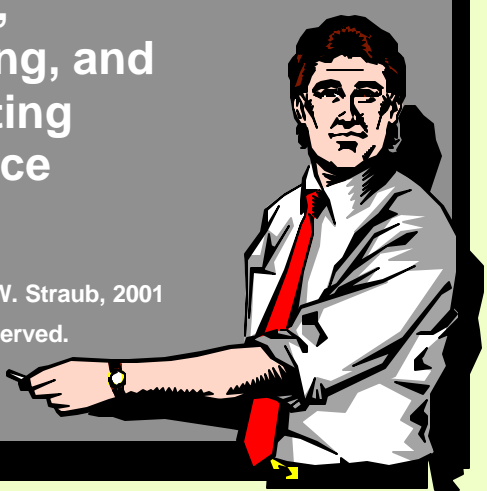



Designing, Outsourcing, and Implementing e-Commerce

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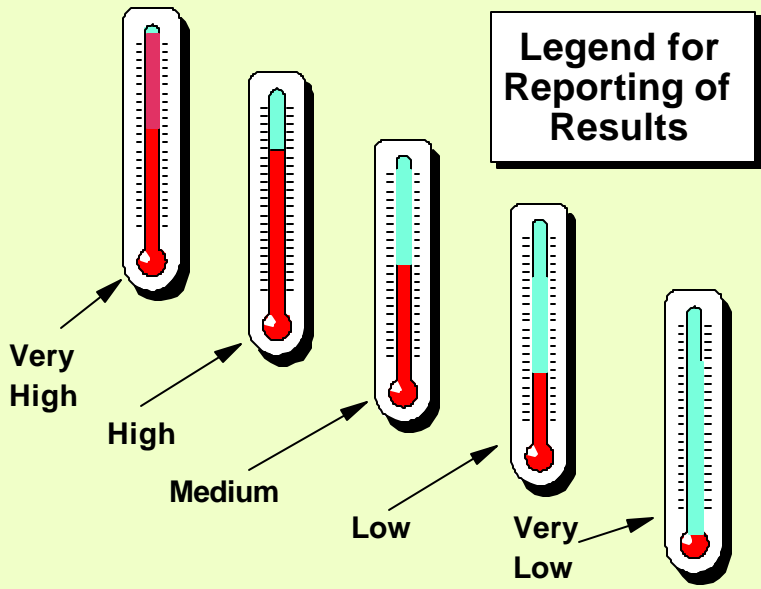


 Lecture

▼ Agenda

- Designing e-Commerce Systems
- Lessons from Experience: EDI and EFT Systems, Web-Based Systems
- Study Results: Outsourcing Choices
- Involving Users as Content Providers
- Measuring Success in e-Commerce
- Outsourcing Choices Revisited

Legend for Reporting of Results



Very High

High

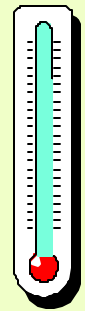
Medium

Low

Very Low

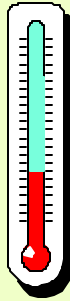
▼ Study Results: Design via Project Planning?

- Little formal planning of Web design & development
- Little to no use of structured analysis & design tools or object-oriented tools
- Tools used:
 - Frontpage, HotMetal, Javascript, Coldfusion, ASP, Dreamweaver, SQL Server



▼ Study Results: Project Planning

- Formal, but non-IS-specific approaches were only occasionally being used
 - They included: budgets, schedules and project tracking tools



▼ Lessons from the Field: EFT

- Most organizations in study were now or going to outsource EFT-style payments to banks, credit card companies, credit card outsourcers like First Data Corp., or other intermediaries
 - Exceptions: Cybercash (debit card) payments where accounts are automatically debited in return for goods and services; payment is credited to seller's account

▼ Move to Internet EDI

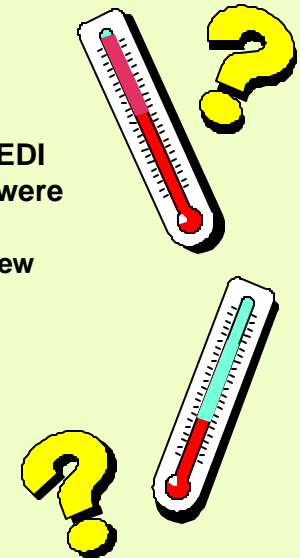
- On a practical level, Fortune 1000 companies that have made vast investments in proprietary EDI are unlikely to abandon it anytime soon



