WebSphere Education

Project management, methodology, and approaches

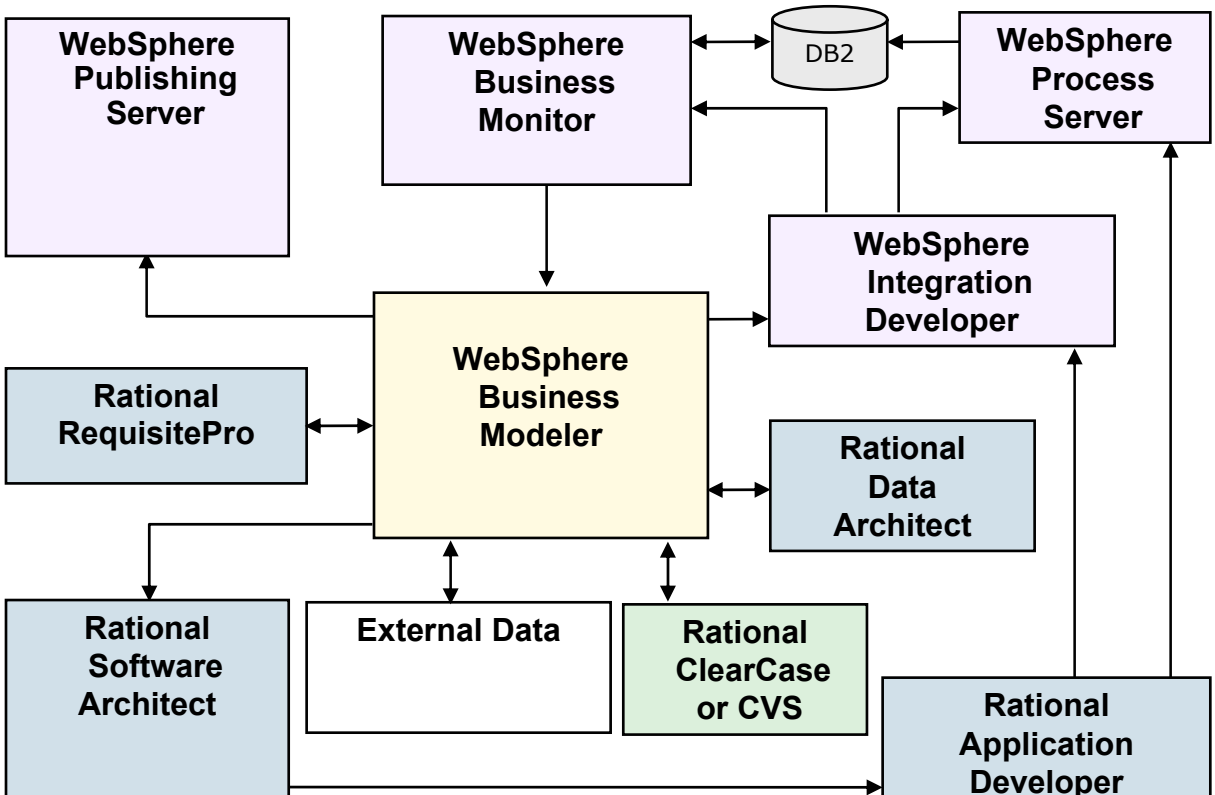
Unit 12

Unit objectives

After completing this unit, you should be able to:

- Discuss process analysis methodology and scoping
- Explain the importance of process modeling standards
- Explain naming conventions
- Define a project (or project team) organization
- Describe Six Sigma and explain why WebSphere Business Modeler is a Six Sigma process management tool

Project management and methodology are important to the use of all products



Reasons for modeling processes

- There are many reasons for modeling processes throughout the project.

- The benefits of the model may include any or all of the following:
  - Documenting the current process
  - Creating a common understanding
  - Identifying areas for improvements
  - Defining a common vision of a future process
  - Developing requirements for new organizations and technology
  - Continuous monitoring and improvement
  - Educating process participants
  - Providing the baseline for a new or improved technical solution

Business process methodology

- A business process methodology is a systematic way of examining the processes of a business to identify and correct inefficiencies in how the business operates. The values of following a methodology are:
  - A common way for individual team members to operate
  - A defined set of processes and the expected result of each process
  - A context for the results so that they can be properly analyzed by the modeling team and by others such as management, consultants, and IT personnel
  - A way to schedule the delivery of these results

- The important point is that WebSphere Business Modeler is neutral toward business process methodologies.
  - It does not support or implement a particular methodology.
  - Instead, it is a tool that business analysts can use within their own methodology to store business process data and analyze it.

