Chapter 3

Information Systems Management in Practice 7E
McNurlin & Sprague

PowerPoints prepared by Michael Matthew
Visiting Lecturer, GACC, Macquarie University – Sydney Australia

Strategic Uses of Information Technology

Chapter 3

Use of the Internet by businesses set off a revolution in the use of IT, so that utilizing the Internet to conduct business became the strategic use of information technology.

The questions that remain are:
– Has the revolution ended, or
– Does an even larger revolution loom?
– Does IT still matter?, and
– What sorts of strategic uses are companies making?

Chapter 3 cont.

Strategic roles of IT fall into one of three categories:
1. "working inward" (improving a firm’s internal processes and structure)
2. "working outward" (improving the firm’s products and relationships with customers) and
3. "working across" (improving its processes and relationships with its business partners)

Today’s Lecture

Introduction
– History of Strategic Uses of IT
– Whither the Internet Revolution?
– The Cheap Revolution
– Episode Two: Profitability Strikes Back
– Does IT Still Matter?

Working Inward: Business-to-Employee
– Building an Intranet
– Fostering a Sense of Belonging

Working Outward: Business-to-Consumer
– Jumping to a New Experience Curve
– The Emergence of Electronic Tenders
– Getting Closer to Customers
– Being an Online Customer

Working Across: Business-to-Business
– Coordinating with Co-suppliers
– Establishing Close and Tight Relationships
– Becoming a Customer-Centric Value Chain
– Getting Back-End Systems into Shape

Today’s Lecture cont.

Introduction cont.
– Use of the Internet by businesses in mid/late ’90s set off a revolution in the use of IT
– Utilizing the Internet to conduct business became the strategic use of IT
– Strategic = having a significant, long-term impact on a firm’s growth, industry and $s

What now?
– Dot-com crash
– A larger revolution to come?
– Does IT still matter?
– What strategic uses are companies making of IT (esp. the Internet)
Introduction

Whither the Internet Revolution?

• Internet frenzy peaked in 2000
• Is the Information Revolution dead?
  – Not if history is any guide
    • British Railway Revolution – mid 1800s
    • 10 fold increase after the boom
      – During boom = great excitement and small companies flourished
      – After = glamour gone. Business became serious and full of hard work
      – Industry became orderly and profits began to reflect real returns
    • Connecting industries

Introduction

Whither the Internet Revolution? cont.

• We are now in a period where organizations are re-architecting themselves around Internet technologies
• Real gains will come when Internet technology adapts to organizations and people
  – When the technology disappears and becomes part of life
• It will be ‘quiet’ compared to frenzy of ’99/00 but many think it will be a giant revolution

Introduction

The Cheap Revolution

• CIOs are shifting from buying expensive proprietary products to buying cheap generic products
• Cost savings are compelling
  – Google = runs on 100,000 cheap servers
  – One breaks = discards
    – Avoids expensive service contracts and in-house staff
  – “Dellification”
    • Moved from selling PCs to also selling servers, printers, storage devices…
  – “Cheap” is occurring elsewhere:
    • Labor – outsourcing to other countries
    • Film production – camcorders etc.
    • Software – Linux Vs. Microsoft
    • Telecommunications – Voice-over-IP…

Introduction

Episode Two: Profitability Strikes Back

• Dot-coms became dot-bombs because they couldn’t generate profits
• Episode One: The Dot-Com Menace
• Episode Two: Profitability Strikes Back
  – Whilst it has taken these so-called “old economy firms” longer to utilize the Web they realize that they must do so in a profit-making manner
  
• Use the Internet to complement your strategy, not replace your past way of serving customers nor disintermediate your channels
  – Michael Porter, Harvard Business School

Introduction

Definitions

• ‘e’ = electronic
• e-business
  – Conducting business using telecommunications networks esp. Internet
  – Involves more than buying and selling
• e-commerce
  – Conducting commerce (buying and selling) electronically using the Internet
E-Business Drivers

- Key Components that have accelerated the rapid growth and acceptance of e-business:
  - Wide access to a public network
  - Standard communication protocol
  - Standard user interface

- As a result, a much broader set of users and firms has access to the systems, allowing rapid growth

Does IT Still Matter?

- “IT Doesn’t Matter” – article by Nicholas Carr in Harvard Business Review May 2003
  - Controversial and now a book
  - Bottom line = IT doesn’t matter anymore, at least not strategically
    - IT is an infrastructure technology, like rail, electricity, telephone etc.
      - Such technology can create a strategic advantage for an individual firm at the beginning of its life cycle when it is expensive and risky
    - Carr = IT is now at the end of buildout and is neither proprietary or expensive
      - = A commodity which is available to anyone and won’t give any individual firm a competitive advantage

Does IT Still Matter? cont.

- Reached the end of its buildout:
  1. Power of IT now outstrips the needs of business
  2. IT prices have dropped = now affordable
  3. Capacity of Internet has caught up with demand (fibre surplus)
  4. Many vendors want to be seen as utilities
  5. Investment bubble has burst

- When an infrastructure technology reaches the end of its buildout, it simply becomes a cost of doing business

- Although IT is necessary for competitiveness, competitive advantage comes from the firm’s business model

Does IT Still Matter? cont.

