

Session: Business Systems
Topic: E-Commerce

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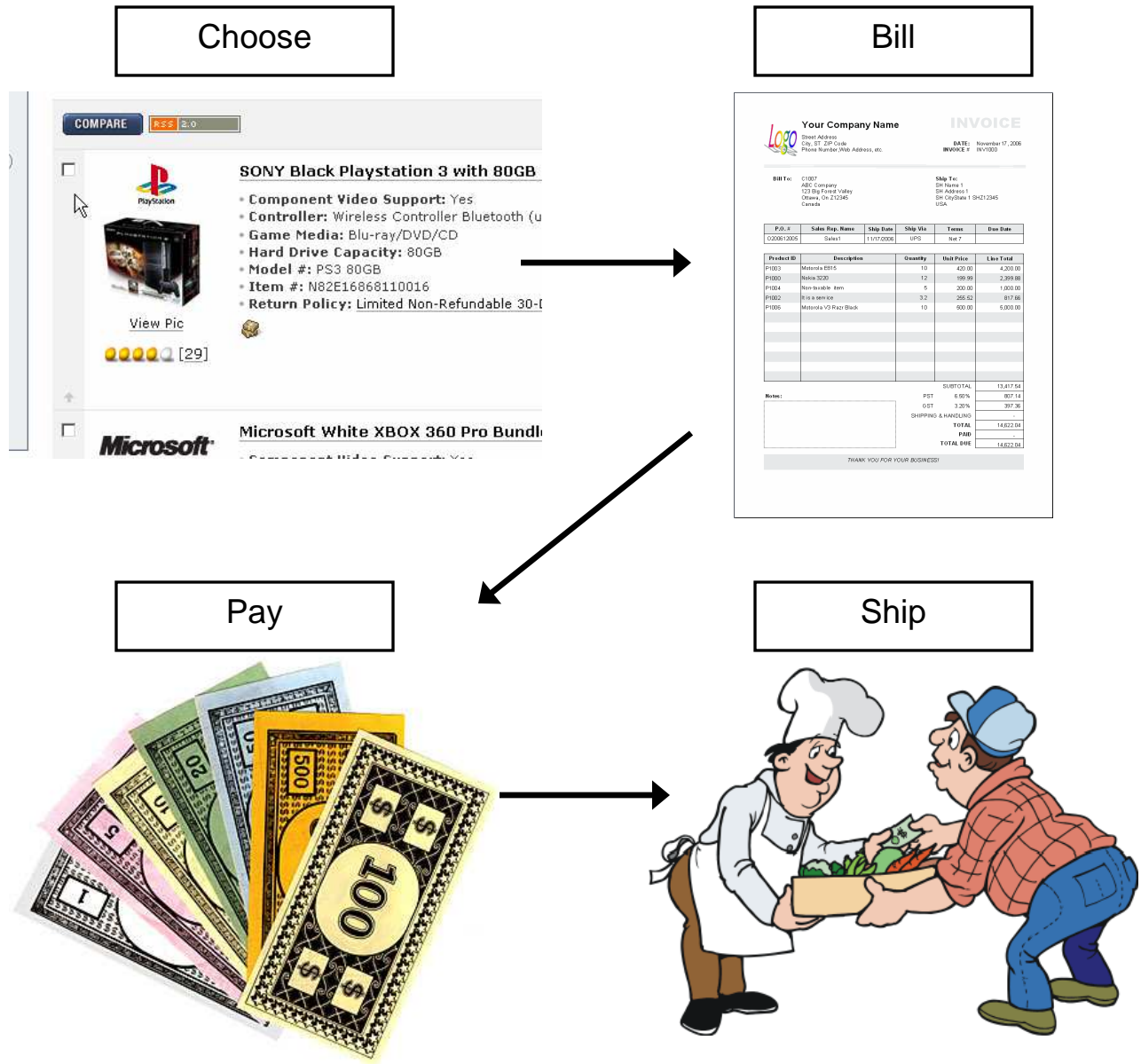
E-Commerce

