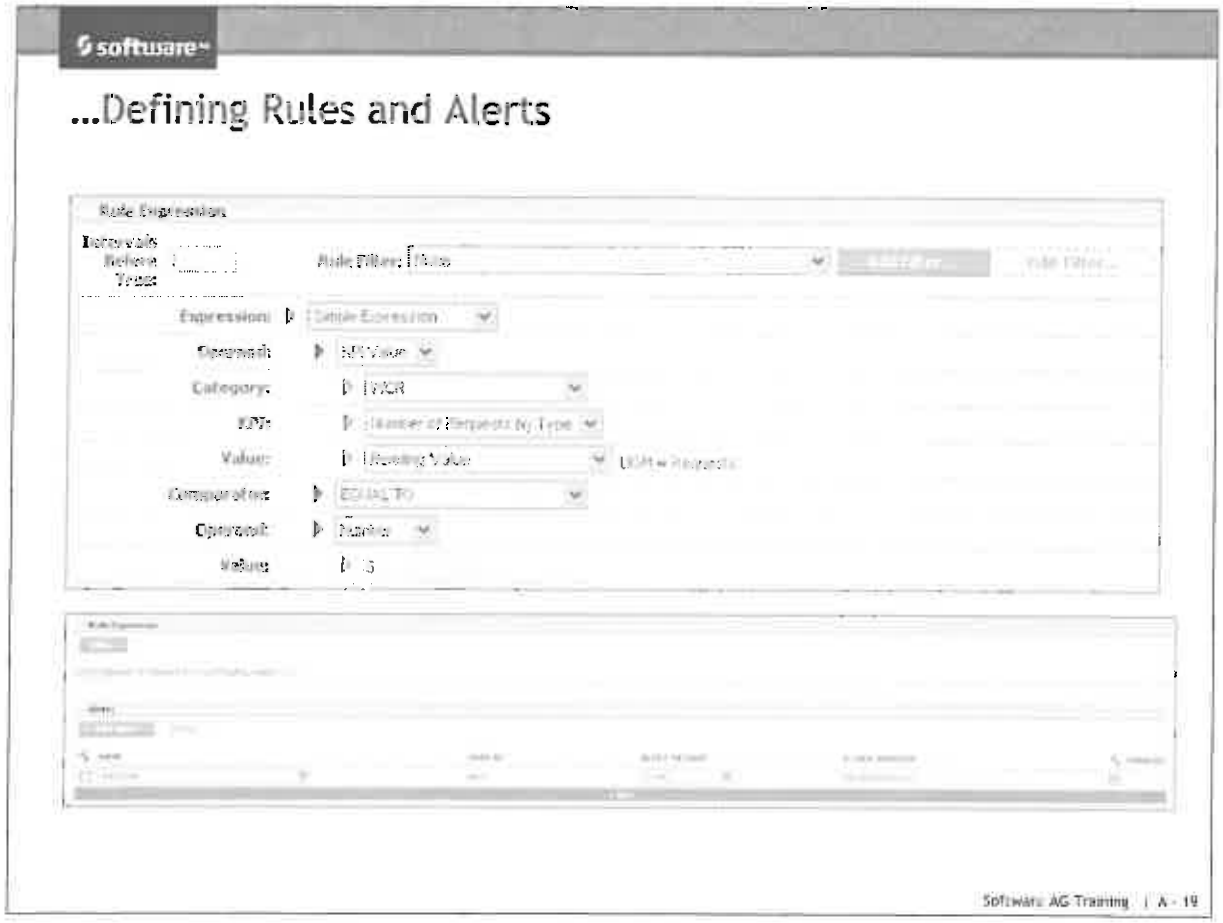
Notes:




Notes:

## KPI Rules

- Evaluate a KPI at the KPI's collection interval
- Maintain state so that you can track data over multiple intervals
- Will remain in violation until their expression condition returns to normal or only by a manual resolution if required (sticky)
- Can take dimensions into account
- Can operate on more than one KPI
- Example:
  - a KPI calculates Profit by subtracting Expenses from Revenue
  - an associated KPI rule would attach to the Profit KPI to monitor and alert you if Profit fell below a given amount



Notes:

## Event Rules

- Evaluate data points as they are collected rather than waiting for a collection interval
- Maintain state so that you can track data over multiple intervals
- Will remain in violation until their expression condition returns to normal or only by a manual resolution if required (sticky)
- Can take dimensions into account
- Can operate on more than one KPI
- Are usually attached to events that need absolute real time intervention
- Example:
  - a rule that alerts when a Broker is down for three intervals



Notes:

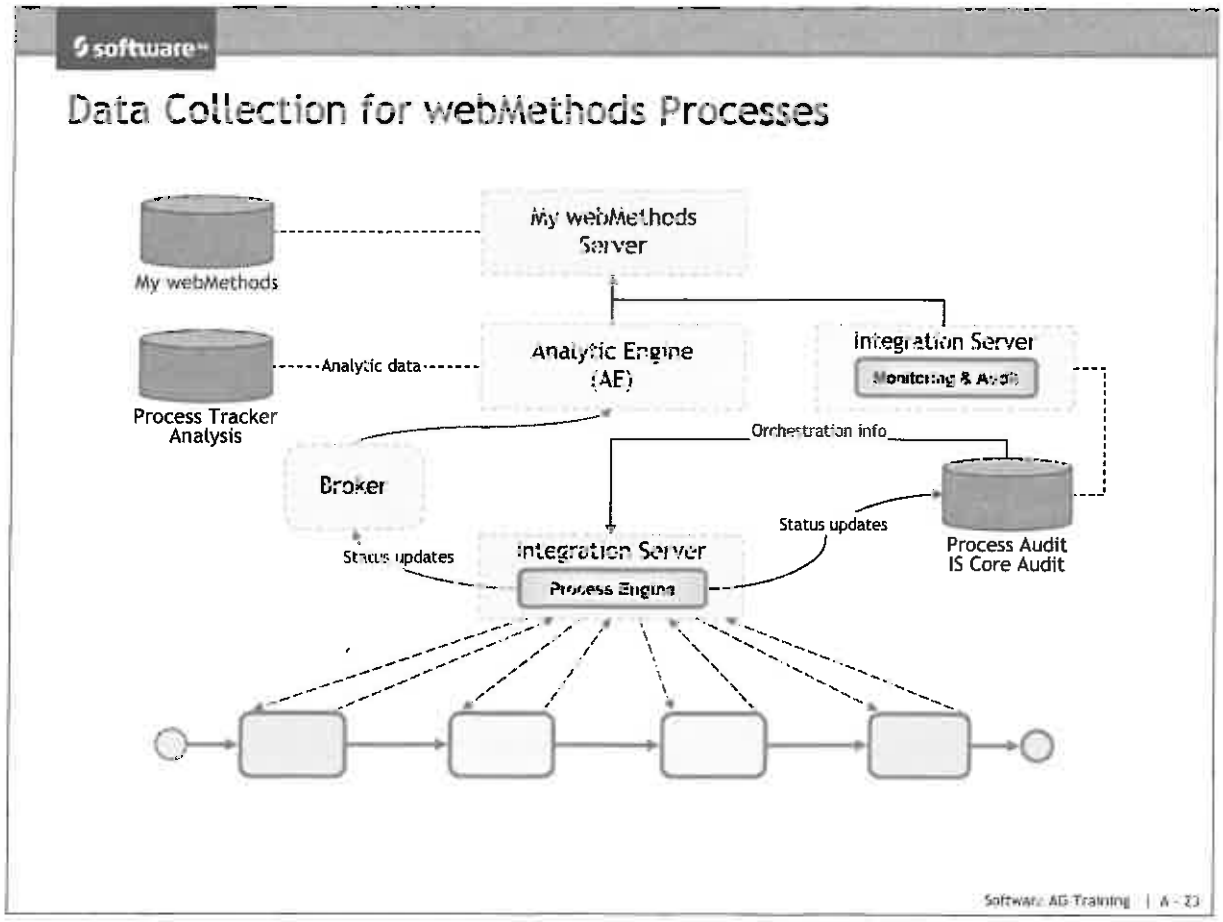
## Threshold Rules

- Threshold rules are like stateless event rules
- Like event rules, they
  - monitor data associated with real time events
- Unlike event rules, they do not
  - maintain state between firings
  - allow for aggregation of data points
  - operate on more than one KPI
  - take dimensions into account
- Example:
  - queue size greater than 1000
  - order amount less than $500

Software AG Training | A - 22

Notes:

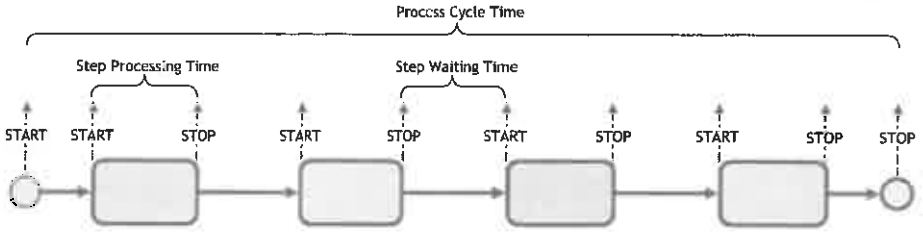
 




Notes:

## webMethods Process: "Analysis Enabled"...



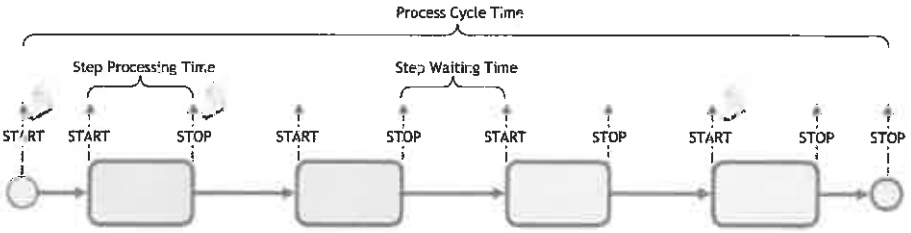

- One-click" activation ("Analysis Enabled" process property)
  - Process Engine is sending time events for every single step
- Out-of-the box "Intrinsic metrics" available automatically
  - Cycle Time (by Process)
  - Error Count (by Process/Step)
  - Instances (by Process/Step)
  - Successes (by Process)
  - Processing Time (by Step)
  - Wait Time (by Step)

Software AG Training | A - 24

Notes:

## ...webMethods Process: "Analysis Enabled" + Business KPIs

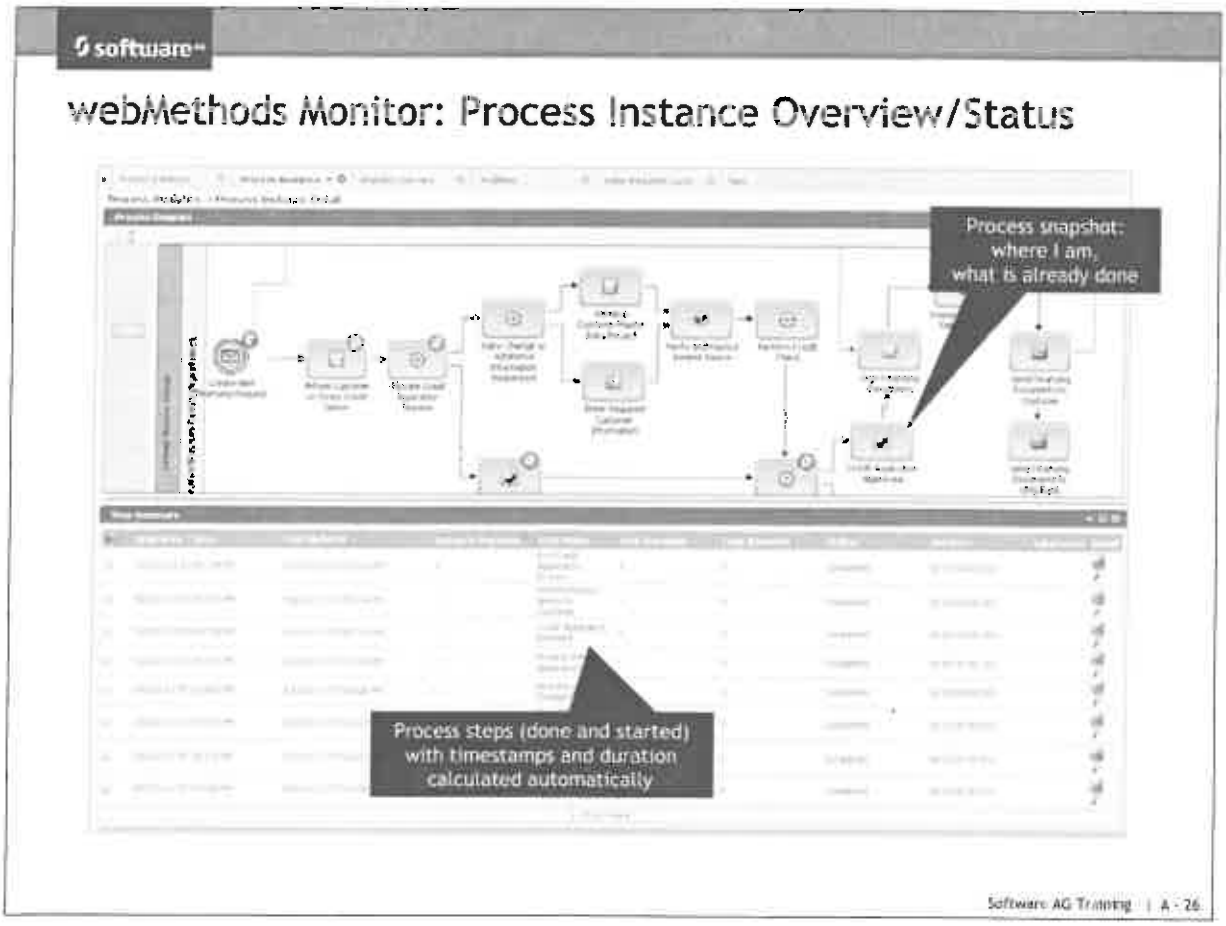



- "Logged fields" used to populate business data to the AE
  - Process Engine is logging data from the process document(s)
- Custom KPIs and dimensions can be defined
  - "More" business relevant & process specific metrics can be provided
  - Process Designer defines when (input and/or output) and which set of data (document and/or single fields) to be passed to the AE
  - Event Map gets generated automatically and needs to be configured (via MWS GUI)
- Intrinsic metrics are available

Software AG Training | A - 25

Notes:

