



WebSphere Education



Process improvement

Unit 20



Unit objectives

After completing this unit, you should be able to:

- Explain how to improve your process
- Demonstrate best practices for analysis using Modeler
- Use process model comparisons

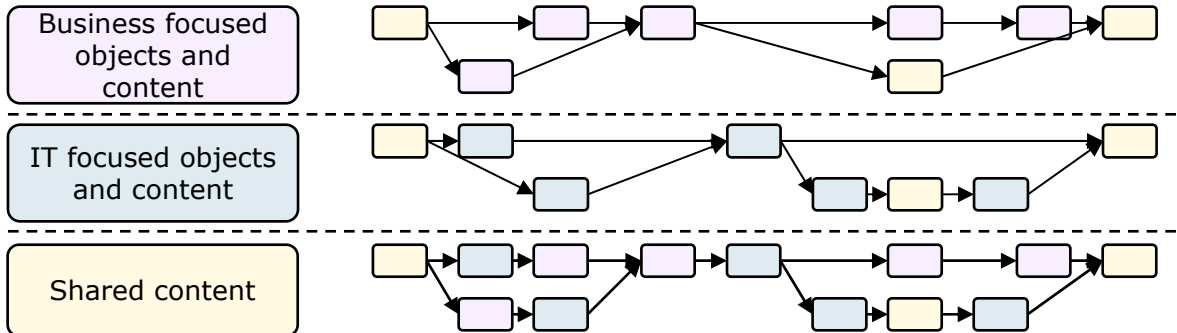
The diagram illustrates the WebSphere Business Modeler (WBM) architecture and its integration with other components. At the center is the **WebSphere Business Modeler** (highlighted with a thick orange border). It is connected to several external tools and servers:

- WebSphere Publishing Server**: Connected via a bidirectional arrow.
- WebSphere Business Monitor**: Connected via a bidirectional arrow.
- WebSphere Process Server**: Connected via a bidirectional arrow.
- DB2**: A database instance connected to both the Business Monitor and the Process Server.
- WebSphere Integration Developer**: Connected to the WBM via a bidirectional arrow.
- Rational RequisitePro**: Connected to the WBM via a bidirectional arrow.
- Rational Data Architect**: Connected to the WBM via a bidirectional arrow.
- Rational Software Architect**: Connected to the WBM via a bidirectional arrow.
- External Data**: A data source connected to the WBM.
- Rational ClearCase or CVS**: A version control system connected to the WBM.
- Rational Application Developer**: Connected to the WBM via a bidirectional arrow.

The WBM acts as a central hub, facilitating the integration and data exchange between these various tools and servers.

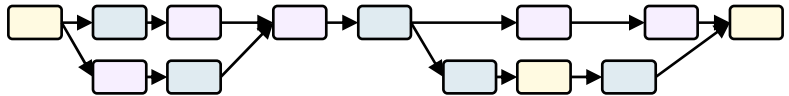
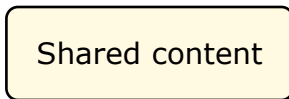
Audience perspectives

- To evaluate alternative solutions, it is necessary to understand the audience perspectives of model content.
- Content relates to the process objects and the data contained in each object.
- A company executive may not need to see detailed task interactions with various applications, as would a software architect.
 - However, the data needs to be in Modeler's repository.
 - Modeler provides for this using subprocesses and in setting the operational mode.
 - Model content should reflect the needs of the intended audience.
 - Models can store content for multiple audiences, so filter the content for a presentation to reduce or avoid confusing a specific audience.



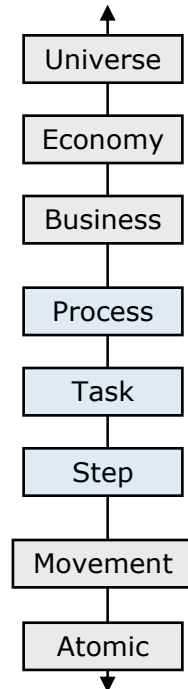
Comprehensive model

- Evaluation of all alternative solutions requires understanding the comprehensive model.
- Comprehensive models contain shared content and shared process flows.
 - Model diagram (process flow) represents tasks for people and systems, their inputs and outputs, and the decisions that direct the flow of the key business item.
 - Model elements contain data that is relevant to both business and technology.
- Process re-engineering requires the analysis of:
 - Business
 - People
 - Process
 - Technology