Entry point for the common modeling approaches

- WebSphere Business Modeler provides optimal results when the business process methodology involves three types of models:
  - The ***current model***: an accurate representation of the business processes as they are currently working. It has two primary purposes:
    - To identify problem areas such as bottlenecks and inefficiencies
    - To serve as a baseline for the second state
  - A set of what-if ***alternative models*** that solve in various ways the problems identified in the first state
  - One model is identified as the best way to implement the business processes: the process ***future model***

- When the process future model has been selected, it can be used as the baseline ***technical model*** (for example, BPEL or UML) used by other WebSphere tools
  - IT personnel can use it as the starting point to create deployable applications that support the new business processes
  - The process future model also serves as a foundation for building the current model in the next iteration of business process modeling
  - Used by WebSphere Business Monitor to provide performance feedback on the implemented model

Common process modeling approaches

Modeling approach	Scope	Outcome
Business process modeling	•As-is models are created and problems analyzed, to-be models are created and used to determine differences and ROI.	•As-is and to-be models •Process documentation •Cost benefit analysis
Enterprise modeling	•Process models are created in sufficient detail to complete the related procedures.	•Published process models •Published procedures
E-business process modeling	•As-is and to-be models are created with a focus on B2B and B2C touch points (supply chain).	•As-is and to-be models (partners) •Customized redesign report •Supply chain comparisons
Business measure modeling	•Process models are created to document runtime metrics measure business performance.	•Process models with defined performance measures •Performance system requirements
Business process system requirements modeling	•Extends the process models into IT integration, requirements, and planning.	•To-be models •UML models •User interface designs
Business process workflow integration modeling	•Extends the process models into executing workflow templates.	•To-be workflow model •Flow definition language

Core phases of the common modeling approaches (1 of 2)

Phase	Description	Deliverables
Kick-off	•Define organization goals •Define methodology •Review supporting documentation	•Project plan •Definition of deliverables
Design goals	•Define and understand how the future process will be performed	•Future modeling session outline
Data gathering	•Review documentation •Interview subject matter experts •Determine documentation gaps	•Interview notes •Initial "straw man" process models
Current model	•Create current process models	•Current process models
Associate data and definitions	•Associate policies, rules, goals, interactions, standards, data, . . .	•Complete process documentation with associated data
Current analysis	•Conduct analysis •Document findings	•Preliminary current times and costs
Current validation	•Review with subject matter experts •Make necessary changes	•Validated current process models •Updated current process models
Current signoff	•Sign off current process models	•Completed current process models

Core phases of the common modeling approaches (2 of 2)

Phase	Description	Deliverables
Alternative models	•Create alternative process models	•Alternative process models
Comparison analysis	•Calculate the model differences •Document the comparison metrics	•Process redesign report
Future model	•Select future process model	•Future process model
Future validation	•Review with subject matter experts •Make necessary changes	•Validated future process models •Updated future process models
Future signoff	•Sign off future process models	•Completed future process models
Technical model	•Create technical process models	•Technical process models for export
Preparation of final report	•Verify final deliverables •Complete analysis •Complete final deliverables	•Custom redesign report •Signed-off deliverables

Comparison of process modeling approaches

Approach phase	Business process modeling	Enterprise modeling	E-business process modeling	Business measure modeling	Business process system requirements modeling	Business process workflow integration modeling
Kick-off	X	X	X	X	X	X
Design goals	X					
Data gathering	X	X	X	X	X	X
Current modeling	X	Enterprise process modeling	X	Process measures modeling	Process modeling	Workflow process modeling
Associate appropriate documentation and definitions	X	Enterprise information	Partner interactions	Process performance measure doc	Process documentation	Workflow process definitions
Current analysis	X					
Current validation	X		X			X
Current sign-off	X		X			
Alternative modeling	X					
Comparison analysis	X		X			
Future modeling	X		Partner interactions		Creation or association of user interface	
Future validation	X		X			
Future sign-off	X					
Create technical model	X				Creation or association of UML models	Workflow process model FDL creation
Prepare final report	X	X	X	X	X	X

Understanding the business problem

- Examine the process in the context of the project objectives
  - Projects to solve business problems are usually defined long before the process to be analyzed is identified.
  - It is important to understand the business problem before committing to the type of modeling to be done.
    - What is the project attempting to accomplish?
    - What is included within the scope of the project?
    - What is the project time frame?
    - What is the project organization?
    - What are the deliverables?
    - What are the expected potential benefits?

Define contribution of process to business goals

- When you know the context of the process, you can better assess the contribution of the process to the goals.

