

The Economics of E-commerce and Technology

Reputation

Reputation

- ▶ **Reputations are essential with experience goods**
 - ▶ Where experience good after buying
- ▶ **Reputation performs two functions**
 - ▶ Allow people to learn about quality of product
 - ▶ Discipline bad behavior
- ▶ **Offline**
 - ▶ Long term relations, word-of-mouth, legal system
- ▶ **Online reputation mechanisms**
 - ▶ eBay – buyers and sellers rate each other
 - ▶ Yelp – customers review restaurants
 - ▶ Peer-to-peer networks – rate user's contribution to system

Reputation Mechanisms

▶ Challenges

- ▶ Encourage participation
- ▶ Extract accurate, useful information
- ▶ Avoid strategic manipulation

▶ Information technology allows for precise management

- ▶ What type of information is solicited?
- ▶ When should it be solicited?
- ▶ How is information aggregated?
- ▶ What information is made available, and to whom?

▶ Examples

- ▶ Detailed information (surveys) vs. positive/negative?
- ▶ How filter out suspect reviews? Weight by trustworthiness?
- ▶ Provide recent reviews or entire history? (eBay vs. Yelp)

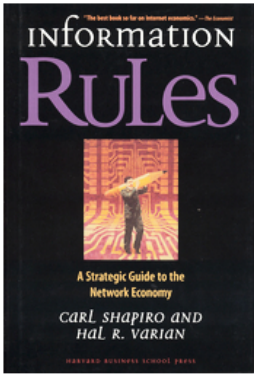
The eBay logo is displayed in white text on a dark blue background. It is positioned on the right side of a horizontal white bar that spans across the middle of the slide. The bar has a thin white border and a small blue vertical bar on its left end.

Typical eBay page

ebay Shop by category All Categories Search Advanced

[Back to search results](#) | Listed as **Information Rules : A Strategic Guide to the Network Ec...** in category: [Books](#) > [Textbooks, Education](#)

FREE SHIPPING



INFORMATION Rules
A Strategic Guide to the Network Economy
CARL SHAPIRO AND HAL R. VARIAN
HARVARD BUSINESS SCHOOL PRESS

INFORMATION RULES - HAL R. VARIAN CARL SHAPIRO (HARDCOVER) NEW

Item condition: **Brand New**

Price: **US \$28.37**

Bill Me Later New customers get \$10 back on 1st purchase. Subject to credit approval. [See terms](#)

Shipping: **FREE** Standard Shipping | [See details](#)
Item location: **Indian Trail, North Carolina, United States**
Ships to: **Worldwide** [See exclusions](#)

Delivery: Estimated between **Thu. Aug. 15 and Wed. Aug. 21**
Includes **5 business days** handling time after receipt of cleared payment.

Payments: **PayPal**, Bill Me Later | [See details](#)

Returns: **30 days** money back, buyer pays return shipping | [Read details](#)

Buyer Protection
Covers your purchase price plus original shipping.
[Learn more](#)

Seller information
moviemars-books (255043) **me**
99.1% Positive feedback
[Save this seller](#)
[See other items](#)
Visit store: **MovieMars Books**

NEW
BETA
Stuff by **ebay**
Keep track of all your shipments in one place
[Watch the video](#)

AdChoice

Reputation and eBay

- ▶ eBay has first-mover advantage
 - ▶ Does not guarantee success: Altavista, WordPerfect
 - ▶ Reputation system is key part of success
- ▶ Reputation system protects buyers
 - ▶ Is good delivered promptly?
 - ▶ Is good as described?
 - ▶ Outright fraud?
- ▶ System creates switching costs for reputable sellers
- ▶ More important as eBay increases high-values sales
 - ▶ Art, cars, houses, land

How Valuable is Seller Reputation?

- ▶ **Reputation is useful [for postcards]**
 - ▶ Having 2000 positive feedbacks and 1 negative yields 8% higher prices than having 10 positive feedbacks
 - ▶ When have little feedback, negatives make little difference. Reflects cheapness of online profiles.
- ▶ **After receive first negative feedback**
 - ▶ Weekly sales rates goes from +7% to -7%
 - ▶ Subsequent negative feedback arrives 25% more rapidly
- ▶ **Seller exit**
 - ▶ Exit more likely when reputation is low
 - ▶ Just before exit, sellers receive lots of negative feedback

