



Distributed Applications e-business

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Definition

- business concepts and the technology concepts that allow provision of the services needed to successfully implement e-commerce.
- distinction to be made between e-commerce and e-business

Classes of e-business

E-business appears in a range of applications [May, 2000, Ch 3]. The two principal classes of e-Business application are:

- Business-to-Consumer Applications
- Business-to-Business Applications

Business-to-Business applications are long established, with a history extending back into the 1960s. Business-to-Consumer applications are a newer phenomenon, fueled largely by the widespread access to the Internet that occurred in the late 1990s.

Business-to-Consumer

The main areas of current b-to-c application are: [May, 2000]

- retail
- auctions
- advice.

Retailing

Retailing aims to provide goods directly to consumers.

- Advantages to consumer
- Advantages to the retailer

Limitations in b-to-c business

The primary limitations are:

- payment transfer
- delivery of goods
- legal jurisdiction

Auctions

- price set by how much customers are willing to offer to pay.
- issues of payment and delivery of goods
- items offered for sale can be legally sold

Advisory

- organisations offer advice via the Internet
- Search and directory services are a main source of advice applications

Business-to-Business

Some of the main areas of b-to-b e-commerce are

- Procurement
- Inventory exchange
- Payment
- Real-time collaboration

Procurement

In some ways business procurement is like retail purchasing, but has other characteristics that make it more suited to automation.

Inventory

Inventory is at the core of most businesses. Components or items are bought in and processed or sold.

JIT or Just In Time management

Seat Filling

The inverse problem is well illustrated with airlines. Airlines must have no empty seats for optimum use of their assets.

In the era of portfolio careers, employees are in a similar category, being partly inventory and partly a seat filling problem.

Automated Payment Systems

Another possibility that can be associated with automated procurement and inventory handling is the automated payment, usually by instruction to a bank for example to transfer funds from the payor's account to the payee's account.

Business-to-Business Applications

EDI Electronic Document Interchange has been in wide commercial use since the 1960s, and was arguably the first b-to-b e-Commerce application.

Real-time Collaboration

Payments

[Ince, 2004] Payment systems are about mechanisms to transfer value from one person or organisation or another. Transferring payment is clearly a target for criminal activity method of security is essential.

Customer to business payments

Credit card schemes

E-wallets

Digital cash

Micro payment systems

Business to business payments

- Customer to business payments are relative to small and involve a small matter bureaucracy.
- Business-to-business payments usually large and involve a greater degree of procedural complication.

Third party to handle payments

A typical set of processes that occur when a transaction occurs is:

- a buyer and seller agree that the financial transaction will occur
- The seller sends invoice to the buyer over the internet.
- The buyer sends an authorisation message to the payment system.
- The payment system debits and credits any accounts that require adjusting.
- The payment system sends data to both buyer and seller.

Electronic Fund Transfer

The bigger topic is Electronic Fund Transfer
[Kalakota and Whinston, 1996]

- Banking and Financial Payments
- Retailing payments
- On-line electronic commerce payments

Banking and Financial Payments

- Large-scale or wholesale payments (bank-to-bank)
- Small-scale or retail payments (ATMs)
- Home banking (bill payments)

Retailing payments

- Credit cards (Mastercard, Visa)
- Debit or charge cards (American express)

On-line electronic commerce payments

- Token-based payment systems
 - Electronic cash
 - Electronic cheques
 - Smart cards
- Credit-card based payment systems
 - Encrypted credit cards
 - Third-party authorisation numbers

An analytic framework for Electronic Payment

[Kalakota and Whinston, 1996]

- The nature and size of the transaction - large, small.
- The means of settlement used. Tokens must be backed by cash.
- Approach to security, anonymity, authentication
- The Risks - value of tokens, arbitrage in tokens, delay in transmission, non-payment

Privacy

All transactions are recorded. Users must be assured they cannot easily be duped, swindled, or falsely implicated in a fraudulent transaction [Kalakota and Whinston, 1996].

Security

- CIA
- Confidentiality
- Integrity
- Availability

Business models

There are four principal business drivers [May, 2000]:

- The race with competitors
- Convert present channels to online presence
- Cost reduction
- Improved partner inclusion

Legal issues- Intellectual Property

Copyright the laws of Intellectual Property apply to online material.

Patents Technology patents fall under the established patent law, but patenting of business processes has become a significant issue in e-commerce,

Domain Names The domain name is the equivalent in the e-commerce world of location in conventional commerce world.

Other legal issues

Responsibility The identification of a person or group responsible for content and transactions on the Internet is not always as clear as with conventional commerce.

Privacy Privacy is about a company or individual protecting information about itself from disclosure.

Regulation and Taxation Most (arguably all) regulation and taxation is implemented at national level.

One proposal has been the so-called *bit tax*, which would seek to collect taxation on the electronic communication itself.



Social Issues

Futures

Platform

Internal Human Communication

Skills

Market Issues

Volatility

Consumer Trust

Privacy

Privacy is about a company or individual protecting information about itself from disclosure. In the extreme form privacy is obtained by non-participation.

The Fair Information Principles approach

Fair Information Principles (FIPs) The OECD version of the FIPs is the following:

- Collection Limitation
- Data Accuracy
- Purpose Disclosure
- Use Limits
- Security
- Openness
- Participation
- Organizational Accountability

Higher tech solutions

Proxies

P3P P3P seeks to automate and integrate privacy-preference notice into normal Web activity.].

Digital Rights Management

[Feigenbaum et al., 2002]

- Internet-based distribution of mass-market content provides great opportunities for producers, distributors, and consumers
- The goal of DRM technology is distribution of digital content in a manner that protects the rights of all parties involved

Security technologies in DRM

[on Intellectual Property, 2000]

- Security and integrity features of computer operating systems .
- Rights-management languages express in machine-readable form the rights and responsibilities all.
- Encryption scrambles digital content so that it can be transmitted or stored in an unusable form.
- Digital signatures provide assured provenance of digital content and nonrepudiation of transactions.
- Fingerprinting and other “marking” technology.

Using these technologies

DRM-system development consists of putting these pieces together into an end-to-end system that serves the needs of owners, distributors, users, and all other major stakeholders.

Rights enforcement

DRM strategies:

- Distribute persistent, complete DRM metadata with digital content.
- Tie downloaded content to a particular device or set of devices.
- Tying the downloaded content to the user.
- A radical strategy consists of dispensing altogether with content downloads.

References

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