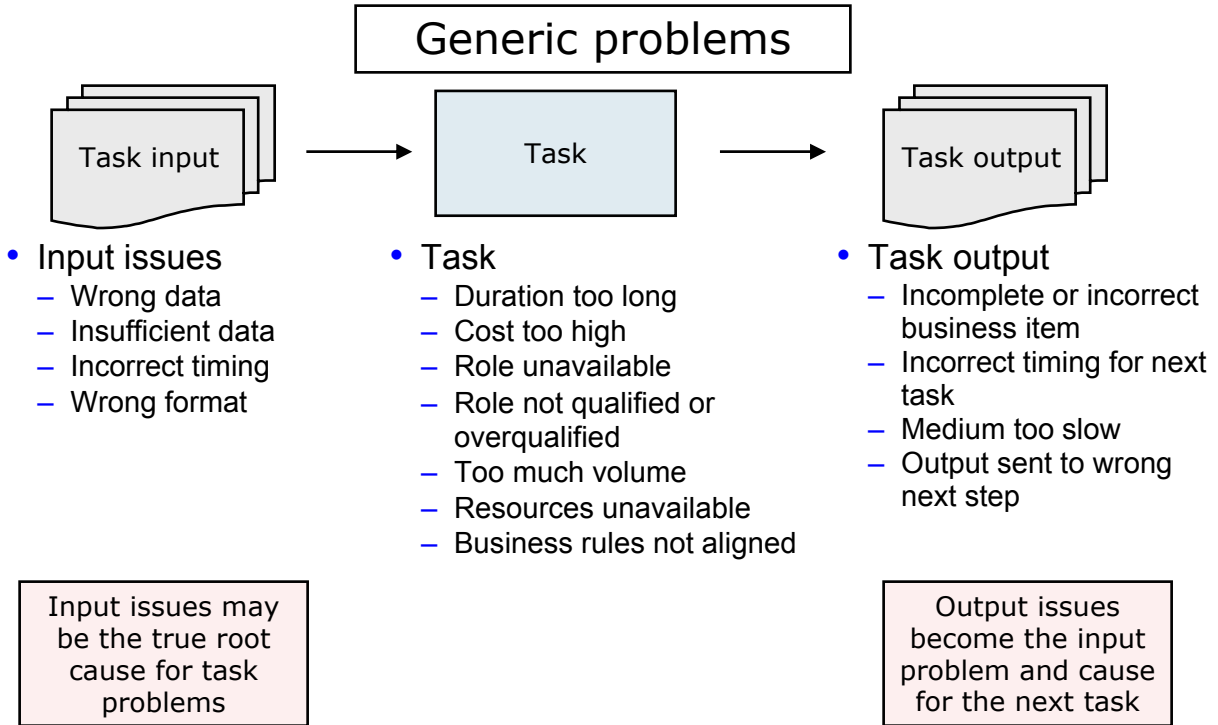
Balance of content versus level of detail

- Content refers to the data collected about each process object.
 - Summary content may include the task name and the role of the person responsible for its execution.
 - Detailed content might include: task name, role, duration, cost, application resources, bulk resources, departmental structure, and inputs.
- Level of detail refers to how the process is described.
 - A high level of detail for sending a letter could be a task.
 - “Send letter”
 - At a lower level of detail:
 - Fold completed letter
 - Place in envelope
 - Seal envelope
 - Address and stamp envelope
 - Deliver to mailbox



One task may represent five steps from a lower level of detail.

Most desirable solution?