- Generally thought of as buying and selling products online
- Overall refers to transactions that are completed using almost entirely computer business systems
- Involve a Transaction Processing System, but by itself a TPS does not represent E-commerce
- Involve some network communication to connect participants (private network connections or Internet)
- Intended to speed transaction, reduce transaction costs

Transactions

- Overall a transaction involves choosing a purchase, being billed for that purchase, paying for the purchase and receiving the purchase
- E-commerce typically has computer business systems handling at least the first three steps

Basic Transaction

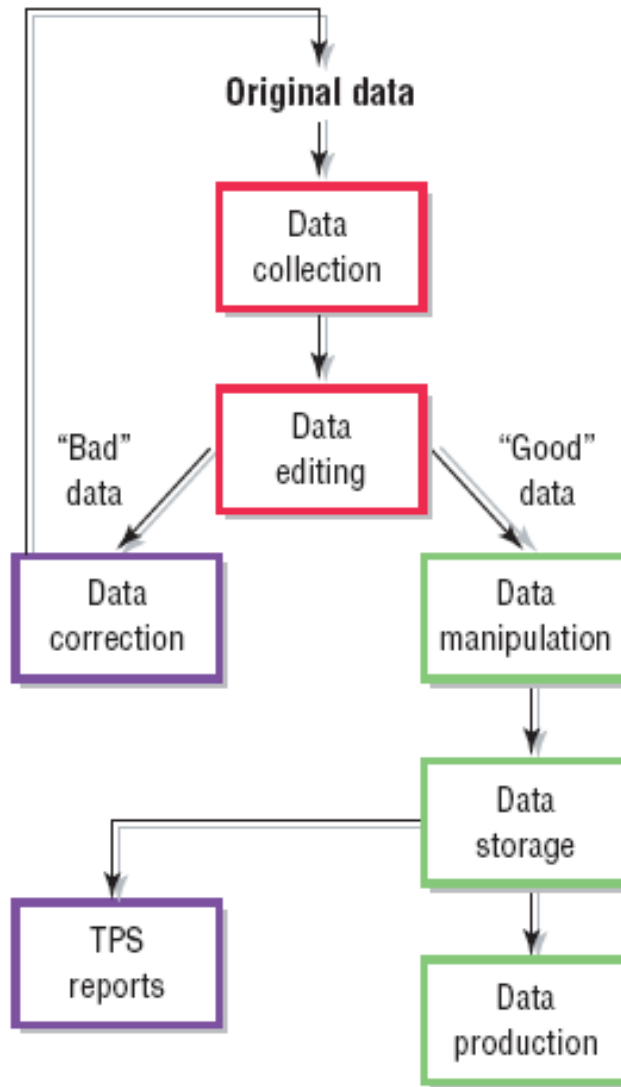


Transaction Processing System

- Processes the data from Transaction steps and updates a database (inventory and invoices)
- Various TPS are used to handle the steps in a Transaction (Inventory TPS, Billing TPS, POS)
- MIS is typically used to report on the data later (also more advanced systems such as Data Mining software)

- Data Collection - "May I take your order"
- Data Editing - Really data "checking"
 - Data Correction - Fix it if wrong
- Data Manipulation - "What's the damage?"
- Data Storage - Update inventory databases, accounting
- Data Output - Receipts, Inventory pick lists

Transaction Processing Cycle



E-commerce Types

Business-to-Consumer (B2C)

- Sales directly to end-customers using computer business systems
- Web store is most common example
- Amazon.com, BestBuy.com

Business-to-Business (B2B)

- Transactions between businesses (not to the final consumer)
- Retailers buying stock from wholesalers is most common example
- Wal-Mart orders breakfast cereal from Kellogg's to sell in retail stores
- Although B2C is more visible, B2B represents by far the largest amount of money transacted

Consumer-to-Consumer (C2C)

- Transactions between end-customers
- Auction web sites are the most common example
- E-Bay, Half.com

Electronic Data Interchange (EDI)

