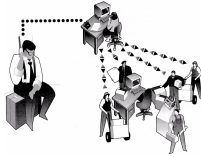


Gaining Competitive Advantage with DSS

DSS can improve profits, gain and retain customers, and speedup decision-making



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Technology and Innovation

- Isolated decision support capabilities
- Information technology advances are creating new DSS capabilities
- Model-Driven DSS can improve production operations
- Inter-Organizational DSS can reduce stock-outs and inventory management

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Exploit Technology Trends

- World-Wide Web Strategically Important
 - Forcing major media to converge
- Network Technology is Mission Critical
 - Wifi, Bluetooth,
 - Faster, more widespread, and less costly
- Interactive Video over IP

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Exploit Technology Trends

- E-Commerce – B-to-B and B-to-C
 - Widely accepted, DSS for e-commerce
- New Models of Business Cooperation
 - Extranets, inter-organizational DSS
- Handheld Computing
 - Support data collection and distributed decision making
- Very large databases (VLDB)

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Gaining Competitive Advantage



- DSS can create a Competitive Advantage if the following 3 criteria are met
 - Must be a major or significant strength or capability of the organization
 - DSS must be unique and proprietary to the organization
 - DSS must be sustainable for approximately 3 years

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How can information technology and DSS alter competition?

- Altering industry structures
- Supporting Cost and/or Differentiation Strategies
 - Inter-organizational systems
 - New services and support
 - increasing organizational control
- DSS is a new resource and the company has the capability to use it

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What is a Strategic Information Systems (SIS)?

- A SIS is designed and intended to change organizational goals, products, services, or environmental relationships
- A SIS is any information system that helps an organization gain a competitive advantage
- A DSS can be a SIS!

Strategic Impact Grid

	Low impact of new applications	High impact of new applications
High strategic impact of existing systems	Factory	Strategic
Low strategic impact of existing systems	Support	Turnaround

Table 2.1 Categories of Strategic relevance

Assessing Strategic Relevance of IS/IT

- Factory/Operations
 - Dependent on cost-effective, reliable IT operational support for internal operations
 - DSS not a priority, BI, BPM, OLAP
- Strategic
 - Novel decision support applications will be crucial to future competitive success

Strategic Relevance of IS/IT

- Support
 - DSS unlikely to provide competitive advantage
- Turnaround
 - Implementing DSS to improve competitive position of firm will create special challenges
 - Firms in this quadrant are DSS laggards

How can DSS provide a competitive advantage?

- Internet technologies have opened doors for innovative Web-based DSS
- Inter-organizational DSS can improve linkages with customers and suppliers
- Increasing efficiency and eliminate staff and activities, cost advantage
- New products and services, differentiation

How can DSS provide a competitive advantage?

- Communications-Driven DSS can remove time and location barriers
- Increase focus on specific customer segments
- Better fact-based decision-making
- Decrease decision cycle time

Strategic DSS Examples

- Frito-Lay
- L.L. Bean
- Lockheed - Georgia
- Mrs. Fields Cookies
- Wal-Mart

Classic examples!!

A company needs to continually invest in a Strategic DSS to maintain any advantage.

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Frito-Lay

- Route Sales people were all given a hand-held computer
 - Enables sales people to have decision-making role
 - Allows Frito-Lay to track products
 - The data is put into a Data-Driven DSS
 - Automated a cumbersome process and improved the quality of data

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L.L. Bean

- Consultants hired to design a system that would provide better allocation of resources in telemarketing
- Economic Optimization Model System (EOM)
 - This Model-Driven DSS examined variables such as the number of telephone lines to carry incoming traffic, number of agents, and the queue capacity
 - System generates specific resource amounts the company should deploy to be most economically advantageous

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Lockheed-Georgia

- Management Information and Decision Support (MIDS)
 - Improved communications, an evolving understanding of information requirements by the organization, and cost reductions
 - Helped managers identify areas that require attention, improved decision-making
 - More timely information, and accuracy improved

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Lockheed-Georgia

- After 12 years of operation the MIDS required a hardware update
 - Managers reviewed both hardware and software and decided to purchase a commercial EIS called Comshare's Commander EIS
 - Fate of Comshare?

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Mrs. Fields Cookies

- Developed MIS in early 1980's to provide uniformity in store management; also supporting rapid expansion
 - Designed to serve two purposes
 - Control and better management decision-making
 - Enabled each store to be run as Debbie Field ran the original store
 - Randy Fields interview

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Mrs. Fields Cookies

- Knowledge-Driven DSS developed that automated routine activities and responded to exceptions by prompting the store manager for input
 - Tracked financial performance of each store, provided comprehensive scheduling of operations, including market support, hourly sales goals, and assisted with candidate interview selection

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Wal-Mart

- Creates a competitive advantage that other retailers have tried to mimic but have not duplicated
 - Result of Retail Link and FAR
 - Less inventory in stores, more inventory of the right products at the right time and place, and improved revenues for both supplier and retailer
 - Collaborative Forecasting and Replenishment Initiative (CFAR)
 - Evaluating ways to apply wireless technology in stores. Testing emerging RFID smart-tag systems, to replace bar codes with a more efficient product-tracking mechanism.

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DSS Opportunities and IS Planning

- Systematic method of searching for and evaluating opportunities
- Link IS planning to Business Strategic planning
- DSS R&D
- Examine Technical Infrastructure for possibilities
- Consultation and Collaboration Managers and IS
- Gain Knowledge about DSS
- DSSResources.COM

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Assess DSS Project Risks

	Small Scope	Large Scope
Low Structure	Moderate Risk	High Risk
High Structure	Lowest risk	Moderate Risk

ambiguous objectives and low structure → projects have higher levels of risk

higher degree of structure and more clearly defined objectives → projects have lower risk

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Risks

- Gaining any advantage may require large financial investments
- Competitors' responses may result in a heated race to gain or regain market share
- Technology risks include:
 - Picking the wrong vendor, using new technology too early in technology life cycle, and using a technology that might soon become obsolete

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Risks

- People cause the greatest risk
 - Inability to predict human behaviors and reactions
 - Basic human instinct to resist change
 - Power struggles
 - Personal motives
- * No matter how wonderful a proposed DSS, if people resist the change the system fails

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DSS Benefits

- Improve personal efficiency
- Expedite problem solving and improve decision quality
- Facilitate interpersonal communication
- Promote learning or training
- Increase organizational control

Other DSS Benefits

- Extending decision-makers' ability to process information and analyze it
- Helping decision-makers deal with complex, large-scale problems
- Decreasing the amount of time needed to make a decision, reducing the decision cycle
- Improving the reliability and enforcing the structure of a decision process
- Encouraging exploration and discovery by the decision-maker in less structured or more novel decision situations related to the domain or scope of the DSS;
- Creating a competitive or strategic advantage for an organization.

Some DSS development opportunities are better than others.

Deal with excuses for not building and using DSS!

- Insufficient computer training
- Lowers status of manager
- Doesn't fit problem solving style
- Doesn't fit with work habits
- Poorly designed DSS
- Expensive to build and use DSS
- Information overload

DSS and Competitive Advantage

- DSS that are large, complex, or risky can intimidate potential duplicators
- Search for advantage should not blind managers to other benefits that a proposed Decision Support Systems may provide managers and a company
- Some very useful DSS do not provide a significant competitive advantage

Review Questions

- What criteria must a DSS meet if we are to conclude it provides a company with a competitive advantage?
- What is an example of a DSS that provides a company with a competitive advantage?
- How can DSS provide a firm a competitive advantage?
- What are the potential benefits of a DSS?
- What factors affect the level of risk associated with DSS projects?