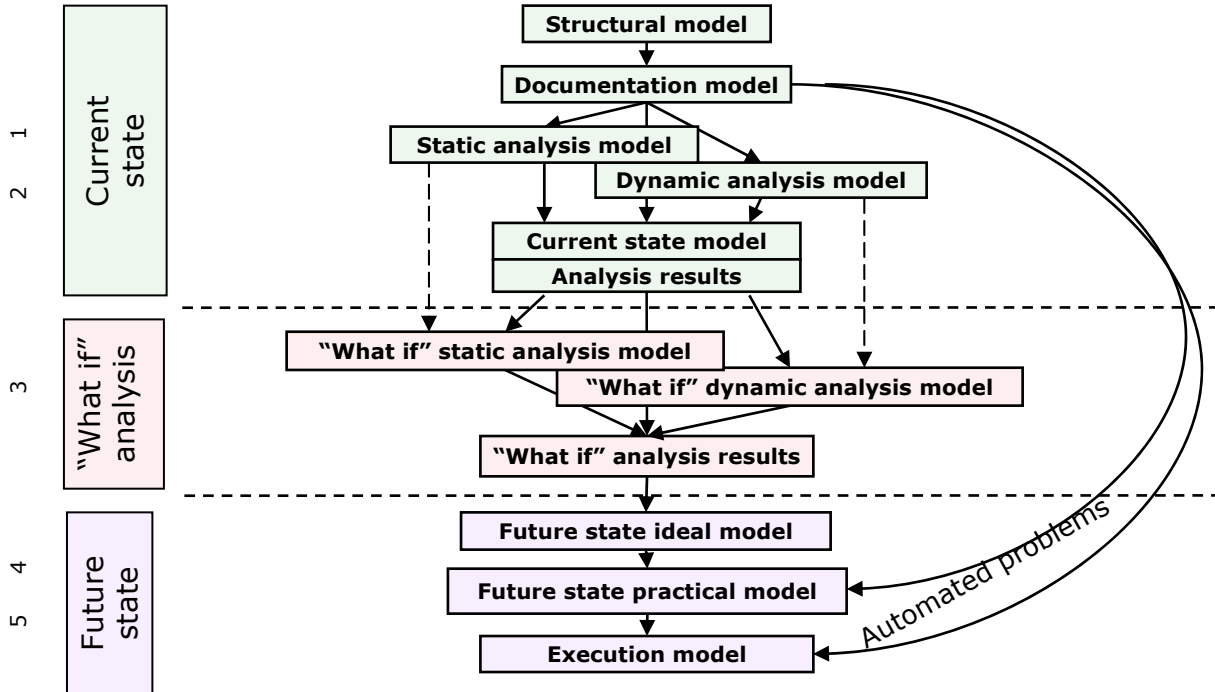


Business issues important to goals

- Business processes break down for a number of reasons.
 - Many of them are hidden and difficult to isolate.
- A model can reduce process complexity by highlighting areas with known problems when the model is constructed, including:
 - Multiple iterations
 - High costs
 - Long process delays
 - Limited or too many resources
 - Bottlenecks

