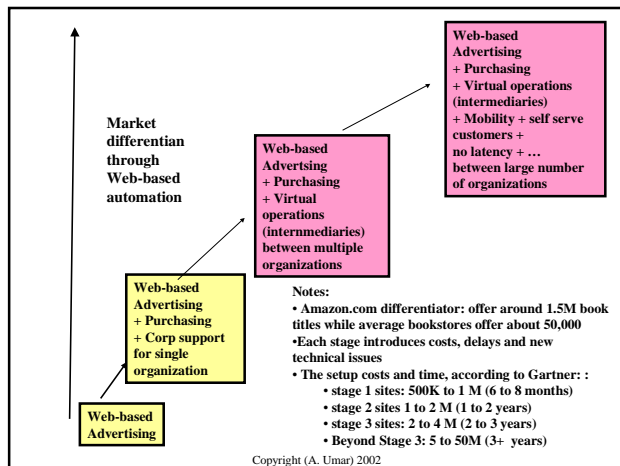
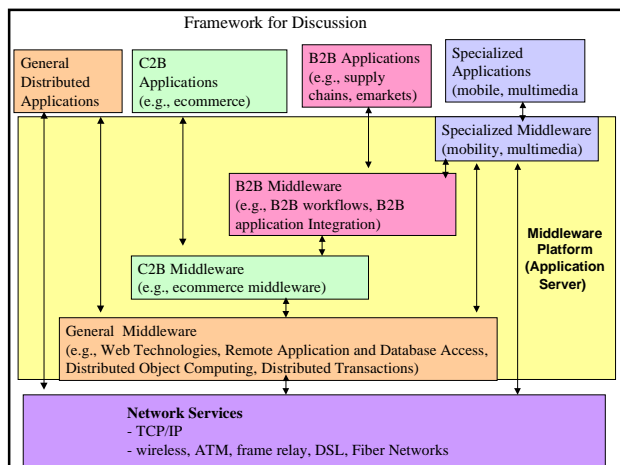


SESSION: Basic Ecommerce Middleware and Platforms

- Purchasing Overview
- Basic EC Middleware
 - Electronic Payment Support
 - Customer care and Billing Support
 - Catalogs
 - EDI support
 - XML in Ecommerce
- Basic Ecommerce Platforms

Amjad Umar





Ecommerce Activities

- Establish presence
 - Web site
- Advertise
 - Home pages
- Product/service browsel and search
 - Catalogs
- Product selection
 - Shopping cart
- Purchasing
 - Purchase systems
 - Order processing
 - Inventory management
 - Billing/Payment
 - Shipping/receiving

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PURCHASING OVERVIEW

Pre-Purchase Activities

- Product search and discovery
- Comparison shopping and product selection
- Negotiation of terms (price, delivery time)



Purchase Consumption

- Placement of order
- Authorization of payment
- Receipt of product



Post-Purchase Activities

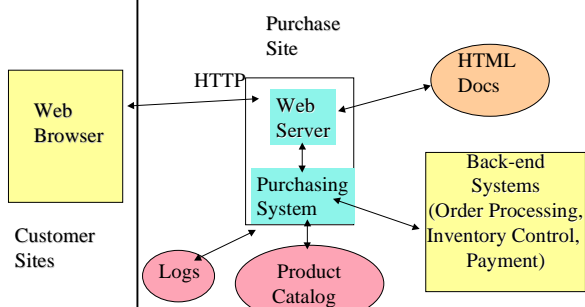
- Settlement of payment disputes
- Resolution of quality issues (e.g., return policies)
- Customer questions and answers

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Simple C2B Purchasing

Buyers

Seller (Supplier)



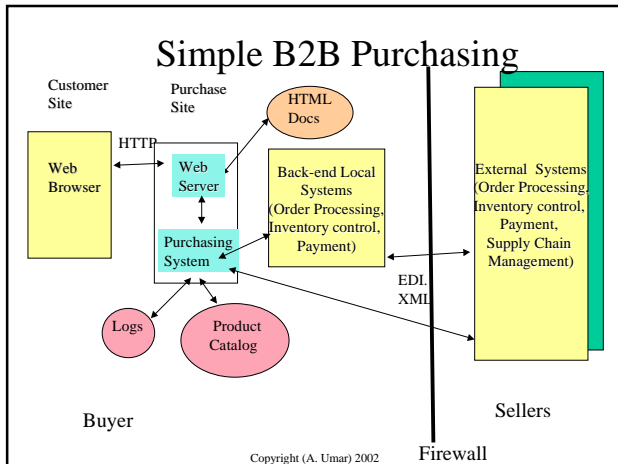
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Simple Ecommerce Example