-Source: Dugan, 1998

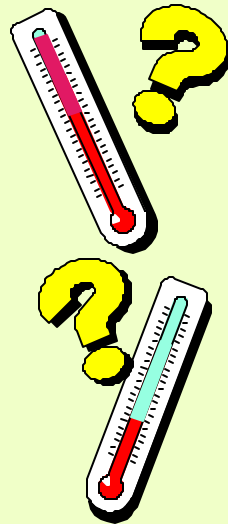
▼ EDI

- Many had some form of EDI underway; many others were planning to expand it
 - Most had limited scope; few applications
- Action Plan?
 - Broaden scope
 - Go with XML



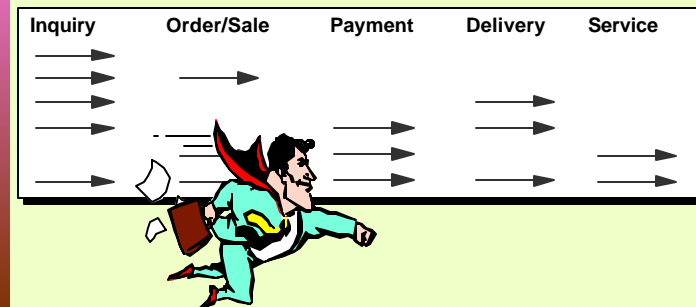
▼ B2B Data Exchange

- XML
 - Has EDI formats built into its grammar
- Application Formats
 - MySAP
- Third Party Service Bureaus take over this task
 - e.g., Harbinger, who was formerly a major EDI provider
 - Microsoft with its Biztalk??



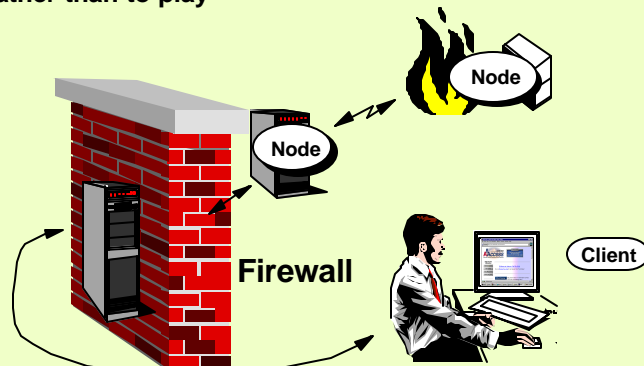
▼ Web-Based Systems: Push along the e-Commerce Value Chain

- Start with Inquiry and Service and then work on bringing the order, payment, and delivery components on board



▼ Additional Challenges Reported

- Security issues—need technical expertise for firewalls & encryption
- Encouraging employees to use the Web to learn rather than to play

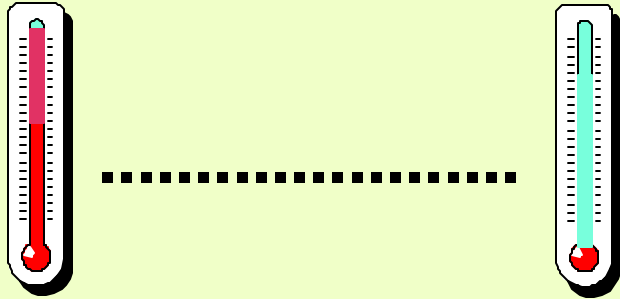


▼ Factors that Lead to Success In Implementation

1. Creating teams that led to a dedicated effort in terms of people and maintenance time
2. Securing sufficient hardware and software resources
3. Staying on top of the relevant technology
4. Creating pages that allow for fast downloading and easy navigation
5. Understanding demographic information about Web-users
6. Having dynamic, updated and relevant contents

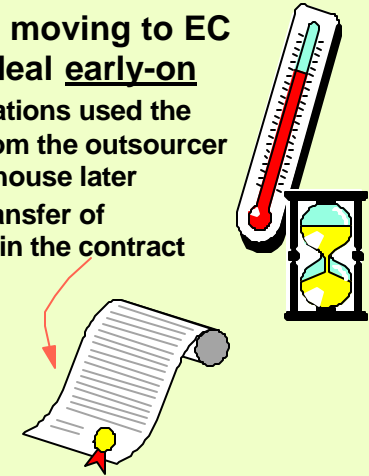
▼ Web-Dedicated Maintenance Personnel (when not outsourced)

- Varied from full-time dedicated personnel to no maintenance effort at all



▼ Study Results: Outsourcing

- Most organizations moving to EC outsource a great deal early-on
 - Many of these organizations used the opportunity to learn from the outsourcer and to then bring it in-house later
 - Some specified this transfer of technological learning in the contract



▼ Study Results: Outsourcing

- But computer services saw it as a strategic asset and insourced it entirely



▼ Study Results: Outsourcing

- What did those who outsourced outsource?
 - Web design
 - Network design and installation
 - Hosting
 - Initial Web site for brochureware
 - Firewall design & installation
- What did they retain internally?
 - Content provision
 - Links to legacy systems

▼ Study Results: Outsourcing

- What about systems development of Web systems after the initial creation of the firm's Web presence?
 - Is the development of Web systems a core competency of an EC firm?
 - For lowest cost provider firms?
 - For differentiated strategies?
 - For niche strategies?