- One of the original implementations of E-commerce, used computer business systems to automatically place orders (buyer) and accept orders (vendor/seller)
- Used Value Added Networks (VAN) - private, direct network connections between businesses called
- Use agreed to format for orders between buyer and vendor
- Implements B2B
- Buyer computer systems could automatically detect low stock quantities and automatically order
- Vendor computer systems automatically accept orders and arrange for billing and delivery (or at least generate pick list)
- Computer business systems handling Choose, Bill, and Pay steps (generally not Ship)

E-Commerce Supporting Consumer Process

- Modern E-commerce systems can help with all steps, but generally handle at least 2, 3, 4, and parts of 5
- Product Research - Web stores provide product information, reviews
- Vendor Selection - Web sites provide vendor information, reviews, stock quantities, shipping times, price
- Payment - Web sites will take your card
- Delivery - Pick lists generated and sent to warehouses/drop ship distributors. Software products may be "delivered" entirely electronically
- Some attempt to have computer business systems help generate a need ("People who bought this generally also bought..."), but still primarily advertising
- Some attempt to use computer business systems for product support (FAQ, Knowledge Bases, or Touchtone Hell)

Consumer Buying Process



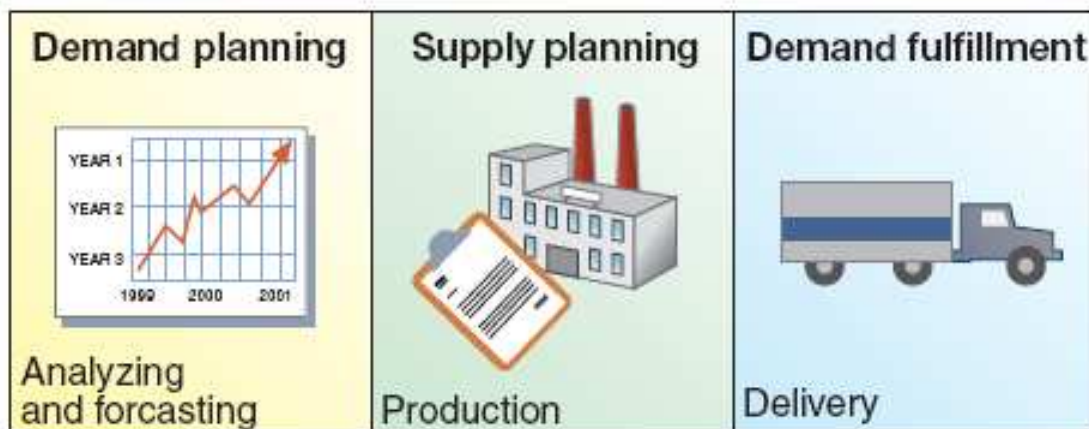
E-Commerce Supporting Seller Processes

- Market Research, Production, Advertising, Payment, Delivery, Support (see textbook)

Supply Chain Management

- Making sure that product is available and reaches customer
- Demand - Know what customers want and how many they want
- Supply - Buy the right amount of materials and have them put together in time
- Fulfillment - Get the product to the customer

Supply Chain Management



Microsoft Xbox 360

- Next generation game console released November 22, 2005

Demand

- Was clear interest existed, but price was \$100 higher than previous generation (\$400 and \$300 models)
- Pre-orders (which involve money deposits) indicate an obvious minimum quantity

Production

- Microsoft did not build up a supply to satisfy first day demand in order to launch months earlier
- Production began 69 days before launch
- Initial U.S. first month shipment estimates dropped from 1 million to 400,000. First month actual sales totaled 326,000
- Microsoft loses about \$126 per console (currently makes about \$75)

