

# 電子商務安全

## Secure Electronic Commerce

網路消費者行為、市場研究與廣告  
(Online Consumer Behavior, Market Research,  
and Advertisement)

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# Syllabus

週次 月／日 內容 (Subject/Topics)

- 1 100/02/18 電子商務安全課程簡介  
(Course Orientation for Secure Electronic Commerce)
- 2 100/02/25 電子商務概論 (Introduction to E-Commerce)
- 3 100/03/04 電子市集 (E-Marketplaces)
- 4 100/03/11 電子商務環境下之零售：產品與服務  
(Retailing in Electronic Commerce: Products and Services)
- 5 100/03/18 網路消費者行為、市場研究與廣告  
(Online Consumer Behavior, Market Research, and  
Advertisement)
- 6 100/03/25 電子商務 B2B、B2C、C2C (B2B, B2C, C2C E-Commerce)
- 7 100/04/01 Web 2.0, Social Network, Social Media
- 8 100/04/08 教學行政觀摩日
- 9 100/04/15 行動運算與行動商務 (Mobile Computing and Commerce)
- 10 100/04/22 期中考試週

# Syllabus (cont.)

週次 月／日 內容 (Subject/Topics)

- |    |           |   |
|----|-----------|---|
| 11 | 100/04/29 | 電子商務安全 (E-Commerce Security)  |
| 12 | 100/05/06 | 數位憑證 (Digital Certificate)  |
| 13 | 100/05/13 | 網路與網站安全 (Network and Website Security)  |
| 14 | 100/05/20 | 交易安全、系統安全、IC卡安全、電子付款<br>(Transaction Security, System Security, IC Card Security,<br>Electronic Commerce Payment Systems) |
| 15 | 100/05/27 | 行動商務安全 (Mobile Commerce Security)   |
| 16 | 100/06/03 | 電子金融安全控管機制<br>(E-Finance Security Control Mechanisms)   |
| 17 | 100/06/10 | 營運安全管理 (Operation Security Management)  |
| 18 | 100/06/17 | 期末考試週   |

# **Chapter 4**

## **Online Consumer Behavior, Market Research, and Advertisement**

Source: Turban et al.,  
Introduction to Electronic Commerce,  
Third Edition, 2010, Pearson

# LEARNING OBJECTIVES

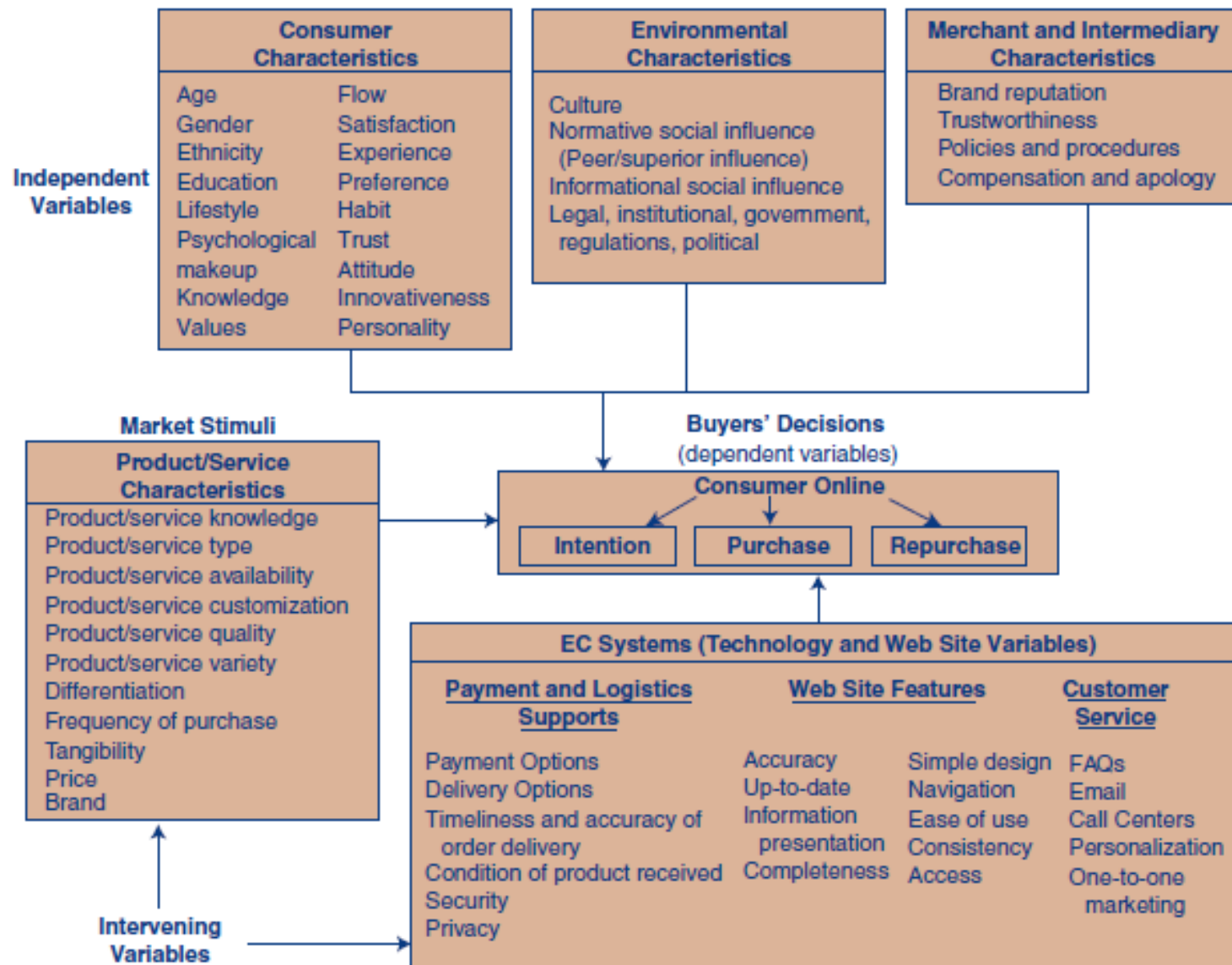
1. Understand the **decision-making process** of consumer purchasing online.
2. Describe how companies are building **one-to-one relationships** with customers.
3. Explain how **personalization** is accomplished online.
4. Discuss the issues of **e-loyalty** and **e-trust** in EC.
5. Describe **consumer market research** in EC.
6. Describe the objectives of Web advertising and its characteristics.