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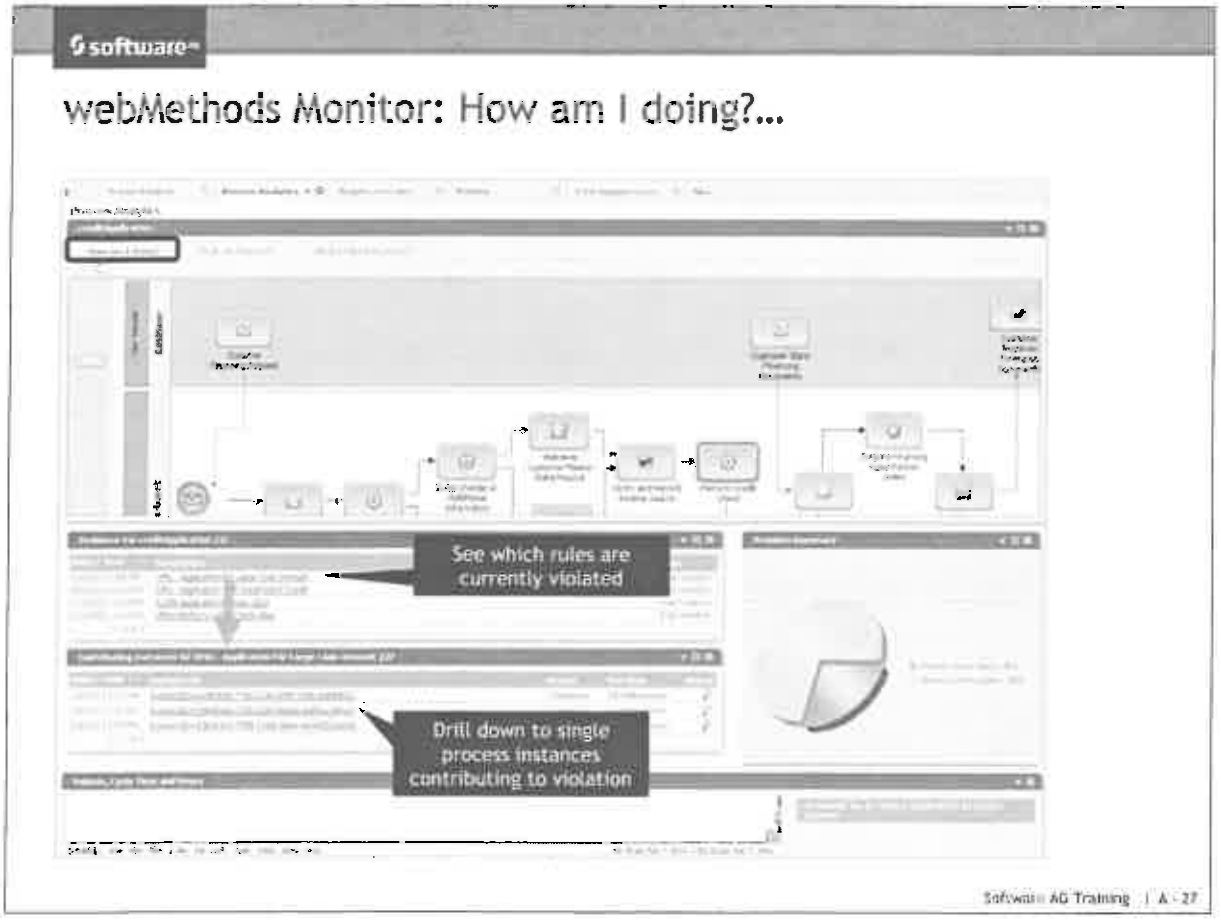


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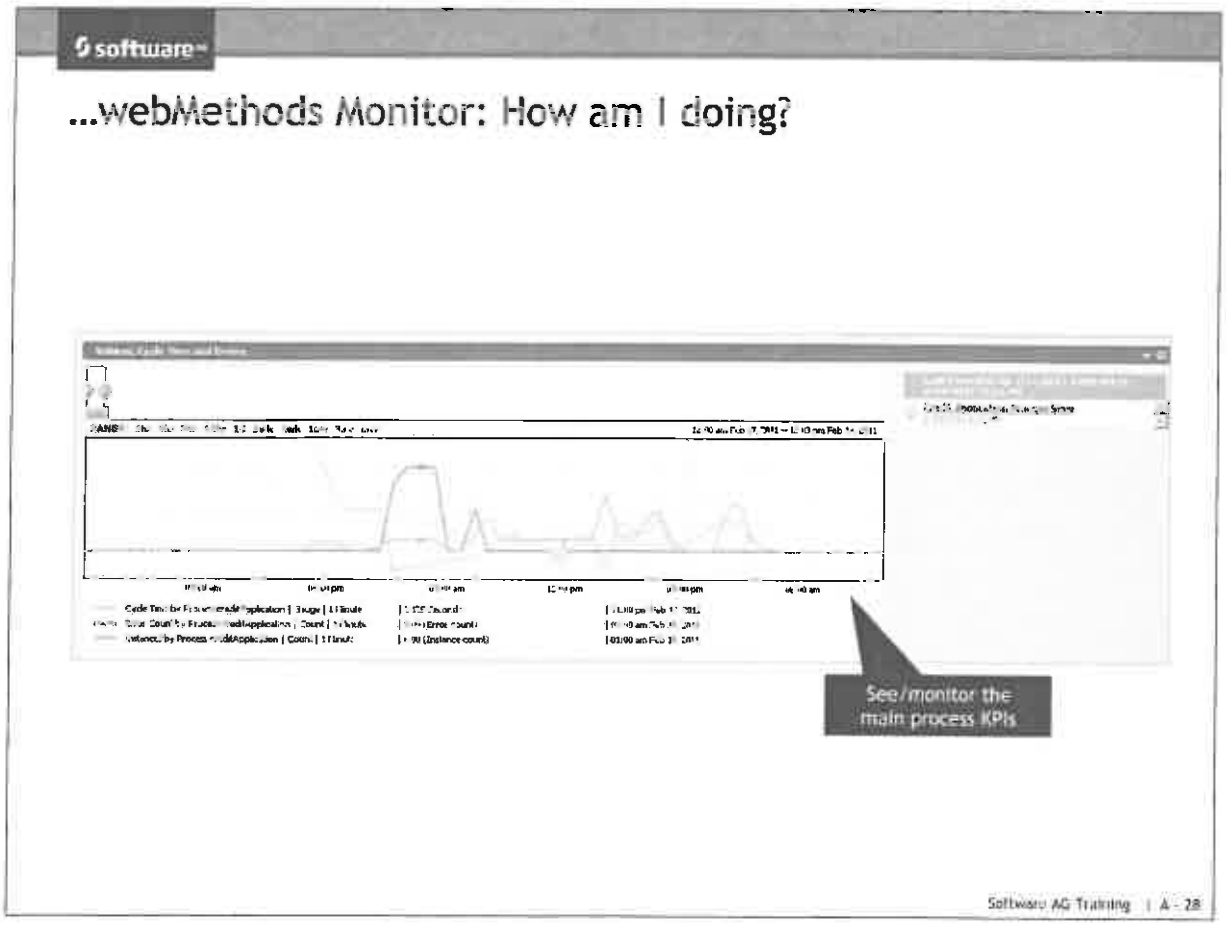


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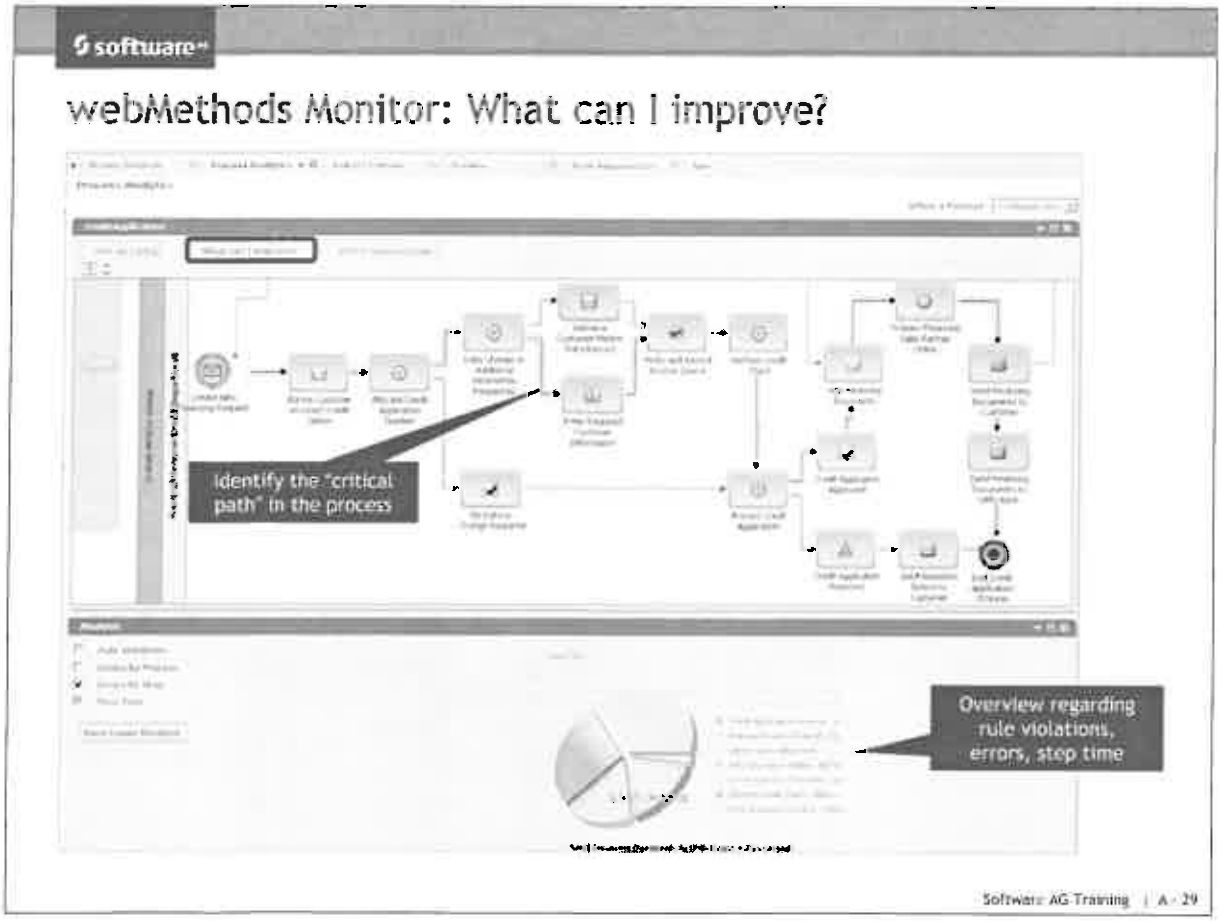


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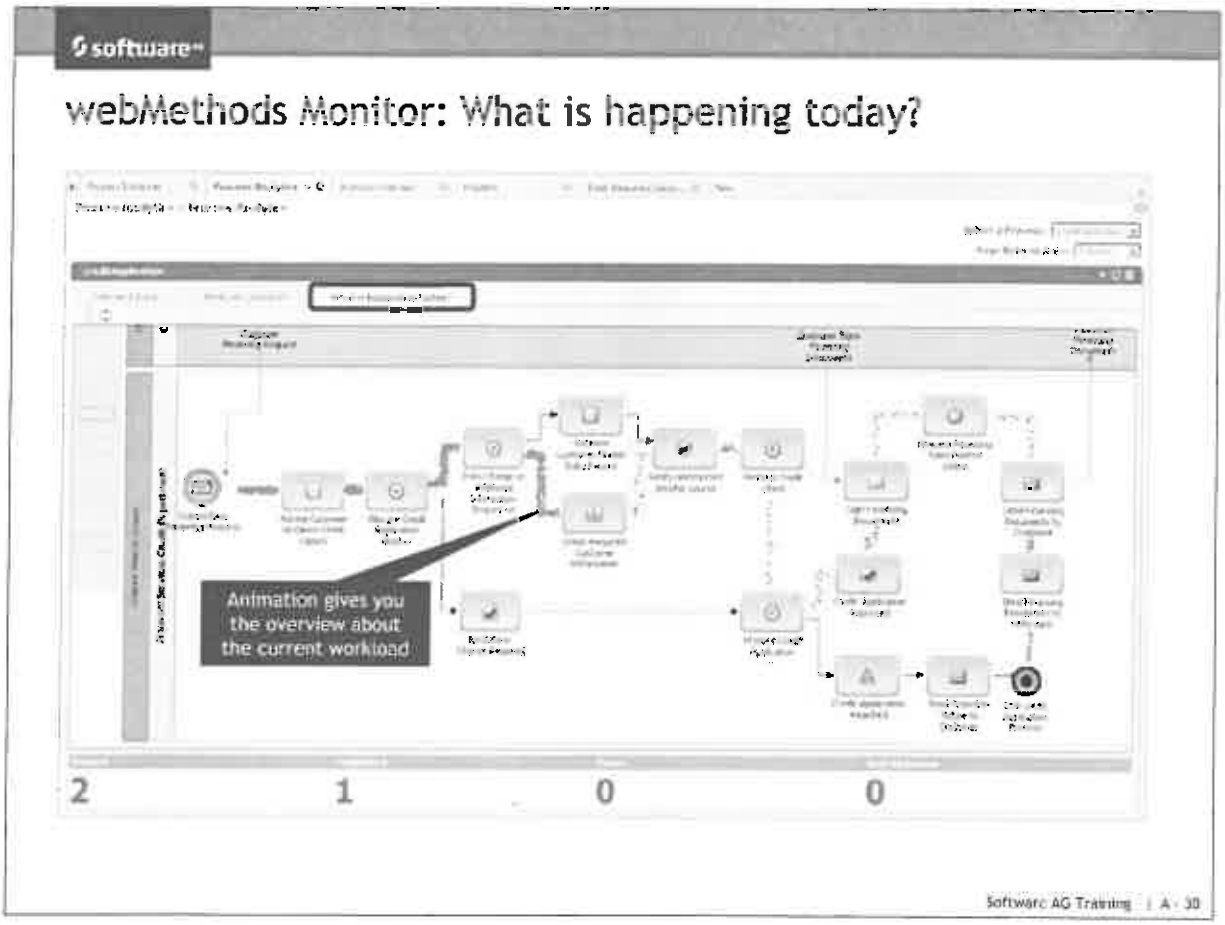