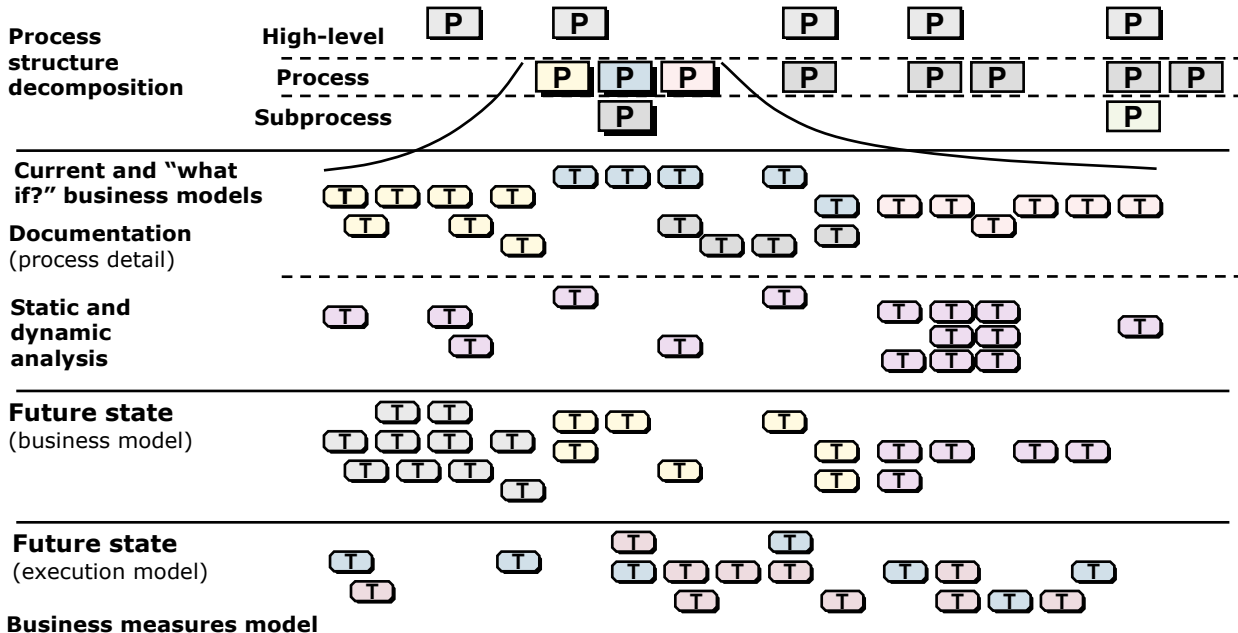
Future process model

- The diagram illustrates how each model becomes the foundation for the next phase.
 - The structural model facilitates the documentation of the current state, models are analyzed, results are published, and so on.



Process model phases: Task details

- The flow below describes the same set of processes at different points in the life cycle.
 - As a process is refined through its life cycle, the emphasis on certain process details may shift.
 - The tasks and content defined for a business owner may be less relevant to an IT solution lead developing workflow.



Business analysis components

- **Process goals:** The purpose of the project or process.
- **Metrics:** Process analysts identify what to capture in the model.
 - What the model needs to produce for reporting and analysis.
- **Proficiencies:** Identify what the process and participants do well.
- **Pain points:** Provide focus for model creation and analysis.
 - Model should be able to prove or disprove these claims through the quantification of the process data.

Process goals

- Reduce the cost of a claim
- Meet corporate financial goals
- Satisfy customer with improved cycle time
- Reduce rework
- Reduce mistakes and improve data integrity

Metrics

- Percent of time claim is approved
- Percent of time credit information is inaccurate
- Percent of time rework is required
- Overall process time and cycle time

Proficiencies

- Experienced team
- Openness to critique and change
- Process flexibility
- Claims

Pain points

- High-level direction not adequate
- Client information is duplicated
- Cost tables are inconsistent
- Reporting needs improvement
- Need collaboration between underwriting and billing

Sample business analysis

- Process overview (work steps)
 - 198 steps in the product development process
 - 171 internal activities
 - 27 external activities
- Task classification
 - 35% of steps add value to the product
 - 50% are related to data entry
 - 35% are related to tracking information or products
 - 32% are approval tasks
- Information (inputs and outputs)
 - 73 pieces of information used in the process
 - Documents, spreadsheets, reports, bill of materials, hardware
 - Information handed off 387 times
 - On average, each piece of information moved about five times

Sample “what if?” scenarios

Current state variables and analysis results

“What if?” assumptions and results are analyzed to achieve best future state

Combination of all assumptions yields the ideal future state

		As is	Delivery	Fax and printing	Data quality	Improve technology	Process	All
Results	METRICS							
	Process time (days)	7.58	7.37	7.58	6.02	7.58	7.23	5.38
	Working time (hours)	30.15	26.52	21.82	26.98	25.77	23.00	15.13
	Resource cost	\$46.44	\$41.49	\$35.17	\$41.49	\$37.51	\$32.29	\$20.34
Task variables	TASKS (values in minutes)							
	Receive request	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Review customer request	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Contact customer	4.7	4.7	4.7	4.7	4.7	4.7	4.7
	Contact internal team	4.7	4.7	4.7	4.7	4.7	4.7	2.4
	Create draft order for review	7.1	7.1	3.6	7.1	4.7	4.7	3.6
	Review order for quality	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Pick order	4.7	2.4	4.7	4.7	4.7	4.7	2.4
	Ship order	3.6	2.4	3.6	3.6	3.6	2.4	2.4
	Paperwork distribution (acct)	1.2	1.2	1.2	1.2	0.0	0.6	0.0
	File order	1.2	1.2	1.2	1.2	1.2	0.0	0.0
Decision variables	DECISION choices							
	Re-contact customer?	20%	15%	20%	20%	20%	20%	5%
	Call internal team?	20%	20%	20%	20%	20%	20%	5%
	Fax and print correctly	75%	75%	95%	75%	75%	75%	95%
	Quality check (pass)	23%	23%	23%	10%	23%	20%	10%

“What if?” comparison: Current versus best case

Policy submission working duration

Policy submission — current case

- This scenario represents the current process, assuming:
 - Policy processes with no problems
 - Has a high occurrence of probability during numerous processes

Revised estimates (per policy)

