

CHAPTER 12

Planning for Electronic Commerce



Twelfth
Edition

ELECTRONIC COMMERCE

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Learning Objectives

In this chapter, you will learn:

- How to identify benefits and estimate costs of online business initiatives
- How online business startups are evaluated and financed
- When and how to outsource online business initiative development
- How to manage and staff electronic commerce implementations

Introduction

- Case study: Wevorce
 - Internet startup offering divorce mediation services
 - Founder worked with startup coaching enterprise Y Combinator
 - Works with startups to develop their business
 - Arranges “demo day” presentations to investors
 - Obtained more than a million dollars from investors

Identifying Benefits and Estimating Costs of Electronic Commerce Initiatives

- Keys to successful implementation of information technology projects is planning and execution
- Successful electronic commerce initiative business plan activities
 - Identify initiative's specific objectives
 - Link objectives to business strategies
- Setting electronic commerce initiative objectives
 - Consider strategic role of project, intended scope, resources available

Identifying Objectives

- Typical business electronic commerce objectives
 - Increasing existing markets' sales
 - Opening new markets
 - Serving existing customers better
 - Identifying new vendors
 - Coordinating more efficiently with existing vendors
 - Recruiting employees more effectively
- Objectives vary with organization size
- Compare the risks of e-commerce versus inaction

Linking Objectives to Business Strategies

- Downstream strategies are tactics to improve the value businesses provide to customers
- Upstream strategies focus on reducing costs or generating value working with suppliers or inbound providers
- Web use for businesses
 - Attractive sales channel for many firms
 - Complement business strategies; improve competitive positions
 - Inspire businesses to undertake activities

Linking Objectives to Business Strategies (cont'd.)

- Electronic commerce activities difficult to measure
- First-wave e-commerce activities
 - Existed without specific, measurable goals
 - Plenty of investors for highly speculative activities
 - Successes and failures measured in broad strokes
- Second-wave e-commerce activities
 - Businesses took closer look at benefits and costs
 - Good implementation plan sets specific objectives for benefits achieved and costs incurred

Linking Objectives to Business Strategies (cont'd.)

- Third-wave e-commerce activities
 - Impacted by smart phones' and tablet devices' pervasiveness
 - Web access in many more locations changed nature of online communication
 - Technology benefits more easily acquired
 - Example: Social media tools
 - Smaller businesses' electronic commerce activities increase anticipated

Identifying and Measuring Benefits

- Some benefits of electronic commerce initiatives are obvious, tangible, easy to measure
 - Example: increased sales or reduced costs
- Other electronic commerce initiatives are more difficult to measure
 - Example: increased customer satisfaction
- Set measurable objectives even if they are for intangible benefits
 - Example: measure customer satisfaction based on number of return customers

Identifying and Measuring Benefits (cont'd.)

- When using Web sites to build brands or enhance existing marketing programs set goals in terms of increased brand awareness
 - Measures: market research surveys, opinion polls
- Companies selling goods or services online measure sales volume in units or dollars
- Complicated to measure brand awareness or sales increase due to other things company doing or by general improvement in the economy

Identifying and Measuring Benefits (cont'd.)

- Using Web sites to improve customer service or after-sale support has possible goals of increased customer satisfaction or reduced support costs
 - Example: Philips Lighting
- Supply chain managers' goals include supply cost reductions, quality improvements, or faster deliveries of ordered goods
- Auction sites' goals include number of auctions, dollar volume of items sold, number of items sold, or number of registered participants

Identifying and Measuring Benefits (cont'd.)

- Virtual communities' and Web portals' goals include number of visitors, quality of visitors' experiences
- Metrics are measurements companies make to assess value of site visitor activity benefits
 - Examples in Figure 12-1
- Businesses must convert raw activity measurements to monetary units to compare benefits to costs
 - Compare net benefit of a particular initiative to net benefits provided by other projects
 - Difficult to measure value in monetary units precisely