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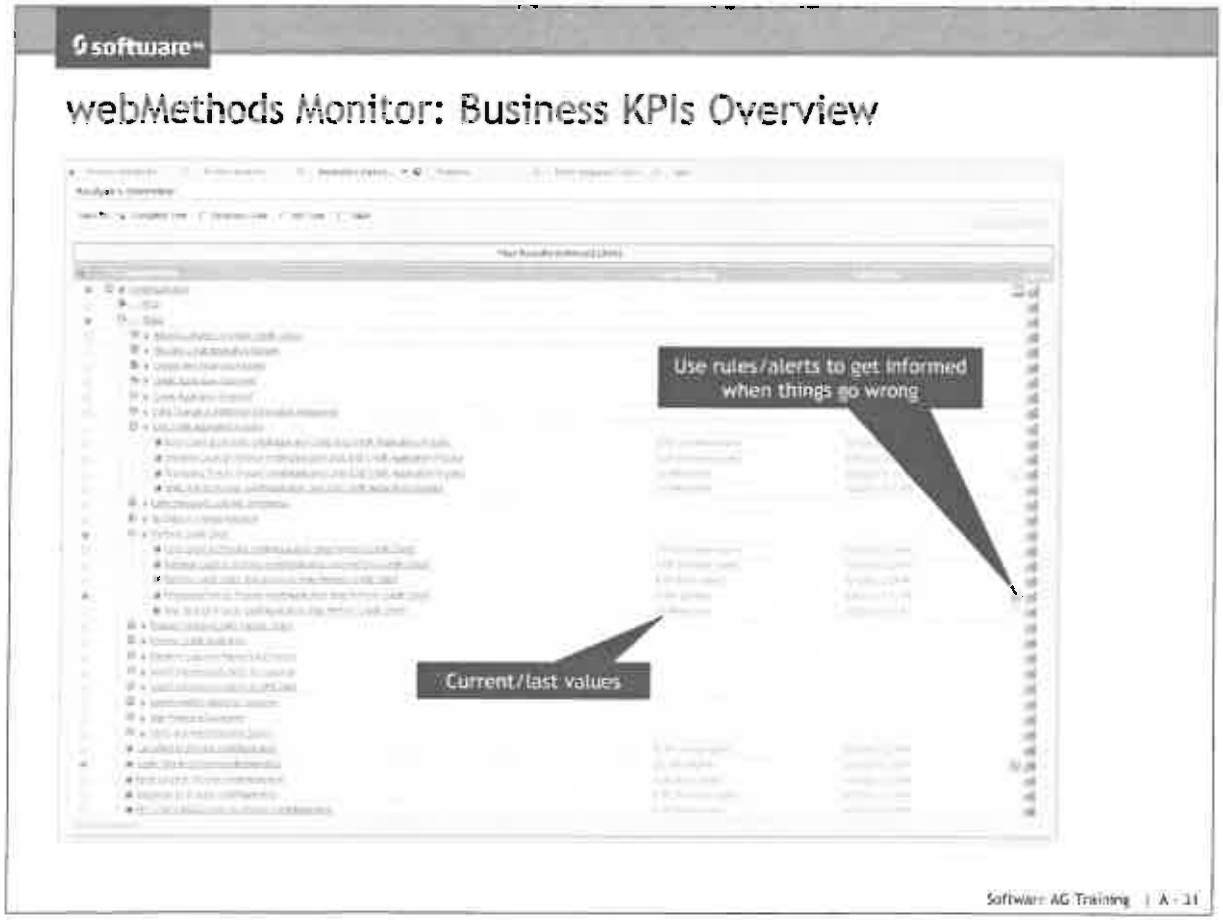


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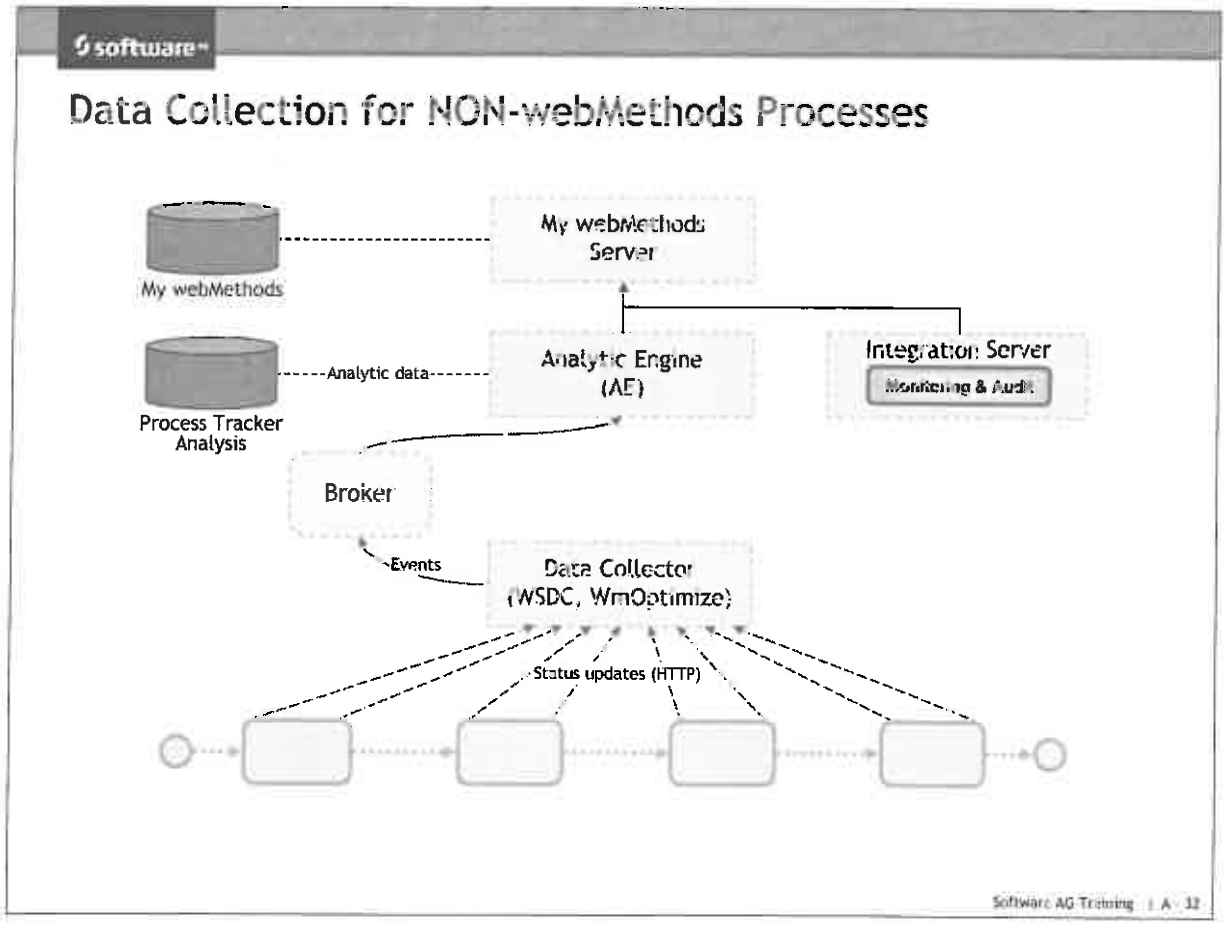
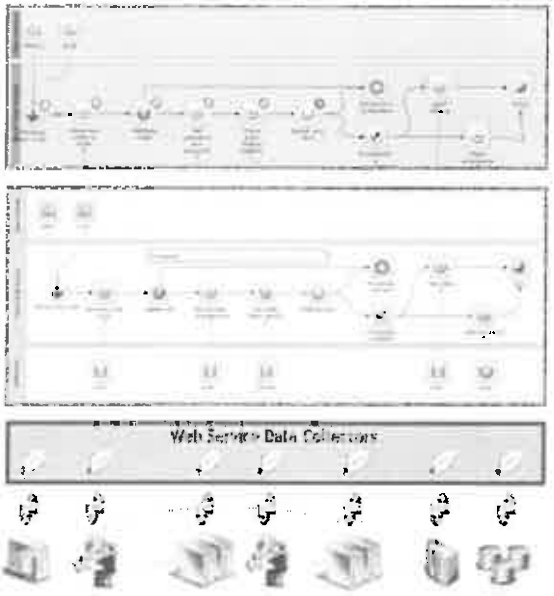



Notes:

## webMethods Optimize for NON-webMethods Processes...

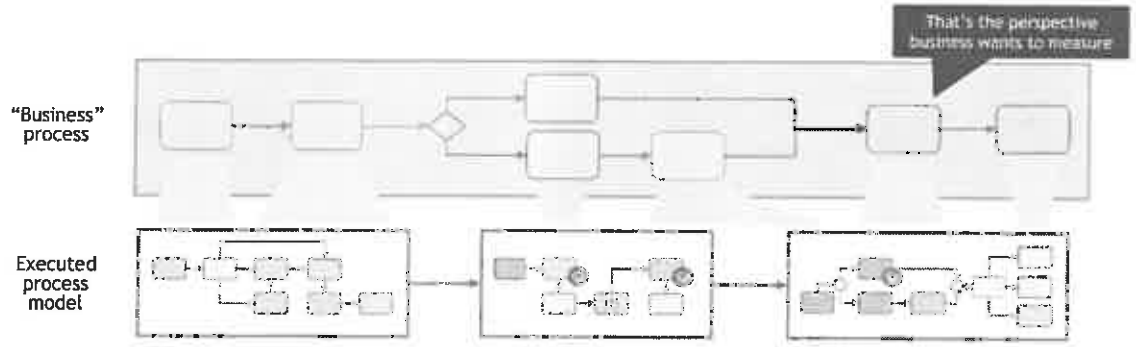
- Visibility, health and optimization are available to processes that "live" in different applications/systems
- "Shadow Process" created to represent the actual process flow
- Data collection services used to collect and correlate events to the modeled process
- "Process logic" within the existing applications



Notes:

## ...webMethods Optimize for NON-webMethods Processes...




- The executed process model often doesn't reflect the "business perspective" of the process
  - implementation driven by IT needs
  - different granularity/complexity due to "technical" steps to be executed (e.g. data mapping steps)
  - implementation (probably) wouldn't address "business" requirements regarding end-to-end visibility and monitoring

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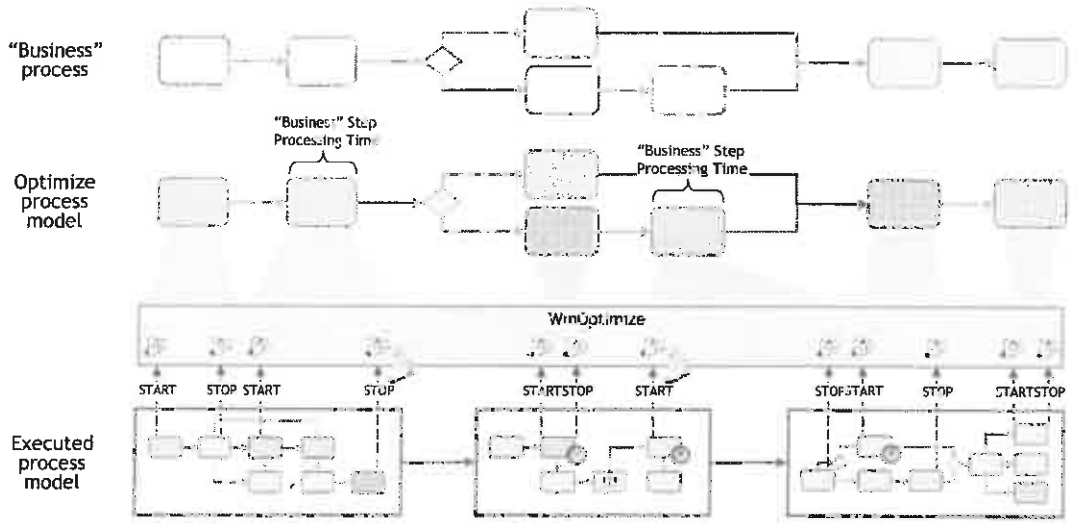
Notes:

## ...webMethods Optimize for NON-webMethods Processes




- Combine Optimize capabilities to deliver the "business" view

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Notes:

 

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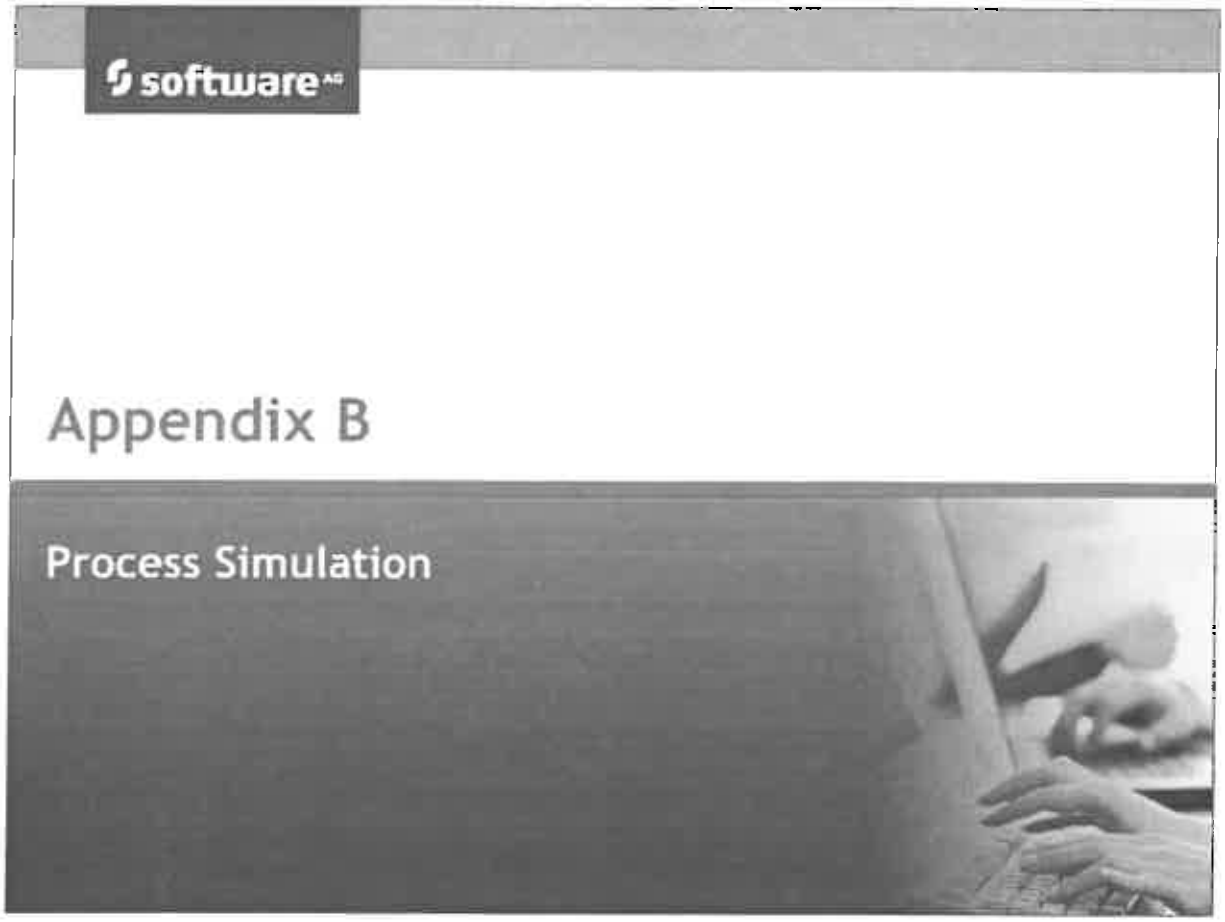
Notes:




Notes:

## Objectives

- At the end of this section you will be able to
  - Create or import a process simulation model
  - Assign resources to steps in your simulation
  - Run a process simulation
  - Generate reports on the process simulation
  - Optimize inputs to be used by the simulation
  - Use historical data in your simulation



Notes:

## Process Simulation...

- Process Simulation is designed to assist Business Analysts in understanding the process requirements
- Process Simulation assists the Business Analyst to define how the model should be created to ensure optimum performance
- It achieves this by providing a design-time view of runtime:
  - bottlenecks
  - capacity planning
- Has it's own Designer perspective


- Fully integrated into the Designer development environment
  - Not required to export/import into another tool

Software AG Training | B - 3

Notes:

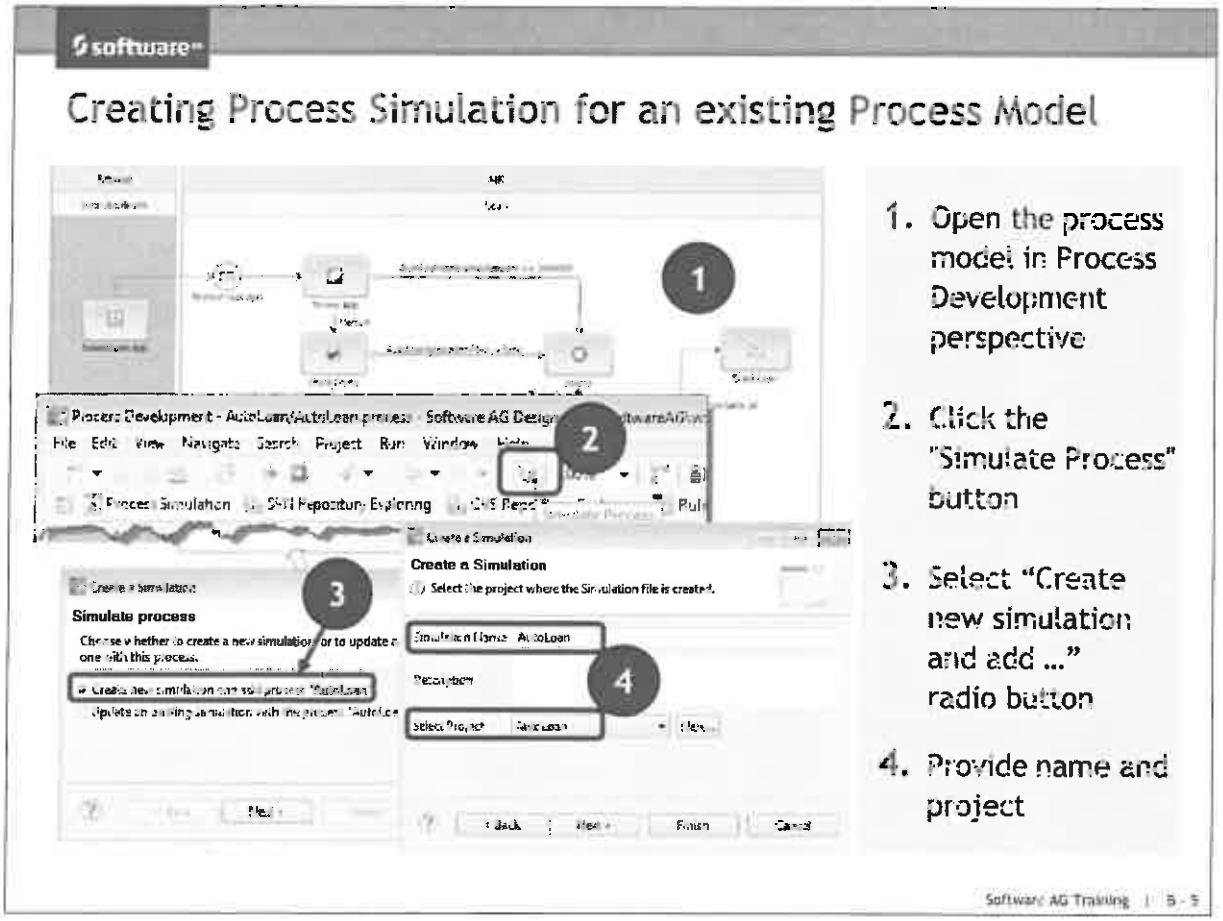
 

## ...Process Simulation

- Encourages scenario management
  - Run various simulation scenarios to determine how the process will run under differing conditions
- Provides activity based costing
  - Process stakeholders can know projected costs aggregated by process, step resource and swimlane before process rollout
- Provides multi-process simulation
  - Analysts can know how the process behaves in the context of other processes
- Offers integrated resource optimization
  - Resources to be assigned could be optimized or gathered from historical data
- Provides reporting tools
  - Detailed simulation statistics are provided for further analysis



Notes:

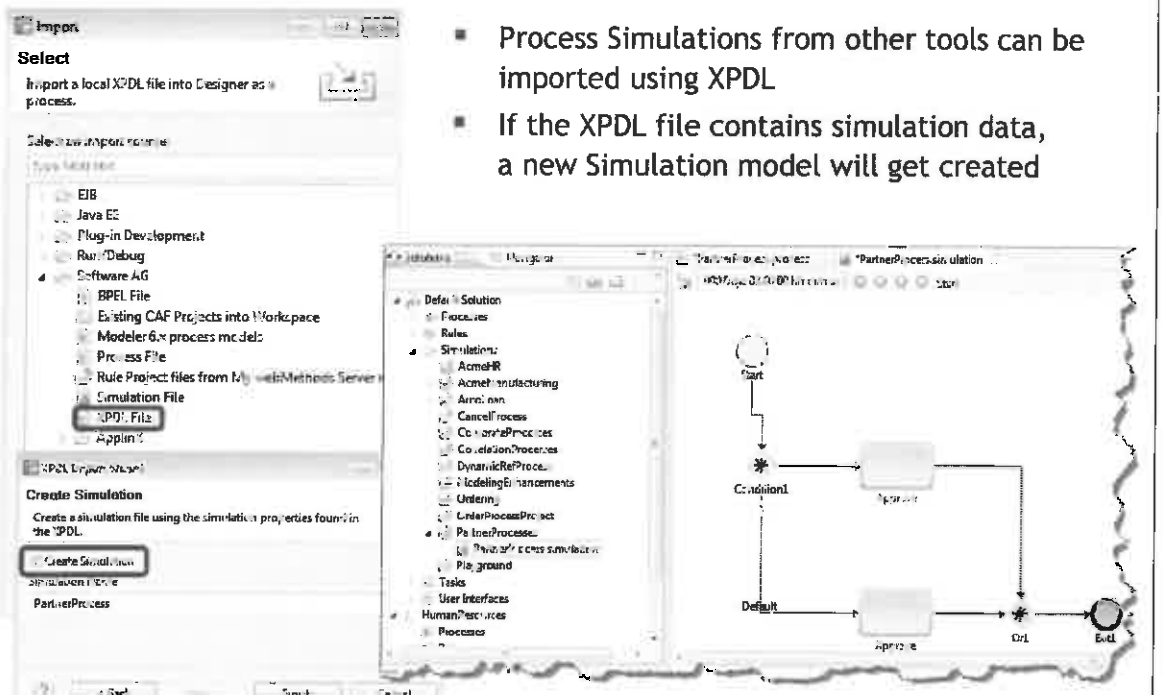



Notes:

## Or: Importing Process Simulation from XPDL File

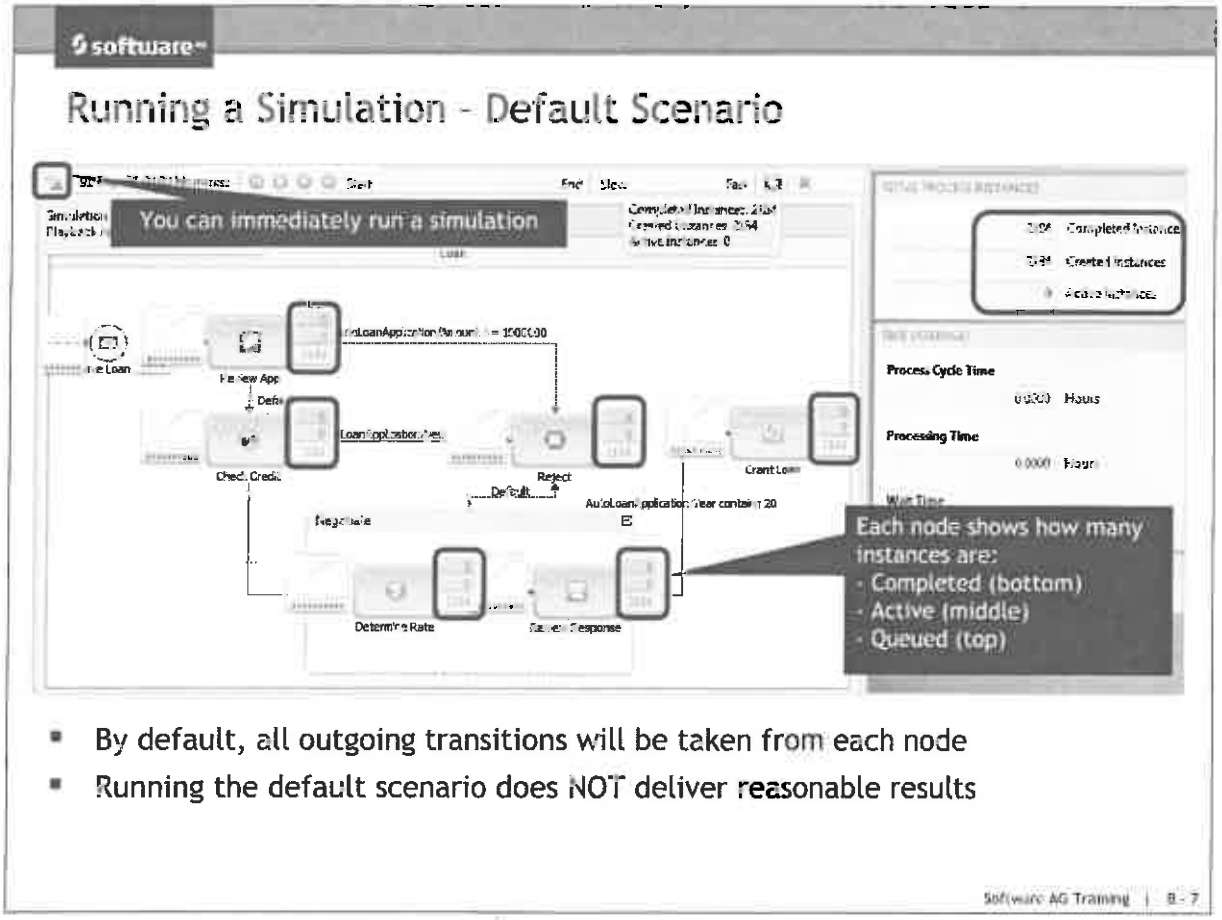
- Process Simulations from other tools can be imported using XPDL
- If the XPDL file contains simulation data, a new Simulation model will get created






Notes:

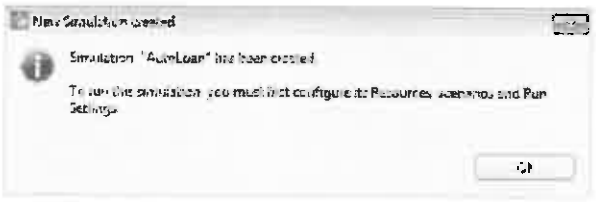
 




Notes:

## Adjust Simulation

- Adjust simulation to receive meaningful results
- Provide:
  - Transition distribution
  - Simulation period (Run Settings)
  - Incoming data volume and distribution at Start Event
  - Step scenario
    - Processing time
    - Assigned resources
  - Thresholds (Metrics)



- Required input can be based on:
  - historical or optimized data - best ☺
  - stakeholder input - better 😐
  - unfortunately, sometimes a best guess - bad! ☹