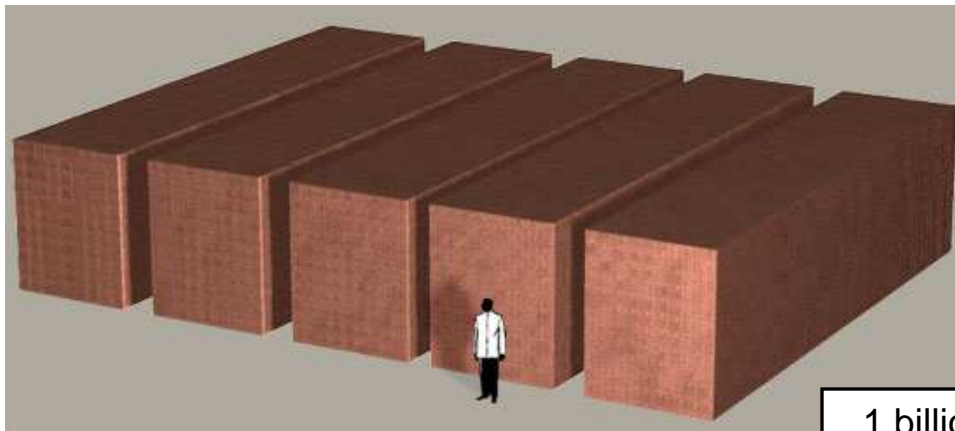
- At launch only 10% - 20% of pre-orders were filled
- 10% of all Xbox consoles sold in the U.S. first month were resold on EBay (some exceeding \$6,000)
- Rushed production led to a high defect rate due to overheating (upwards of 10%)



Microsoft XBox 360

Verdict

- Demand possibly estimated correctly
- Production a complete failure (although 1 year lead on competitors)
- Microsoft did not reach their original worldwide target of 3 million units sold in the first 90 days, directly attributable to failed supply, and revised their estimate to 2.5 million (in reality approximately 1.5 million shipped by years end)
- 500,000 units X \$400 = \$200,000,000
- 200,000,000 seconds is about 6.34 years
- Sold 11.6 million worldwide as of October 2007 (~2 years)
- Estimated \$1 billion cost to Microsoft for repairs and replacement
- \$1 billion in \$1000 bills would make stack 63 miles high (jet planes fly at about 6 - 8 miles high)



1 billion pennies!

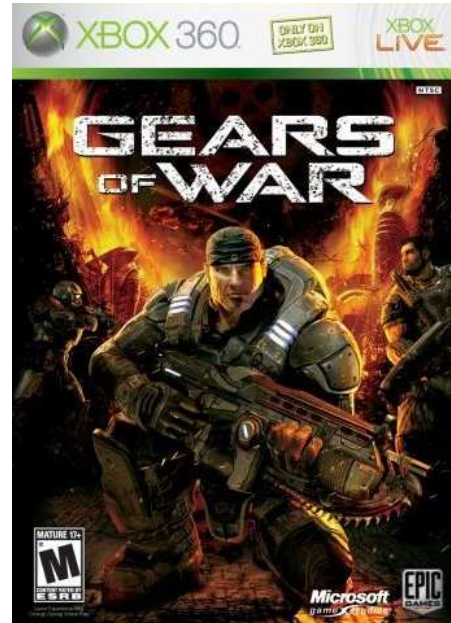


Gears of War

- Early Xbox 360 game delayed from launch for a year (November 7, 2006)
- First game to show truly revolutionary next generation graphics and gameplay

Demand

- EB Games/Gamestop announced a Tuesday midnight special event at stores for customers to obtain as early as possible on release day



Fullfillment

- Release was then delayed to 10:30 a.m. Wednesday, then 5:00 p.m. Wednesday shipment
- Finally available late Thursday, at same time as Wal-Mart and a day later than Best Buy
- Federal Express left 70% of game copies on a loading dock in Memphis Tennessee

Verdict

- Delivery failures resulted in lost sales, cancelled preorders, and very unhappy customers
- EB Games/Gamestop apparently no longer uses FedEx for game launch shipments (What can Brown do for you?)
- Gears of War sold 3 million units worldwide within ten weeks (by January 19, 2007)
- Fastest selling title of 2006 and fastest selling exclusive Xbox game of all time
- A movie version was announce on March 20, 2007

Sony PlayStation 3

- Next generation game console released a year after XBox 360 (November 11, 2006 in Japan, November 17 U.S.)