Minimum working duration:	6 hours 15 min
Average working duration:	7 hours 15 min
Maximum working duration:	8 hours 26 min
Minimum FTE* costs:	\$345.75
Average FTE* costs:	\$397.98
Maximum FTE* costs:	\$467.79



# of policy submissions:	65
Total # of hours required	471.3
# of work hours per day	9
Estimated # of FTEs* required	52

Policy submission — best case

- This scenario represents the average working duration for a policy going through the submission process, assuming:
 - No request for additional information is required
 - No off-grid pricing concessions exist

Revised estimates (per policy)

Minimum working duration:	4 hours 15 min
Average working duration:	4 hours 50 min
Maximum working duration:	5 hours 30 min
Minimum FTE* costs:	\$232.68
Average FTE* costs:	\$266.78
Maximum FTE* costs:	\$305.53



# of loan submissions:	65
Total # of hours required	314.2
# of work hours per day	9
Estimated # of FTEs* required	35

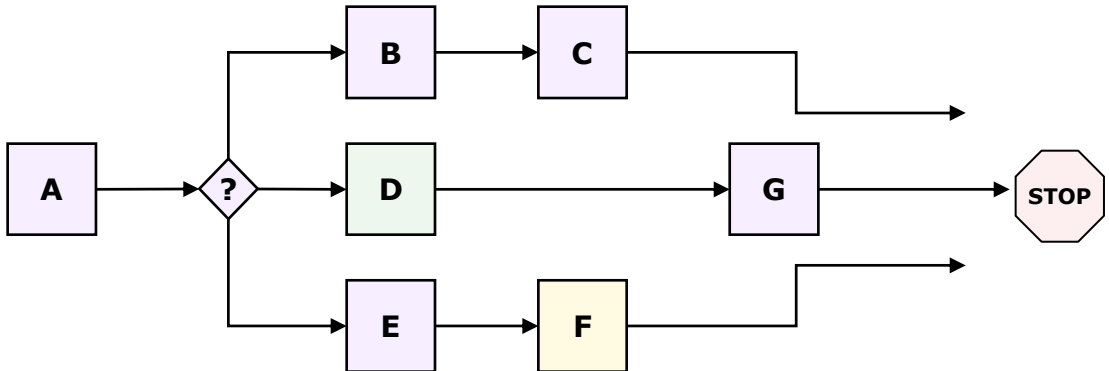
* FTE = Full time employee

A case for change

- Deciding what to present to build a case for change
- Expansion versus decomposition
 - Expand the high-level diagram or decompose it?
 - Or use a combination of expansion and decomposition?

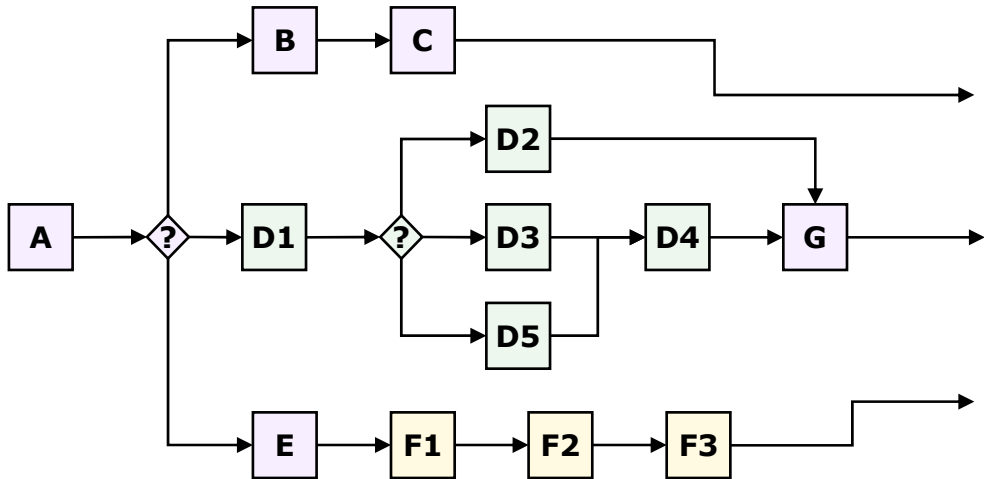
Expansion versus decomposition: High level

- The high-level perspective provides a contextual end-to-end diagram.