- Management of IT should becoming “boring” focussing on:
  1. Manage the risks
    - Focus on vulnerabilities (which are more common with open systems) rather than opportunities
  2. Keep costs down
    - Greatest risk = overspending, so only pay for use and limit upgrading
      - Don’t update PCs when not needed
  3. Stay behind the technology leaders
    - But not too far behind!
      - Delay investments until there are standards and best practices and prices drop
      - Only innovate when risks are low

Does IT Still Matter? cont.

- This ‘negative’ view deals with individual firms = losing competitive advantage
- Infrastructure technology brings its greatest economic and social benefits to all once it has become a shared infrastructure

- The debate is on
  - IT is one of their strategic resources, besides people and $ for working inward, outward and across

Working Inward: Business-to-Employee

Building an Intranet

- The primary e-business way to reach employees is via ‘Intranets’
  - Intranets are private company networks that use Internet technologies and protocols, and possibly the Internet itself

- Benefits of using intranets:
  - Wider access to company information
  - More efficient and less expensive systems development
  - Decreased training (due to browser interface)
  - By using an intranet, companies can significantly decrease the cost of providing companywide information and connectivity
Working Inward: Business-to-Employee
Building an Intranet cont.

- Benefits cont.
  - Investments in an intranet (open) = significantly less $$ than a proprietary network
  - The link to the Internet allows companies to expand intranets worldwide easily and cheaply
    - Significant Benefit = unthinkable before the Internet!
  - Because an intranet uses the browser interface (and internet ‘protocols’ technology) = users do not need extensive training on different products
  - Companies only need to record information in one place, where it can be kept up-to-date for access by all employees no matter where in the world they are located

Working Inward: Business-to-Employee
Building an Intranet

- Due to the ease with which Web sites can be created, many employees have (did?) build their own, leading to a proliferation of sites with company information
  - Deciding how much control of the systems should be decentralized

- Proposed solutions
  - Create a corporate portal to act as the gateway to the firm’s internal resources, information, and Internet services
  - Microsoft, KPMG, Dell etc.
  - Develop separate departmental or divisional portals, such as sales, HR, operations, and finance portals which are linked to form a corporate portal

Working Inward: Business-to-Employee
Fostering a Sense of Belonging

- Intranets are evolving into very important enterprise structures
  - In some enterprises, the intranet is seen as the enterprise
    - Videos of executives – vision and mission
    - Internal forms, rules and processes
    - Need to file an expense report?
  - Can also be seen as ‘cold’
  - Can provide the foundation for creating a sense of belonging by giving a means of communicating and creating communities

Working Outward: Business-to-Customer

- In most industries companies need sophisticated computer systems to compete
  - Airlines, hotels, rental car companies = a sophisticated reservation system (theirs or someone else’s) is a must
  - Similar ‘musts’ in other industries
    - Wholesale = automated order entry and distribution
    - Finance = ATMs, trading and settlement…

- As industry leaders increase the sophistication of their systems to improve
  - Quality, service innovation and speed
  - Competitors must do the same or find themselves at a disadvantage

Working Outward: Business-to-Customer
Jumping to a New Experience Curve

- Using IT (or any technology) as the basis for a product or service can, in some cases, be viewed as moving up a series of experience curves
  - The traditional view of an experience curve is that the cost of using a new technology decreases as the firms gain more experience with it.
  - More experience leads to a set of connected curves Vs. one continuous learning curve
  - Each curve represents a new technology or combination thereof in a product or service as well as in its manufacture and/or support
  - Moving to a new curve requires substantial investment in a new technology
CISCO SYSTEMS and UPS
Case Example: Jumping to a New Experience Curve

• In the late 1990s Cisco committed itself to manufacturing products within 2 weeks of order – BUT could not guarantee delivery

• Turned over its European supply chain to UPS Supply Chain Solutions (UPS SCS)
  – Uses UPS system to find the best shipper to move the package from the Netherlands centre to the customer
  – The systems of the two companies have become increasingly linked
    • Each movement of product is recorded in both systems

• Handles over 1m boxes a year
  – Because UPS can ensure reliable transit times, Cisco is able to now promise delivery times for its European customers

Working Outward: Business-to-Customer
The Emergence of “Electronic Tenders”

• Initially IT has been embedded in products and services for its computational capabilities
  – e.g. in cars and elevators to make them operate more efficiently

• Now allows product/service to be “tended” i.e. cared for, attended to, or kept track of by another computer
  – e.g. vehicle diagnostics monitored by car dealer
  – Packages / luggage etc. with bar codes = able to be tracked
  – Potential uses are endless and we are just at the beginning

• Options are endless but the goal is still to get closer to the customer

Working Outward: Business-to-Customer
Getting Closer to Customers

• Business-to-consumer e-business is the most widely reported form of e-business.

• Nearly every type of product can now be purchased online: books, CDs, flowers etc.
  – Many success stories – Dell, Cheap Tickets, ETrade ....