Demand

- Predicted to be high, but priced at \$600 and \$500
- Includes built in Blu-Ray player, a new un-established technology that adds \$200 - \$300 per unit

Production

- Sony loses about \$240 per console (currently may lose about \$140)
- Initial announcement was for 400,000 launch units, but actual shipment was 40% short
- Severe lack of Blu-Ray laser diodes hindered production
- Newly created, complex Cel processor hindered production
- Rushed production resulted in a lack of exclusive games that continues to this day



Sony PlayStation 3

Verdict

- Sony shipped 1 million units to the U.S. by January 1, 2007, however many remain unsold
- Sold 5 million worldwide as of October 2007 (but not restricted by production)
- In the U.S. June 2007 the PS3 was outsold 4.4 to 1 by the Nintendo Wii and 2.2 to 1 by the XBox 360
- Release of new PS3 games continues to suffer, as low as 12 titles a month (game sales is where hardware costs are recouped)
- The PS3 is outsold by its predecessor the 7-year old PS2
- Inclusion of Blu-Ray and new Cel processor technology hindered initial production (and thus sales)
- Inclusion of Blu-Ray, high cost and lack of game titles hinders current demand
- Sony Game Division has lost about \$2 billion as of March 2007

Nintendo Wii

- Offering in the next generation game console market that is actually using older graphics and computing technology
- However, used a new concept in game controllers with motion detection features (still using old technology)
- Released September 14, 2006



Demand

- With less advanced hardware and a \$250 price aimed at average gamers and cost-conscious costumers
- The name is intended to imply "We" - a console for everyone

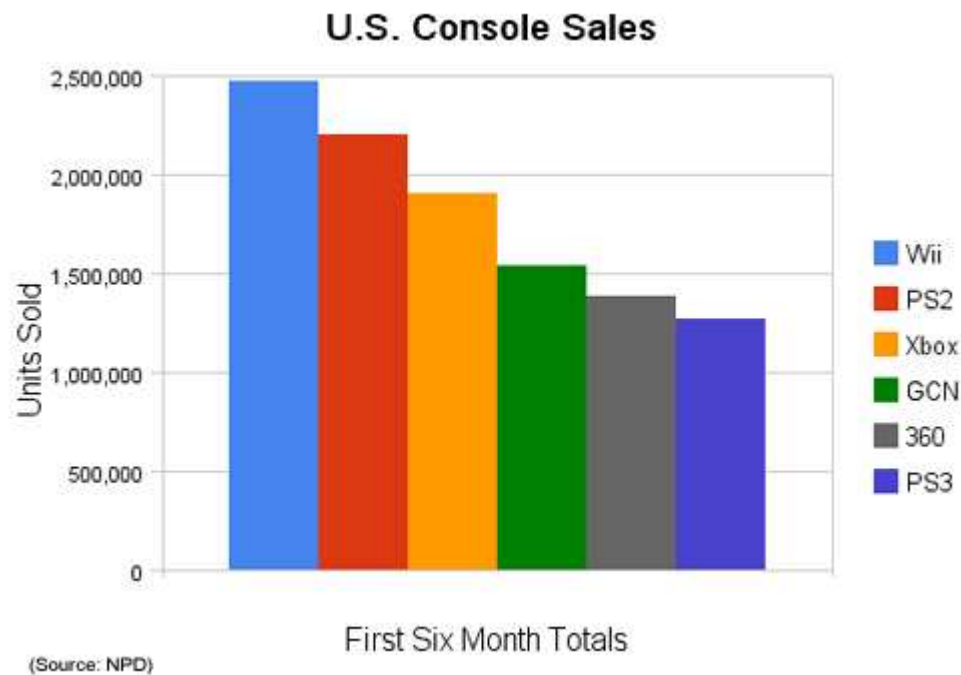
Production

- Since it uses older, more available hardware Nintendo can more easily produce in quantity
- In the U.S. sold 600,000 in the first eight days
- Wii motion controller actually scarce
- Monthly sales of Wii consoles are higher than all competitors across the globe
- Due to older, cheaper technology, Nintendo makes about \$50 per console

