Understanding and Scoping Process Problems

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Business Process Reengineering

1396

Outline

- What Is a Process?
- Process Levels and Levels of Analysis
- Simple and Complex Processes
- Business Process Problems
- The Initial Cut: What is the Process?
- Refining an Initial Process Description
- Creating a Business Case for a Process Change Project

What Is a Process?

- A process is a bounded set of activities that are undertaken, in response to some event, in order to generate an output.

Figure 8.1 An example of a simple process.

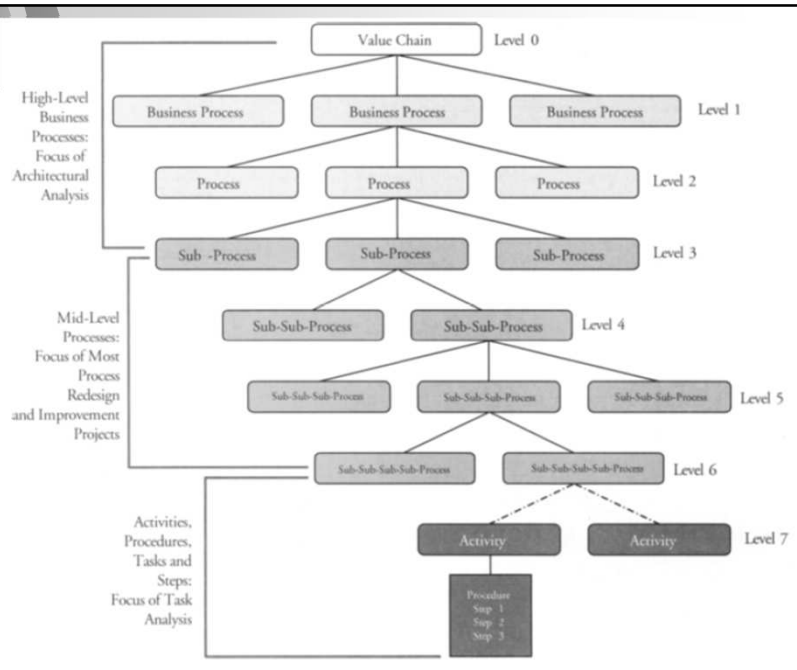


Figure 8.2 A hierarchical decomposition of a value chain, suggesting how "level of analysis" corresponds to process level.

Process Levels and Levels of Analysis

- we can usually divide the process hierarchy into three parts and associate problems and analysis techniques with specific levels.
  - one set of process analysis techniques are used to redesign or improve higher-level processes.
    - associated with architecture problems and with problems of coordination between departments or functional units
    - Focusing on aligning inputs and outputs and write contracts to specify what Process A will need to deliver to its "customer," Process B.
  - Another set is used on the types of process problems we find in the middle of the process hierarchy
    - usually occur in processes managed within a single department.
    - The problems often require that the processes be simplified or the sequences rearranged.
    - Non-value adding processes need to be removed; some activities need to be automated.
  - Still another set of techniques is appropriate for processes at the bottom of the hierarchy
    - usually involve individual performers or software systems
    - They usually require a detailed task analysis.
    - In some cases, the business rules used by the performers or the systems need to be specified.
    - Often training programs and job descriptions need to be developed.

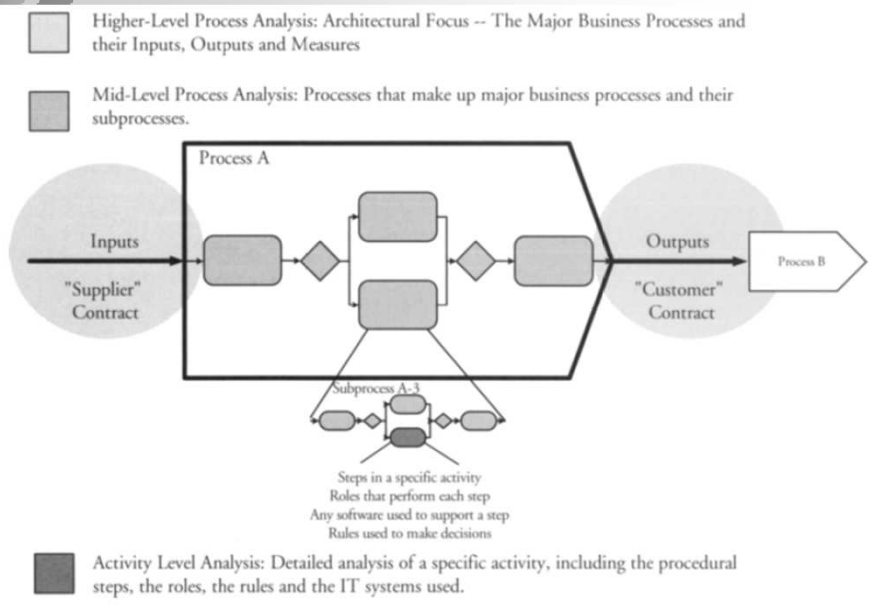


Figure 8.3 An overview of the different levels of process analysis.

