Session: Business Systems
Topic: Decision Making

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Decision Making

- Choosing what to do

- Intelligence - Identify *problem space* (or opportunities)
  1. What is the problem?
  2. What is the environment surrounding the problem

- Design - Develop solutions and Feasibility Analysis
  1. Possible solutions are not necessarily perfect
  2. Often weighing pros and cons of each solution

- Choice - Some organizations find this very hard to do

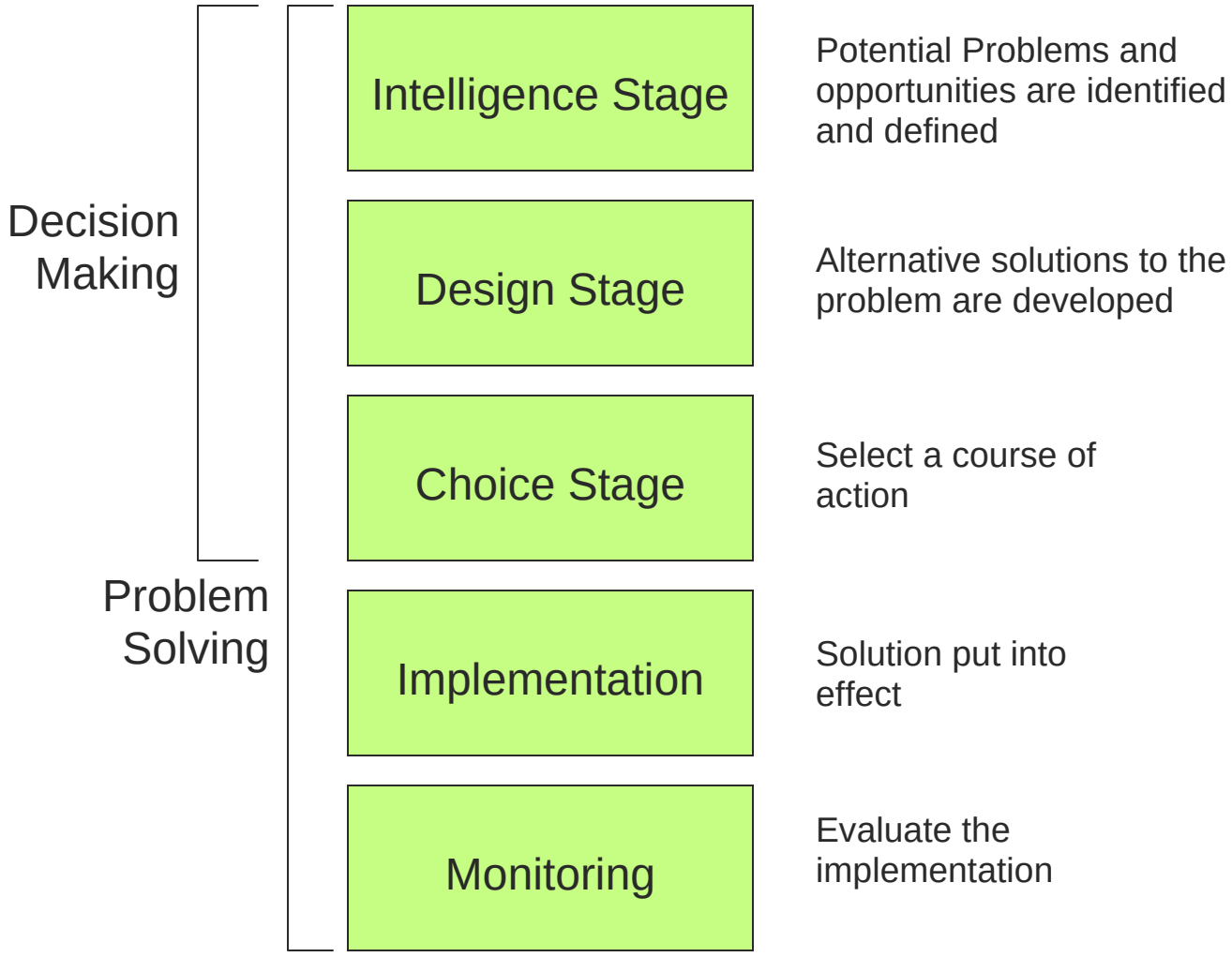
Problem Solving

- Choosing what to do and then actually doing it
  1. All of "Decision Making" and …

- Implementation - Actually make the solution happen
  1. Failures in Feasibility Analysis will reveal themselves

- Monitoring - Evaluate solution and fix
  1. See what went right and what went wrong
  2. Do it all over again

Decision Making and Problem Solving



Decision Types

Programmed Decisions

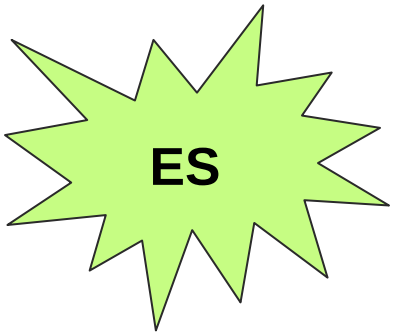
- Can be made according to a "recipe"
- Problem parameters are well-defined

- Often only need simple report information
- "When there are less than 10 laptops in stock, buy 50 more"

Non-programmed Decisions

- Problem parameters and results can be unclear
- Unusual or exceptional situations

- "What colors should you offer on your new laptop line?"



DSS Problem Solving Methods

- A DSS ultimately only provides information relevant to a problem
- Often someone still has to make a final decision

Optimization Model

- Give a set of goals and limits
- Attempt to find best solution that satisfies goals and limits
- Very hard to do
- Often DSS simply provides information that relates to the solution

Heuristics

- Uses commonly understood guidelines to find a "good" solution
- Guidelines are often derived from experience
- Solution will be acceptable, but not necessarily the best
- "High ground is usually the position of strength"
- "Always purchase 3 times as many games as you have pre-orders"

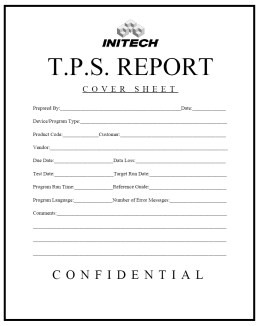
Management Information Systems (MIS)

Inputs

- Generally TPS data

Outputs

- Reports



Scheduled Reports

- Occur at regular times
- Often for day-to-day information
- Ex: Daily Sales Recap every morning

Demand Reports

- Generated upon request (that is, upon "demand")
- Can be any of other reports
- Ex: Sales performance as of this month

Exception Reports

- Generated when something unusual occurs, or something that requires action
- Often can set "triggers" for when report is generated
- Ex: Inventory report will be printed whenever an item has less than 50 in stock
- May occur "scheduled" or "on demand" as well

Decision Support Systems

Varying data amounts

- Often deal with very large data input
- But can also deal with small amounts of input (no minimum expected)

Varying data sources

- Different databases (TPS data, warehouse inventory)
- External information (such as stock quotes)

Varying output

- Present information in different ways
- Tabular, such as in a spreadsheet
- Graphical, such as with bar charts
- Geographical, using maps and areas

Complex analysis and comparison

- Really complex

Varying problem solving approaches

- Optimal
- Heuristic
- Organizational (occurs at regular times)

"What if" analysis

- Allow varying of factors to see alternate results
- Simulation involves actually processing an event to see possible outcome

Remainder

- Group DSS
- Artificial Intelligence
- Special Purpose Systems
- Game Theory - John Nash