▼ Lowering Costs through Outsourcing

- If a firm can theoretically save money through outsourcing, then why not outsource the entire firm and become a holding company?
- Should every function be outsourced and should all EC firms become entirely virtual?

▼ Virtual Models

In a Virtual Corporation,....:

"...the majority of the activities of the firm are contracted or outsourced."
(Study Definition based on ...)

This allows the firm to focus on its strategic, core processes (core competencies)

▼ Virtual Designs

In a Virtual Corporation,....:

"...the majority of the activities of the firm are contracted or outsourced."
(Study Definition based on ...)

This allows the firm to focus on its strategic, core processes (core competencies)

Strategic alliances.....

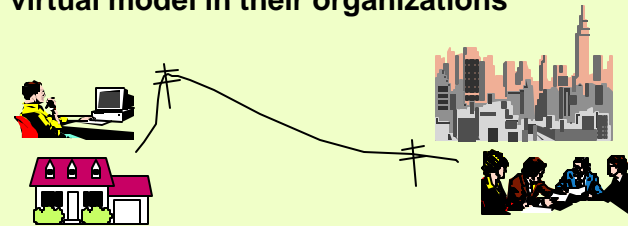
▼ Changes in the Underlying Business Model/Linkages

- Partnering, Supplier Links → Virtual Model

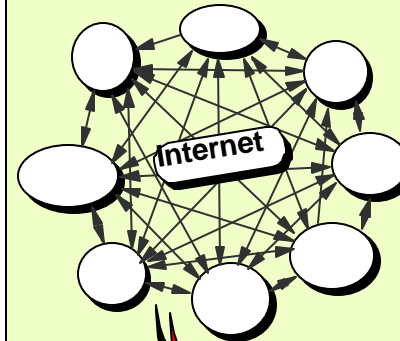
A "Virtual Organization" operates as if it were a group of enterprises. It depends on contracts rather than outright ownership of resources and services that it requires in order to do business.

▼ Virtual Models

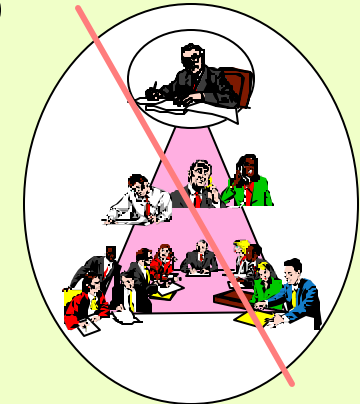
- Respondents saw a connection between virtual versus physical coordination processes and virtual organizational designs
- They mentioned "virtual teams" & telecommuting as examples of an emerging virtual model in their organizations



They are not HIERARCHICAL!



Why?



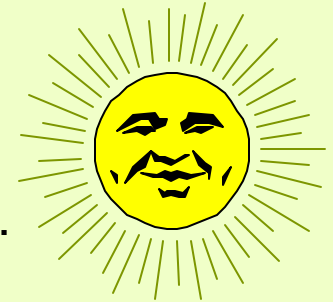
▼ A Virtual Firm



Sun Microsystems, Inc.

- ✓ Sun Microsystems, a leading maker of computer workstations, concentrates on hardware and software design, where it distinguished itself from competitors, and outsources nearly everything else in its value chain
- ✓ It relies so heavily on external manufacturers and distributors that its own employees *never touch* one of its top selling products
- ✓ After a vendor assembles the machine, another contract supplier delivers it to the customer

▼ A Virtual Firm

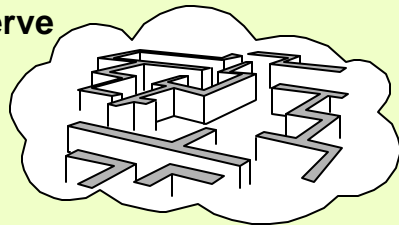


Sun Microsystems, Inc.