• Success is not easily achieved:
  – Amazon.com had its business viability questioned for a long time
  – Levi Strauss, despite encouraging figures, quit selling jeans over the Internet

Working Outward: Business-to-Customer
Getting Closer to Customers cont.

• Use of the Internet has grown more sophisticated

• Customer Relationship Management (CRM)
  – Involves using IT to know more about customers
  – Whether you visit their website, call them (home, office, mobile) or buy something – the firm is often keeping track and combining that information to create a profile of you
    • Followed on from ERP
      • ERP focused on internal data
      • CRM focuses on customer data
  – Boenix or bane = depends on how intrusive you think they are
    • Great useful information Vs.
    • Invasion of privacy
Working Outward: Business-to-Customer

Getting Closer to Customers cont.

• Successful selling over the Internet entails much more than just setting up a Web site and taking orders
  – It involves organizing the entire value chain around the Internet

• The E-Business Model
  – Redefining Customer Value
    • “On-demand”: reduces the time it takes to respond to customer requests
    • Convenience: one stop shopping plus single point of contact. Online business allows gathering and managing customer information (to serve the customer)
    • Access to a wide range of competitive prices and sellers for products

Working Outward: Business-to-Customer

Being an Online Customer

• Companies large and small are transacting business via the Internet

• Some (still?) use it as their main means of business, even after the dot-com crash

Working Across: Business-to-Business

Streamlining processes that cross company boundaries is the next big management challenge

- Companies have spent a lot of time and effort streamlining their internal processes, but their efficiencies often stop at their corporate walls

Working across business takes many forms including:
1. Working with ‘co-suppliers’
2. Working with customers in a close mutually dependent relationship
3. Building a virtual enterprise, in fact, one that might evolve into an e-marketplace

Working Across: Business-to-Business

Coordinating with Co-suppliers

• Collaborating with non-competitors is a type of working across
• Example – two food manufacturers might have the same customers (supermarkets and other retailers) but do not compete with each other
• Lack of convenient ways to share information quickly and easily has deterred co-suppliers from working together
  – Internet takes away this deterrent

Working Across: Business-to-Business

Establishing Close and Tight Relationships

• Strategic use of IT and the Internet has moved to the most difficult area = working across companies
  – Having relationships with various players in one’s business ecosystem
    • Banks, advertising agencies, suppliers, distributors, retailers, even competitors
    • Such relationships often have accompanying linking information systems

Working Across: Business-to-Business

Establishing Close and Tight Relationships cont.

• Need to determine what level of systems integration they want:
  – Loose = provide ad hoc access to internal information
    • Business processes remain distinct
    • Such limited integration requires little risk or cost
    • A builder of small power units that lets suppliers and customers check specifications on its Web site
  – Close = two parties exchange information in a formal manner
    • Leads to greater benefits, so there is greater impetus to make the relationship work
    • Risks increase because confidences are shared
    • Costs are also higher
    • Airlines sharing pricing data with each so that they can provide seamless service to customers using several airlines on one trip.
Working Across: Business-to-Business
Establishing Close and Tight Relationships cont.

- **Tight =** two parties share at least one business process
  - Most risky – business critical and the most costly to integrate
    - Due to high costs and risks = can only have a few!
  - Where does one organizational boundary begin and the other end? = Intermeshed!
    - A supplier and a retailer sharing a common inventory process.

Working Across: Business-to-Business
Becoming a Customer-Centric Value Chain

- A company’s value chain consists of:
  - **Upstream supply chain**
  - Working with its suppliers of raw materials and parts
  - **Downstream demand chain**
  - Working with its distributors and retailers to sell its products and services to end customers
  - Traditionally most companies make-to-stock = build products / create services and then “push” them to customers
  - **Supply-Push world**
  - Today, we are seeing the rise of the reverse – a demand-pull world where a customer’s order triggers the creation of a customized product or service the customer has defined
  - **Dell**

Working Across: Business-to-Business
Becoming a Customer-Centric Value Chain cont.

- **Pros and Cons of Demand-Pull**
  - Value-chain transparency = should reduce the number of duplicate orders
    - 10,000 memory chips Vs. 30,000 ‘ordered’ due to shortage
  - Creating private exchanges such as Dell changes the level of co-operation among firms
  - Con = infrastructure
    - Manufacturer’s becomes its suppliers – binding them even tighter
    - Requires TRUST
  - Becoming customer centric is not easy, especially for supply-push companies
  - **The promise of CRM is alluring**
    - Aims to help companies shift their attention from managing their operations to satisfying their customers

Conclusion

- Over the years a few innovative companies have used IT for strategic advantage
  - ‘Models’ but many companies did not have the resources or skills to follow their example
  - With the growth of the Internet and development of e-business, IT has become a strategic tool in every industry
- **Looking for cohesion of often dispersed employees?**
  - Intranets and Portals
- **Increasingly customer centric view has many using IT in working across**
  - Value chains are looking to shift from supply-push to demand-pull
- As IT continues to evolve, so do its strategic uses