Simple and Complex Processes 1

- Another way to begin the analysis of a process is to consider the overall complexity of the process you are going to analyze.
- Simple processes usually follow a consistent, well-defined sequence of steps with clearly defined rules.
  - Each step or task can be precisely defined and the sequence lacks branches or exceptions.
- More complex processes involve branches and exceptions, usually draw on many rules and tend to be slightly less well-defined.
  - They require more initiative on the part of human performers.
- Really complex processes demand still more initiative and creativity on the part of human performers.
  - They are usually processes that cannot be automated using current technologies.
  - We usually don't train people to do these tasks, but hire people who have already demonstrated the creative or analytic skills required.
  - These processes are less well defined, change often and evolve as time passes.

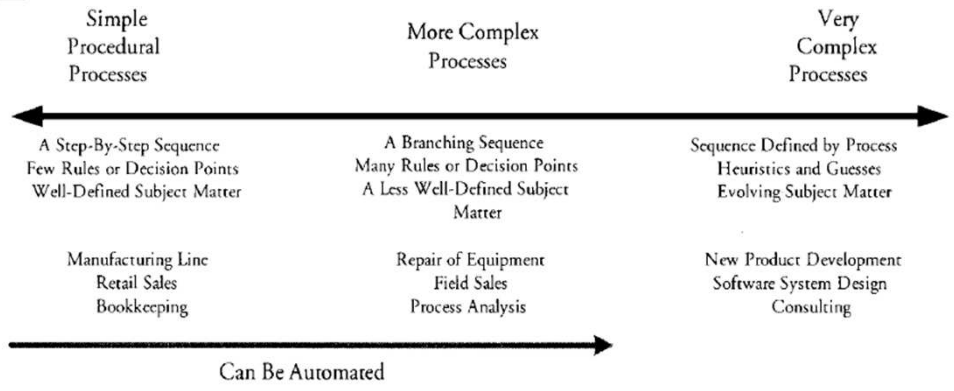


Figure 8.4 A continuum suggesting how processes vary as to their complexity.

Simple and Complex Processes 2

- Today's workers are engaged in tasks that require more knowledge and many writers refer to them as *knowledge workers.*

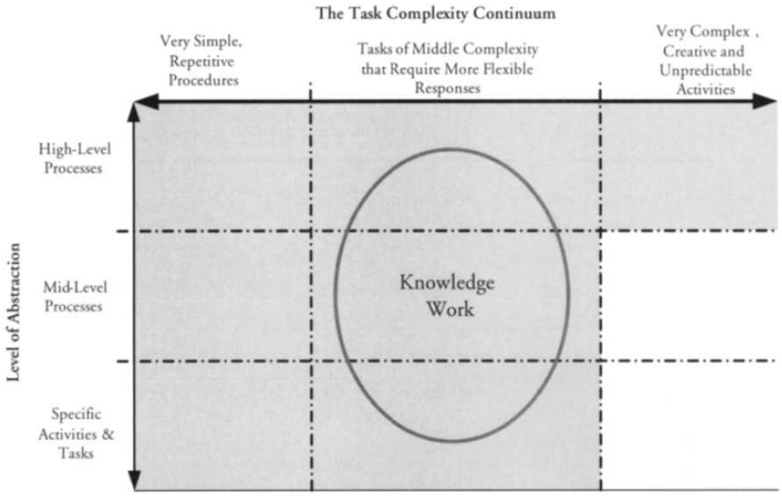
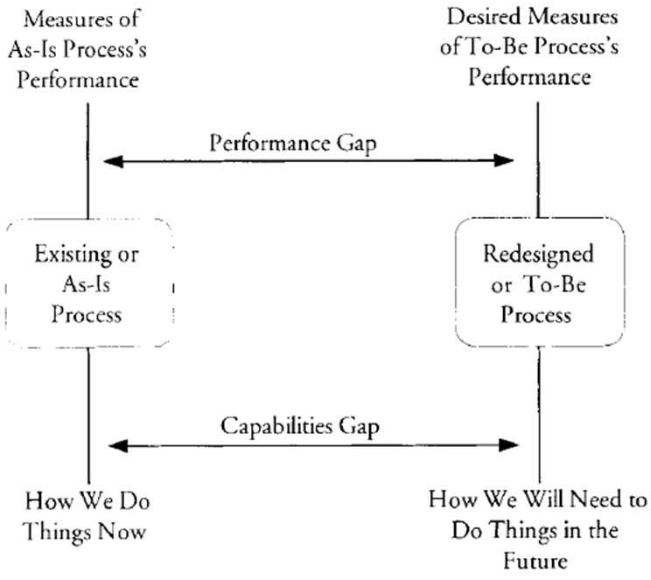


Figure 8.5 The space of possibilities created by crossing levels of analysis with process complexity.

Business Process Problems

- Projects begin with problems
- The challenge is to figure out the nature of the problem, and then to consider what kind of intervention might be required to resolve the problem.
- A model of problem solving: Gap Model
  - a problem is the difference between what exists now (AS IS) and what we desire (TO BE).