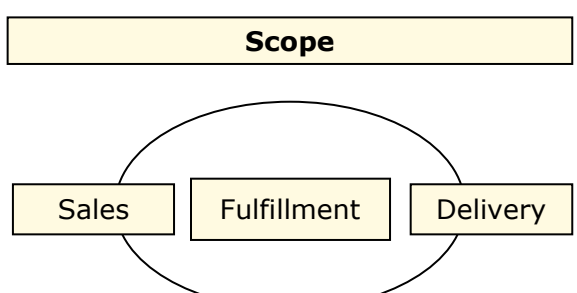
- During the what-if alternative modeling these goals will be the design drivers in your performance comparisons to select the process redesign that will, for example:
  - Eliminate the complexities of resource sharing that impact process efficiency
  - Improve communication of among interdependent tasks and eliminate or reduce unique handling requirements
  - Reduce or redesign critical constraint points in a process to streamline or improve resource availability
  - Eliminate exception execution of processes that result in performance degradation and extra resource usage

Define context and purpose of the process model

- Understanding the context and purpose of the process model helps you define the process model scope
  - Explore the critical task of defining the boundaries of the business process model — the scope.
  - The scope of a project provides guidelines for modeling, analysis, and design
  - The scope of a process model clearly identifies the area of a business to be included in the project
    - A subprocess
    - One or more processes
    - One or more departments
    - One or more divisions
    - The whole organization
    - Multiple organizations

Define the project boundaries

- Specify those business processes that are included within the project
- Specify those business processes not included in the project
- Document the processes to be included in the scope in both text and graphic formats
  - Graphical
    - Draw a picture indicating those processes included and not included
  - Text
    - Write a short narrative describing those processes included and not included
- It needs to be clear to everyone



Clearly document and communicate the scope

- Minimize individual or personal interpretations of the project.
- Gain commitments to a common vision for the project.
- Use the project charter and scope to do continuous evaluation of the project performance.
  - Review project documentation for business process issues.
  - Conduct additional interviews to clarify process-related issues.
  - Determine if the key issues are included within the processes in scope.
  - Change the scope if necessary or change outcome expectations.

Project charter

Business purpose
Improve, redesign, and automate

Process scope
Define what is in and what is out

Goals of the modeling effort
Define the purpose of the model

Project organization
Sponsor, project manager, members, and time commitment

Key contacts
Subject matter experts

Project plan and schedule

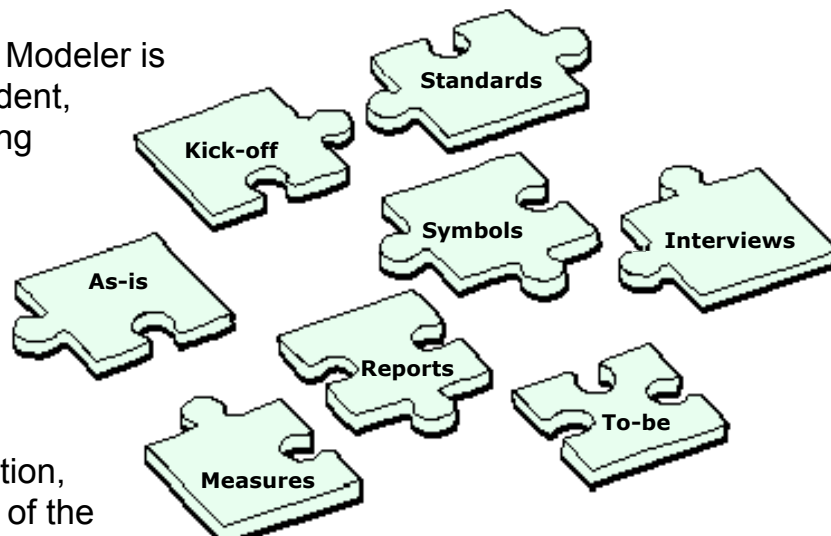
Glossary of key terms

Identifying stakeholders

- Project approach is crucial to identifying the appropriate stakeholders and keeping them involved,
  - Healthy signs:
    - Executive incentives tied to project results
    - Investments in change management and training
    - Subject matter experts dedicated full-time
  - Unhealthy signs:
    - No executive sponsor visible
    - People sabotaging efforts
    - Resistance to new ideas
    - Subject matter experts are unavailable

Defining standards and agreeing to best practices

- Your stakeholders will also help you define the standards and gain the agreement required to maintain best practices:
  - WebSphere Business Modeler is methodology independent, but successful modeling efforts require a level of standardization and a defined approach.
  - Process modeling standards:
    - It is necessary to define the use, creation, and implementation of the symbols, definitions, and data descriptions.



Process modeling standards (1 of 4)

- Agreement to a set of standards is critical to developing a set of process models that are compatible and aligned with each other and in determining:
  - The naming of objects (tasks, processes, roles, and so forth)
  - The details to be gathered and documented
- Process models should follow defined standards understood by all participants.
  - The model is a language that describes the way the organization operates.