Electronic Commerce Initiatives	Common Measurements of Benefits Provided
Build brands	Surveys or opinion polls that measure brand awareness, changes in market share
Enhance existing marketing programs and create new marketing programs	Change in per-unit sales volume, frequency of customer contact, conversion (to buyers) rate
Improve customer service	Customer satisfaction surveys, quantity of customer complaints, customer loyalty
Reduce cost of after-sale support	Quantity and type (telephone, fax, e-mail) of support activities, change in net support cost per customer
Improve supply chain operation	Cost, quality, and on-time delivery of materials or services purchased, overall reduction in cost of goods sold
Hold auctions	Quantity of auctions, bidders, sellers, items sold, registered participants; dollar volume of items sold; participation rate
Provide portals, social networks, and virtual communities	Number of visitors, number of return visits per visitor, duration of average visit, participation in online discussions

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FIGURE 12-1 Measuring the benefits of electronic commerce initiatives

Identifying and Estimating Costs

- Information technology project costs can be as difficult to estimate and control as benefits
- Web development uses rapidly changing hardware and software technologies
 - Hardware costs trending downward but increasing software sophistications often requires more of the newer, cheaper hardware
 - Yields net increase in overall hardware costs and higher software costs than anticipated
 - Rapid changes in Web technologies can destroy manager's plans

Total Cost of Ownership (TCO) and Opportunity Costs

- TCO includes all costs related to electronic commerce implementation
 - Hardware costs, software costs, outsourced design work, employee costs, site maintenance
 - Good TCO number includes assumptions about how often site would need to be redesigned in the future
- One of the largest and most significant electronic commerce initiative costs is opportunity cost
 - Foregone benefits that company could have obtained from electronic commerce initiative not pursued
 - Lost customers, sales or cost reductions

Web Site Costs

- Total dollar amounts required to create and operate a Web site has varied with time and business type
 - Relative proportion of costs remained stable
 - 10% hardware, 10% software. 80% labor
 - Small online store can be placed into operation for less than \$1000
 - Small to midsize online business operation with full transaction and payment processing capabilities has an initial investment between \$10,000 and \$1 million
- Annual cost of operating an online business Web site between 50% and 200% of site's initial cost

	Small Online Store	Midsize Online Business	Large Online Business	Large Company's Online Business Integrated with Other Business Operations
Initial costs	\$400–\$7,000	\$10,000–\$1 million	\$1 million–\$5 million	\$5 million–\$100 million
Ongoing annual costs	\$400–\$14,000	\$25,000–\$2 million	\$500,000–\$10 million	\$2.5 million–\$200 million

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FIGURE 12-2 Estimated costs for business Web sites

Web Site Costs (cont'd.)

- Costs generally heading downward
 - Lower costs for broadband access and computer hardware and decreased software development and maintenance costs
 - Netscape (early 1990s) needed more than \$40 million just to get started
 - Digg (2004): less than \$500,000
 - Today, smartphone app development less than \$1000

Feature	Typical Measures
Functionality	Bandwidth, number of different operating systems and databases supported, disk space, number of e-mail accounts allowed, number and type of software provided (for Web site construction, traffic analysis, and so on)
Reliability	Guaranteed uptime percentage, guaranteed speed of service reinstatement when it does fail
Scalability	Ease of expansion of bandwidth, disk space, additional software (database, traffic analysis, and so on) that can be added to an account as it grows
Security	Employee background checks, features that provide physical protection of the facilities (fences, alarms, guards, security cameras, and so on) and protection against online intrusions (firewalls, network security software, and devices)
Backup and recovery	Frequency of backups, automation of backups, off-site storage of backup media
Cost	Initial and ongoing charges for setup and operation, additional charges for specific software and other features

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FIGURE 12-3 Important Web hosting service features

Funding Online Business Startups

- Early Web businesses started by individuals with knowledge of computers, technology, and business
- Late 1990s online startups attractive to investors wanting to make fast money (Internet boom)
 - Angel investors funded initial startup in hopes for rapid growth
 - Still an option today
 - Goal is to sell to venture capitalists at a profit
- Venture capitalists are wealthy individuals or firms who have a goal of making profit by selling stock to the public through an initial public offering (IPO)

Funding Online Business Startups (cont'd.)