- ✓ Sun's strategy focuses internal operations on a small set of critical core activities
- ✓ Sun has become "*an intellectual holding company*"
- ✓ Firms in high-technology industries, such as computers and biotechnology, have been pioneers in developing such partnered relationships and focused strategies

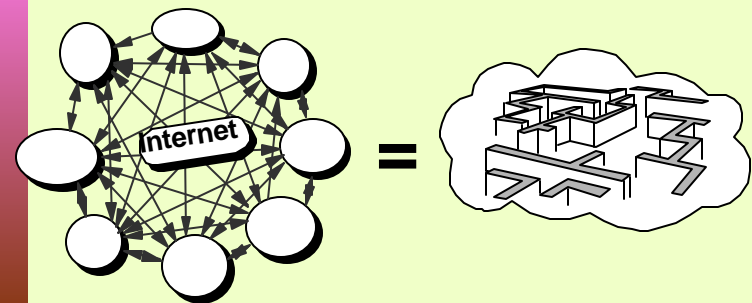
▼ Why are there Virtual Designs?

- These examples and definitions tell us what a virtual organization (by how it operates)
- But they do not answer the question of why these organizational forms have come into existence and what purpose they serve



▼ Why are Virtual Designs?

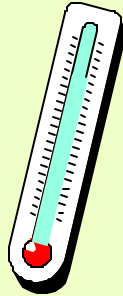
- ...and they do *not* tell us why there might be a connection between EC and virtual designs



▼ Changes in the Underlying Model for Doing Business

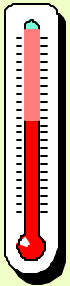
■ Virtual Models

- Most firms in our study said they were not now a "virtual" company
- ...and unlikely to be one in the near future
- Yet, astonishingly, most felt that virtual models would be **required** to effectively do business in e-Commerce



▼ Virtual Models & e-Commerce

- Most of the respondents in the study felt that there was a natural link between virtual models and e-Commerce
- **They believed that success in e-Commerce would require, over time, a change to a virtual organization**



▼ Need for Virtual Designs in Electronic Commerce?

- Why?
- Is there a natural connection between EC and firm design?
- Theoretically (later)?
- Your intuition??

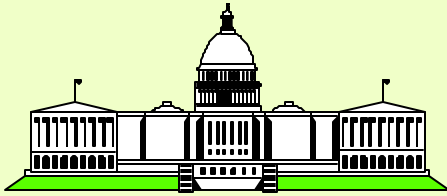
▼ Creating & Updating Content in the Web World: Virtualize/Outsource This?

- Content is "King"
- Content is the firm's strategic asset, its core competency



Findings: Creating & Updating Content

- Example: Legislative updates for trade association
 - Primary reason members stayed members
 - Domino server
 - Lotus Notes interface was the only knowledge required of users providing content



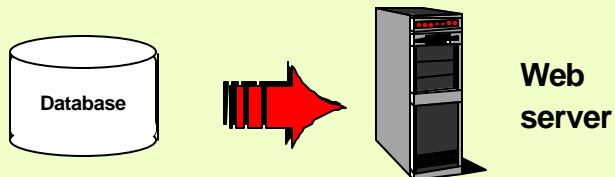
Findings: Users as Content Providers

- Example: a large urban university creates updatable "static" pages from a database to which the users have access
 - User friendly database interfaces allow the users to input changes themselves
 - Faculty and doctoral students, for example, are empowered to add, modify, and delete information in their password-protected records



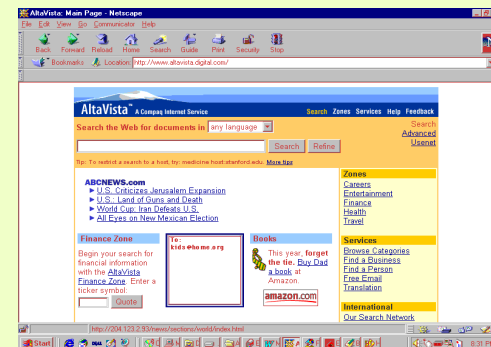
Findings: Users as Content Providers

- Programs running on the university server regularly check the databases for changes and create new "static" Web pages on the fly



Findings: Users as Content Providers

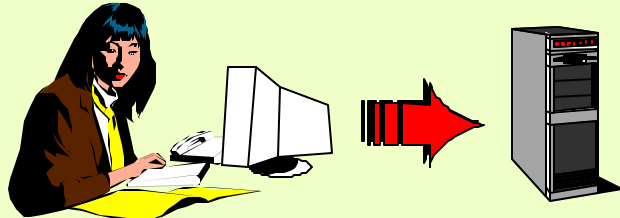
- Why not "dynamic" Web pages (ASP)?
 - Not indexed by present search engines!