Nintendo Wii

Verdict

- In the first half of 2007 the Wii has sold more units in N.A. than XBox 360 and PlayStation 3 combined
- Despite being able to provide more units, Wii consoles are regularly sold out at stores
- By September 12, 2007 the Wii surpassed the XBox 360 to become the leader in worldwide console sales with 11.8 million worldwide
- Nintendo also makes money for each console sold, as opposed to Microsoft and Sony losses
- Older technology in the Wii is crushing all competition in both sales and profit



Summary

- Supply chain management is critical to success
- You must deliver
- Demand for new technology may not compare to demand for price and usability
- The U.S. video games industry is expected to make \$17-18 billion in 2007

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E-Commerce Implementation

Main Components

- Interface - How customers buy stuff
- Transaction Processing
- Database Maintenance - Inventory and invoices (typically heavily tied to Transaction Processing)
- Payment Processing

- Any component can be implemented by third-parties (an E-Commerce Host)
- Database of products is often not out-sourced though

Interface

- Often handled by Web sites (typically for customers)
- Can be handled using EDI
- Web Services allow systems to communicate over the Internet

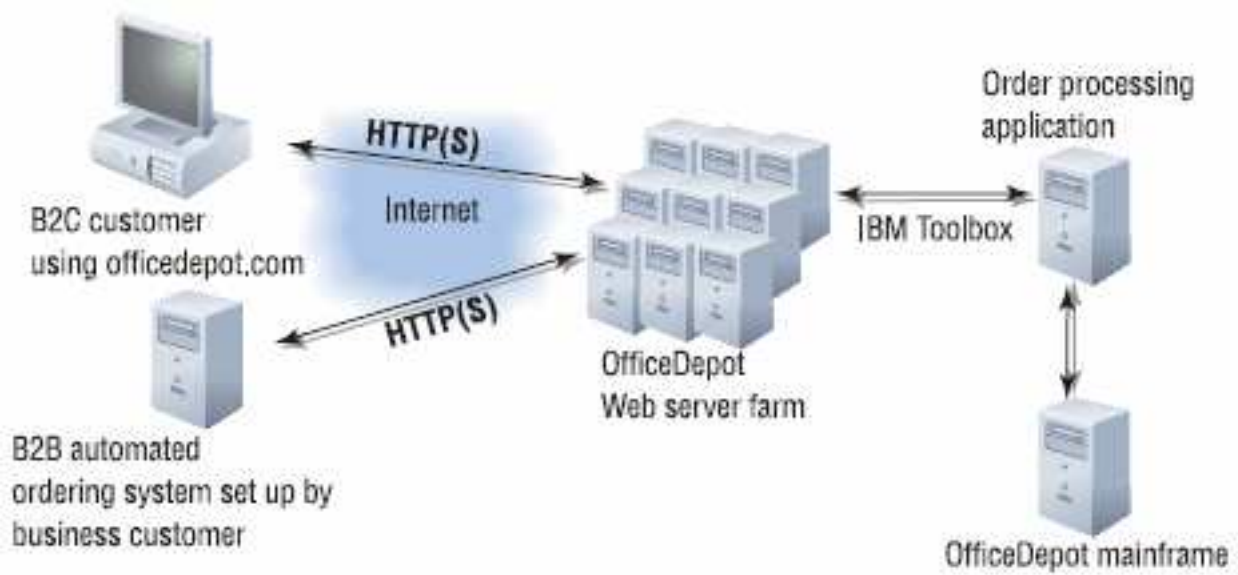
Payment Processing

- Fairly specialized systems linked with banks
- Need "Merchant Account" to use credit cards

Security Issues

- Authentication - Is user real? Is vendor real?
- Encryption - must encode transmitted data
- Protocols - SSL, HTTPS, TLS

E-Commerce Implementations



Credit Card Transactions