- Getting a domain name:
 - www.allwhois.com - searches for desired name and contact info if name is taken
 - www.networksolutions.com - purchase a domain name (roughly \$35 per year)
- Set up a web site (can outsource to Web hosters)
- Shopping cart: can build or outsource (ecommerce.about.com)
- Payment System through Credit Cards (how do I get paid)
 - Credit card processing (www.cybercash.com)
 - Need a merchant account to transfer money into (Banks, cybercash, authorize.net)
- Payment systems through other means (beyond the scope of this talk)
 - Banks - EFT, letter of credit, loan
 - Purchase orders
 - Others
- Can buy ecommerce platforms (e.g., IBM Websphere, Oracle Ecommerce Platform, Microsoft EC Site Server,,)
- Can outsource the entire process: www.webhostdir.com

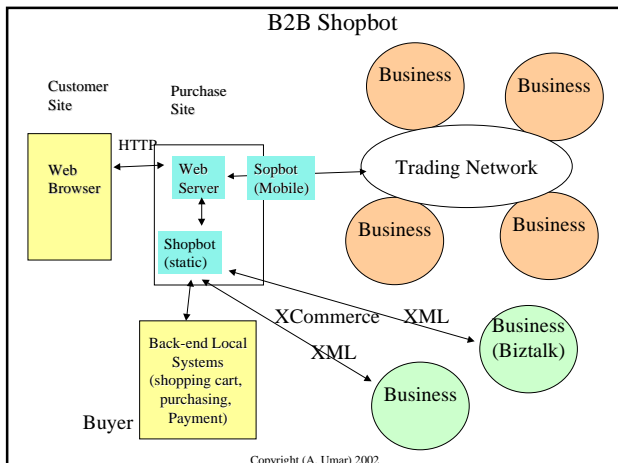
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Simple B2B Purchasing

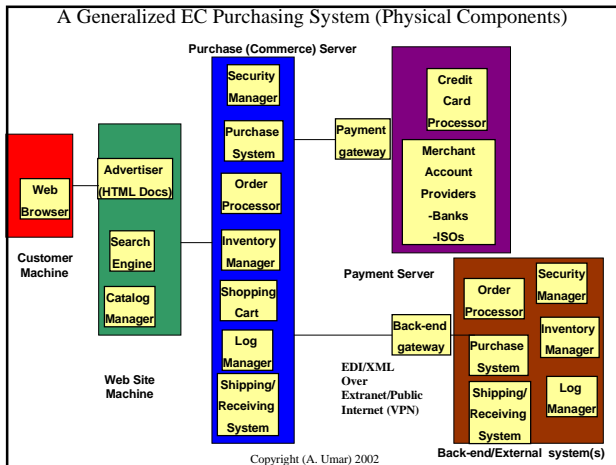


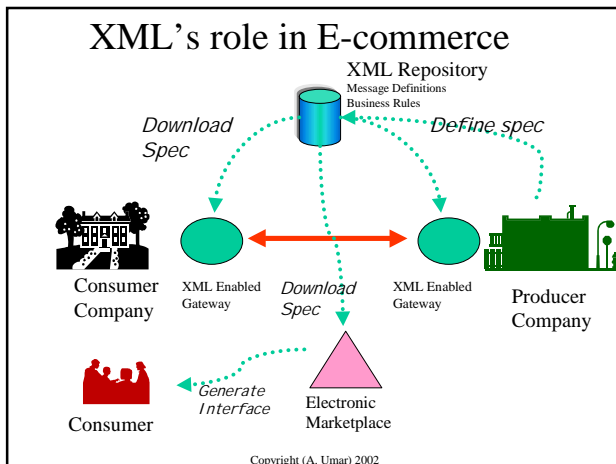
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B2B Shopbot



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Issues with XML

- Very popular (perhaps too popular)
- Everyone can define its own standard and they are (too many standards)
- Some efforts:
 - Microsoft's Biztalk (www.biztalk.org) for interoperability between trading partners
 - EDI/XML forum for mapping EDI to XML
- Companies should create:
 - Conceptual model (technology independent)
 - Map technology to conceptual model

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Electronic Payment Support

■ Retailing payments

- credit cards (e.g., VISA or MasterCard),
- charge cards (e.g., American Express),
- private label cards (e.g., Sears cards).