Business Process Problems

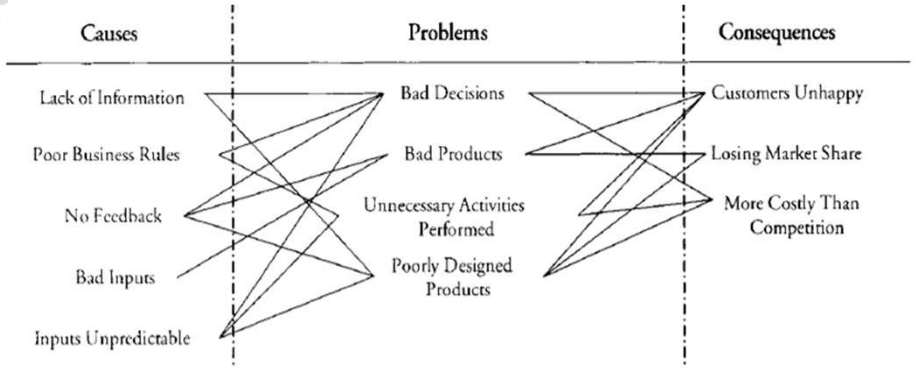


Business Process Problems

- One problem that any project team will encounter is the difference between descriptions of actual problems and descriptions of causes or consequences
- The project team is forced to ask, often several times:
  - "Why do you think this happens?" or
  - "Why is this a problem?"

until the team is satisfied that they can clearly define the actual problem.

The Gap Model Example



The Gap Model

- If we extend the Gap Model,
  - it also provides a framework for thinking about the kinds of analytic techniques we might want to use to define the problem and
  - can even suggest the redesign techniques we might use to resolve the problem.

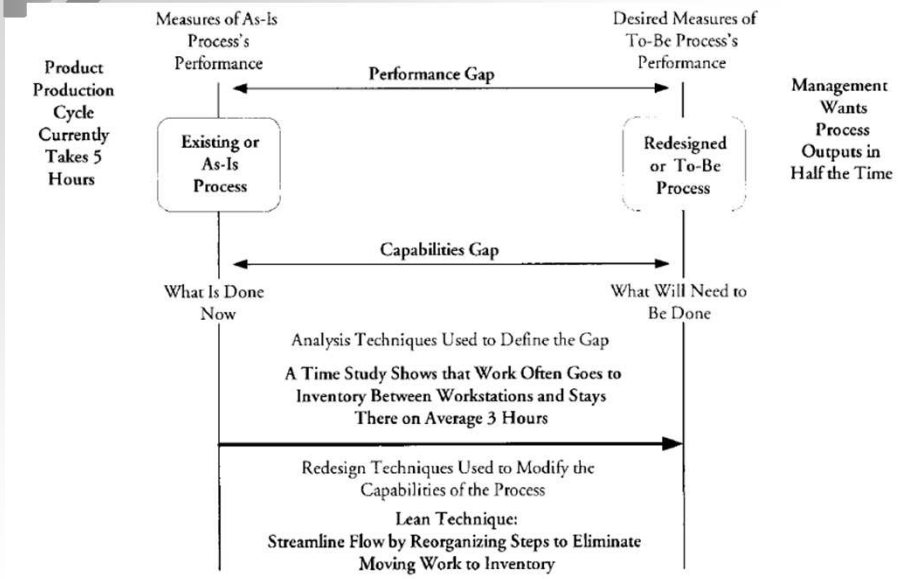


Figure 8.8 The Gap Model suggests the need for analysis and redesign techniques.

Initial Cut: Pizza Delivery Process

- AS-IS Process
- Stakeholders

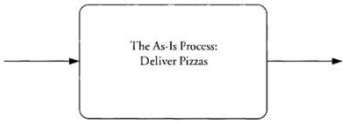


Figure 8.9 A very general overview of the process we are asked to study.

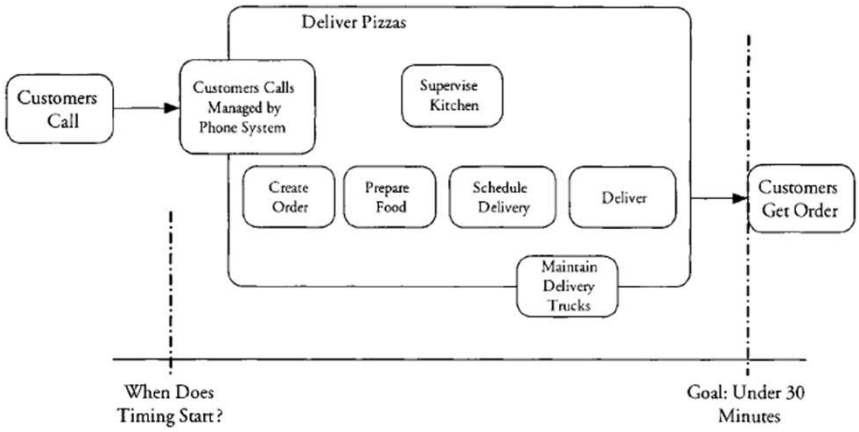


Figure 8.10 A diagram of the Deliver Pizzas process that includes some detail.

Stakeholders

- you should develop a list of all the stakeholders who have an interest in the process.
- Stakeholders will include
  - customers,
  - suppliers,
  - managers,
  - employees, and
  - anyone managing a process that interacts with the process you are going to try to change.
- During the analysis phase of the project, you will want to interview all of the stakeholders (or at least representatives) to assure that you understand how they view the process and its problems.

Refining an Initial Process Description

- Once you have a basic description of the problem process, represented, you are ready to refine your
  - understanding of the process,
  - the scope of the problem, and
  - specific nature of the problems you will need to deal with.
- Then, interview a number of different stakeholders, including customers, employees, and day-to-day managers.
- At this early stage, create a project scoping diagram.