▼ Findings: Must Insource Content in the Web World!!

■ Implementation successes

- Internal users (not IS Dept.) need to be content providers
- Systems need to be set up to automatically update useful pages (no html knowledge required!)



Study Findings: Insource Core Competencies in the Web World!!

■ In-House Systems Development

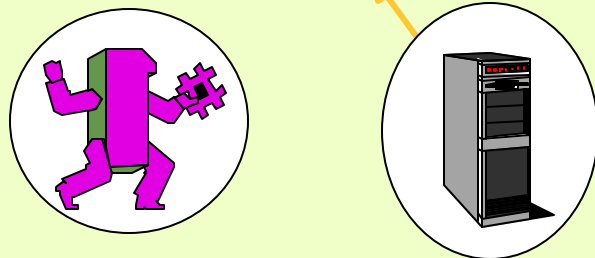
- Core systems are those that support the provision of content to your Web site



▼ Findings: Insource Core Competencies in the Web World!!

■ In-House Systems Development

- Core systems are those that help you to exploit your proprietary data about your customers and to provide more effective customer service (CRM)



▼ Achieving an Edge over Competitors for the Long Run ("Experience" Communities)

"Do"

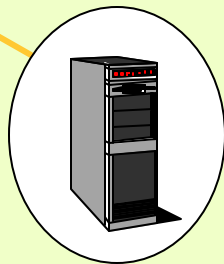
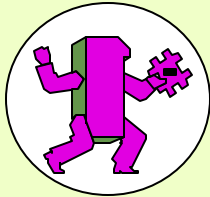


not "See"

Findings: Insource Community Activities in the Web World!!

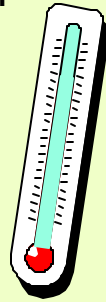
In-House Systems Development

- Core systems are those that help you to draw customers back to your site again and again



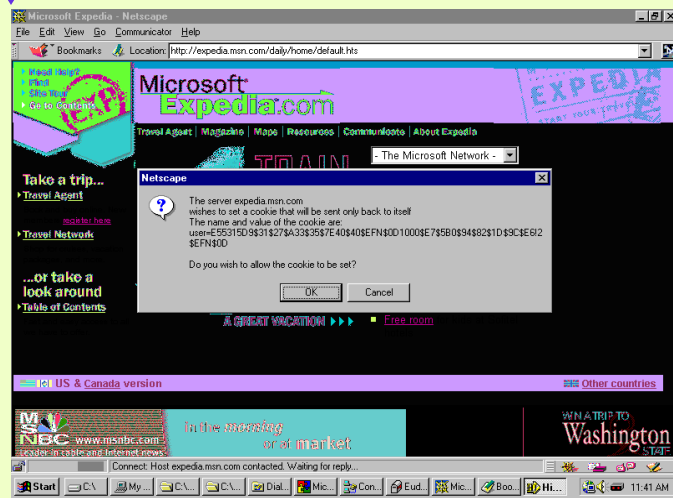
Study Findings: Few Know How to Measure Success

- Some analyzed hit rates on individual Web pages
- Could not calculate accurate % of sales related to Internet ordering because the Internet is no doubt cannibalizing traditional sales
- Few measured length of time at site(s) [set_cookies]
- None pattern analyzed user behavior in sites [set_cookies]



Firms Need to Devise New Measures of Success in e-Commerce

- ★ Revenue growth, market share, and revenue per employee are still be too far removed from the immediate systems effect
- ★ Measures of market penetration may be useful
- ★ Gaining customers outside the firm's usual customer profile would satisfy this criterion
- ★ Customer loyalty & sense of community as it develops through e-Commerce connection is a powerful measure (questionnaires/Web focus groups)
- ★ Customer evaluation of site
- ★ Pattern analysis of user behavior in sites (which links are used most and how do users move between links; set_cookies to track user activity)



▼ Devising New Measures of Success in e-Commerce

- ★ Which of these metrics, if any, should be outsourced?
- ★ Does the ability of the firm to "sense and respond" quickly relate to its ability to compete?
- ★ Is the creation and the rapid development of these metrics a core competency of an EC firm?

▼ Insource Creation & Applications of New Measures of Success in e-Commerce?

YES!!



▼ Outsource e-Commerce?

- Is there any danger in outsourcing the development, maintenance, and facilities management of your Web sites?
 - Additional issue: **For systems development**, will your vendor stay abreast of new technologies for creating, displaying, and involving consumers/business customers?
 - You cannot be sure!

▼ Virtualize e-Commerce?