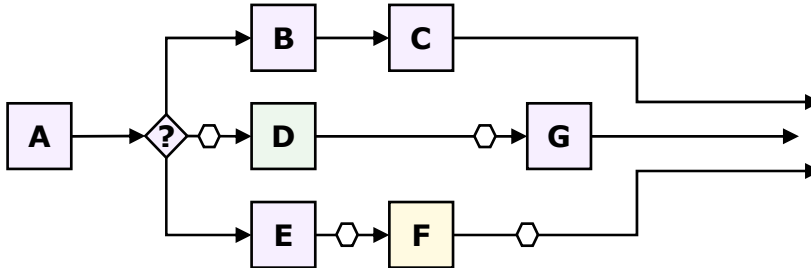
Expansion

- Expansion enforces collaboration by providing impact visibility, but the diagram becomes complex.



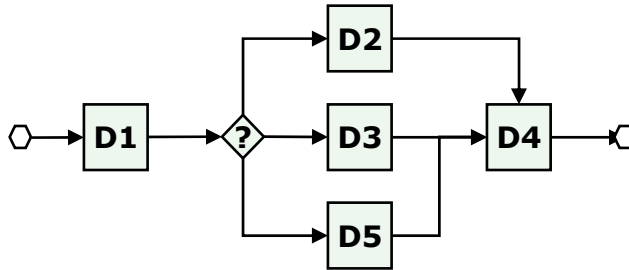
Decomposition (1)

- Decomposition establishes boundaries, thereby enforcing silos, but may lead to oversimplification.



Decomposition (2)

- Expansion of D as a separate subprocess
 - Note that this information may be lost in decomposition, although it was visible in expansion.

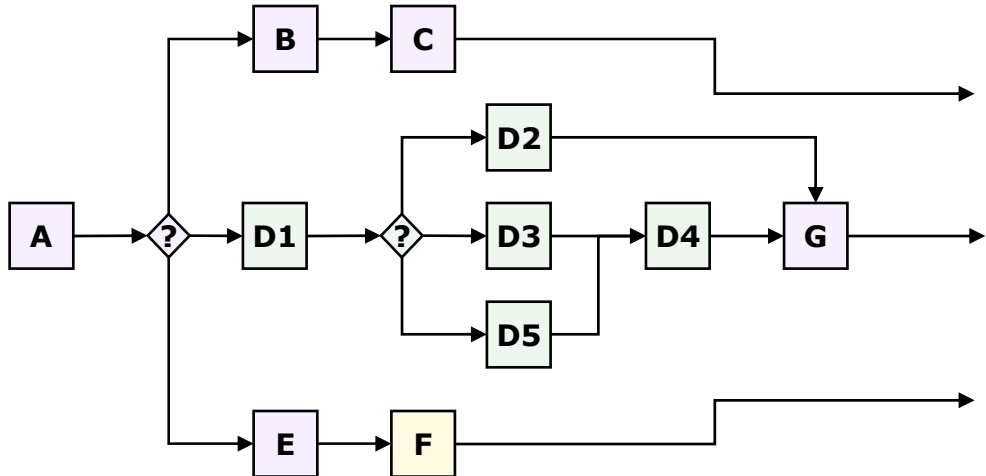


- Expansion of F as a separate subprocess
 - Note that F is a stand-alone process and matches the boundaries.



Expansion versus decomposition: Both

- Expand where collaboration occurs and decompose where boundaries are clearly defined.



Expansion versus decomposition: Subprocesses

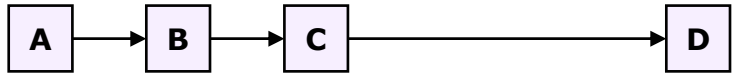
- Logical collection of tasks and decisions that generate an output
- When to use:
 - When the collection of tasks is reused in multiple processes across functional areas
 - To simplify a long set of tasks which are not relevant to the picture, but relevant to the data being analyzed
- Subprocesses: The exception rather than the rule
- Driven from an end-to-end perspective
- Establish boundaries through process decomposition
- Example:
 - An imaging process converts paper documents into electronic form.
 - This subprocess could appear in many processes whenever a paper document is required in electronic format.
 - The details of this subprocess are not important to the picture of the process containing it, but the details are relevant to the calculations (data) of cost.

Modeling for rework and process volume

- Modeling to show activities
 - Different ways of drawing the flow means different things.