# LEARNING OBJECTIVES

7. Describe the **major advertising methods** used on the Web.
8. Understand how **advertising** is done in **social networks** and the **Web 2.0 environment**.
9. Describe various **online advertising strategies** and types of **promotions**.
10. Describe **permission marketing, ad management, localization**, and other advertising-related issues.

# **LEARNING ABOUT CONSUMER PURCHASING ONLINE**

## EXHIBIT W4.1.1 EC Consumer Behavior Model





# TRA (1975)

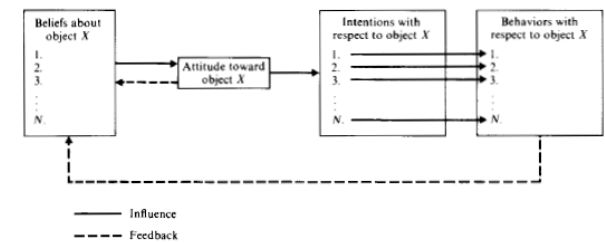


Fig. 1.1 Schematic presentation of conceptual framework relating beliefs, attitudes, intentions, and behaviors with respect to a given object.

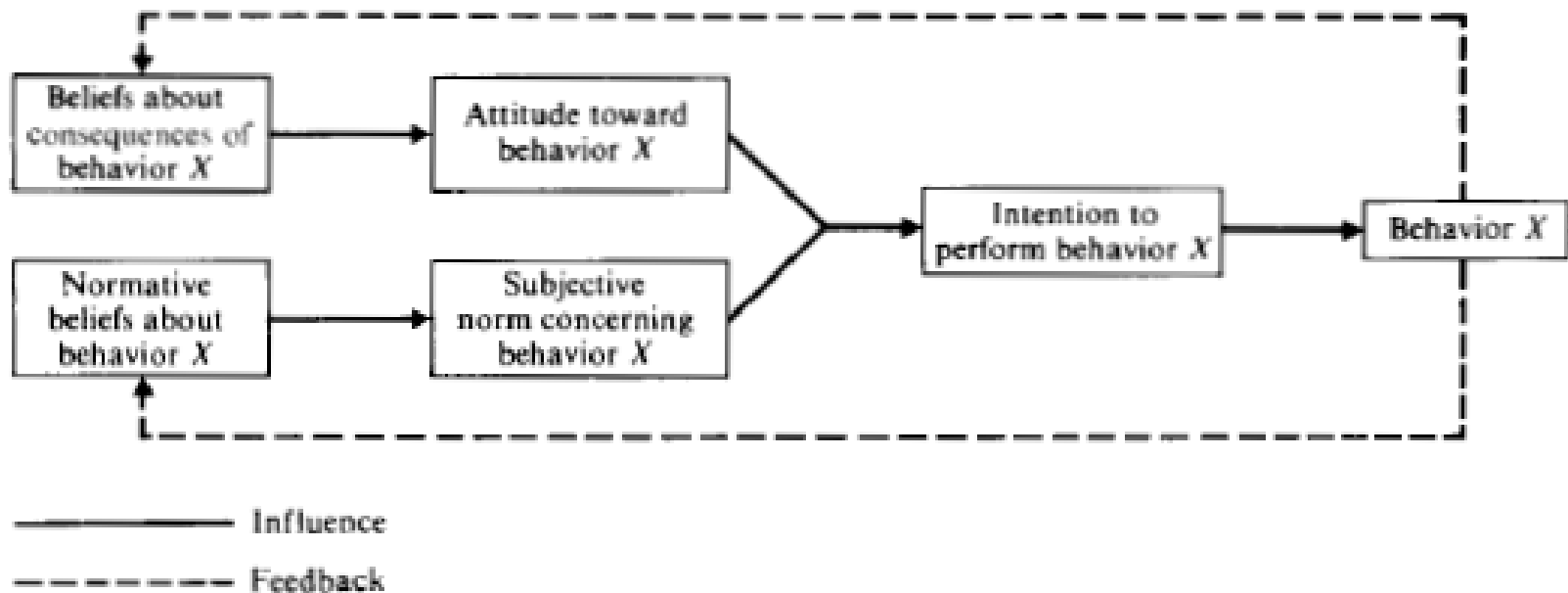


Fig. 1.2 Schematic presentation of conceptual framework for the prediction of specific intentions and behaviors.

# TRA (1989)

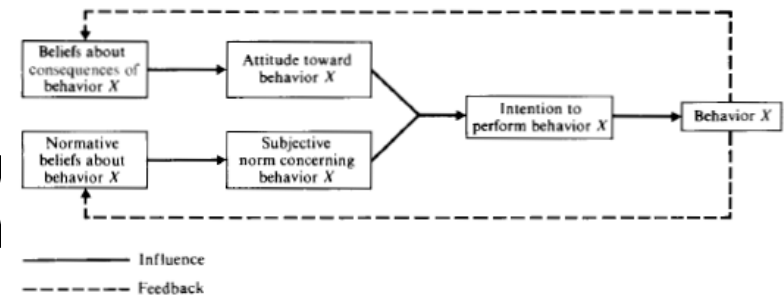


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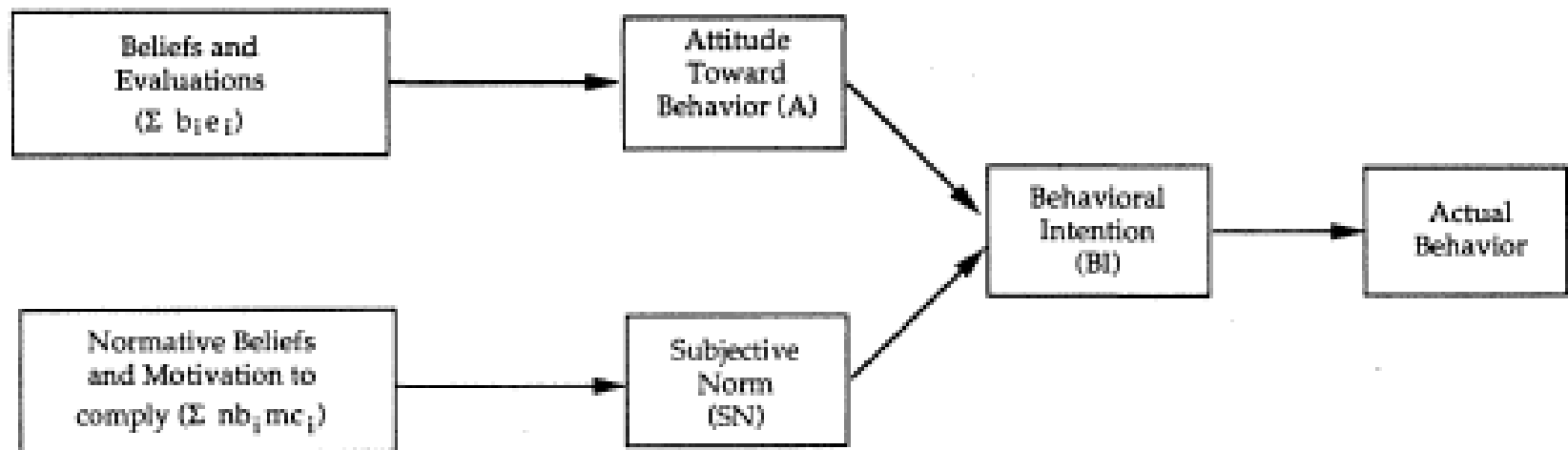


FIGURE 1. Theory of Reasoned Action (TRA).