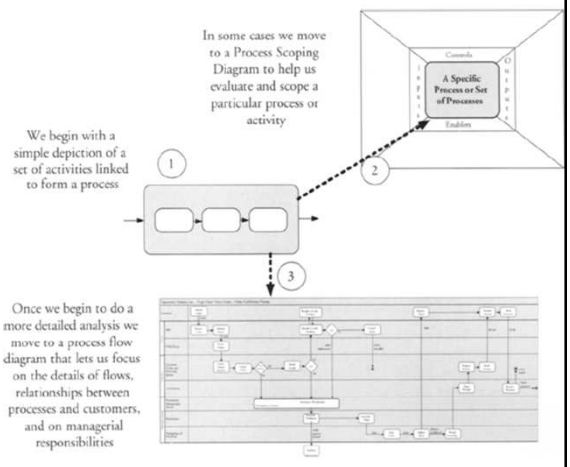


Figure 8.11 Moving from an initial, informal process diagram to a project scoping diagram or a process flow diagram.

project scoping diagrams (IGOE)

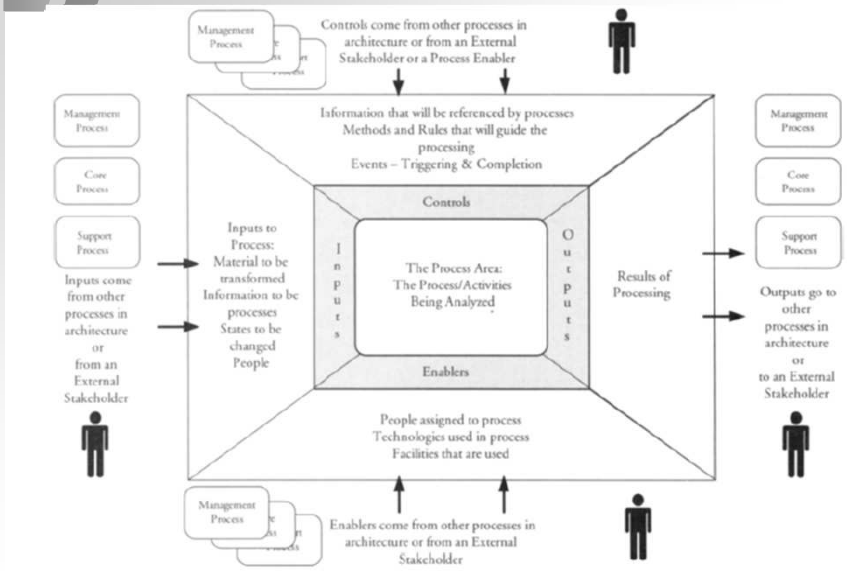


Figure 8.12 The elements of a project scoping diagram (modified from a diagram originally developed by Process Renewal Group).

cause-effect diagrams

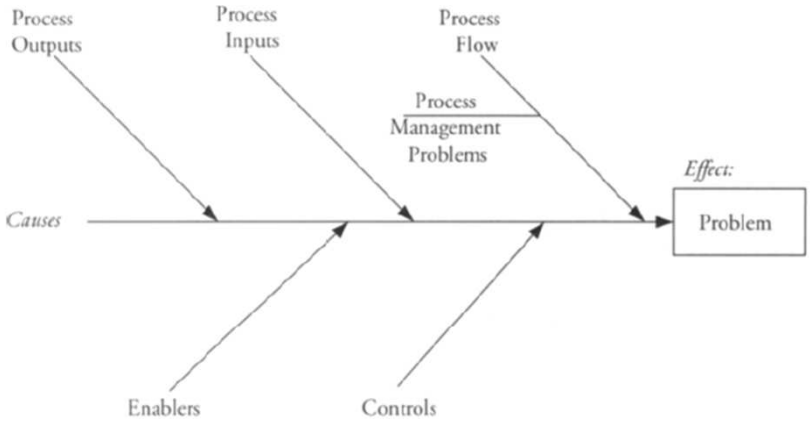


Figure 8.13 A cause-effect figure with prespecified cause categories for scoping.

Types of Problems

- Five generic types of process problems
  - Process Flow and Day-to-Day Management Problems
  - Output Problems
  - Input Problems
  - Problems with Controls
  - Problems with Enablers

Process Flow Problems

- **1.1 Flow Problems**
  - **1.1.1 Problems with Logical Completeness**
    - Some activities are not connected to other, related activities
    - Some outputs have no place to go
    - Some inputs have no place to go
  - **1.1.2 Sequencing and Duplication Problems**
    - Some activities are performed in the wrong order
    - Some activities are performed sequentially that could be performed in parallel
    - Work is done and then put into inventory until needed
    - Some activities are performed more than once
    - There are no rules for determining or prioritizing flows between certain activities or individuals
  - **1.1.3 Subprocess Inputs and Outputs**
    - The inputs and outputs of subprocesses are wrong or inadequately specified
    - Subprocess inputs or outputs can be of inadequate quality, insufficient quantity or untimely
    - Subprocesses get inputs or make outputs that are unnecessary
    - Some subprocesses do things that make for more work for other subprocesses

Process Flow Problems

- **1.1.4 Process Decision-Making**
  - The process-in-scope, or one of its subprocesses, is called upon to make decisions without adequate or necessary information
  - The process-in-scope, or one of its subprocesses, is required to make decisions without adequate or complete guidance from the value chain or organization. E.g., decisions must be made without stated policies or without specific business rules
- **1.1.5 Subprocess Measures**
  - There are inadequate or no measures for the quality, quantity or timeliness of subprocess outputs
  - Subprocess measures are lagging measures and don't provide the process manager or other employees with the ability to anticipate or plan for changes in pace or flow volume