Process modeling standards (2 of 4)

Subject	Recommendation	Examples
Organization units	• Use names that appear on the organization charts. • The actual units used will be determined by the level of detail to be modeled.	Quality (team) Engineering (department) Plastics (division)
Locations	• Use names that the organization uses to describe where people perform their work.	New York Building 2
Roles	• Use names assigned to the position in organization. • Avoid specific job titles, as they tend to change. • General roles can be used in several organization units without entering additional data. • Cost is the biggest differentiator, obtained from HR. • Serves as the position's general overhead cost.	Teller Welder Administrative assistant Senior analyst Director of engineering
Resources	• Other resources, such as tools, equipment, consumables, or services can be documented in the process model along with human resources. • Add resources that will add value to the overall analysis. – Name and describe early in the modeling exercise. – Make sure everyone is modeling at the same level.	Name or ID number Copier CNC Paint booth Title search

Process modeling standards (3 of 4)

Subject	Recommendation	Examples
Processes	•Follow the *verb object* format. – Should represent the collection of tasks within it. •Some objects need further definition because alone they could mean several things. – The object "order" is a prime example: customer order, work order, sales order, delivery order.	•**Not as good** –Ordering •**Good** –Fill customer orders –Assemble products –Assembly
Tasks	•Tasks should follow the *verb object* format and describe the work being performed. •Be concise because in a given organizations there will be several task names. •The available verbs can also be standardized to support a common language. •Avoid verbs like *review* because they are unclear and add no value.	•**Good** –Cut material –Sort invoices •**Not as good** –Repairing –Review order (what does it mean?)
Decisions	•Decisions and choices should reflect the path being followed because of an actual decision. •Multiple decisions typically result in smaller diagrams that are easier to read. •The name should be stated as a question with a question mark. •Binary decisions (yes or no) work well for simple decisions.	•**Loan status?** –Loan approved –Loan rejected •**Risk rating?** –High –Medium –Low

Process modeling standards (4 of 4)

Subject	Recommendation	Examples
Services	• Use names that describe the work being performed outside the organization. • A service is a process or task performed by someone outside the scope.	• Process payroll checks • Print books • Distribute supplies
Business items	• The business items names identify the specific inputs and outputs important to the process and need unique names. • Some business items include a set of other business items, like a work packet.	• Customer order • Work packet • Rental agreement • Desk • Power supply

Modeling project considerations

- Modeling team composition
  - To model the business processes effectively, a modeling team needs a diverse set of skills and roles. A team member can fill more than one role, and more than one person can fill a role.
- Conventions for modeling teams
  - Modeling teams should establish conventions to help make the model consistent throughout and to help with interaction between the team members.
- Setting up modeling projects
  - One of the tasks for the architect is to define the structure or organization of the projects. There are several ways to accomplish this.
- Consider master and component projects
  - You can model using multiple projects while sharing common information. The overall structure may be a master project that contains common elements and a manageable set of component projects that each model a specific aspect of the business.
- One large project versus multiple projects

Typical roles in a modeling team

- Leader
  - Coordinates the activities of the modeling team
  - Maintains the schedule and manages inter-personnel problems
  - Have experience in project management and in the modeling methodology
- Architect or senior business analyst
  - Defines the structure to use within WebSphere Business Modeler to store the model information
- Process analyst or business analyst
  - Gathers and enters information into the projects
  - Conducts activities such as interviewing subject matter experts and reviewing documentation
  - Should have some experience with using WebSphere Business Modeler
- Administrator
  - Uses WebSphere Business Modeler Publishing Server to publish projects to a publishing server
  - Uses version control tool to manage the project versioning

Team dynamics

- Effective and comprehensive business process models are labor-intensive to create
- Protecting model information
- When to use project versioning versus exporting and importing
- When to use restricted versus unrestricted ownership