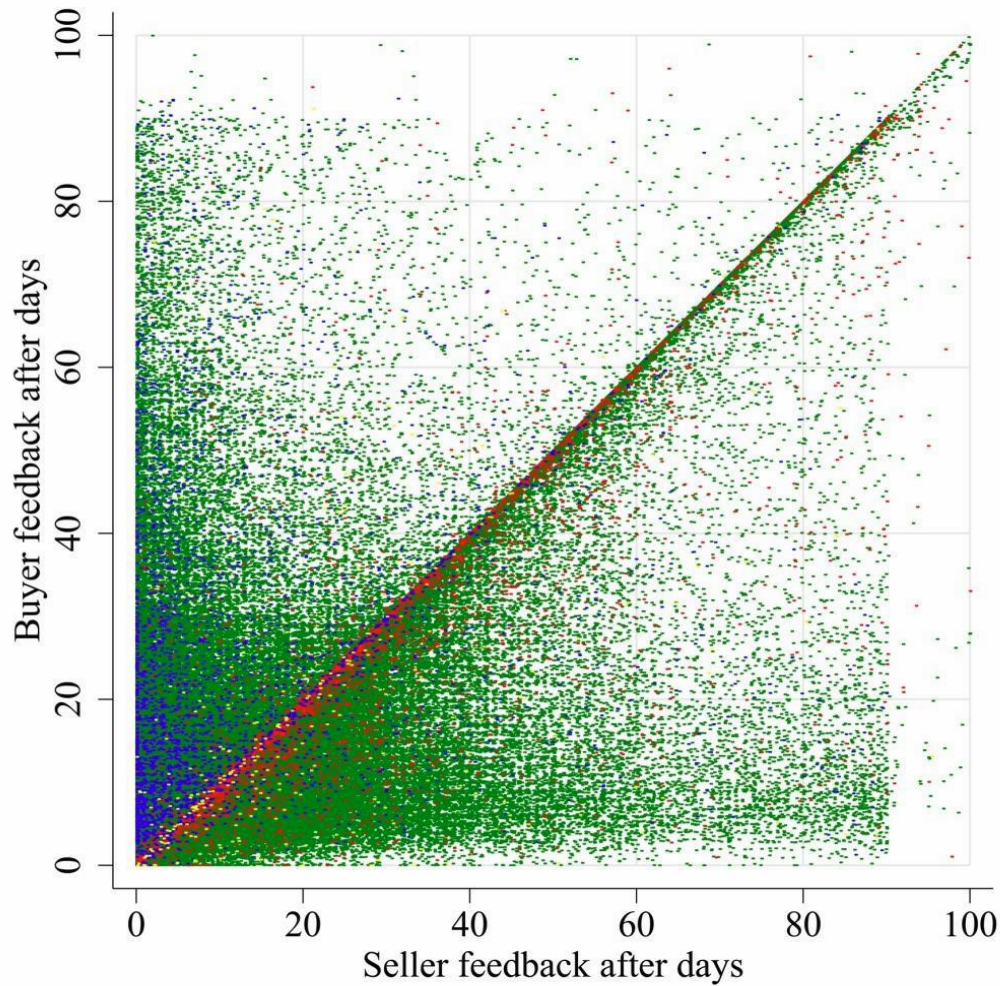
How Valuable is Seller Reputation?

- ▶ It's also valuable to be a “powerseller” or a “store”.
- ▶ Saeedi (2012), looks at iPod prices:

	Average Prices		Fitted Values	
	All iPods	New iPod Nano	Average Item	New, Nano, 8GB
All Sellers	\$131.81	\$132.95	\$136.51	\$135.34
Non-Powersellers & Non-Store	\$130.70	\$130.15	\$122.18	\$131.19
Stores	\$135.96	\$134.09	\$128.80	\$139.96
Powersellers	\$134.95	\$137.44	\$137.79	\$140.90
Powersellers & Stores	\$139.90	\$135.29	\$145.35	\$142.09

Does Reputation Work?

- ▶ **Baseball card market on Ebay**
 - ▶ Graded card: Ken Griffey Jr worth \$1200 for 10, \$150 for 9, \$60 for 8.
- ▶ **Graded market**
 - ▶ Reputation of seller doesn't matter.
- ▶ **Ungraded market**
 - ▶ Higher claims lead to higher prices: \$90 for 10, \$70 for 9, \$50 for others.
 - ▶ 10 claim not credible: should get card graded
 - ▶ When tested, quality independent of claims.
 - ▶ High claims had higher frauds (hit and run strategy).
 - ▶ Buyers and sellers of 10's less experienced
- ▶ **Role of eBay reputation**
 - ▶ High reputation less likely to claim "10"
 - ▶ Raises probability of sale, but not prices
 - ▶ Fixing claim, reputation has no effect on quality, lowers prob of fraud



- Mutually positive feedback (N=451,227)
- Only buyer left bad feedback (N=2,884)
- Mutually bad feedback (N=5,279)
- Only seller left bad feedback (N=357)