Day-to-Day Management Problems

- **1.2 Day-to-Day Management Problems**
  - **1.2.1 Planning and Resource Allocation Problems**
    - The process manager working on the process-in-scope is given lagging data, but no leading data that he or she can use to anticipate work, plans, schedule, etc.
  - **1.2.3 Manager's Goals and Incentives Conflicted**
    - The process manager is trying to achieve functional/departmental goals that are incompatible with the goals of the process-in-scope The process manager does not have the authority, budget or resources required to effectively manage the process-in-scope
  - **1.2.4 Manager Accountability**
    - The process manager is not held responsible for achieving one or more key process goals
    - The process manager is punished for pursuing one or more key process goals
    - The process manager is not given adequate information about the performance of the process he/she is responsible for managing

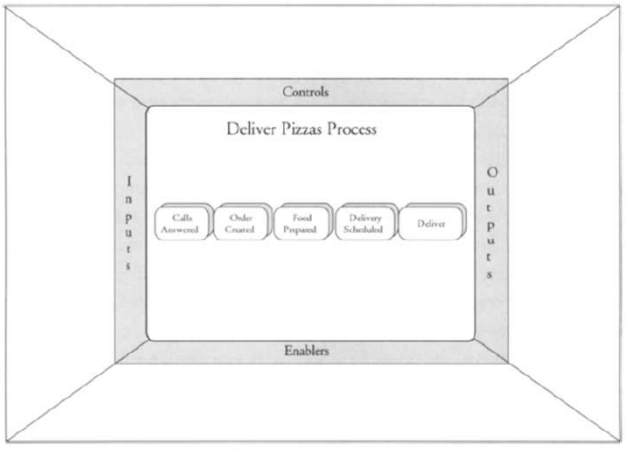


Figure 8.14 A process scoping diagram with the process area filled in.

Day-to-Day Management Problems

- **1.2.2 Monitoring, Feedback and Control Problems**
  - Employees working on the process-in-scope are not held responsible for achieving one or more key process goals
  - The employees working on the process-in-scope are punished for pursuing one or more key process goals
  - The employees working on the process-in-scope are not given adequate information about the performance of the process he/she is responsible for managing
  - The employees working on the process-in-scope are given lagging data, but no leading data that they can use to anticipate work, plans, schedule, etc.
  - The employees working on the process-in-scope are either not rewarded for achieving key process goals or they are punished for achieving key process goals e.g., the employee who works the hardest to assure that the process-in-scope meets a deadline is given more work to do

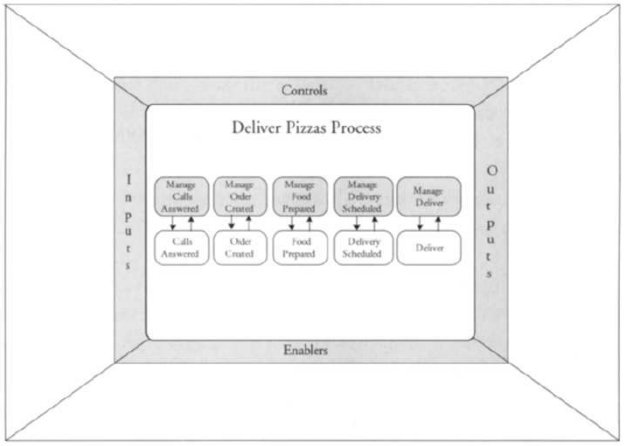


Figure 8.15 Project scoping diagram showing both processes in scope and their associated day-to-day management processes.

Output Problems

- **2.1 Quality of Output**
  - Output is rejected by a quality control process downstream (number, ratio of rejects)
  - Downstream process refuses to accept output of process-in-scope Output is returned (ratio of returns to output)
- **2.2 Quantity of Output**
  - Process does not produce number of outputs required
  - Process cannot scale down quickly when a decreased number of outputs is required
  - Process cannot scale up quickly when an increased number of outputs is required
- **2.3 Timeliness of Output**
  - Some or all of the needed outputs are not produced when required

Input Problems

- **3.1 Quality on Inputs**
  - Inputs are rejected because they don't meet quality standards of process-in scope
  - Inputs must be returned to upstream process or supplier (Ratio of returns to input)
- **3.2 Quantity of Input**
  - Supplier does not produce number of inputs required
  - Supplier can not scale down quickly when a decreased number of inputs are required
  - Supplier can not scale up quickly when an increased number of inputs are required
- **3.3 Timeliness of Inputs**
  - Some or all of the needed inputs do not arrive when needed
  - Inputs arrive in batches and must be stored till needed

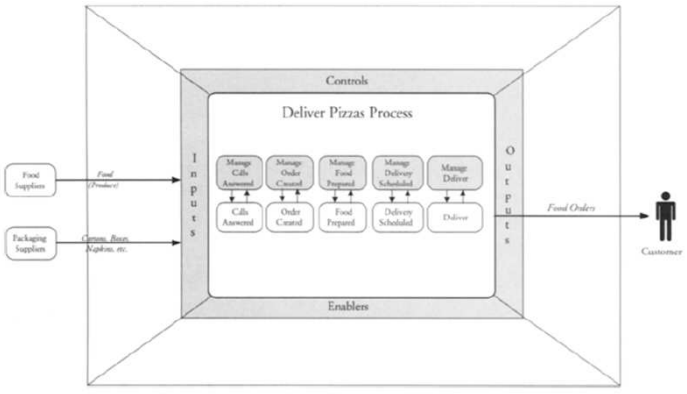


Figure 8.16 A project scoping diagram with some inputs and outputs shown.

