
TIM 50 - Business Information Systems

Lecture 8

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UC Santa Cruz

10/24/2011

Outline

- Announcements
 - CISCO review
 - ERP
 - Student Presentation (news)
 - E-commerce
 - Alibris case
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Announcements

- Homework 2 due Monday 10/31
 - Forum
 - Topic: Is it possible for a publicly-held corporation in the U.S. today to be socially responsible?
 - Thought experiment
 - Reading for Wednesday
 - Messerschmitt Ch 4
-

Announcements

Forthcoming presentations

- 10/26

- ??

- ??

- 10/28

- ??

- ??

Announcements

2nd TA now on board

- Varun Raghavan (varun@soe.ucsc.edu) will be coordinating all business paper issues
 - Groups
 - Presenters
 - Topics to cover
 - Send me your presentation slides the night before
 - Failure to do so may result in loss of points
 - We plan to post all student presentations
 - If you want to edit before posting, send in an update
-

Cisco Summary

Success Factors

- Cross-Functional Team of top people
 - People from across the company involved
- Hungry Vendors
 - Oracle and KPMG needed this to succeed
- Strong Support from Top Management
- Favorable Hardware Contract
- Rapid Prototyping -conference room pilots
- Aggressive pace

Good management or luck? Or merely self-fulfilling outcome?

Cisco Summary

Challenges

- Poor testing Strategy
 - Inadequate Hardware
 - Software required more modifications than originally hoped.
 - Is such an emotional investment on the part of upper management healthy?
-

Cisco Summary

- What did it cost?
 - Costs Beyond original budget:
 - Non-IT Personnel In Project
80 personnel X 8 months X 160 hours / month X 100 hour = \$10 million
 - IT-Personnel beyond original 20
80 personnel X 4.5 months X 160 hours / month X 100 hour = \$5.7 million
 - Actually cost more than 15 million more than the original budget of \$15 million!
 - Was this really a success?!
-

Cisco Summary

- **Top Management made it a priority**
 - What effect did this have?
 - Were problems addressed, or merely suppressed?
 - **Rapid Iterative Prototyping?**
 - What was this?
 - Was it a good strategy?
 - Was aggressive pace good, or reckless?
 - **Project justification**
 - Did they do a RoR or NPV analysis to justify the project?
-

Review: Types of organizational applications

1. Departmental

- Supports a single functional department
- Example: An accounts management application for an accounting department.

2. Enterprise

- Support enterprise-wide processes and goals.
- Example: coordinate information between functional departments involved in fulfilling an order.
(or other cross-functional process.)

3. Commerce

- Supports the purchase/delivery of goods/services
 - Example: product support over the Internet
-

Student Presentation

- ??
- ?? (Case: Alibris)

Enterprise Resource Planning (ERP)

ERP applications: a networked computing application

- Sophisticated configuration tools and options
- Customizable to local tools

So what exactly is ERP??

1. *Business Modeling Tool*
 2. *- Or is it just a Business Model?*
 1. *We are still early in the life cycle of these tools: it may be both, or neither, and different products may be one or the other.*
-

Material (Manufacturing) Requirements Planning - MRP

- The precursor of ERP
 - MRP: A production planning and inventory control system
 - Take:
 - Product Demand forecasts
 - Inventory Balances
 - Replenishment Lead Times
 - Develop a production schedule for a single plant
-

A desire to Link Across Functional Departments



- Each functional department had its own *legacy* application
 - Programmed in different languages
 - Different data formats
- Often some data was shared between departments by duplicating it.

MRP evolves into ERP

- ERP applications support different business processes that are standardized across organizations
 - Accounting, sales, HRM, material management, CRM, supply chain management, project management, etc...
 - Key features:
 - Multi-functional
 - Integrated
 - Modular
-

Information Integration

- **Key issue**
 - **Should integrate different data/applications**
 - **CONSTRAINT: Legacy Applications**
 - Applications developed using obsolete technology and worked well for many years...
 - e.g., most commercial applications were built using COBOL
 - ...until unanticipated problems occurred
 - e.g., the Year 2000 (Y2K) problem
 - Some applications were built 40 years ago. Programmers of that era would have been shocked to learn their code would still be in use!
 - The programmers used last 2 digits to represent the year:
"1/1/00" => 1900 or 2000?
 - Y2K made many enterprises replace their legacy systems with ERP solutions
-

ERP

- How would you design an ERP?
- Collection of modules sharing/exchanging information, triggering remote events
- Design a user interface for each module
 - Ask user to fill in certain "fields" at particular times.
 - Set up a sequence of events
 - E.g. When the sales department enters an order, that event triggers an event at the manufacturing department.