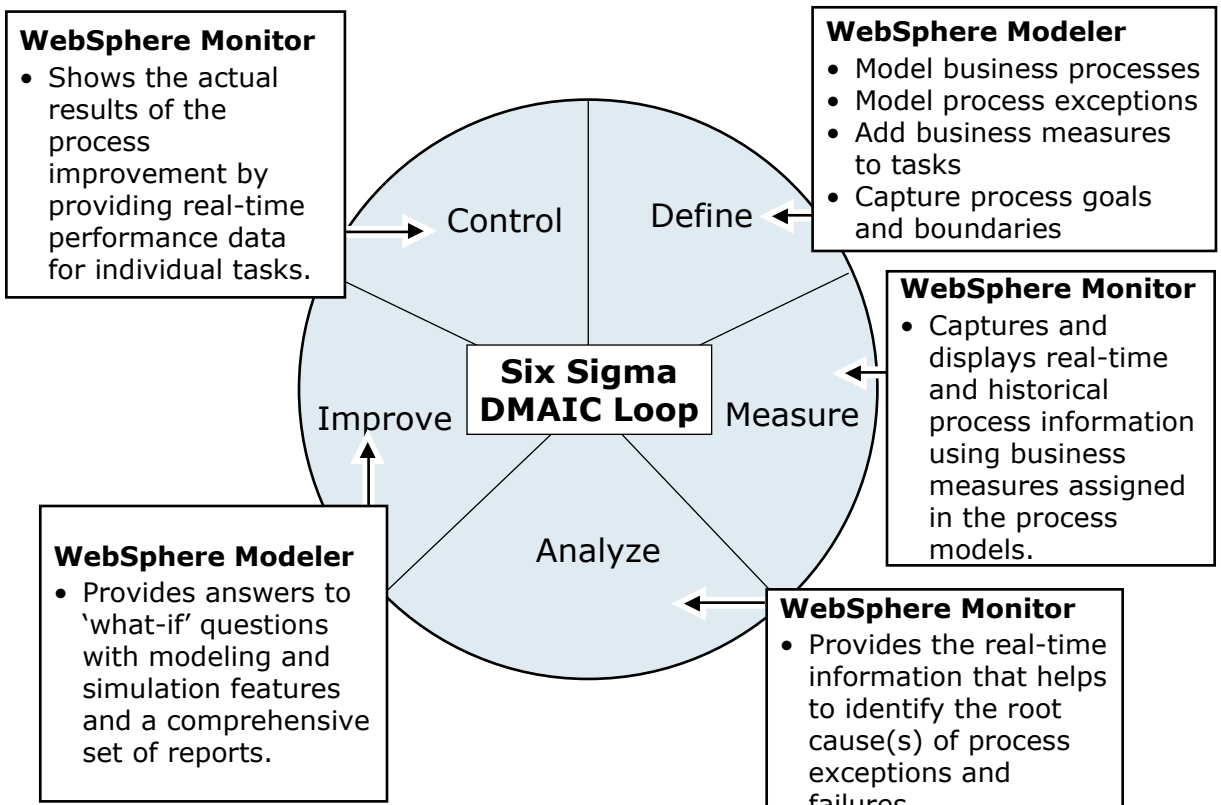
Six Sigma overview

- Six Sigma has been built as a critical business tool for the 21st century
- Leading companies, such as, Motorola, General Electric, and Honeywell International, launched major Six Sigma initiatives
- What is Six Sigma?
  - A measure of quality that strives for near perfection
  - A disciplined, data-driven approach and methodology for eliminating defects in any process
  - Drives towards six standard deviations between the mean and the nearest specification limit
  - Applicable from manufacturing to transactional and from product to service
  - A statistical representation of Six Sigma describes quantitatively how a process is performing

Six Sigma objectives

- Implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects
- This is accomplished through the use of two Six Sigma sub-methodologies, DMAIC and DMADV:
  - DMAIC (define, measure, analyze, improve, control) is an improvement system for existing processes falling below specification and looking for incremental improvement
  - DMADV process (define, measure, analyze, design, verify) is an improvement system used to develop new processes or products