Categories

Computers/Tablets & Networking (46)

Computer Components & Parts (36)

iPads, Tablets & eBook Readers (8)

Other (2)

Drives, Storage & Blank Media (2)

Books (41)

Other (41)

Everything Else (23)

Other (23)

[See all categories](#)

Format

see all

- All Listings
- Auction
- Buy It Now

Condition

see all

- New (82)
- Used (37)
- Not Specified (25)

Price

\$ to \$ >>

Item Location

- on eBay.com
- US Only
- North America
- Worldwide

Show only

see all

- Expedited shipping
- Returns accepted
- Free shipping
- Completed listings
- Sold listings

[More refinements...](#)

Seller Information

[hardwaresaler](#) (2053) | |

Feedback rating: 2.053
Positive Feedback: 99.5%
Member since Nov-28-09 in United States

[Read feedback profile](#)
[Add to my favorite sellers](#)
[Visit seller's eBay Store!](#)
 [Hardwaresaler](#)

MY GADGETS SWEEPSTAKES

OVER \$35K IN PRIZES

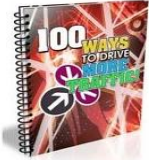

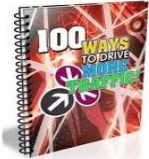



Enter for a chance to win the ultimate gadget collection

All Listings Auction Buy It Now

Sort: Best Match

View:

124 results [★ Save search](#)

 100 Ways to Drive More Traffic!	<p>100 ways how to get traffic to your website learn - pdf - EBOOK</p>	<p>10h left Thursday, 4AM</p>	<p>\$0.06 2 bids Free shipping</p>
 NEW Samsung Galaxy S3 SIII i747 LCD Touch Screen Digitizer Assembly White	<p>One-day shipping available</p>		<p>\$177.95 Buy It Now Free shipping</p>
 100 Ways to Drive More Traffic!	<p>100 ways to get traffic website increase traffic to your ecommerce awesome ebook</p>	<p>10h left Thursday, 4AM</p>	<p>\$0.06 2 bids Free shipping</p>
 100 Ways to Drive More Traffic!	<p>100 ways to get traffic your website increase Traffic ecommerce ebook</p>	<p>10h left Thursday, 4AM</p>	<p>\$0.11 3 bids Free shipping</p>
 NEW OEM Samsung Galaxy S3 III T999 i747 LCD Screen Assembly GlassFrame White	<p>One-day shipping available</p>		<p>\$183.95 Buy It Now Free shipping</p>
 Unlimited Talk/Text /Web - Solavei Service FOR \$49 (No contract)		<p>10h left Thursday, 4AM</p>	<p>\$0.01 0 bids Free shipping</p>

Problems with Ebay Reputation

- 1. Feedback not sufficiently rich**
 - ▶ Feedback often concerns time to delivery, not quality of card
 - ▶ Detailed review expires after 90 days
- 2. Easy to build up reputation**
 - ▶ Market for feedback: buy “positive feedback book” \$0.25
 - ▶ Build up as buyer, then become seller
- 3. Feedback is bilateral**
 - ▶ Buyers fear retaliation from sellers
- 4. Reputation could be more informative**
 - ▶ Weight by value of transaction
 - ▶ Weight by experience of buyer
 - ▶ Weight by recentness

Theory

Reputation and Learning

- ▶ Reputation provides information about underlying quality
 - ▶ Helps solve “adverse selection”
 - ▶ Epinions, Amazon’s reviews
- ▶ Example: Product is ‘high’ or ‘low’ quality with equal prob
 - ▶ High product yields $v=10$ with prob $\frac{3}{4}$, and $v=0$ with prob $\frac{1}{4}$
 - ▶ Low product yields $v=10$ with prob $\frac{1}{4}$, and $v=0$ with prob $\frac{3}{4}$
- ▶ First customer
 - ▶ Willing to pay: $\Pr(\text{high})U(\text{high}) + \Pr(\text{low})U(\text{low}) = \5
- ▶ Second customer (if first liked product)
 - ▶ Bayes rule: $\Pr[\text{high}|v_1=10] = \frac{3}{4}$
 - ▶ Willing to pay: $\Pr(\text{high})U(\text{high}) + \Pr(\text{low})U(\text{low}) = \$6\frac{1}{4}$
 - ▶ What if first did not like the product?