Fundamental options

- **Build in-house?** *using a company's own funds, staff, or resources.*
- **Customize the off-the-shelf application to existing organization?** *refers to products that have already been designed and made*
- **Mold organization to off-the-shelf application?**
 - Adapt business processes to "Best practices"
 - When there exist compliance requirements or when process is a commodity
- **If all companies use the same "best practices" how can they gain competitive advantage?**

E-commerce

- The buying and selling, and marketing/servicing of products, services, and information over a variety of computer networks.

[O'Brien book]



E-Commerce

- **Major Categories**

- Consumer (B2C)

- Example: Amazon.com sells books to consumers.

- Inter-consumer (C2C)

- Example: e-bay, real estate

- Inter-enterprise (B2B)

- Example:??
-

E-Commerce Principal Steps

- **Matching buyers and sellers**
 - Who are the available sellers?
 - How do I decide?
- **Negotiating terms**
 - Terms and conditions, i.e. price, delivery
- **Consummation**
 - Order, Fulfillment, Payment
- **Customer service**
 - Assistance in usage, repair or replacements

Matching Buyers and Sellers

Information management

- **Catalog** (*pull model*)
 - Seller publishes (web) a catalog of goods and services
 - Willing buyers access at their initiative
- **Advertising** (*push model*)
 - Attach advertisements to other publications or web pages
 - Substantial source of revenue for web sites
 - Example: Spam mail, Banners
- **Intermediary Recommender**
 - Other users recommend a seller/item/service, forums
 - Examples?

Intermediaries?

- What roles should intermediaries play in the networked age?
 - Examples?
 - Amazon, eBay, Travelocity, etc.
 - What intermediary roles may change or even be eliminated?
 - Travel Agents?
 - Others?
-

Negotiating Terms

Social applications

- Fixed price? Why or why not?
 - Price based on buyer characteristics
 - History
 - Demographics
 - Behavior
 - Time
 - Availability of item/service
 - Examples?
 - Auctions - price *never* fixed.
-

Consummation

- **Order**

- Buyer conveys an order to the seller wrt the terms

- **Fulfillment**

- Seller conveys goods to buyer

- **Payment**

- Buyer conveys payment to seller

- **Security?**

- Need to ensure both fulfillment and payment occur
 - Use of intermediate
-

Payment options

(Topic of Chapter 14)

Account transfer authorization

Credit/debit card

Digital cash



What about security?

■ SET: Secure Electronic Transactions

- VISA & MasterCard Initiative
- Customer authentication
- Precludes merchant from seeing credit card number
- Precludes financial institutions from tracking purchases

Customer Support

- Often need to provide post-sales service to the customer
 - In person
 - Over telephone
 - Via Network
 - Email
 - Remote conferencing
 - FAQ board
 - Automatic distribution of new versions or patches
-

Customer Relationship Management

- The challenge of maintaining the relationship with a customer is called *Customer Relationship Management* (CRM)
 - CRM software applications seek to provide customer facing employees a complete view of each customer.
 - What they've bought and returned.
 - What problems they've reported.
 - What other agents they've talked to in the past.
 - An opportunity to add value.
-

Consumer e-commerce (B2C)

- What have you bought on the Internet, or what do you buy most often?
 - What are the advantages and disadvantages compared to a retail store or direct mail catalog?
-

