: What are "best practice" guidelines for decision process flowcharts?

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As part of decision oriented diagnosis and design (Power, 2007), DSS analysts need to develop decision process flowcharts. Some IS/IT folks assume that process flowcharting is an easy and perhaps even a trivial task. The fact is that preparing a decision process flowchart for a current process and then creating a revised chart for a redesigned process can be challenging and difficult.

A decision process flowchart should be an easy to understand diagram of sequential and parallel steps, activities, tasks or processes associated with processing information associated with one or more interrelated decisions. In general, the diagram is a linear flow from top to bottom that documents what happens during a specific decision making sequence of activities.

Decision process flowcharts document a process, help people communicate about the process, and most importantly help DSS analysts and managers understand the process and when appropriate revise and improve the process and associated computerized decision support.

The flowchart should show processes/activities and decisions in the actual order in which they occur. In many cases, analysts will want to create an "as is" or existing process chart and then when appropriate create a "will be" or intended decision process flowchart. Multiple alternative "will be" charts can help decision makers evaluate alternative approaches to improving an existing decision process.

Decision process flowcharts have five main content symbols: a rectangle for processes/activities; a diamond for decisions and choice points; arrows to indicate process and information flows; a rectangle with a wavy base indicates a document/output; and a rounded rectangle or oval indicates an initiation event or a termination of a decision process. When a decision is made in a process, the decision diamond has arrows leaving it for each possible choice alternative.

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To facilitate communication it is important to use simple, easy to explain symbols. Obscure, poorly understood or inconsistently used symbols in the chart will hinder and perhaps harm communication about the process and will obscure any need for process redesign or reengineering. Circle connectors
show continuation of the flowchart from one page to another or from a decision diamond to another page or process.

Some flowcharts indicate the job title or role of participants in the process who
perform a specific process or subprocess task or take an action during the process.

According
to beckman.com, the most common errors in flowcharting are:
inconsistent level of detail; chart inconsistencies especially in decomposing activities/processes into individual actions; excessive detail or trivial details; disorganized flows; and inaccurate flows.

The following are suggested steps in flowcharting a decision process:

1. Select the decision process to flowchart.

2. Define the boundaries of the process, especially identify what initiates and ends the specific decision process.

3. Brainstorm steps, processes, decisions and activities in the decision process.

4. Sequence and order the process steps. Especially ask "what happens next?" Add steps and sequence them using arrows. When a decision or choice point is reached, identify the decision in the form of a question in a diamond and develop the choice paths. Each path must reenter the process or go to the process termination point.

5. Repeatedly ask questions like "What happens next?", "Is there a decision or choice made now?", "Does the chart reflect reality?", "Who else is familiar with this process?", and "Is the process description complete?"

6. When possible, do a walk-through of the flow chart with multiple decision process participants prior
to finalizing the chart.

So what are "best practice" guidelines for decision process flowcharts?

1. Accurately determine the start and end points of the decision process and clearly identify them on the chart. Chart and clearly identify the actual "as is" decision process that is occurring or the planned "will be" decision process.

2. Use simple, meaningful symbols. Generally 5 symbols, initiator/terminator, process rectangle, decision diamond, output documents and directional arrows are sufficient for diagramming most decision processes.

3. Keep the "as is" flowchart simple enough to follow and understand, but with enough detail to show bottlenecks, barriers, problems.

4. Maintain a consistent and appropriate amount of detail in process activities at the same level. When necessary, identify subprocesses at a more detailed level.

5. Have an organized flow, usually vertically with expansion from left to right. Concurrent activities/processes should be charted side-by-side.

6. Label process and decisions accurately and number processes and decision nodes. Consider using letters and numbers to keep the tasks seperated, for example D1 for decision node 1 and P1.1 for process 1, sub-process 1.

7. When possible use a team that includes current decision makers to brainstorm the major steps in the decision work process. Then sequence processes and decisions and add detail.

8. Ask someone unfamiliar with the decision process to verbally "walk through" the flowchart. Note their questions and fix problems found during the review.

As always your comments, suggestions and questions are appreciated.

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