- System of financing startup and initial growth of online businesses has both benefits and costs
 - Benefit is access to large amounts of capital early
 - Costs include the pressure to grow rapidly and most profits going to angel investors and venture capitalists
- Cost decreases of starting online businesses reduces need for venture capitalists and angel investors
 - Allows business owners to become more creative and learn from mistakes
 - Trend is towards more and smaller online ventures

Comparing Benefits to Costs

- Capital projects (capital investments) are major investments in equipment, personnel, other assets
- Techniques to evaluate proposed capital projects range from simple calculations to complex computer simulation models
 - Reduces to comparison of benefits and costs
- Key parts of creating electronic commerce initiatives business plan is to identify potential benefits and costs and evaluate whether benefits exceed costs

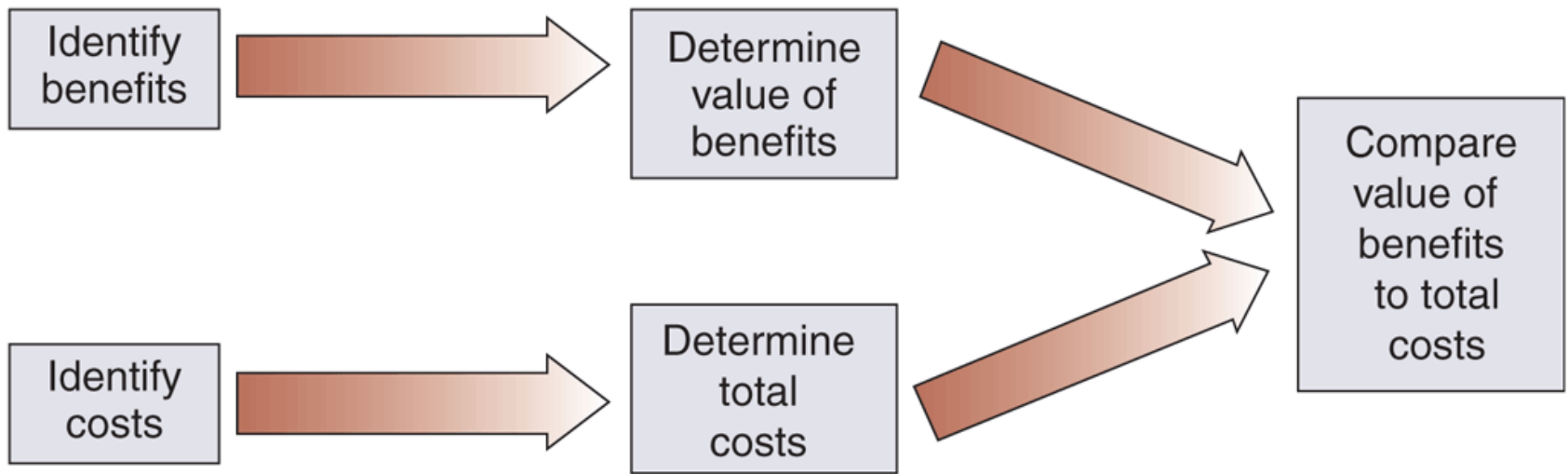


FIGURE 12-4 Cost/benefit evaluation of electronic commerce strategy elements

Return on Investment (ROI)

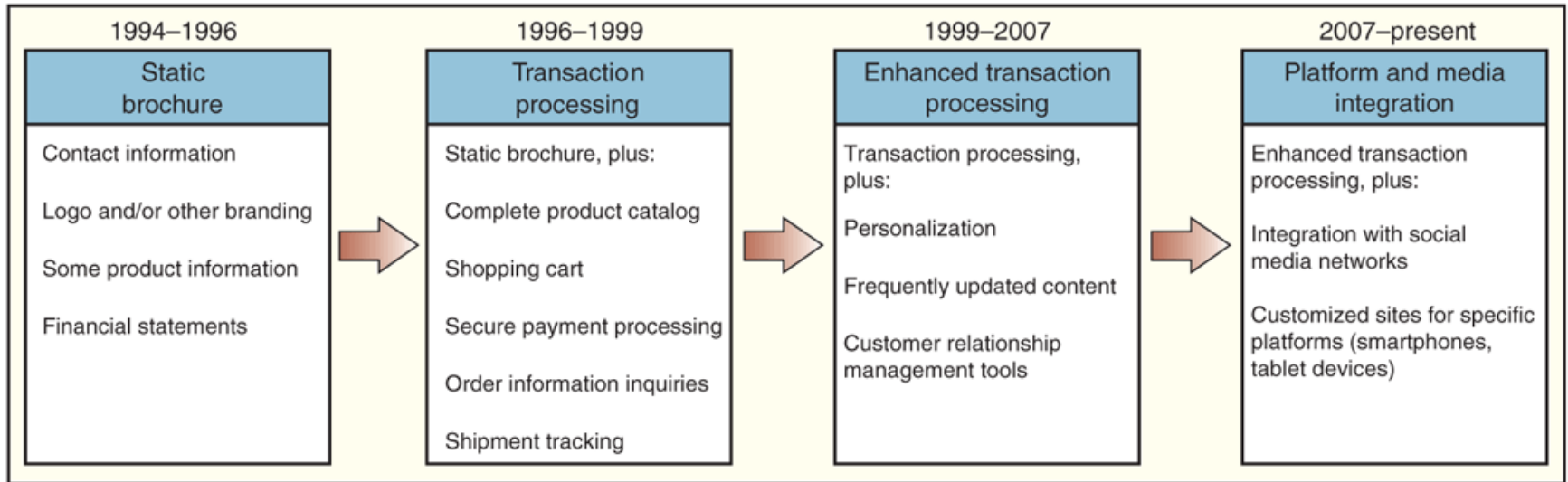
- Return on investment (ROI) techniques measure amount of income (return) provided by specific current expenditure (investment)
 - Provides quantitative expression of comfortable benefit-to-cost margin and mathematically adjusts for future reduced value of benefits
- Some see electronic commerce initiatives as necessary and may not subject them to analysis
 - Companies fear being left behind
 - Newspaper Web sites are an example of companies willing to incur losses to establish an online presence