■ Banking and financial payments

- large scale or wholesale payments (e.g., bank-to-bank transfer)
- retail or small scale payments (e.g., cash, ATM cards, checks)

Not completely adequate for large scale EC

- assume that the parties will be in physical presence
- enough delays will be built into the system for frauds and overdrafts to be detected.

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E-Payment

Most of the current work in EC payments concentrates on token-based systems.

■ Electronic cash (e-cash).

- involves “digital signatures” that enforce public/private keys to identify buyers/sellers.
- the buyer establishes an account with a bank and is responsible to keep enough money in the account to pay for the purchases.
- The customer is issued a token for, say \$100, and the token value is reduced every time a purchase is made.

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E-Payment

■ Electronic checks.

- automation of paper checks.
- The seller sends this check to the bank through an accounting server that performs various authentications before clearing the check.

■ Smart cards.

- credit cards with microprocessor chips
- enhance the services of traditional cards (traditional cards are evolving into smart cards that allow processing from multiple accounts)
- provide electronic purses (supply quick electronic cash for buying soda and candy).
- need special smart-card readers.

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Merchant Account Providers (MAP)

MAP: **verify** the credit card, **process the transaction**, and **deposit** the results into your **account**. can refer to

- providers of merchant accounts without payment processing, (banks);
 - providers of merchant accounts and online credit card processing, such as independent sales organizations (ISOs);
 - providers of online credit card processing that refer customers to merchant account providers on request, such as credit card processors.
- The terms MAP, ISO and merchant service provider (MSP) often are used interchangeably.

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Credit Card Processors (CyberCash and Authorize.NET)

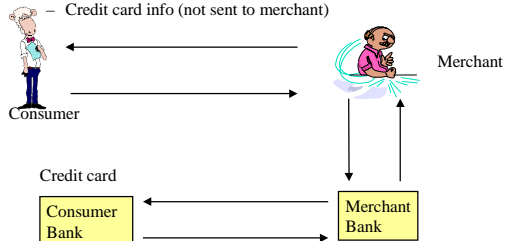
- Three ways to handle credit card transactions:

- **Terminal Processing** -physical credit card of customer to swipe it on a terminal machine.
- **Software Processing** - operator enters the customers information, and credit card number to process the order.
- **Real-Time Processing** - charge your credit card information automatically by working with the chosen ordering system (Shopping Cart, Order Forms, etc.).

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SET (Secure Electronic Transactions)

- Primarily for credit card processing
- Dance between four players
- Purchase transaction separated in two parts:
 - Purchase info (sent to merchant)
 - Credit card info (not sent to merchant)



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Customer Care and Billing (CC&B)

- Traditional work on CC&B
- Modern call centers include integration of voice, video, data, and Web technologies
- Challenges in virtual enterprises (multiple orgs tied over a network as one org)
- Customer relationship management (CRM) is a big area of work

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Catalog Management Systems

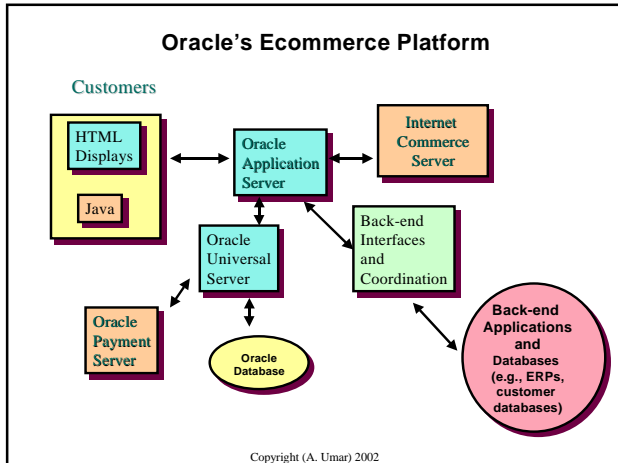
- Central to Ecommerce
- Must be able to handle:
 - Structured data (e.g., product id, price,,)
 - Unstructured text (e.g., product description)
 - Images
 - Links to more details (supplier sites)
 - ease of storage, update, retrieval
- Initial products based on RDBMS (e.g., Oracle)
- New products coming into marketplace
 - iCAT, IBM Catalog Architect, POET eCAT