Reputation and Discipline

- ▶ Reputation punishes bad behavior (“moral hazard”)
 - ▶ Helps overcome eBay rating, restaurant hygiene
- ▶ Firm chooses high effort (cost c_H) or low effort (c_L)
 - ▶ Benefit to customers: $v_H > v_L$. But agent does not see effort.
 - ▶ Firm then chooses price to charge agent.
 - ▶ Assume high effort is socially optimal: $v_H - c_H > v_L - c_L$
- ▶ What happens in one-shot game?
- ▶ Repeated game with discount rate δ
 - ▶ Suppose customers use “grim trigger” punishment: Pay up to v_H if never cheated; only pay v_L if ever cheated before
- ▶ High effort sustainable if firm patient (i.e. δ high):

$$\frac{1}{1-\delta}(v_H - c_H) \geq (v_H - c_L) + \frac{\delta}{1-\delta}(v_L - c_L)$$

Punishment schemes

- ▶ Is punishment severe enough to deter defection?
- ▶ Is punishment credible? Subgame perfect? Renegotiation proof?
 - ▶ Is punishment optimal after defection?
 - ▶ Credible not to renegotiate?
- ▶ When to punish?
 - ▶ Is deviation deliberate or by mistake?
- ▶ How do you recover from mistakes?

Cooperation harder to enforce when:

- ▶ Harder to detect defection (e.g. more randomness)
- ▶ Longer to detect defection (e.g. time to review)
- ▶ Harder to coordinate punishment (e.g. diffuse community)
- ▶ Higher benefits from defection (e.g. high value goods)
- ▶ Demand high (e.g. selling Wii's before Christmas)
- ▶ Firm is less patient (e.g. firm is failing)
- ▶ Re-entry is easy
- ▶ Ambiguity about what is acceptable behavior

Eliciting Feedback



Coming Soon

In theaters December 14.

[Get Showtimes](#) | [Watch Trailer](#) »



The Hobbit: An Unexpected Journey (2012)



[Adventure](#) | [Fantasy](#) - [14 December 2012 \(USA\)](#)



Your rating: ★★★★★★★★★★ -/10

Ratings: **9.3/10** from 4,437 users

Reviews: [write review](#)

A curious Hobbit, Bilbo Baggins, journeys to the Lonely Mountain with a vigorous group of Dwarves to reclaim a treasure stolen from them by the dragon Smaug.

Director: [Peter Jackson](#)

Writers: [Fran Walsh](#) (screenplay), [Philippa Boyens](#) (screenplay), [and 3 more credits](#) »

Stars: [Martin Freeman](#), [Ian McKellen](#) and [Richard Armitage](#)
| [See full cast and crew](#)

Designing Reputation Mechanisms

- ▶ **What type of information should be solicited?**
 - ▶ Positive/negative (Rotten Tomatoes), ratings out of 5 (Yelp), detailed surveys (eBay), freeform (Yelp)
- ▶ **How encourage participation**
 - ▶ Pay for feedback (Angie's List), prestige (Yelp), Matching (Netflix)
- ▶ **How obtain high quality reviews?**
 - ▶ Review the review (Yelp), or review the reviewer (Amazon).
- ▶ **How prevent strategic manipulation?**
 - ▶ Cross-check reviews, Use robust statistics
- ▶ **How is information aggregated?**
 - ▶ Weight more recent higher? Weight reviews by rating?
- ▶ **Punishing bad behavior**
 - ▶ Make re-entry harder, reduce time until reviews posted

The Trust Business

The Trust Business

- ▶ For many firms their reputation is most important asset
 - ▶ Financial firms (banks, life insurance, market makers)
 - ▶ Experience goods (Intel, Odwalla, Toyota)
- ▶ **Banks**
 - ▶ Banks invest money in long-term projects (e.g. mortgages)
 - ▶ If people believe bank will fail, this causes bank run
 - ▶ Failure becomes self-fulfilling
- ▶ **Intel**
 - ▶ In 1994 covered up Pentium bug
 - ▶ Refused to replace when discovered
- ▶ **Odwalla**
 - ▶ E. coli outbreak in 1996, led 66 people to become sick
 - ▶ Recall cost \$6.5m (revenue \$59m) and started to pasteurize

Enron

- ▶ **Market cap of \$60bn at end of 2000**
 - ▶ Hid \$8bn of debts and went bankrupt by end of 2001
 - ▶ Why aren't profitable parts of Enron still in business?
- ▶ **Enron's Business**
 - ▶ Long-term contracts for natural gas (and chemicals, metal etc)
 - ▶ Enron acted as middleman - party to every transaction
 - ▶ Every trader has credit exposure to Enron
- ▶ **What happened?**
 - ▶ At start of scandal Enron started to look shaky
 - ▶ Bid-Ask spread widened because of credit risk
 - ▶ Enron's profits fell, further increasing credit risk
- ▶ **Lesson: loss of trust cannot be contained**
 - ▶ It can spill into all aspects of firm's operations