Leaning Objectives

- Understand Decision Support (Assist) in E-Business
- Understand the role of leadership
- Understand the decision environment
- Understand artificial intelligence technologies in Business

Decision Support

Two Important Premises

The support of decision making is fundamental to the role of information systems within an organization.

Information Systems can support a variety of management decision-making levels and decisions.
(including empowered employees)

Mission Statement

To assure that the corporation's present as well as future demands for information, information processes, information systems and computer-based technologies are provided in such a manner that the daily conduct of the business will not be impacted and that the future business opportunities can be capitalized on and managed by the corporation.

Decision Support (continued)

An objective of a System!

1. Provide Access to Information.
2. Enhance Communications.
3. Provide Decision Assist.

Decision Support (continued)

Which types and phases of decision making are the most critical to a company’s on-going business success?

- Major threat from a competitor?
- Quality problems with a vendor?
- Dissatisfied major customer?
- Not enough cash to pay your employees?
Who Makes Competitive Strategy Decisions when the Process is Built on a Computer Base?

Decision Support (continued)

Unstructured
- Ad hoc
- Unscheduled
- Summarized
- Infrequent
- Forward looking
- External
- Wide Scope

Structured
- Pre-specified
- Scheduled
- Detailed
- Frequent
- Historical
- Internal
- Narrow Focus

Types of Assists

- Management Information System: Supports much of the day-to-day decision making.
- Decision Support System: Provides interactive information support to managers during the decision making process.
- Executive Information System: Combines many of the features of the above two systems with a focus on strategic information needs.

Frito-Lay Example

"Ten years ago I could have told you how Doritos were selling west of the Mississippi. Today, not only can I tell you how well Doritos are selling in the west but how they are selling in California, in Orange County, in the local Von's supermarket, in a special promotion, at the end of Aisle 4, on Thursday.”
Decision Support (continued)

How does a company go from where it is today to where it wants to be in a highly competitive environment?

**Decisions!**

Enterprises Culture impacts the decision process:

- **Speed** within the organization
- **Integration** of the organization
- **Innovation** including how to react quickly.
- **Flexibility** in how to get things done.

**Decision Support (continued)**

**How can an enterprise solve problems or make decisions?**

- **Absolution**: Ignore it and hope it will go away.
- **Dissolution**: Redesign to eliminate the problem.
- **Resolution**: Do something that yields an outcome that is **good enough** emphasizing past experience.
- **Solution**: Involves research and relies heavily on experimentation, quantitative analysis and both common and uncommon sense.

**Decision Support (continued)**

**How does speed play out in solving problems or in making decisions?**

<table>
<thead>
<tr>
<th>To market</th>
<th>competitive, market position, market leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>To decision</td>
<td>consensus, commitment, responsive</td>
</tr>
<tr>
<td>To task completion</td>
<td>productivity</td>
</tr>
</tbody>
</table>

**Decision Support (continued)**

Does the size of the decision influence the decision process?

**Little Deal:**
- Routine based on past experience (habit).
- Quick decision since consequences are minimal.
- Individual versus consensus decision.

**Big Deal:**
- Research and get as much data as possible.
- Evaluate as long as time permits.
- Consensus decision by key participants.
At what level should decisions be made?

<table>
<thead>
<tr>
<th>CEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Staff</td>
</tr>
<tr>
<td>Group Executives</td>
</tr>
<tr>
<td>Divisional General Managers</td>
</tr>
</tbody>
</table>

Operational Managers in San Jose with a business opportunity suggestion

---

Decision Support (continued)

What can drive decision selection?

1. Risk: including the odds.
2. Economy of effort: greatest results with least effort.
3. Timing: based on urgency which is difficult to systematize.
4. Limitation of Resources: relative to those that must carry out the decision. No decision is better than the people that must carry it out.

---

Leadership

Frequently Heard Comments:

He/she is a great leader.

Leaders are born, not made.

Leadership is difficult to define but you will know it when you see it.

An important factor to train future leaders is to have good role models that they can observe and emulate.

---

Leadership (continued)

- A process, direction or pathway of leadership.
- Individual characteristics of people involved.
- Relationships and influences amongst the people involved.
- A context in which leadership happens—a social environment, a military environment, an athletic environment, a business environment, etc.

---

Leadership (continued)

A process that includes influencing the task objectives, and strategies of a group or organization, influencing the people in the organization to implement the strategies and achieve the objectives, influencing the group maintenance and identification and influencing the culture of the organization.

Objectives and strategies suggest the need for and use of information to influence and lead people.

---

Leadership (continued)

1. There can be a close relationship between effective management and decision making.
2. Like decision making, the closer the manager is to the operational level, the more likely the use of operational data to support determining the company direction.
3. If the focus of the manager is on high level strategies that deal with reshaping or refocusing the organization with new strategies there is likely to be less of a role for information systems.
**Leadership (continued)**

**A New Business Model**

- Vision and Macro Strategies
- Empowered Implementers
- Micro Strategies, Tactics and Operational Decisions

**Senior Management**

- Company Culture
- Risks to be Avoided
- Critical Performance Factors
- Key Enterprise Business Processes

**Empowered Implementers**

- Business Uncertainties

**Decision Environment (continued)**

*Olap: Drill Down*

Online Analytical Processing

**Graphical**

**Geographical**

**Mine Information**

**EIS**

**Decision Environment (continued)**

**MIS**

- Decision support provided
- Information form and frequency
- Information format
- Information processing methodology

- Provide information about the performance of the organization
- Periodic, exception, demand, and push reports and responses
- Prespecified, fixed format
- Information produced by extraction and manipulation of business data

**DSS**

- Provide information and decision support techniques
- Analyze specific problems
- Interactive inquiries and responses
- Ad hoc, flexible, and adaptable format
- Information produced by analytical modeling of business data

**Decision Environment (continued)**

**Understanding leading to decision**

Seeing leading to decision

Discovery leading to decision

Bottom Line: Information leading to decision!

**Decision Environment (continued)**

**Drill Down**

Data is retrieved from corporate databases and staged in an OLAP multi-dimensional database

- Client PC
- Web-enabled OLAP Software
- OLAP Server
- Corporate Databases
- Multi-dimensional database
- Operational DB
- Data Marts
- Data Warehouse
An area of computer science whose long-range goal is to develop computers that can think, as well as see, hear, walk, talk and feel.

A major thrust is the development of computer functions normally associated with human intelligence, such as reasoning, learning, and problem solving.

Artificial Intelligence consists of:

- Expert Systems
- Learning Systems
- Fuzzy Logic
- Genetic Algorithms
- Neural Networks
- Intelligent Agents
- Visual Perception
- Tactility
- Dexterity
- Locomotion
- Navigation
- Natural Languages
- Speech Recognition
- Multisensory Interfaces
- Virtual Reality

Expert Systems

A computer-based information system that uses its knowledge about a specific complex application area to act as an expert consultant to users. The system consists of a knowledge base and software modules that perform inferences on the knowledge and communicate answers to a user’s questions.

Components of Expert Systems

The Expert System

Virtual Reality is a computer-simulated reality.

It is a fast-growing area of AI that had its origins in efforts to build more natural, realistic, multi-sensory human/computer interfaces.

Basically, it allows a person to experience computer-simulated “virtual worlds” three-dimensionally through sight, sound, and touch as if they actually exist.