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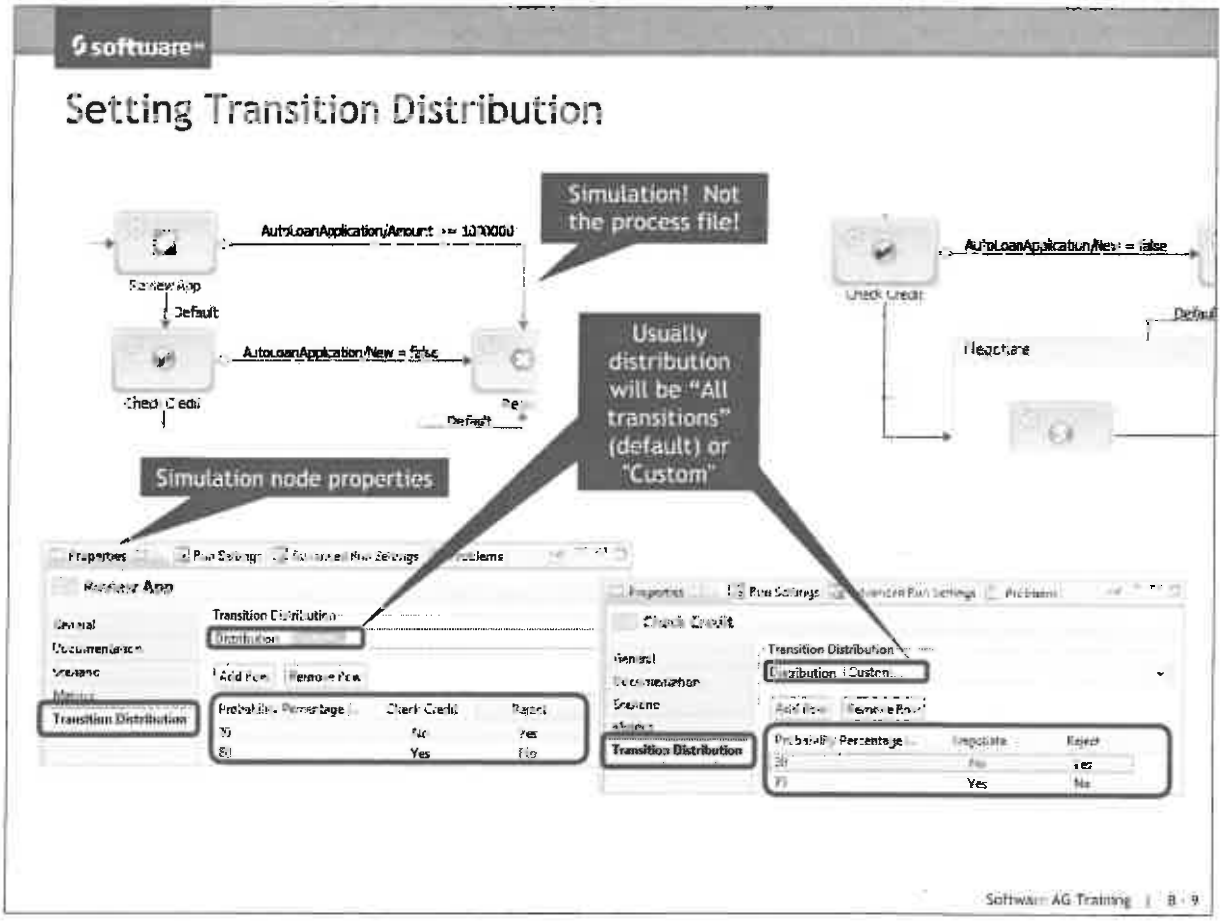
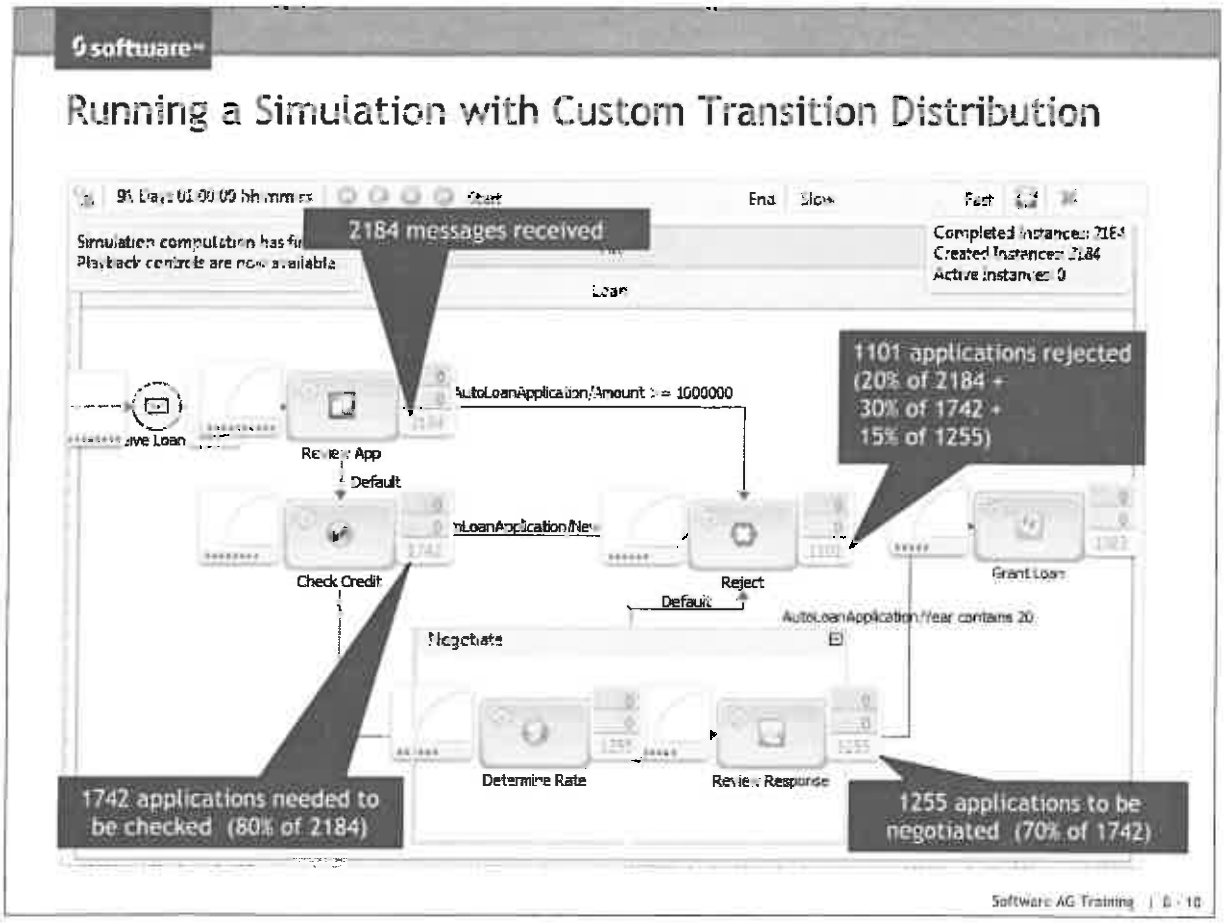
Notes:



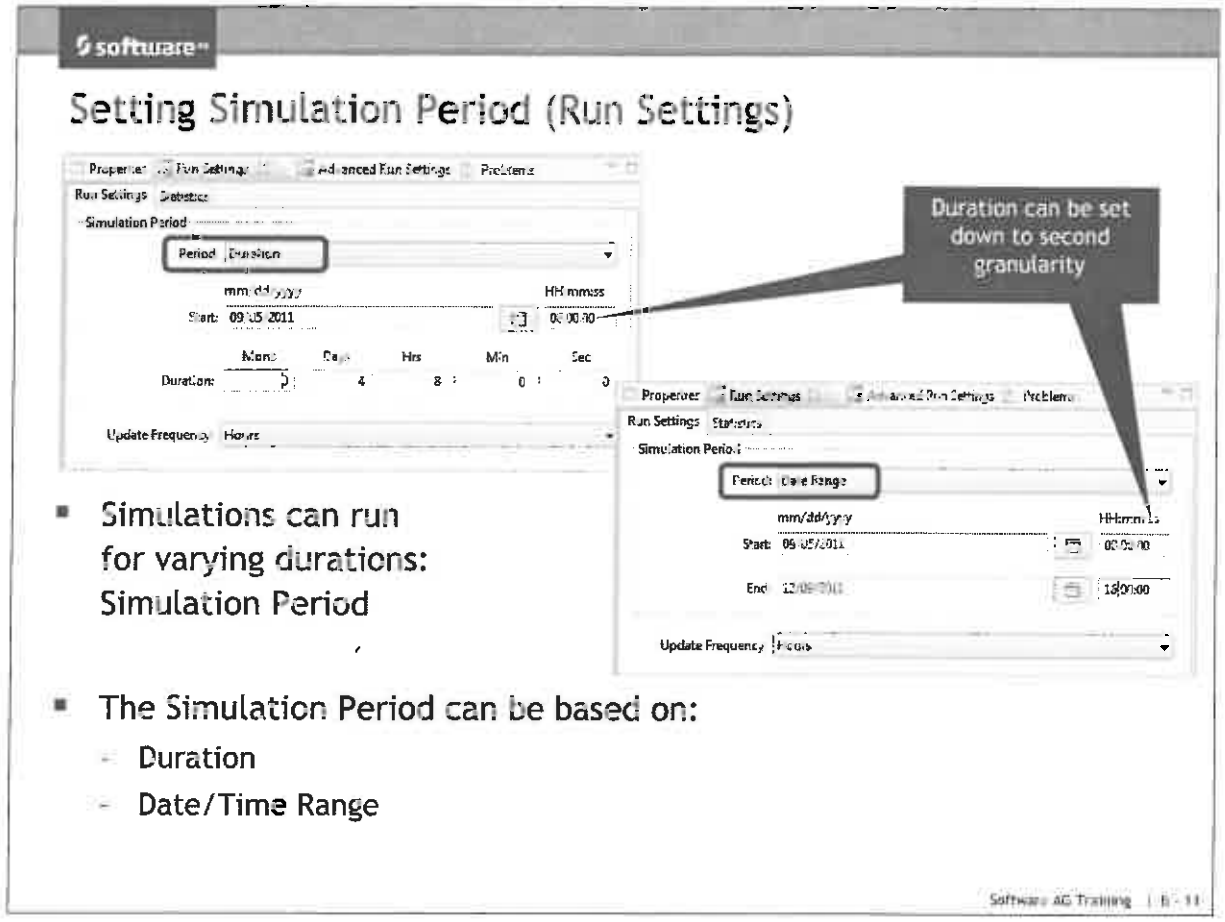

Notes:



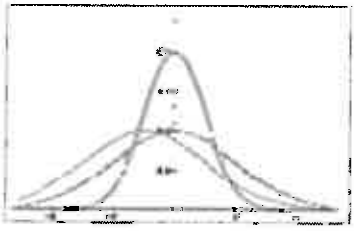

Notes:




Notes:

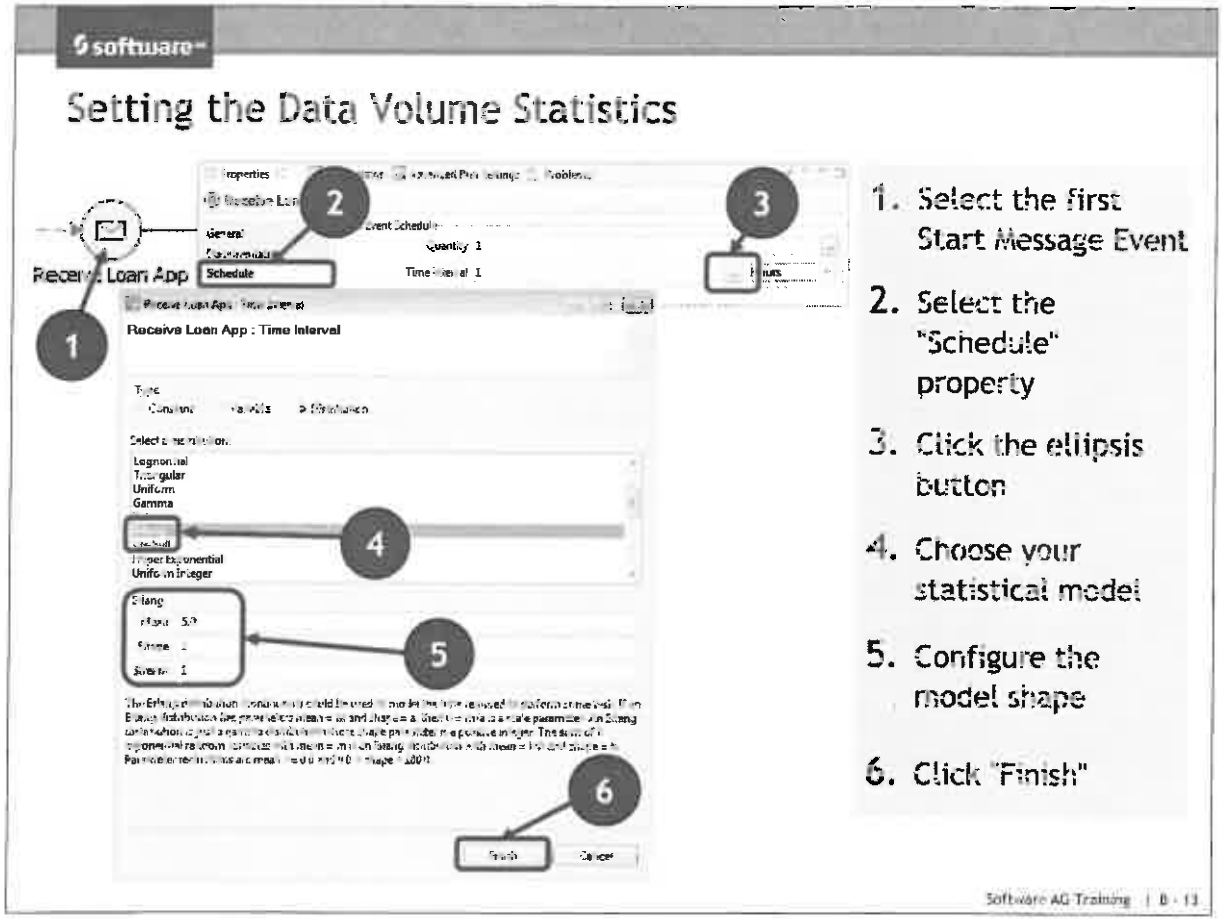
## Data Volume Statistics



- Meaningful simulation results require realistic data volume
  - Providing simulation data at a constant rate would not provide real world results
- Large, process driven organizations typically have reports and statistics on data trends
  - Some organizations have statisticians on staff who have analyzed the data
  - Some organizations have developed or purchased software for the analysis
- webMethods BPM is able to feed simulation data to the simulation based on common statistical data models
  - Set the statistical data model in the Start Message Event



Notes:




Notes:

## Simulation Resources

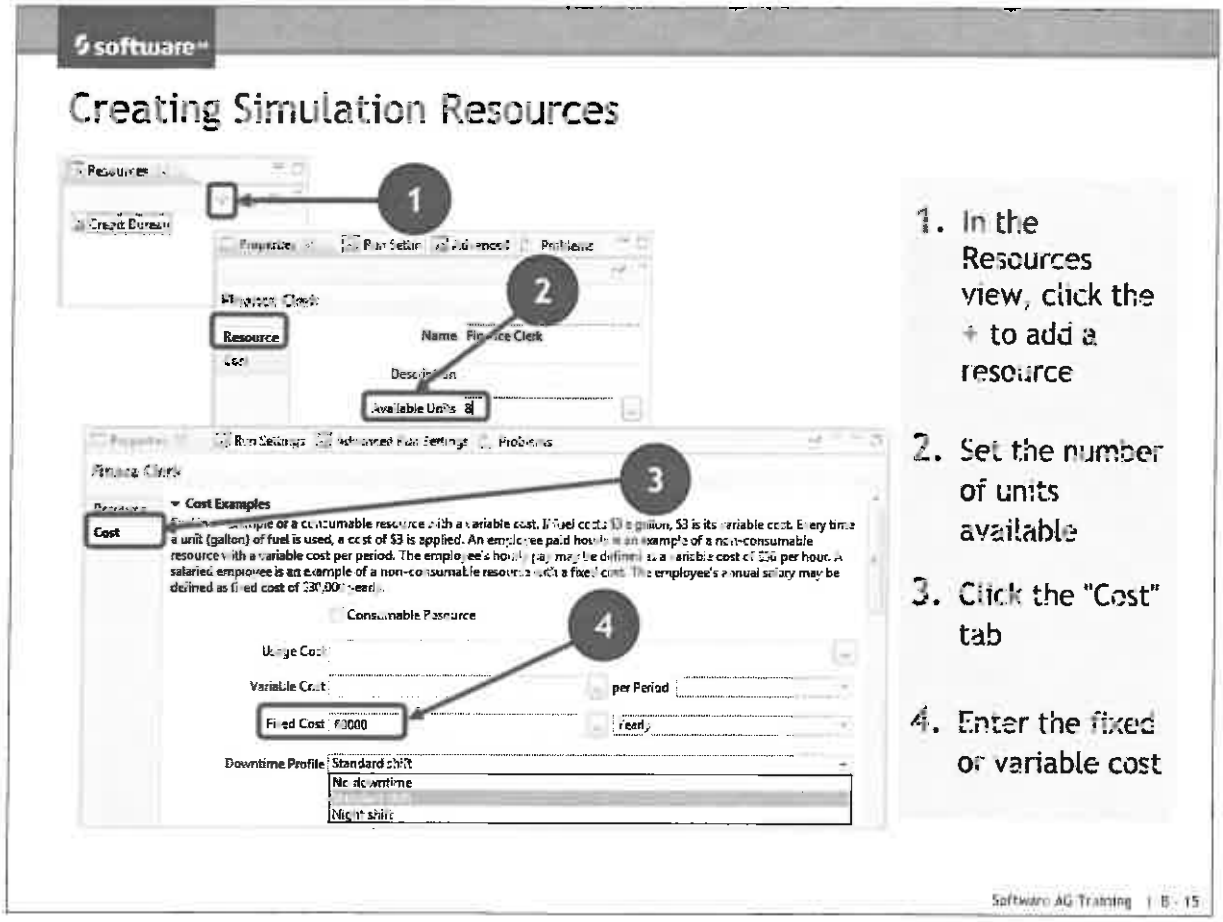
- Resources are used when process steps execute
  - Resources may be people associated with User Task Activities
  - Resources may be consumable items such as fuel or foodstuffs