Problems with Controls

4.1 Process-In-Scope Not Aligned to Organization or Value Chain Strategy

4.2 Problems with Policies or Business Rules

4.3 Problems with Documentation, Manuals, etc

4.4 Problems with External Management Processes

4.1 Process-In-Scope Not Aligned to Organization or Value Chain Strategy

- Organization strategy, with regard to the process-in-scope, is unclear
- Process is pursuing a strategy incompatible with stated organization strategy
- The value chain strategy is unclear and two or more processes are pursuing uncoordinated or incompatible strategies. E.g., one process is doing something to save money that is costing another process more money.

4.2 Problems with Policies or Business Rules

- Full implementation of stated policies would make it impossible for the process in scope to function
- The process-in-scope consistently ignores one or more organizational policies
- The process-in-scope consistently ignores one or more specific business rules
- Individual employees working in the process-in-scope ignore one or more specific policies or business rules
- The process-in-scope is tasked to implement incompatible goals or policies
- The priority of goals or policies that the process-in-scope is tasked to implement is unclear
- The priority of goals or policies that the process-in-scope is tasked to implement can shift rapidly and the process is unable to make the switch quickly or completely enough

4.3 Problems with Documentation, Manuals, etc

- Documentation is incomplete, out-of-date, or wrong
- Documentation is obscure and hard to read or understand
- Documentation is written in the wrong language
- Documentation is unavailable to people who need it, when they need it

4.4 Problems with External Management Processes

- External management process require information that the process-in-scope is unable to provide
- External management processes input information or directions that the process- in-scope in unable to use or implement

Problems with Enablers

- **5.1 Employee Problems**
- **5.2 IT Problems**
- **5.3 Facilities, Equipment and Location Problems**
- **5.4 Accounting and Bookkeeping Problems**

5.1 Employee Problems

- The process-in-scope is understaffed. HR can't find or hire enough employees to adequately staff the process-in-scope
- The jobs or roles defined for employees assigned to the process do not match the needs/requirements of the process-in-scope
- Employees lack the skills needed to perform the work required to accomplish the process-in-scope
- The employees have never been told who is responsible for various tasks that are part of the process-in-scope
- Employees need training

5.1 Employee Problems

- Training provided is inadequate or offered at the wrong times
- Manuals or other documentation do not offer complete or adequate guidance
- The rewards or incentives provided for employees do not support the performance required by the process-in-scope.
  - Worse, they actively discourage the correct employee performance.
    - For example, the salespeople get bonuses for selling widgets, but get nothing if they spend time trying to sell the products generated by the process-in-scope
- The employees lack the time, space or tools required for the performance of some of the tasks involved in the process-in-scope
- The employees working on the process-in-scope are given lagging data, but no leading data that they can use to anticipate work, plans, schedule, etc.
- The employees believe that some or all of the performance required by the process-in-scope is unnecessary, not properly part of their *job, or should not be* performed for whatever reason

5.2 IT Problems

- IT applications require inputs or generate outputs that are out of sync with the actual flow and activities of the process-in-scope
- Data is required or is generated that is out of sync with the actual flow and activities of the process-in-scope
- IT applications or tools require inputs or make outputs that are hard to impossible to interpret and thus inadequate user interfaces lead to inefficiencies or errors
- IT applications or tools support normal processing but do not adequately support exception handling, which is a special problem whenever the number of exceptions spikes
- Activates are performed manually that could be more efficiently performed by a software application
- Data must be input more than once because the software applications being used do not share the relevant data
- Data or reports provided to employees is inadequate, incomplete, or out of date

5.3 Facilities, Equipment and Location Problems

- Resources or tools required by the process-in-scope are unavailable when they are needed
- The facilities are inadequate
- The equipment is inadequate
- The process-in-scope is geographically distributed and this causes inefficiencies

5.4 Accounting and Bookkeeping Problems

- Bookkeeping requirements impose heavy burdens on the process-in-scope
- Accounting information needed for decisions in the process-in-scope isn't available or isn't available in the form needed for the decisions.