Some Advantages

■ For the Consumer

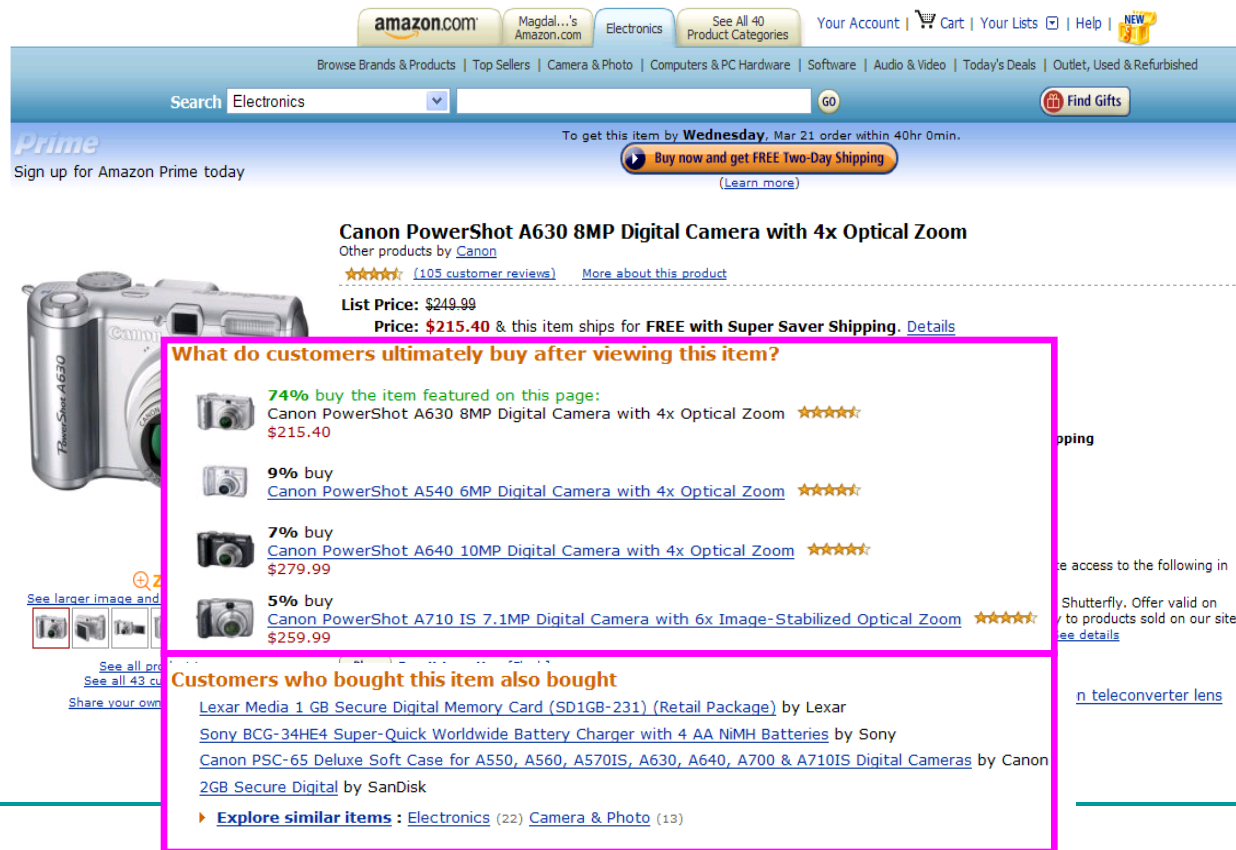
- ❑ Check prices at many vendors with minimal effort
- ❑ Anonymity
- ❑ Mass customization
- ❑ Order tracking
- ❑ Recommendations

■ For the Business

- ❑ Global reach
 - ❑ Automate order taking (cost savings)
 - ❑ Price Discrimination
-

Recommender Systems

How do they work?



The screenshot shows the Amazon.com interface for a Canon PowerShot A630 8MP Digital Camera. The page includes a search bar, navigation links, and a product listing with a price of \$215.40. A pink box highlights two recommendation sections: 'What do customers ultimately buy after viewing this item?' and 'Customers who bought this item also bought'. The first section lists related camera models with their respective purchase percentages and prices. The second section lists complementary products like memory cards, battery chargers, and soft cases.

Canon PowerShot A630 8MP Digital Camera with 4x Optical Zoom
Other products by [Canon](#)
★★★★★ (105 customer reviews) [More about this product](#)

List Price: \$249.99
Price: **\$215.40** & this item ships for **FREE with Super Saver Shipping**. [Details](#)

What do customers ultimately buy after viewing this item?