Six Sigma process steps: DMAIC

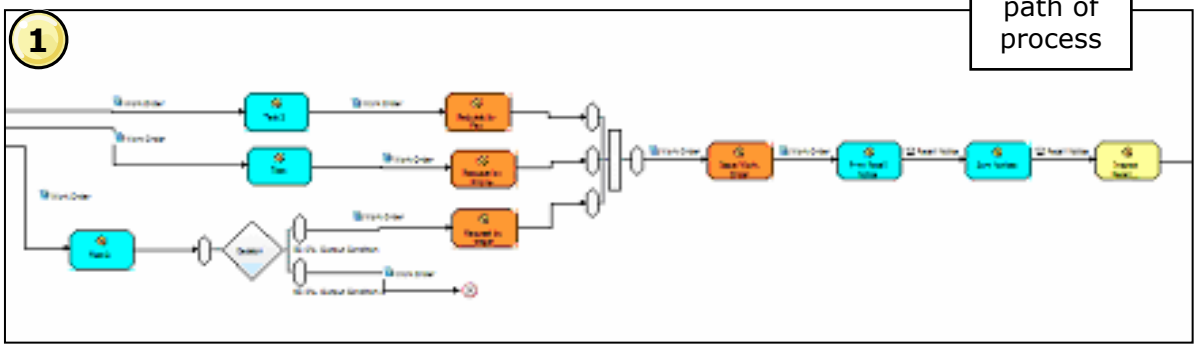


Exception pattern methodology

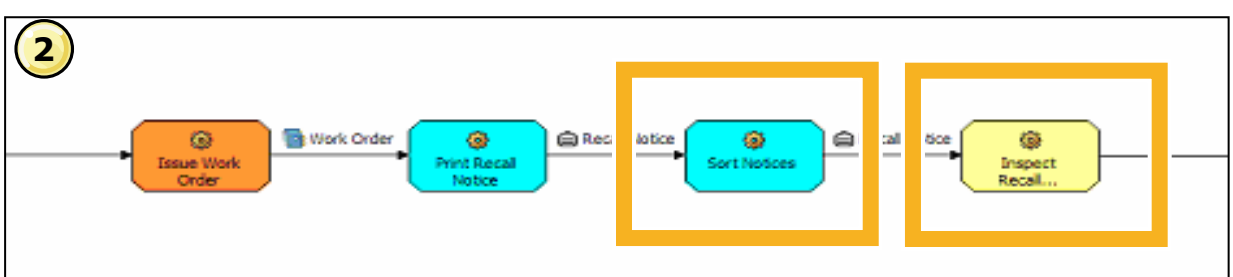
- A business transaction is the performance of a unit of work by a process, task, or activity in response to an internal or external input
- An exception is any business transaction that deviates from a desired process path
  - Input errors or omissions
  - Product or service irregularities
- A failure is any business transaction that results in an unacceptable exception or output due to a process error
- Modeling exceptions as discrete paths providing clarity and enabling independent analysis
- Capturing detailed exception information for diagnosis
- A Methodology for Representing Exceptions in a process diagram
  - Model the Macro Flow
  - Review the process model for exceptions
  - Change exception tasks to sub-processes
  - Model exception paths
  - Create possible causes of exceptions
  - Associate classifiers to the exceptions
  - Analyze the exceptions

Six sigma modeling using Modeler (1 of 4)

- Model the macro flow

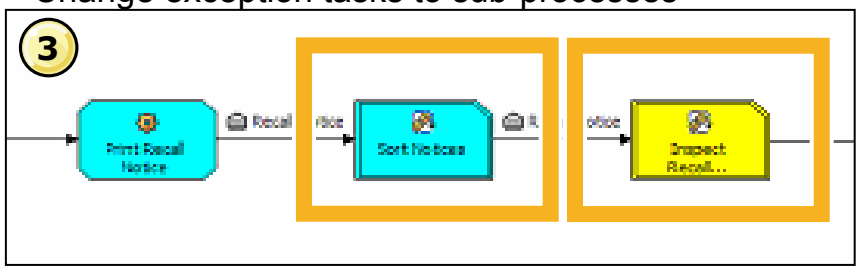


- Review the process model for exceptions

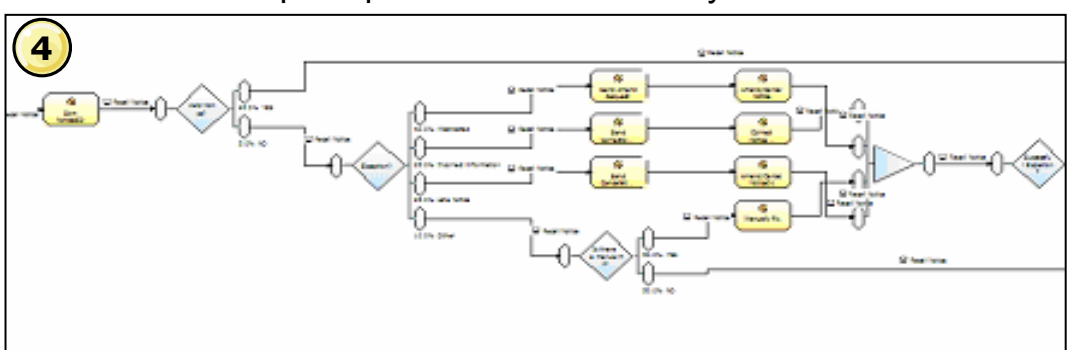


Six sigma modeling using Modeler (2 of 4)