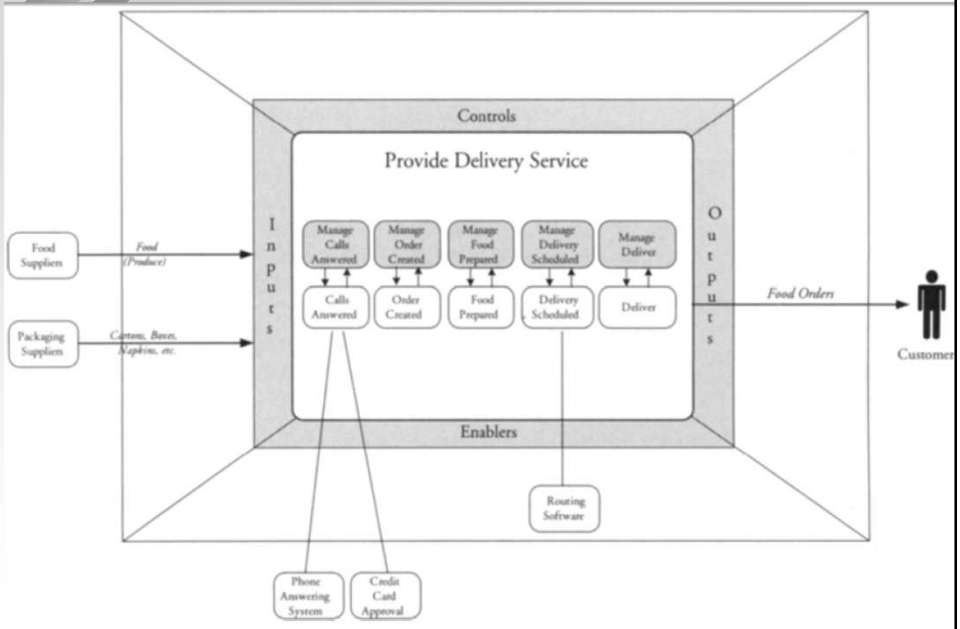
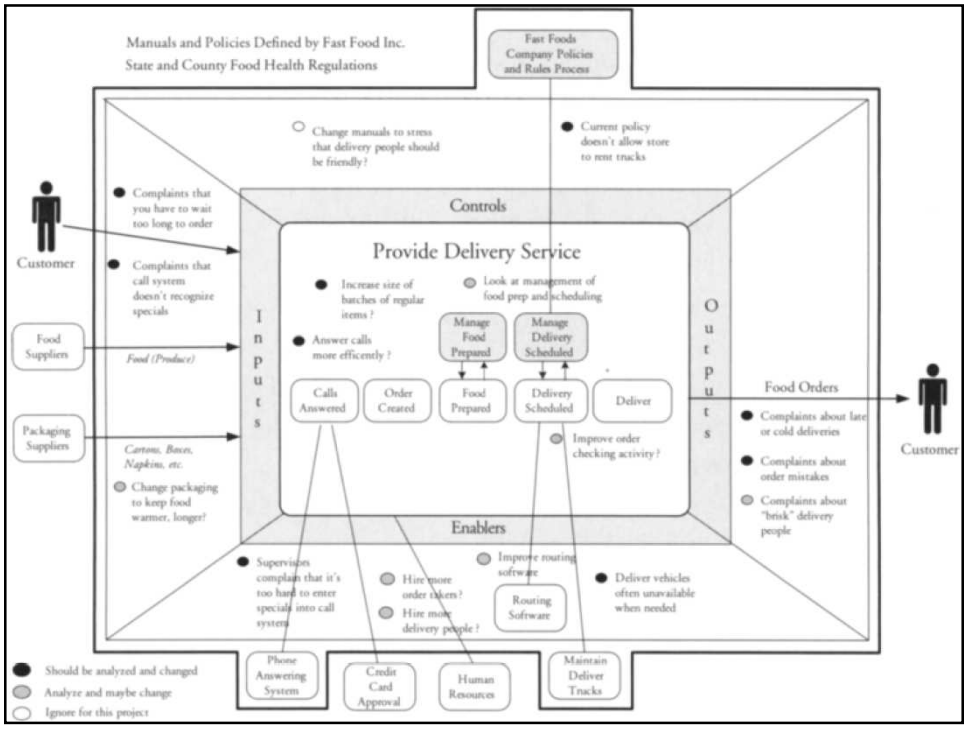


Figure 8.17 A project scoping diagram with some controls and enablers defined.

Provide Delivery Service					
Subprocess	Nature of Activity	Manager	Employees	Measure of Success	Problems ?
Calls Answered	Answering system answers calls and asks customer to wait for an available operator	Order Supervisor	(Phone System)	(System answers each call within 10 seconds.)	System can tell customers of specials, but Supervisors often don't program system with new specials
Order Created	Operator answers next call on queue, takes order, and asks how customer will pay (credit card or cash). If credit card, information taken and checked. Operator puts paper order on kitchen "rotator."	Order Supervisor	From 1 to 5 phone order takers who sit at a phone with a head set and take orders.	Each order taken within 3 minutes of call. Each order written down correctly. Only valid credit card orders processed.	Supervisors don't have enough order takers. Customers sometimes have to wait 4-5 minutes and some hang up.
Food Prepared	Food prep person takes next order from "rotator" and cooks or assembles food and then places it in a bag. Bag is placed in Delivery "window."	Kitchen Supervisor	From 2 to 5 cooks	Every order processes within 4 minutes of receipt. Each order prepared and packaged correctly. Food packaged so it stays warm.	"Continuously available items (e.g., French Fries) are re-set-up often enough and delays result while new batches need to be prepared. Some order mistakes made. Key supplies sometimes run out.
Delivery Scheduled	Delivery supervisor looks at order on each bag placed in "window," and determines location, prepares route sheets and groups deliveries in boxes, which are assigned to delivery people.	Delivery Supervisor	(no employees)	Orders clustered into routes that can be run in under 30 minutes.	Sometimes there aren't enough delivery people available when orders "surge." Some routes take more than 30 minutes.
Delivery Undertaken	Delivery person takes route sheet assigned, loads boxes in truck and makes deliveries. Collects from all cash orders. Returns to store with cash and accounts with delivery supervisor.	Delivery Supervisor	From 2 to 8 delivery people	Routes run in 30 minutes. Cash collected from all cash customers. Delivery people are polite to customers. All cash correctly accounted.	Some routes take more than 30 minutes. Some food delivered cold. Some delivery people "brisk." Cash is sometimes not properly accounted.