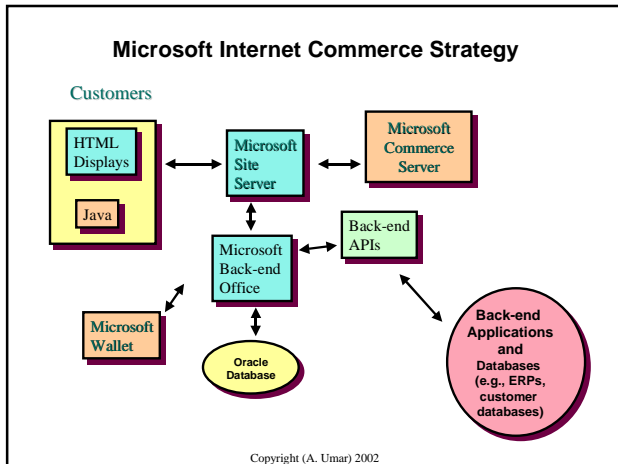
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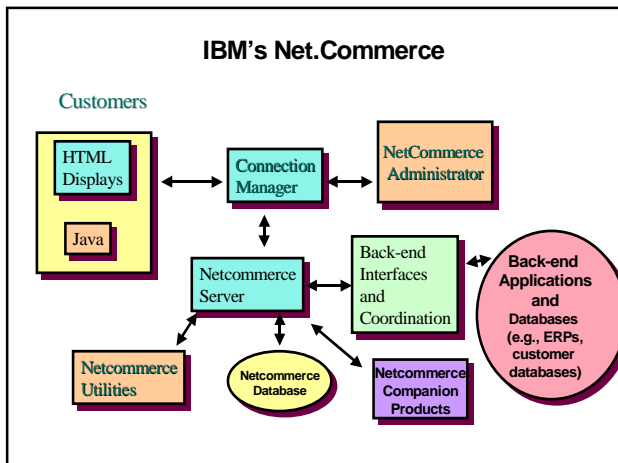
EC Platforms

- Combine
 - Network services (usually assume IP)
 - EC Middleware
 - catalog
 - purchasing
 - Web services
 - Gateways to legacy systems
 - Becoming more sophisticated

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EC Platforms

- Many others
 - Netscape
 - Open market
 - Broad vision
 - iplanet (sun)
 - others
- Becoming more sophisticated
- Becoming XML aware

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Concluding Comments

- Purchasing is at core of EC Middleware
- Basic EC Middleware
 - Electronic Payment Support
 - Customer care and Billing Support
 - Catalogs
 - EDI support
 - XML in Ecommerce
- Basic Ecommerce Platforms are becoming commercially available

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Main References (Web Sites)

- www.commercenet.com (a useful site for EC standards)
- EC/EDI Center for Standards homepage (URL: www.edi.itsi.disa.mil)
- EDI Resources Centre Web Site: Web based EDI and e-business systems (URL: www.edicity.com)
- EDI resources for trainers, Classroom and Self-Study (URL: www.worldbank.org/html/edi/resource.html)
- [Extensible Markup Language \(XML\) 1.0](http://www.w3.org/TR/WD-xml) description at <http://www.w3.org/TR/WD-xml>
- www.xml.com, a very useful Web site for a great deal of information about XML
- [cbXML initiative](http://www.cbxml.org) and the [XML/EDI group](http://www.xml.edi.org) Web sites
- www.biztalk.org (good site for XML ecommerce standards)

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Additional Web Links

- <http://www.realsoft.com/index.html>
- <http://www.cybercash.com/>
- <http://www.miva.com/products/merchant/>
- <http://www-4.ibm.com/software/webservers/commerce/>
- http://www-4.ibm.com/software/webservers/commerce/wcs_start/it.html
- <http://www.webhostdir.com/>
- <http://www.ibill.com>
- <http://www.cnow.com>
- <http://www.verza.com>
- <http://www.hostmysite.com>
- www.rackspace.com
- <http://www.SimpleWebSite.com/>
- <http://www.allwhois.com/>
- <http://www.networksolutions.com>
- http://www.iplanet.com/products/whitepaper_index_2_2.html
- <http://www.netcraft.com/survey/>
- <http://www.intershop.com/>

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Main References (Books)

- Kalakota, R., and Whinston, A., "Frontiers of Electronic Commerce", Addison Wesley, 1996.
- N. Adam, O. Dogramaci, A. angopadhyay, and Y. Yesha, "Electronic Commerce: Technical, Business, and Legal Issues", Prentice Hall, 1998
- "Surviving the Digital Jungle: What Every Executive Needs to Know About eCommerce and eBusiness", by Jack Shaw, 1999
- Xml by Example : Building E-Commerce Applications", by Charles F. Goldfarb Series on Open Information Management) by Sean McGrath (June 1998)
- "Xml for EDI : Making E-Commerce a Reality" by Hussain Chinoy, et al (May 2000)
- "Understanding BizTalk", by John Matranga, et al (March 2000)

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