- 74% buy the item featured on this page:
Canon PowerShot A630 8MP Digital Camera with 4x Optical Zoom ★★★★★
\$215.40
- 9% buy
Canon PowerShot A540 6MP Digital Camera with 4x Optical Zoom ★★★★★
- 7% buy
Canon PowerShot A640 10MP Digital Camera with 4x Optical Zoom ★★★★★
\$279.99
- 5% buy
Canon PowerShot A710 IS 7.1MP Digital Camera with 6x Image-Stabilized Optical Zoom ★★★★★
\$259.99

Customers who bought this item also bought

- [Lexar Media 1 GB Secure Digital Memory Card \(SD1GB-231\) \(Retail Package\)](#) by Lexar
- [Sony BCG-34HE4 Super-Quick Worldwide Battery Charger with 4 AA NiMH Batteries](#) by Sony
- [Canon PSC-65 Deluxe Soft Case for A550, A560, A570IS, A630, A640, A700 & A710IS Digital Cameras](#) by Canon
- [2GB Secure Digital](#) by SanDisk

▶ **Explore similar items** : [Electronics](#) (22) [Camera & Photo](#) (13)

Recommender Systems

- Find users with similar interests/purchases/visits
 - See what they have bought/visited/liked that you haven't bought/visited (yet)
 - Suggest them!
-
- Are smart websites the only example of this?
-

Inter-Consumer E-commerce (C2C)

- What value does something like E-bay add over a simple classifieds listing like craigslist?
 - Ratings of both buyers and sellers
 - Anything else?
 - Potential problems?
-

C2C Examples



Inter-Enterprise E-Commerce (B2B)

- *Procurement*
 - One enterprise purchases goods or services from another
- *Direct Procurement*
 - Ongoing, consistent, and scheduled procurement
- The relationship between firms involved in direct procurement often called a *Supply Chain*
- The set of problems associated with managing a supply chain is called *Supply Chain Management (SCM)*