Tasks

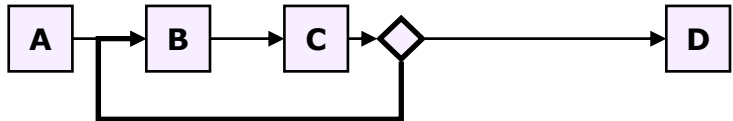
As they occur in a perfect process



Tasks — Resource perspective

Showing rework as a function of resources — described as a role or resources loop

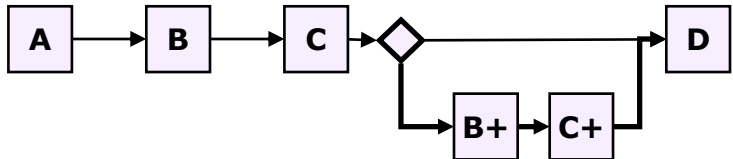
Resources often rework activities B and C and C



Tasks — Sequence perspective

Showing rework as a function of the sequence of steps over time — described as additional tasks

Resources often rework activities B and C drawn to illustrate — cannot go back in time



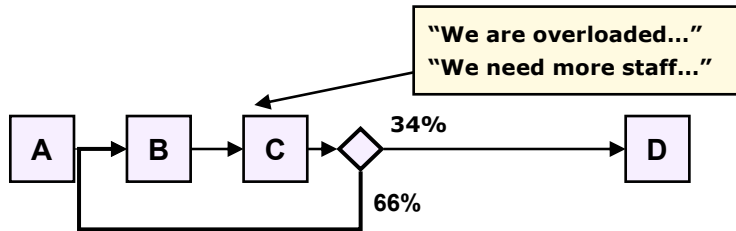
Time

Rework and process volume: Pain points

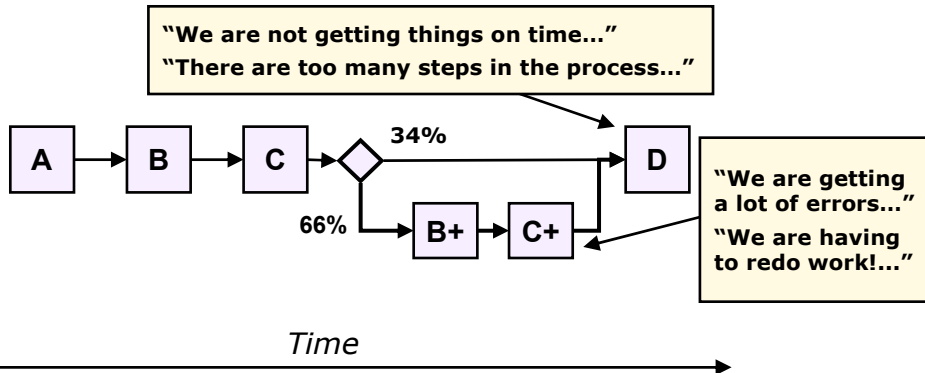
- Pain points recorded from subject matter experts, as a result of process volume

Resource perspective

Modeled where the jobs are not returned to the same individual — in a rework loop



Sequence perspective

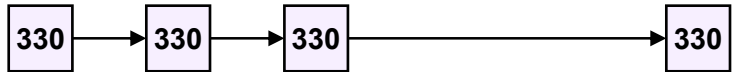


Rework: Volume

- Modeling to show the volume (throughput) impact on the process

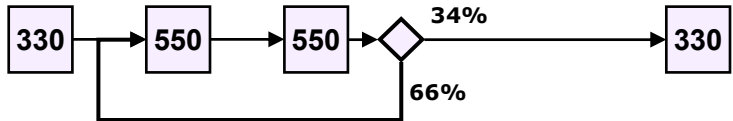
Tasks

As they occur in a perfect process



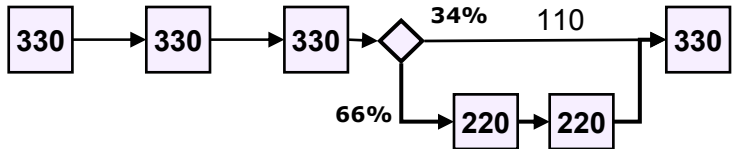
Tasks — Resource perspective

Showing rework as a function of resources — described as a role or resources loop