- Change exception tasks to sub-processes

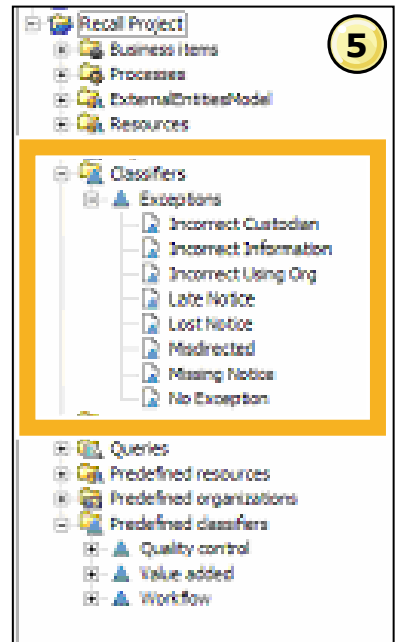


- Model the exception paths for detailed analysis

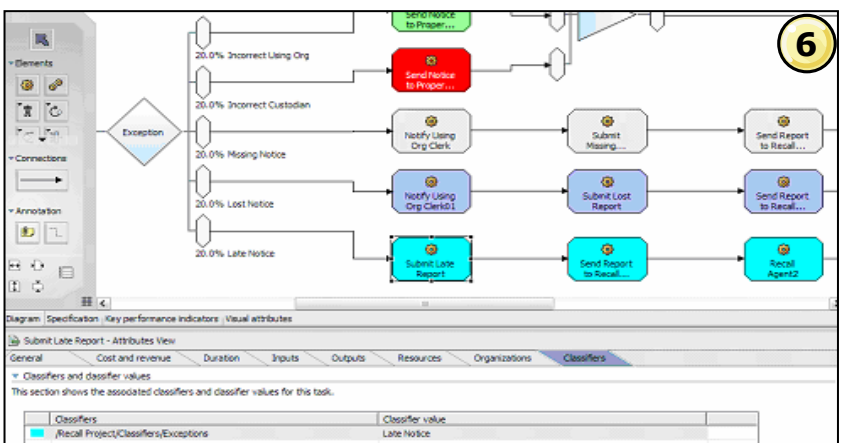


Six sigma modeling using Modeler (3 of 4)