Return on Investment (ROI) (cont'd.)

- Many companies turned to ROI as a measurement tool for evaluating projects because of past use
 - Easy to understand, but has some built in biases that can lead to poor decisions
 - ROI requires all costs and benefits be stated in monetary units which gives undue weight to costs
 - ROI focuses on benefits that can be predicted but initiatives have returned benefits not foreseen
 - ROI tends to emphasize short-run benefits over long-run benefits

Strategies for Developing Electronic Commerce Web Sites

- Web sites began as static “brochure”
- Next generation added transaction processing and other capabilities making Web sites an important part of the information system infrastructure
 - Enhanced with personalization and customer relationship management features
 - Redesigned to work better with mobile devices
 - Recently, sites have become integrated with social media networks
- Transformations required software development



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FIGURE 12-5 Evolution of Web site functions

Internal Development vs. Outsourcing

- Some companies use contractors to handle entire online business site development (outsourcing)
- Most companies understand sites are too important to the future to risk outsourcing
 - Business initiative must be integrated into existing activities to ensure success
 - Having internal people lead projects ensures specific needs are addressed and initiative is congruent with organization goals, culture
- Key to success is finding the right balance between inside and outside support for the project

The Internal Team

- First step in deciding what to outsource is to create an internal team that is responsible for the project
 - Team members need to be knowledgeable about Internet and its technologies
 - Creative thinkers, distinguished within the company
 - Good sense of company goals and culture
 - Technical expertise less important than other factors
- Measuring achievements of team is important
 - Expressed in whatever terms are appropriate to the objectives of the initiative

The Internal Team (cont'd.)

- Intellectual capital is employees' knowledge about the business and its processes
 - Hard to measure but value is recognized today
- Internal team responsible for initiative decides what to outsource, outsourcer and consultants or partners needed
 - Partners can be important in the early part of the project because they often have skills and expertise in new technologies before other system professionals

Early Outsourcing

- Company outsources initial site design and development to launch project quickly
- Outsourcing team trains company's information systems professionals before handing site operation to them
- Company's own information systems people work closely with outsourcing team
 - Develop ideas as early as possible in project life

Late Outsourcing

- Company's information systems professionals perform initial design and development, implement system, and operate system until stable
- Once competitive advantage gained maintenance of the electronic commerce system is outsourced
- Company's professionals turn attention to developing new technologies to provide further competitive advantage
- Online business initiatives are more suited to early outsourcing

Partial Outsourcing

- Also called component outsourcing
- Company identifies specific project portions that can be completely designed, developed, implemented, and operated by another firm
 - Smaller Web sites outsource e-mail handling and response functions
 - Electronic payment system
 - Web hosting
 - Generally offers 24/7 operations

Incubators

- Offers start-up companies physical location with offices, accounting and legal assistance, computers, and Internet connections at a very low monthly cost
- May offer seed money, management advice, and marketing assistance
- Receives ownership interest in company that is typically between 10% and 50%
 - When company grows sells interest to venture capitalists or through an IPO
- Early Internet incubator: Idealab
 - Helped CarsDirect.com, Overture, Tickets.com

Incubators (cont'd.)