Figure 8.18 A worksheet with information gathered about the Deliver Pizza process.



Creating a Business Case for a Process Change Project

- Different companies have different forms or approaches, but the essence of the task reflects the Gap Model and the scoping effort.
- The steps in defining a preliminary business case include:
  1. Define the As-Is process (what's in and out of scope).
  2. Determine what the As-Is process is or isn't doing now (concrete measures).
  3. Define what the To-Be process should or should not do when it's completed (the goal of the project).
  4. Consider the means you will use to bridge the capability gap.
  5. Then consider what bridging the gap will cost in terms of time, cost, and effort.
  6. Finally, consider the risks and the "politics" and revise if needed.

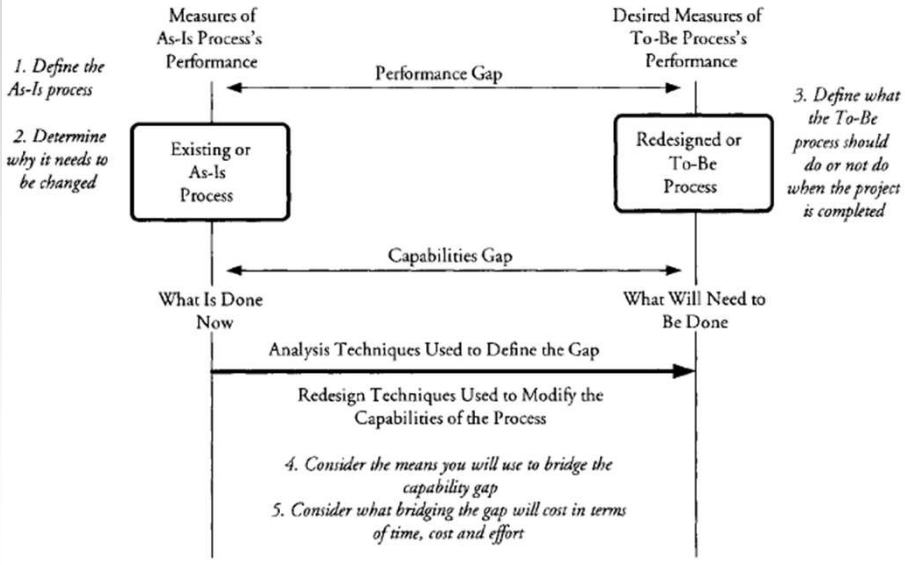


Figure 8.20 The Gap Model provides an overview of a business case.

Guidelines and an Outline for a Business Case Proposal

- Keep it simple.
- State clearly: What is the problem?
  - What process do we want to change?
  - Why do we want to change it?
  - Describe measures of the current situation.
- What is the objective or goal of the project?
  - What would the new process be like?
- What measures would we expect of the new process?
- What is involved in creating the new process?
  - Analysis and Design.
  - Implementation.
  - Roll-out.
- What resources, time and cost will be required to solve this problem?
- What risks or opportunity costs will be required?
- What results and what return should we expect from this effort?

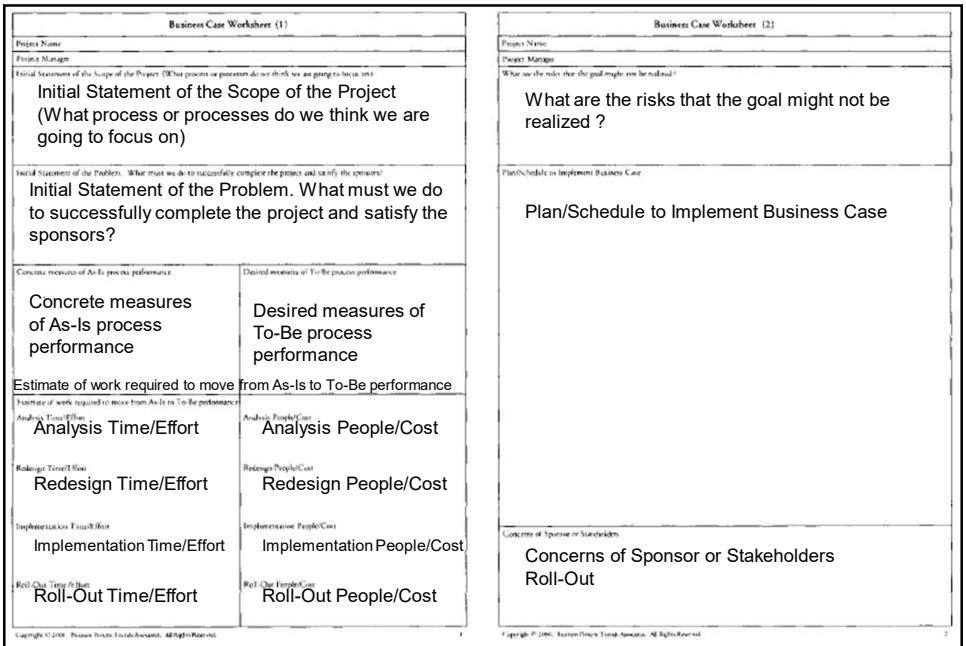


Figure 8.21 Worksheets for the development of an initial process change project business case.

Questions?