- Create possible causes of exceptions as Classifiers

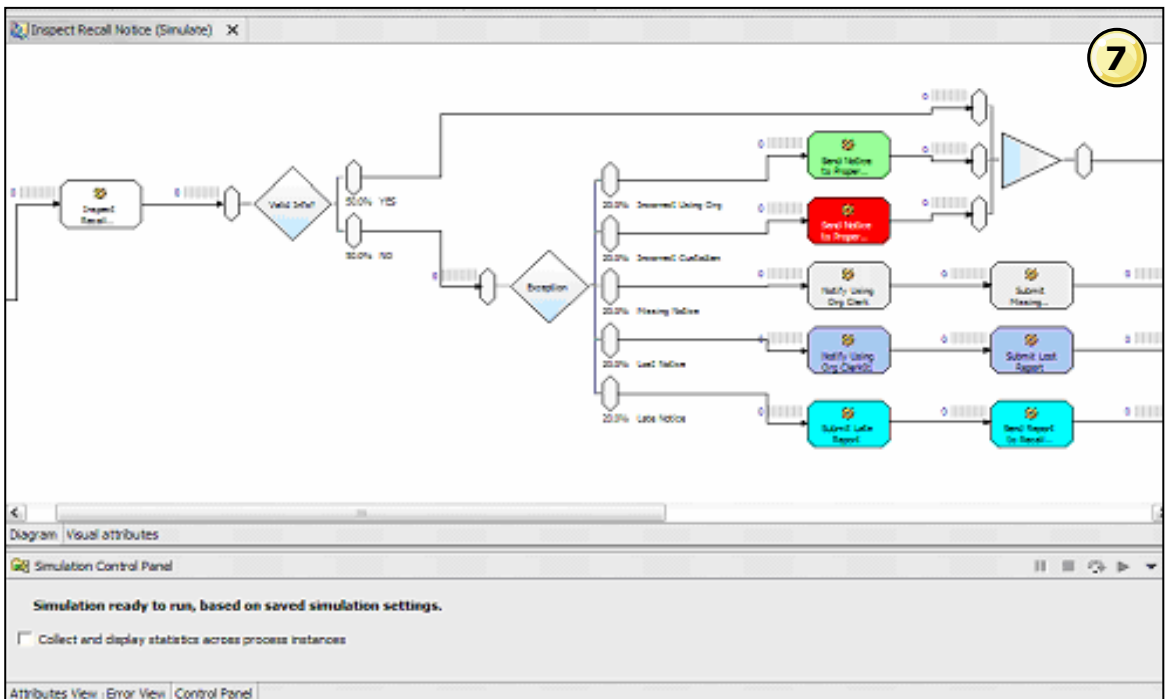


- Associate Classifiers to the tasks



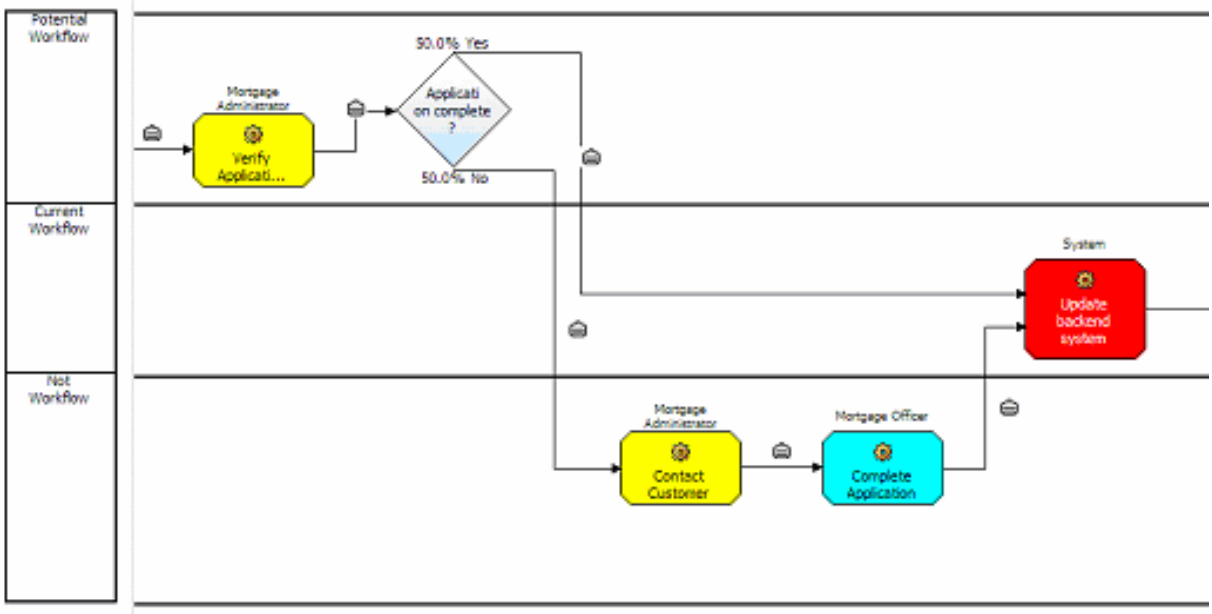
Six sigma modeling using Modeler (4 of 4)

- Analyze the exceptions and plan corrective actions



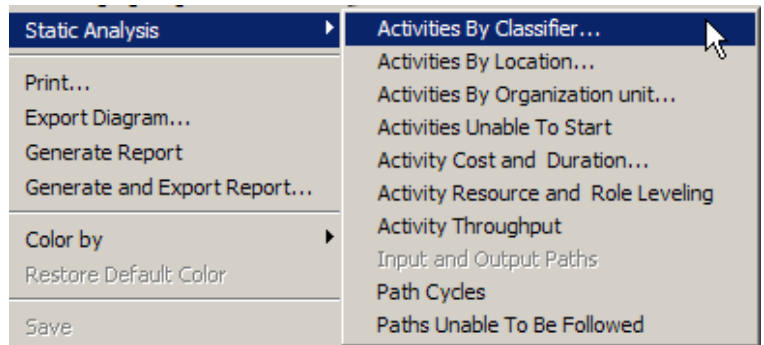
Color by and analysis by classifiers in Modeler

- Color code the process diagram by classifier
- Use classifier values as the label on top or below the elements
- Swimlane view by classifier

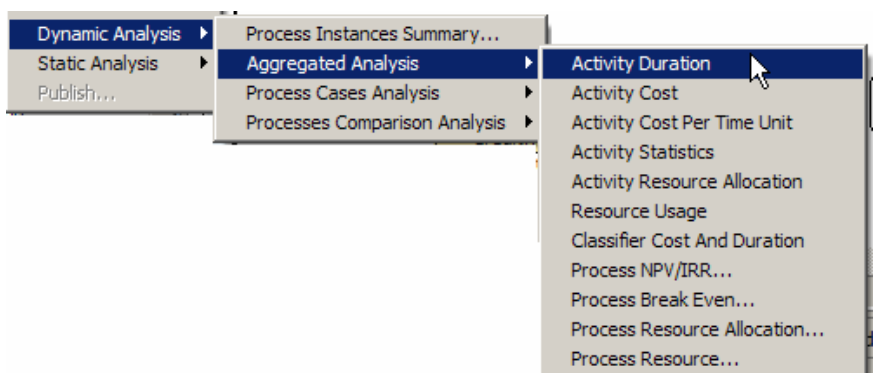


Analysis reports in Modeler

- Static analysis report



- Dynamic analysis report



Modeler: Six Sigma process management tool

- Modeler is an effective and efficient Six Sigma process management tool
  - Gather information on exceptions and their causes
  - Optimize proposed changes through ‘what-if’ simulations
  - Show process-performance trends
  - Allow for continuous process improvement

Unit summary

Having completed this unit, you should be able to:

- Discuss process analysis methodology and scoping
- Explain the importance of process modeling standards
- Explain naming conventions
- Define a project (or project team) organization
- Describe Six Sigma and explain why WebSphere Business Modeler is a Six Sigma process management tool

Exercise overview

- This exercise covers a case study; an interactive group discussion of the modeling techniques and an alternate solution will follow.
- You are presented with a case study as a business analyst assigned to a business process management project.
  - Read the case and the information about the company and its expenses reporting process.
  - Based on the information provided, use Modeler to created a project, business items, and the process diagram.
- Translate “What they said” into a meaningful model.