Tasks — Sequence perspective

Showing rework as a function of the sequence of steps **over time** — described as additional tasks



Time

Process goal analysis

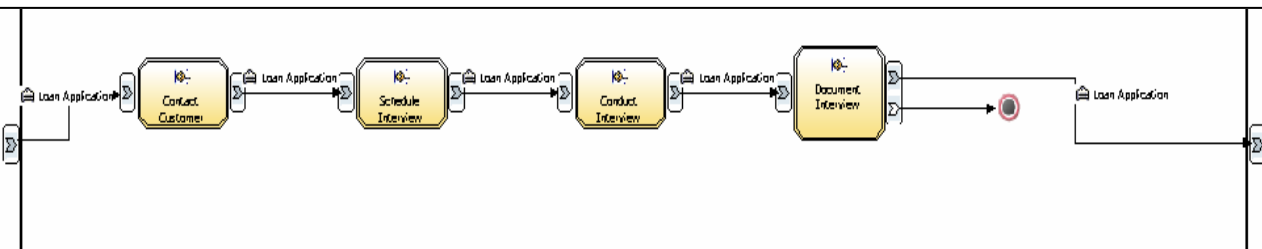
- Process goals are derived from specific organization goals and customer requirements.
 - Organizations achieve their goals through the operations of their processes.
- Process goal analysis is used to analyze a process to determine how well it supports the organization's goals.
 - The performance of the process is analyzed and evaluated against its goals.
 - Goal analysis allows the focus to be set on increasing the probabilities of process cases that support organizational goals.
 - Therefore, it reduces the probabilities of cases that do not support goals.

Redesign analysis

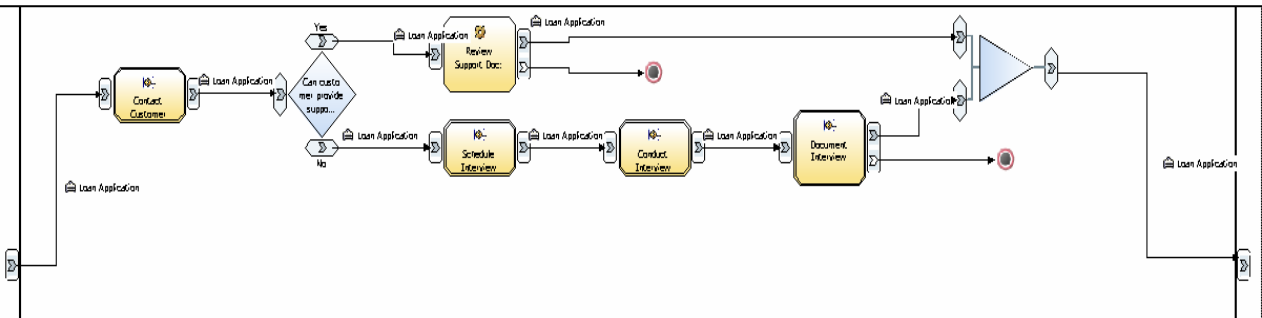
- Shows the effects of adding tasks to, or deleting tasks from, a process during the redesign phase
- Use redesign analysis when you need to:
 - Identify improvement opportunities within a process
 - Measure the effects of redesigning a process

Redesign the process

- “As-is” process



- “To-be” process



Checkpoint: Process improvement

Your instructor will review these questions with you as a group. If time permits, the instructor may provide you time to answer the questions on your own before the group discussion.

1. What types of analysis should be used for process re-engineering?
2. What is process goal analysis?
3. When do you need to conduct redesign analysis?
4. What are the four business analysis components?

Checkpoint solutions: Process improvement

1. Business, people, process, and technology
2. Process goal analysis is used to analyze a process to determine how well it supports the organization's goals. The performance of the process is analyzed and evaluated against its goals. It allows the focus to be set on increasing the probabilities of process cases that support organizational goals.
3. When you want to identify improvement opportunities within a process or measure the effects of redesigning a process.
4. Process goals
 - Metrics
 - Proficiencies
 - Pain points

Unit summary

Having completed this unit, you should be able to:

- Explain how to improve your process
- Demonstrate best practices for analysis using Modeler
- Use process model comparisons

Exercise overview

In this exercise you will:

- Redesign your model
- Set up simulation settings for the redesigned model
- Run simulations and generate analyses for the redesigned model
- Compare simulation results