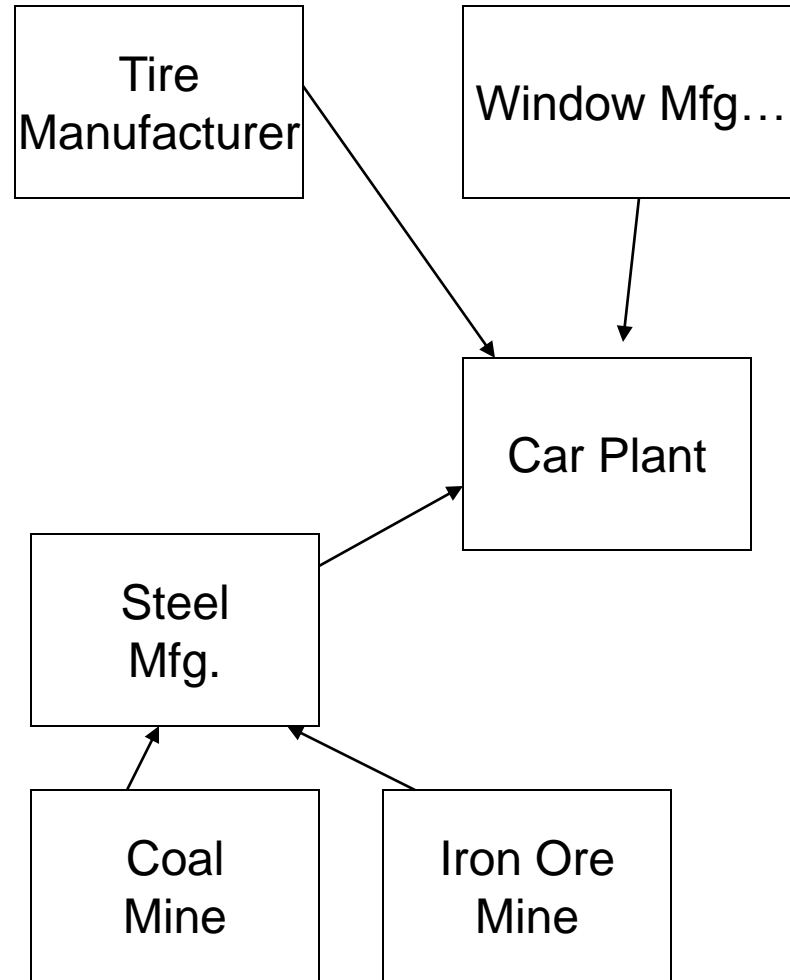
SCM

Need to manage the procurement of parts

- Don't run out of any one
- Don't order too many
- Order far enough in advance

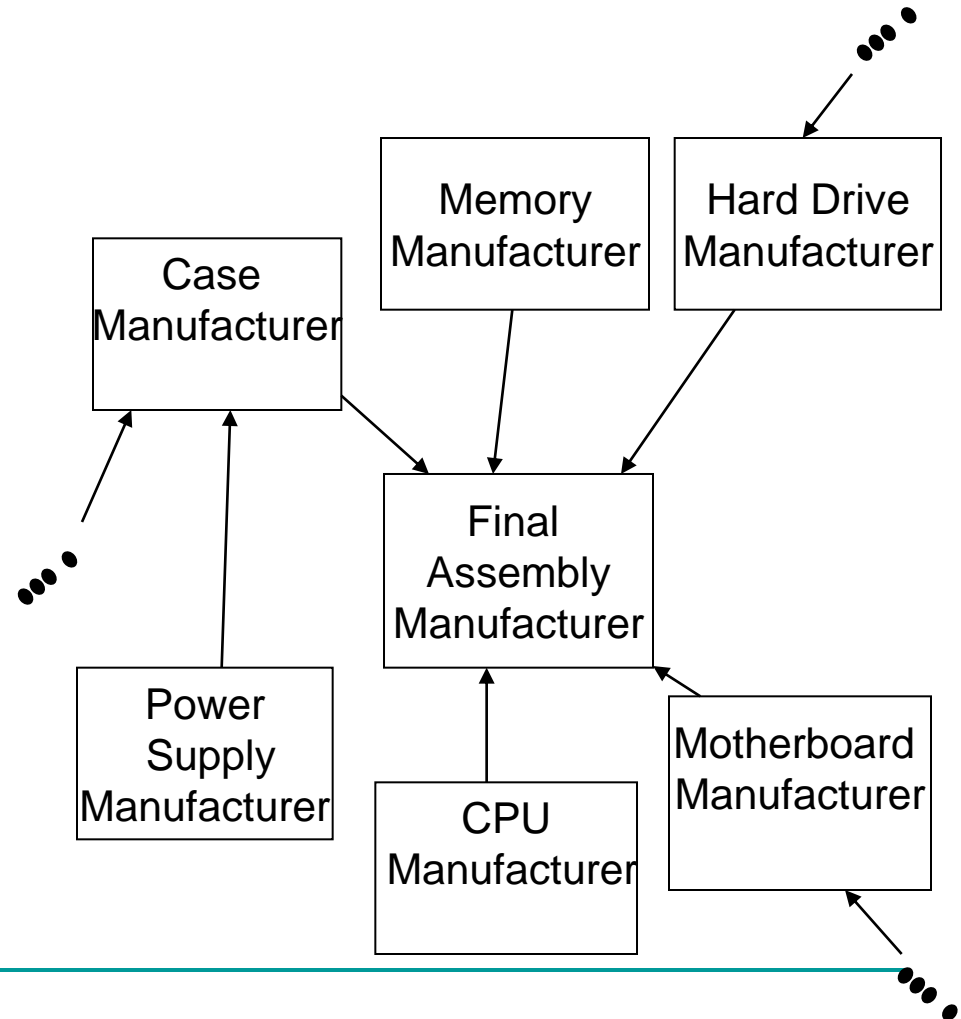
Ideally

- Know in advance
 - # cars
 - features



SCM

- Thousands of orders per day, each with different requirements!
- Adjusting orders from suppliers constantly according to demand
- Minimal inventories
 - Cut costs
 - Much more sensitive to errors or disruptions
 - Acceptable risk?
- mass customization (example Dell) requires sophisticated SCM



Networked Computing in direct procurement

- *Electronic Data Interchange (EDI)*
 - Exchange order information between firms involved in direct procurement
 - Existed since 70's
 - Usually large firms who could afford proprietary communication links
 - Initially order and invoice
 - *Financial EDI (FEDI)* later added EFT payment capability (electronic funds transfer)
-

Networked Computing in direct procurement

- XML (Extensible Markup Language) is another data interchange format making an impact on inter-enterprise commerce
 - (We will talk more about this later in the quarter)



Indirect Procurement

- Sporadic purchase of goods and services to support organizational objectives
 - Example: Office Furniture