- Some companies created internal incubators
 - Developed technologies for use in main business operations
 - Most unsuccessful and shut down
- Matsushita Electric's U.S. Panasonic division started internal incubators to help launch new companies to become strategic partners
 - Incubator development team become managers of new company
- Strategic partner incubators have yielded better results than old style method

Accelerators

- Company that performs a function similar to that of an incubator but with a different activity structure
 - Tend to work with entrepreneurs who have already developed their idea into a business
- Formal application process with a competitive series of proposals and presentations
 - Proposals that survive work closely with a mentor network to convert idea into viable business
- Accepted proposals receive a monetary investment in exchange for a small equity interest
 - Real value to entrepreneur is the mentor network

Project Management

- Collection of formal techniques for planning and controlling activities to achieve a specific goal
 - Developed by U.S. military and defense contractors
- Plan includes cost, schedule and performance criteria
 - Helps management make trade-off decisions
- Project management software helps project managers oversee projects, the internal team and outside consultants
 - Oracle Primavera, Microsoft Project, and open-source options: Open Workbench, OpenProj, Redmine

Project Portfolio Management

- Used by company's top technology manager the chief information officer (CIO)
- Technique to monitor each project like it was an investment in a financial portfolio
 - Allows tradeoffs between cost, schedule, and quality across projects as well as within individual projects
 - Provides more flexibility in allocating resources to achieve the best set of benefits from all projects in the most timely manner
- CIO assigns a ranking for each project based on importance to goals and level of risk

Staffing for Electronic Commerce

- Chief information officer (CIO) oversees information systems and related technological elements needed to undertake and operate online business activities
- Business manager is a member of internal team that sets project objectives and is responsible for implementing and reaching them
- Project manager should have specific training, skills in tracking costs and accomplishing objectives
- Project portfolio manager is responsible for tracking and managing online projects as a portfolio
 - Usually promoted from the ranks of project managers

Staffing for Electronic Commerce (cont'd.)

- Account manager keeps track of multiple Web sites in use or projects combining into a larger Web site
- Applications specialists maintain accounting, human resources, logistics software, electronic commerce site software
- Web programmers design and write underlying code for dynamic database-driven Web pages
- Web graphics designers trained in art, layout, and composition and knows Web pages construction
 - Must ensure Web pages are visually appealing and easy to use

Staffing for Electronic Commerce (cont'd.)

- Content creators write original content
- Content managers or content editors purchase existing material and adapt it for use on the site
- Social networking administrators responsible for managing Web virtual community elements
- Online marketing managers specialize in specific techniques used to build brands and increase market share using Web site and other online tools
- Customer service reps help design and implement customer relationship management activities in electronic commerce operations

Staffing for Electronic Commerce (cont'd.)

- Call center is a company that handles incoming customer calls, e-mails for other companies
- Systems administrator is responsible for system's reliable and secure operation
- Network operations staff functions include load estimation and monitoring, resolving problems
 - Design and implementation of fault-resistant technologies and managing outsourced operations
- Database administration function support activities
 - Transaction processing, order entry, inquiry management, shipment logistics

Postimplementation Audits

- Also called postaudit review
- Formal review of project after up and running
- Examine project items established in planning stage and compare them to what actually happened
 - Objectives, performance specifications, cost estimates, and scheduled delivery dates
- Blame identification approach often used in the past
 - Focused on identifying individuals to blame for cost overruns and missed delivery dates
 - Generally unproductive and uncomfortable

Postimplementation Audits (cont'd.)

- Today audits are used to gather lessons learned from successes and failures
 - Create and update standards of best practices
- Feedback on strategies used provides valuable information for planning future projects
 - Gives participants meaningful learning experience
- Comprehensive audit report analyzes overall performance and how well project was administered
 - Considers if appropriate organizational structure was in place and specific project team(s) performance
 - Should compare actual results to objectives

Change Management

- Information system projects involve change which can be upsetting to people
- Employee concerns include the ability to cope with changes, to continue to do good work, and job security
 - Concerns lead to increased stress
- Change management is the process of helping employees cope with changes
 - Includes tactics designed to help employees feel involved with change
 - Helps employees overcome feelings of powerlessness