- Resources typically have an associated cost
  - Salaried personnel can have a fixed cost
  - Hourly personnel may have variable cost
  - Foodstuffs may have a cost per ton

- By associating the cost and time with nodes in the process simulation, the Business Analyst can:
  - determine where money is being spent and can possibly be saved
  - determine how much the process will cost over a number of iterations or time duration



Notes:

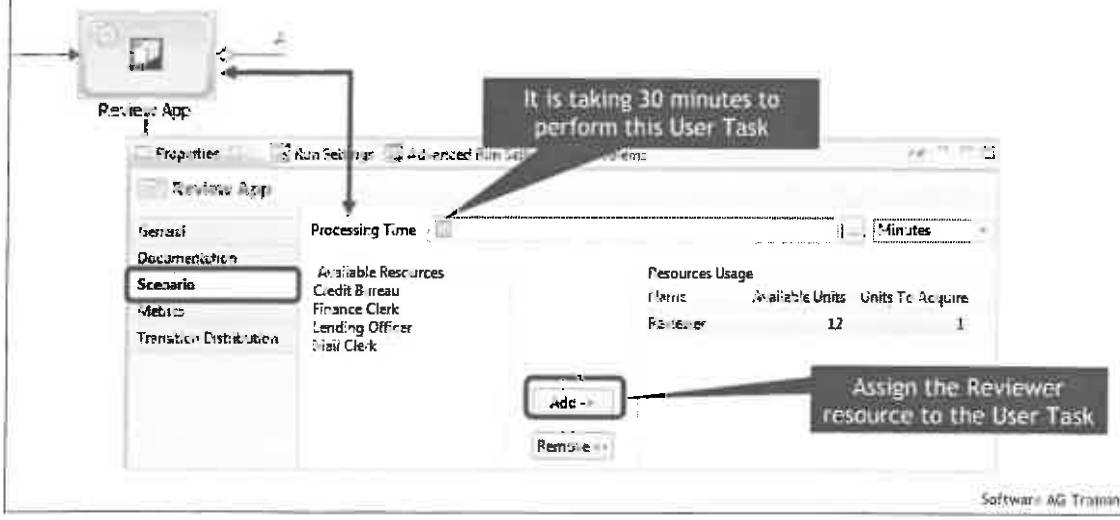



Notes:

## Associating Simulation Resources with Process Nodes

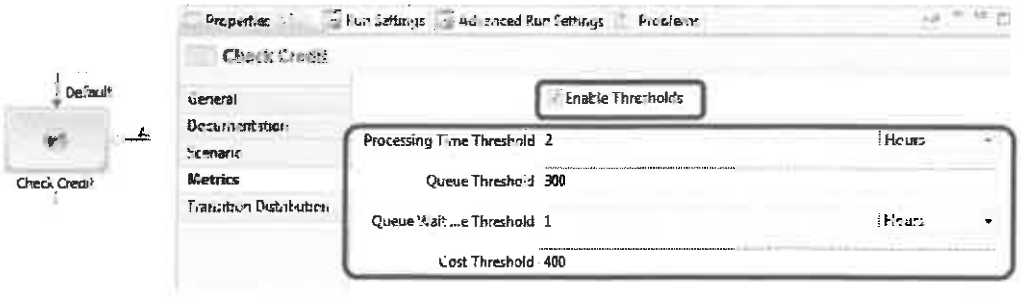
- Resources can be associated with nodes
  - Allows the simulator to determine the processing cost
  - Changing the resource properties can affect downstream steps in the simulation




Notes:

## Setting Thresholds

- Define and enable thresholds on a per-step basis - if desired




- Enable Thresholds: violation warnings
  - *Checked:*
    Threshold values enabled in the Properties UI for editing, threshold violations will be displayed in the animation and the simulation report
  - *Unchecked:*
    Threshold values disabled in the Properties UI, violations will not appear in the animation or report

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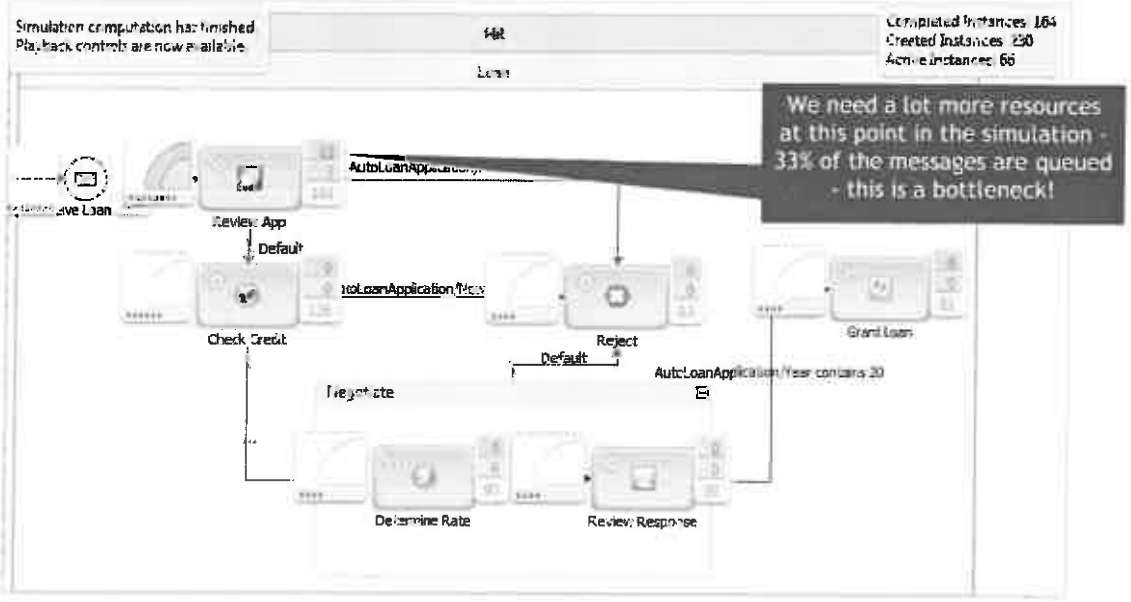
Notes:

## Running the Adjusted Simulation




- Number of assigned resources has to be refined:
  - Try and Error ☹
  - Use integrated Optimization engine ☺ (see later)

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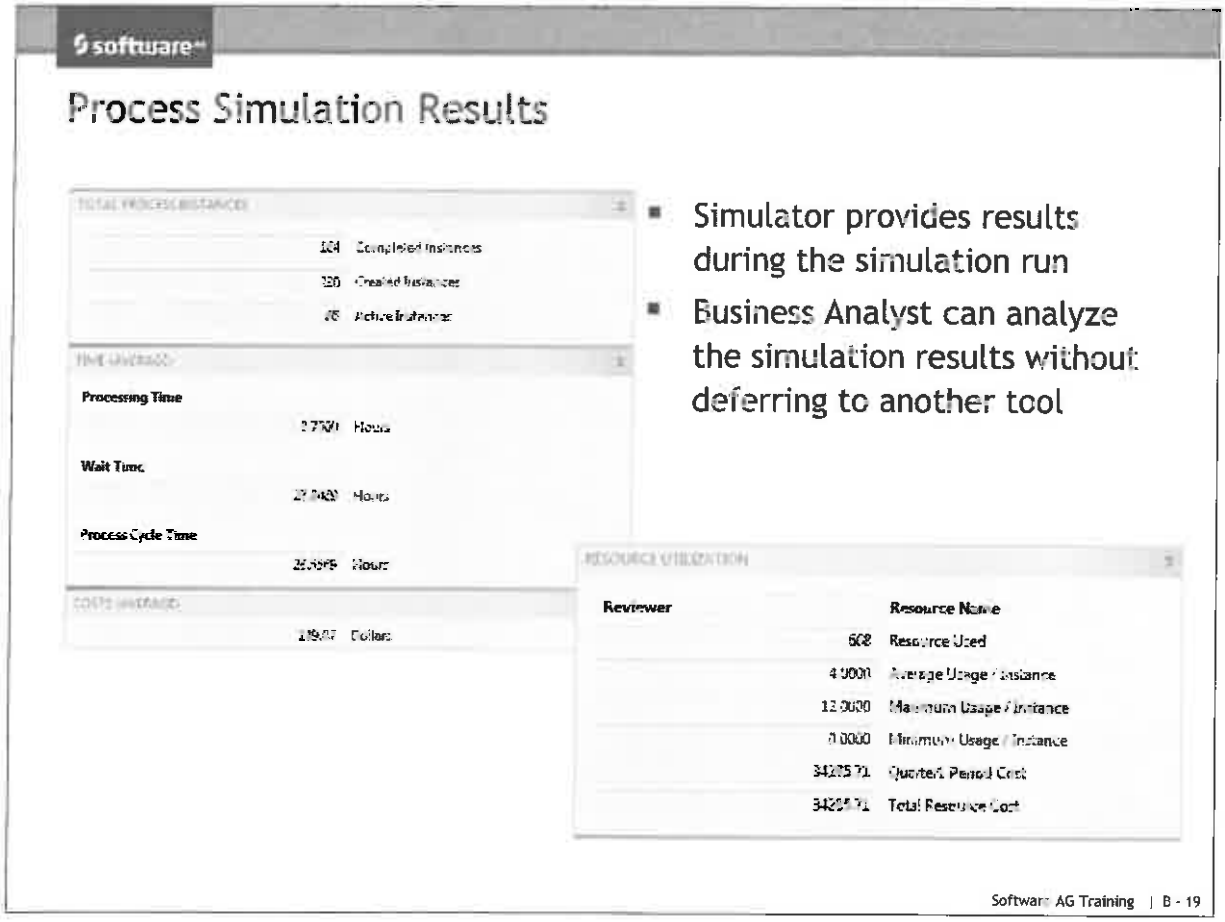
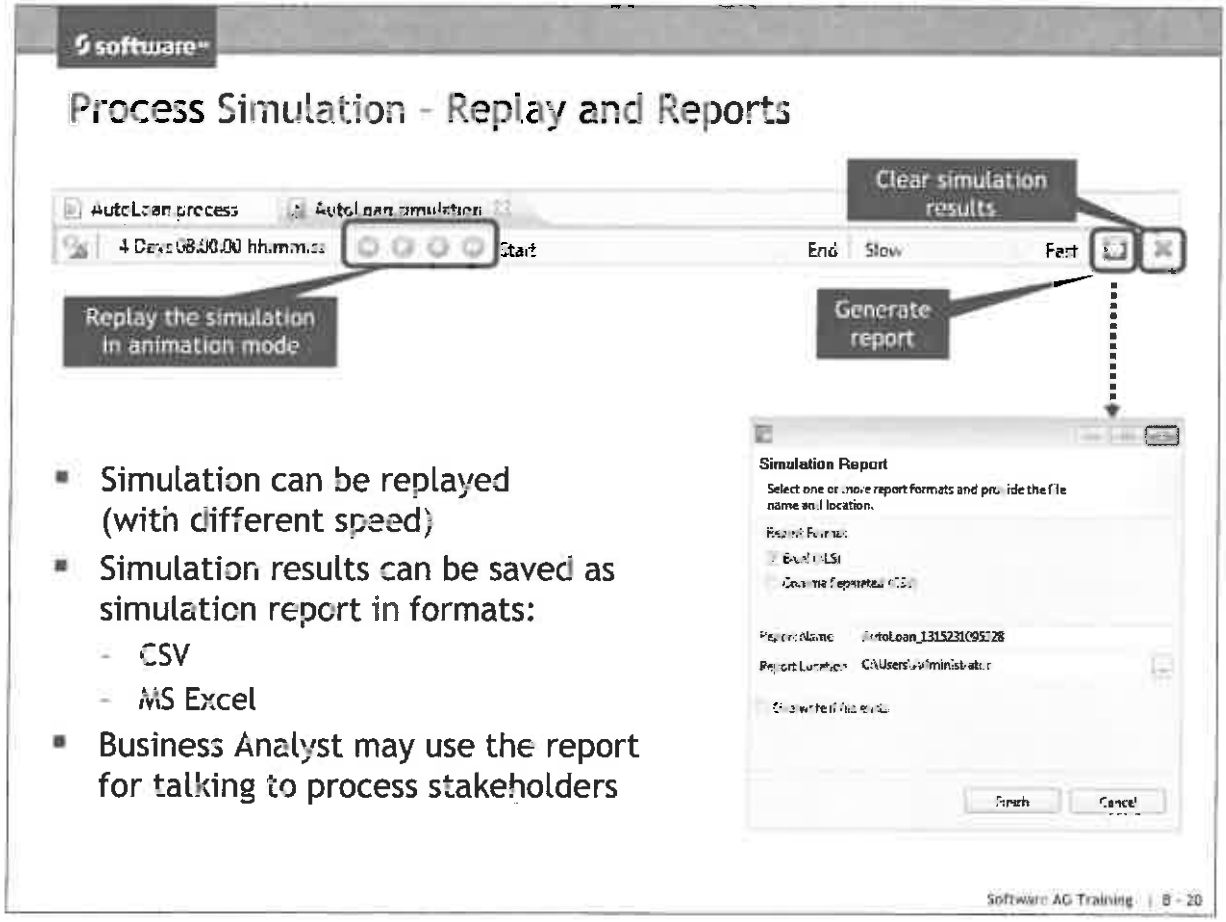
Notes:

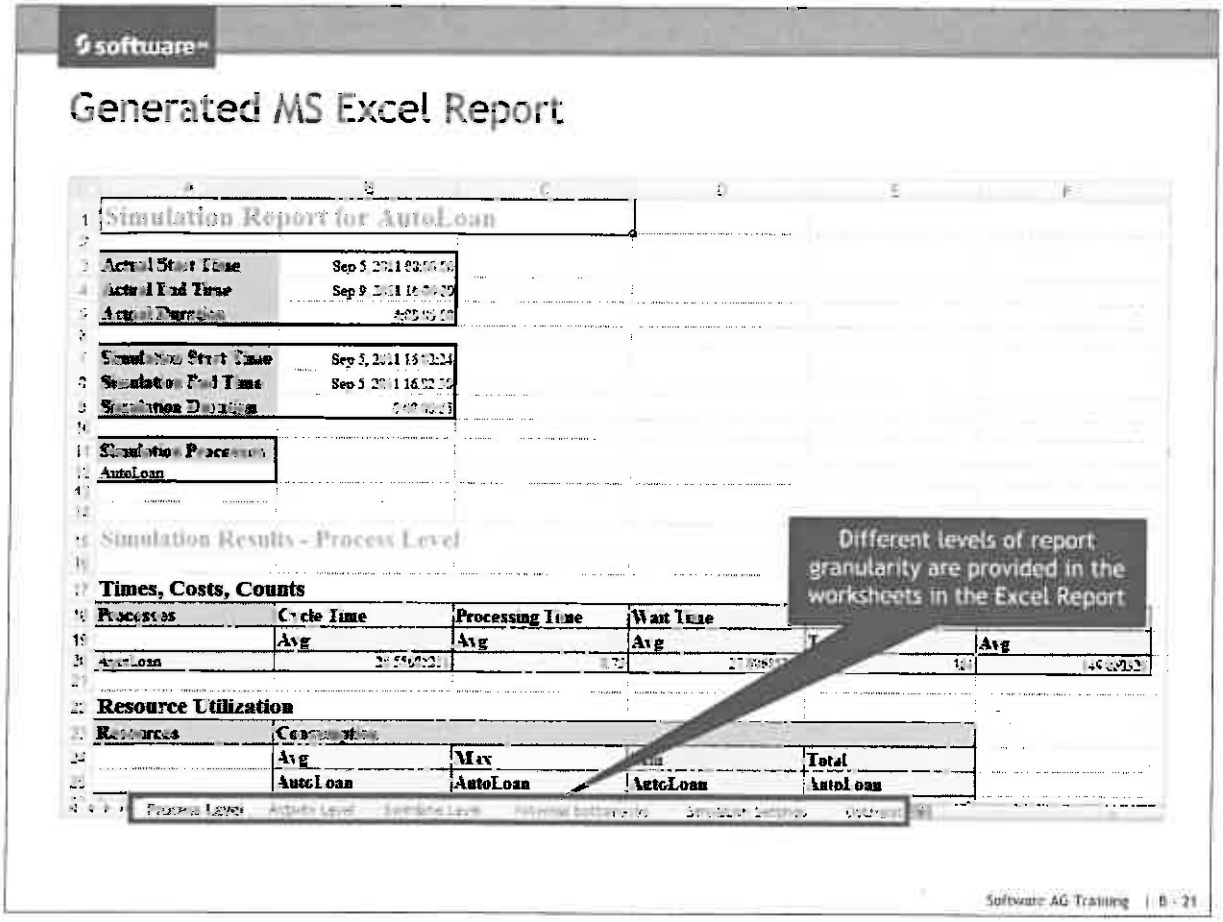



Notes:




Notes:




Notes:

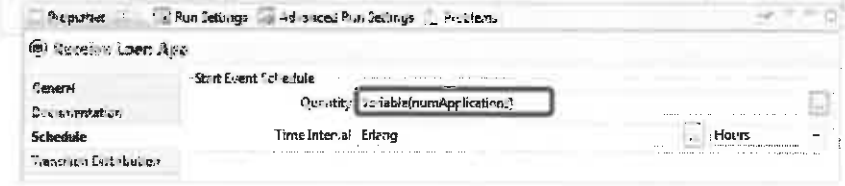
 

## Simulation with Optimization

- Use embedded optional Optimization engine to calculate the recommended number of simulation resources, quantities,...
- Choose type Variable to utilize optimization:


Resource:
*Available Units*

Step:
*Processing time*


Start Event:
*Time interval, num. of Applications*

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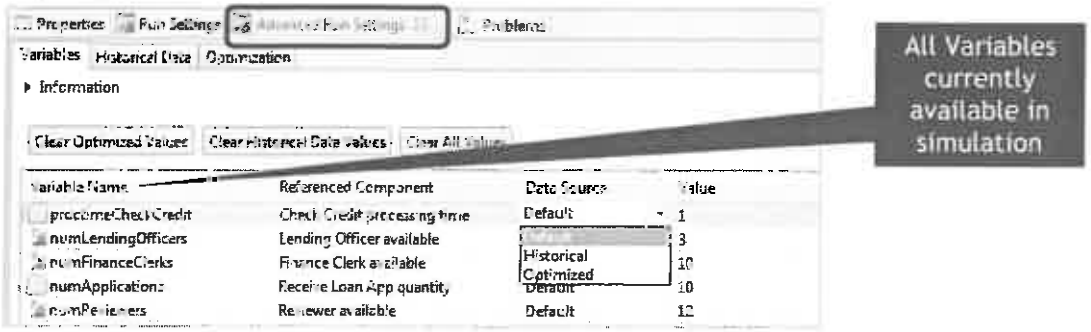
Notes:

## Configure Simulation Variables

- Optimize Engine configurations are done on the "Advanced Run Setting" view:




- Three different Data Sources for Simulation Variables:
  - *Default*: Fixed integer value
  - *Optimized*: Value to be calculated by integrated Optimization Engine (not BAM!)
  - *Historical*: see later...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Notes:

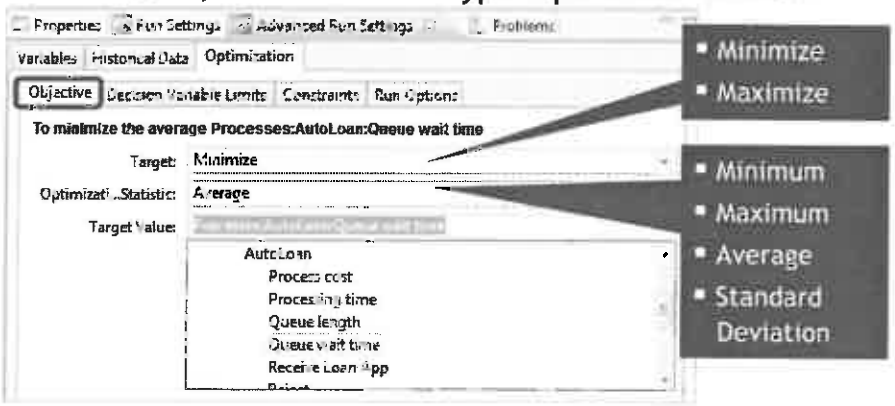
 

## Configure Optimized Simulation Variables...

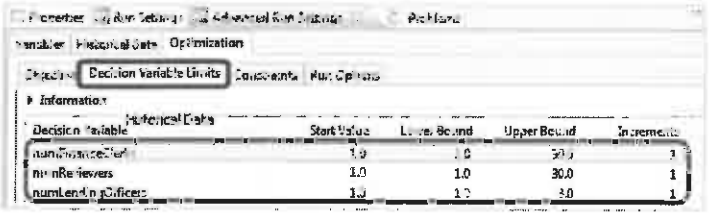
- Optimization sub tab used, if Data Source type "optimized" chosen

Specify:

a) Objective:




b) Decision Variable Limits:

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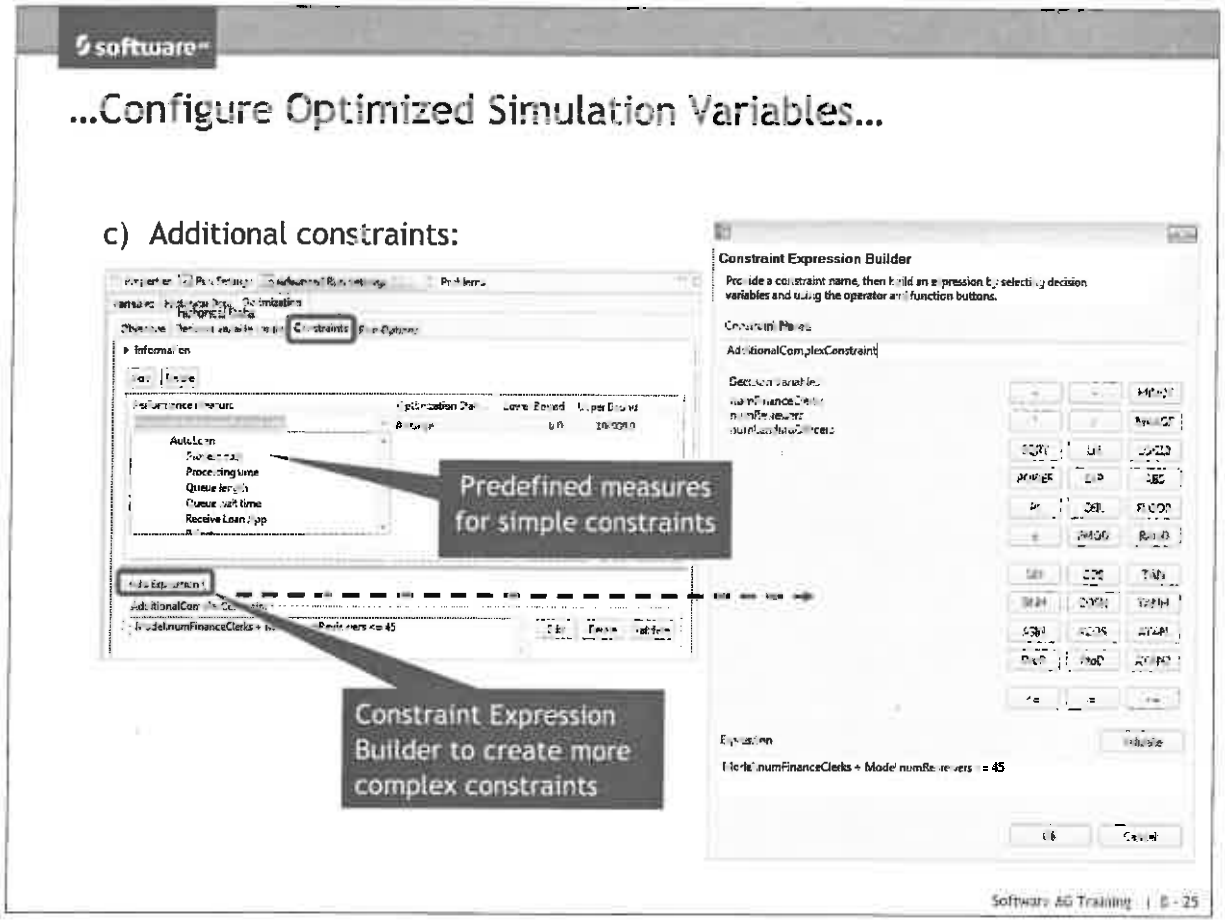
## Notes:

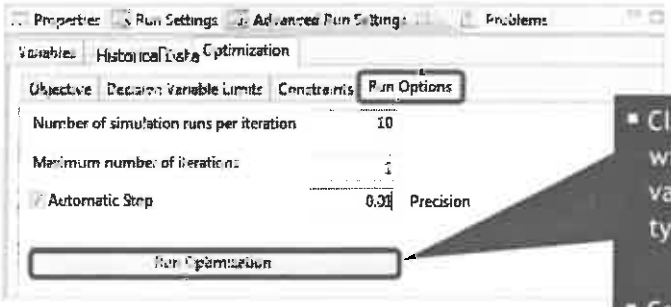



Notes:

## ...Configure Optimized Simulation Variables

d) Optimization Run Options:




- Clicking "Run Optimization" will calculate optimized value(s) for variable(s) of type "Optimized"
- Can be done in an incremental manner or for many variables during one simulation

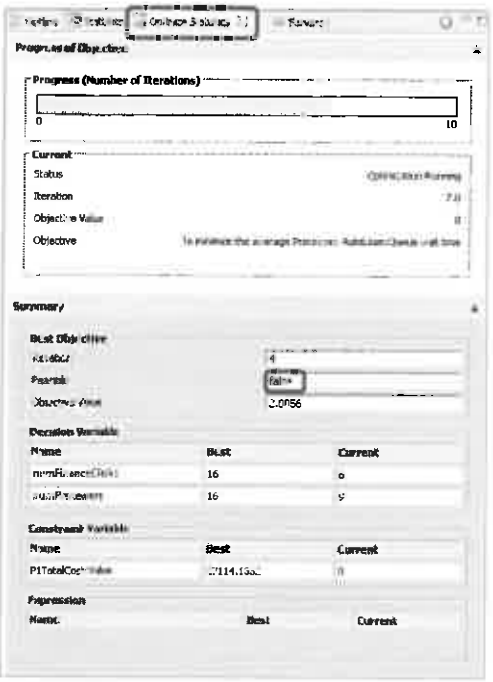


Notes:

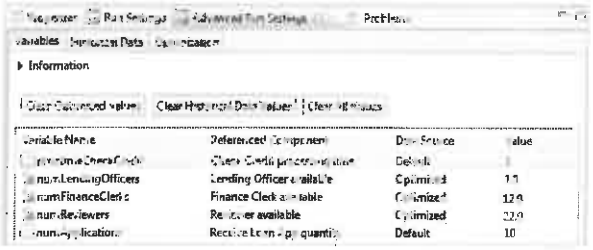
 

## Calculate Optimized Simulation Variables

- View "Optimize Statistics" shows progress of optimization:




- Results are pasted into Variables view:



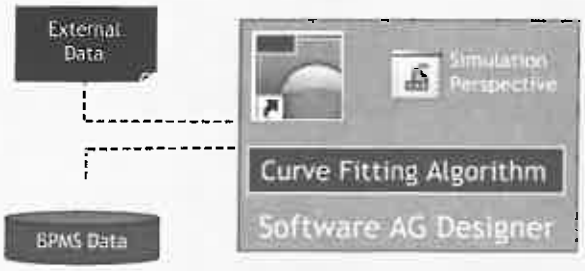

- Will be used in subsequent simulation to avoid bottlenecks



Notes:

## Historical Data used in Simulation




- Receive frequency *Poisson*
- Processing times *Normal*
- Transition probabilities *Percentages*
- Resource availability *Erlang*
- :
- :

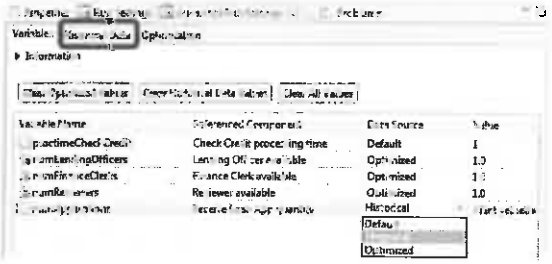
- Simulation can use historical runtime BPMS data
- Simulation can use historical external data sources
- Embedded Curve Fitting algorithm allows to calculate fitting distribution