Alibris

The screenshot shows the Alibris website interface within a Mozilla Firefox browser window. The browser's address bar displays "http://www.alibris.com/". The website header includes the Alibris logo and navigation links for "books", "movies", and "music". A search bar is located on the left side, with options to search by title, author, or subject. The main content area features a "USED BOOKS" section with a featured book, "ERASED" by Marilee Strong. Below this, there are promotional banners for "more MUSIC! better MOVIES! lucky YOU!" and "turn up the MUSIC". A "BOOKS YOU MIGHT LIKE" section lists several titles, including "Grace (Eventually): Thoughts on Faith" by Anne Lamott, "Home: A Memoir of My Early Years" by Julie Andrews, "Then We Came to the End" by Joshua Ferris, "The Bin Ladens: An Arabian Family in the American Century" by Steve Coll, and "Everyday Food: Great Food Fast" by Martha Stewart Living Magazine. On the right side, there is a "browse" section with "OUR STAFF PICKS IN ..." and a "USED TOP SELLERS" list. The bottom of the page shows the Windows taskbar with various open applications and the system clock displaying 5:19 PM.

Alibris: Used Books, Used Textbooks, Rare & Out-of-Print Books - Mozilla Firefox

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search all sellers in
Books
by title / ISBN
by author
by subject
GO
advanced search
books movies
pop/jazz classical

enjoy the MOVIES
screen our enhanced movie site

turn up the MUSIC
give our new music site a spin

FREE SHIPPING
search for eligible books

DISCOUNT SHIPPING
order one two books from the same seller

Write a review
WIN A \$100 GIFT
GET STARTED!

account
your shopping cart
order status
wish list
book fetch
order history
preferences

books movies music
NEW BOOKS OF NOTE | COLLEGE TEXTBOOKS | BARGAIN BOOKS | RARE BOOKS

as good as new
USED BOOKS

Fascinating and true, *Erased: Missing Women, Murdered Wives* is a brilliantly written, dramatic revelation, exposing what's behind today's stories of missing and mysteriously murdered women. Investigating sensational recent cases like that of Scott Peterson as well as renowned and remarkable killings from previous decades, Strong probes the darker areas of human psychology to reveal what is really going on behind the seemingly endless stream of these cases.
> more new books of note

more MUSIC! better MOVIES! lucky YOU!
We've just zapped up our music selections and premiered enhanced movie offerings.
> see what's new in music
> see what's new in movies

BOOKS YOU MIGHT LIKE

Grace (Eventually): Thoughts on Faith
by Anne Lamott
In "Grace (Eventually)," the bestselling author of "Traveling Mercies" and "Plan B" delivers a poignant, funny, and bittersweet primer of faith, as she comes to discover what it means to be fully... > read more

Home: A Memoir of My Early Years
by Julie Andrews
Many know Julie Andrews from "The Sound of Music" and "Mary Poppins." In this memoir, she looks back on her early years with an aspiring Vaudeville mom and a loving dad and her role in "Camelot" with... > read more

Then We Came to the End
by Joshua Ferris
Every office is a family of sorts, and the ad agency Ferris brilliantly depicts in his debut novel is a family at its strangest and best, coping with a business downturn in the time-honored way... > read more

The Bin Ladens: An Arabian Family in the American Century
by Steve Coll
Two-time Pulitzer Prize winner and author of the national bestseller "Ghost Wars," Steve Coll presents the story of the Bin Laden family's rise to power and privilege, revealing new information to... > read more

Everyday Food: Great Food Fast
by Martha Stewart Living Magazine
In the first book from the award-winning magazine "Everyday Food," which reaches more than 850,000 readers monthly, comes this collection of 200

browse

OUR STAFF PICKS IN ...
Fiction: juvenile, literary, mystery, romance, sci-fi
Nonfiction: biography, history, religion, cooking, sports & leisure

Also at the movies, audiobooks, award winners, books on books
> browse all subjects
> top-selling authors

USED TOP SELLERS

1. 90 Minutes in Heaven: A True Story of Death & Life
by Don Piper & Cecil B. Murphy
2. I Am Legend
by Ian McEwan
3. Atonement
by Ian McEwan
4. The Pillars of the Earth
by Ken Follett
5. The Giver
by Lois Lowry
6. Biology
by Jane Reece and Neil Campbell
7. The Biggest Loser: The Weight-Loss Program to Transform Your Body, Health, and Life
by Maggie Greenwood-Robinson
8. Three Cups of Tea: One Man's Mission to Promote Peace... One

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Alibris

- How is Alibris different from eBay?
- ...from Amazon?