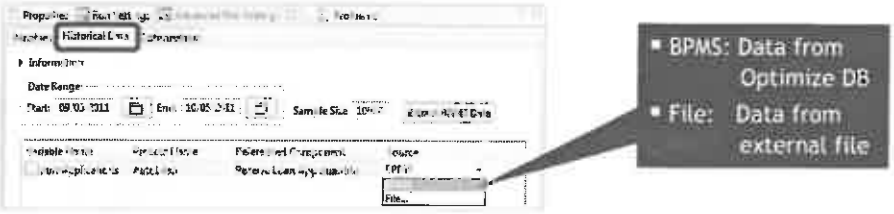
Notes:

## Assigning Historical Data...

- Data Source of a Simulation variable can be "Historical":



- Use Historical Data sub tab to define source of historical data:




- Historical data are related to a certain process version, probably these data won't fit to the version I'd like to simulate

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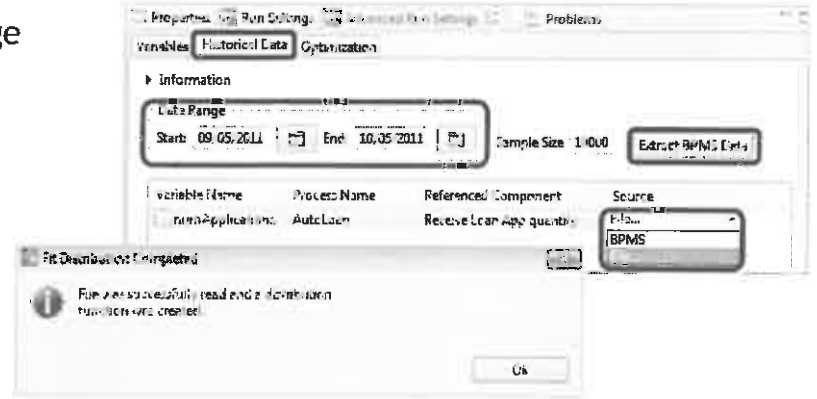
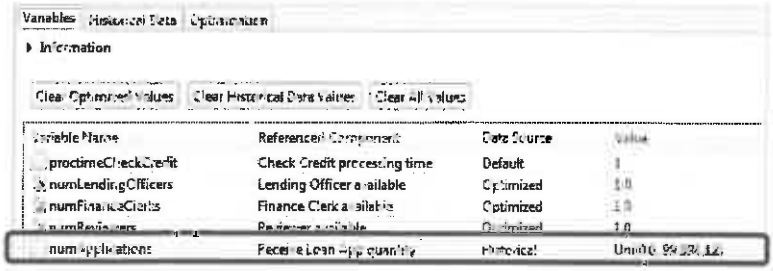
## Notes:

## ...Assigning Historical Data

- Specify data range
- Provide/extract historical data
- Create fitting distribution from historical data
- Results are pasted into Variables view

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Notes:

## Simulation Variables Support Matrix

| Possible Simulation Variable | Can find value using Optimization | Can be read from Simulation DB | Can be read from elsewhere, e.g. tab-delimited file |
|---|---|---|---|
| Resources | ✓ | | ✓ |
| Processing time per step | ✓ | ✓ | ✓ |
| Resource depletion | ✓ | | ✓ |
| Process instance frequency | ✓ | ✓ | ✓ |
| Process instance volume | ✓ | ✓ | ✓ |
| Transition distribution *(can't be optimized)* | | ✓ | |

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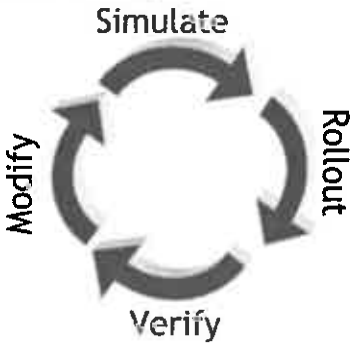
Notes:

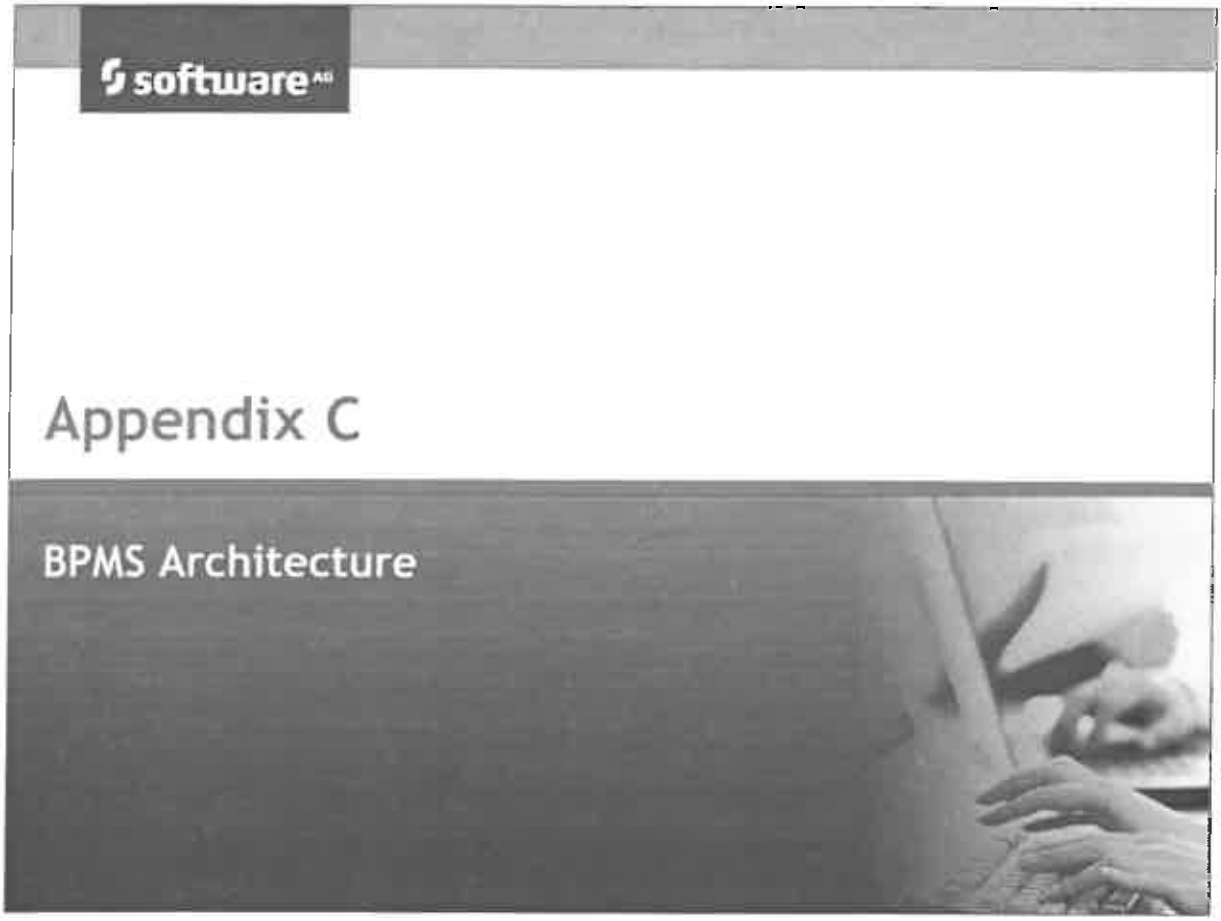
## Simulation - Remarks and Suggested Practices

- Accurate simulation results take time to create and require input from stakeholders
- Adding model resources and timings to *all* steps is required to create accurate results
- Use Optimization and historical data to optimize simulation resources
- Simulation - like your model - is a constant work in progress for continual improvement
- However, the ROI of properly configured simulations can be very significant



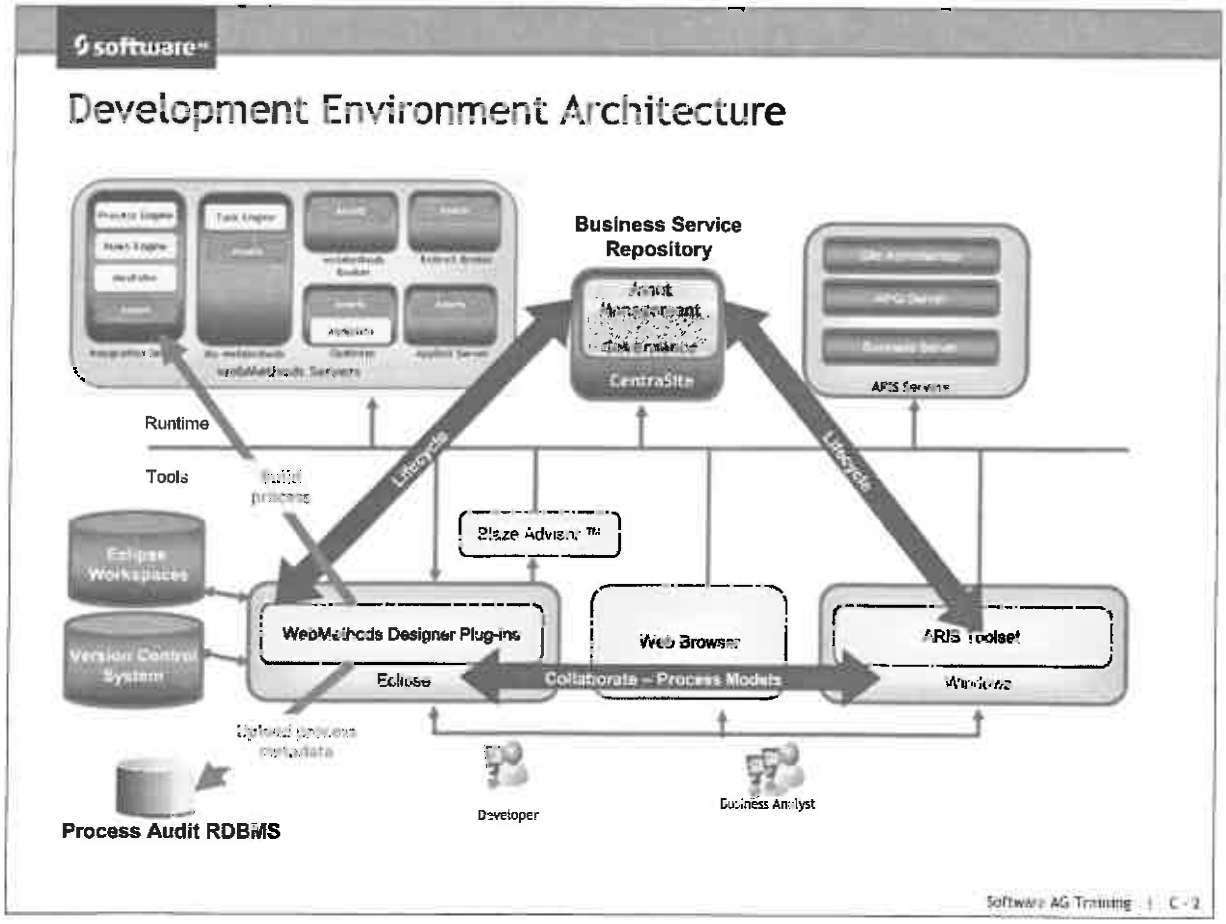

Notes:



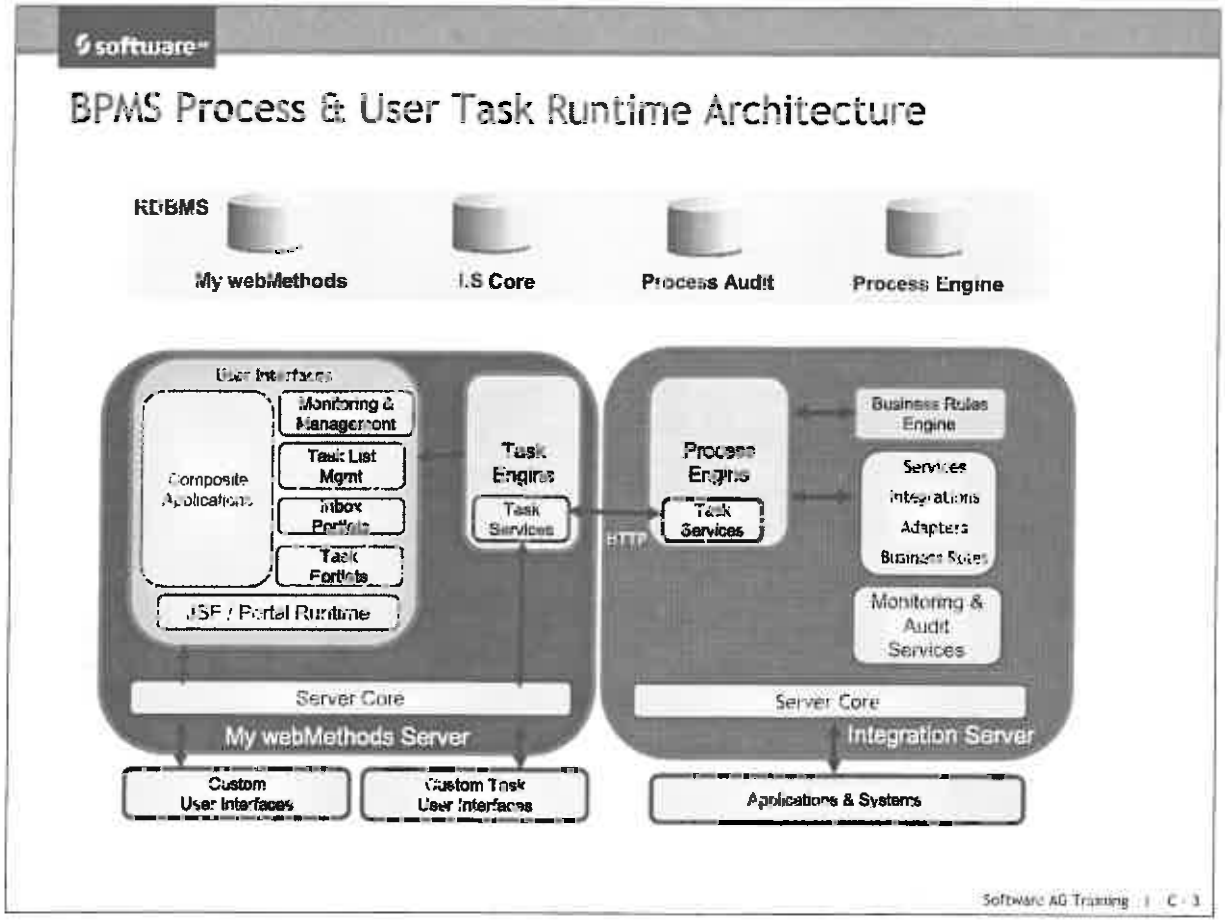

Notes:




Notes:




Notes:


Notes:

Last page