# TPB (1985)

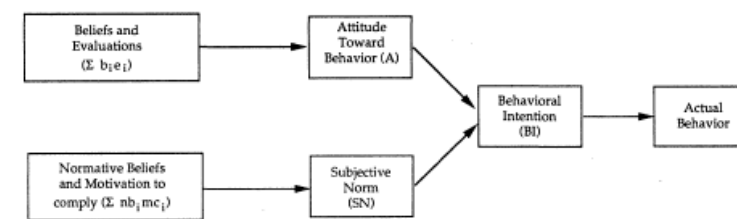


FIGURE 1. Theory of Reasoned Action (TRA).

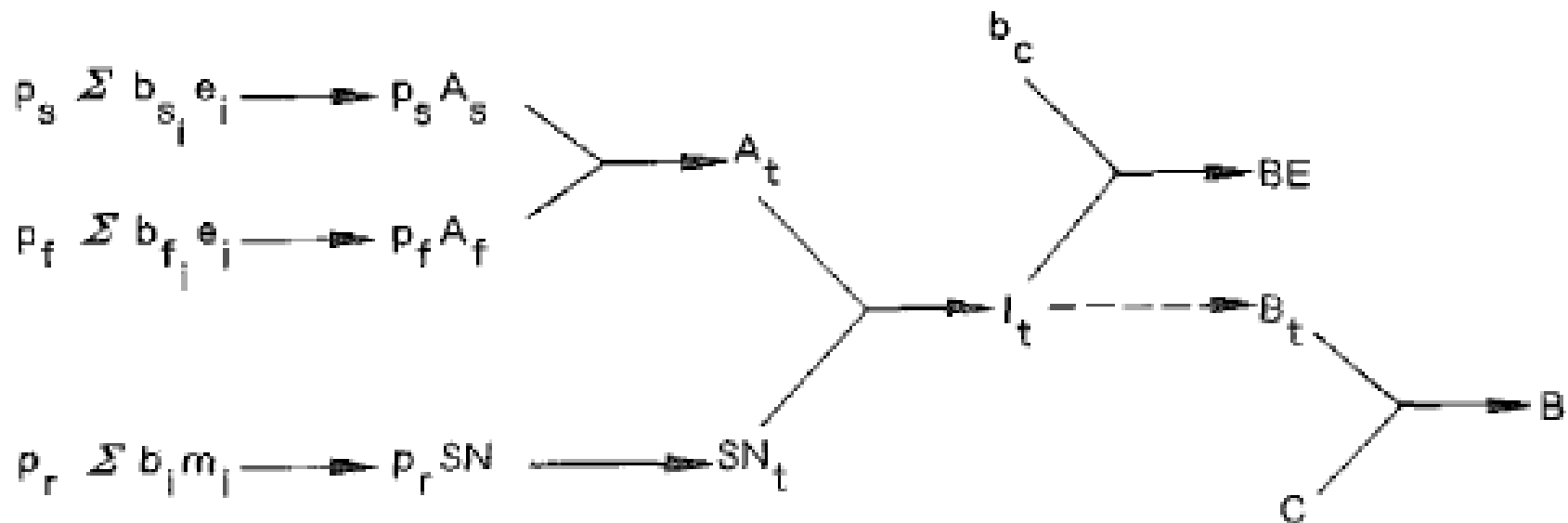


Fig. 2.1. Schematic presentation of the theory of planned behavior

# TPB (1989)

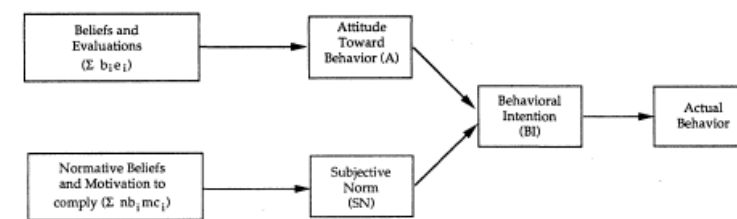


FIGURE 1. Theory of Reasoned Action (TRA).

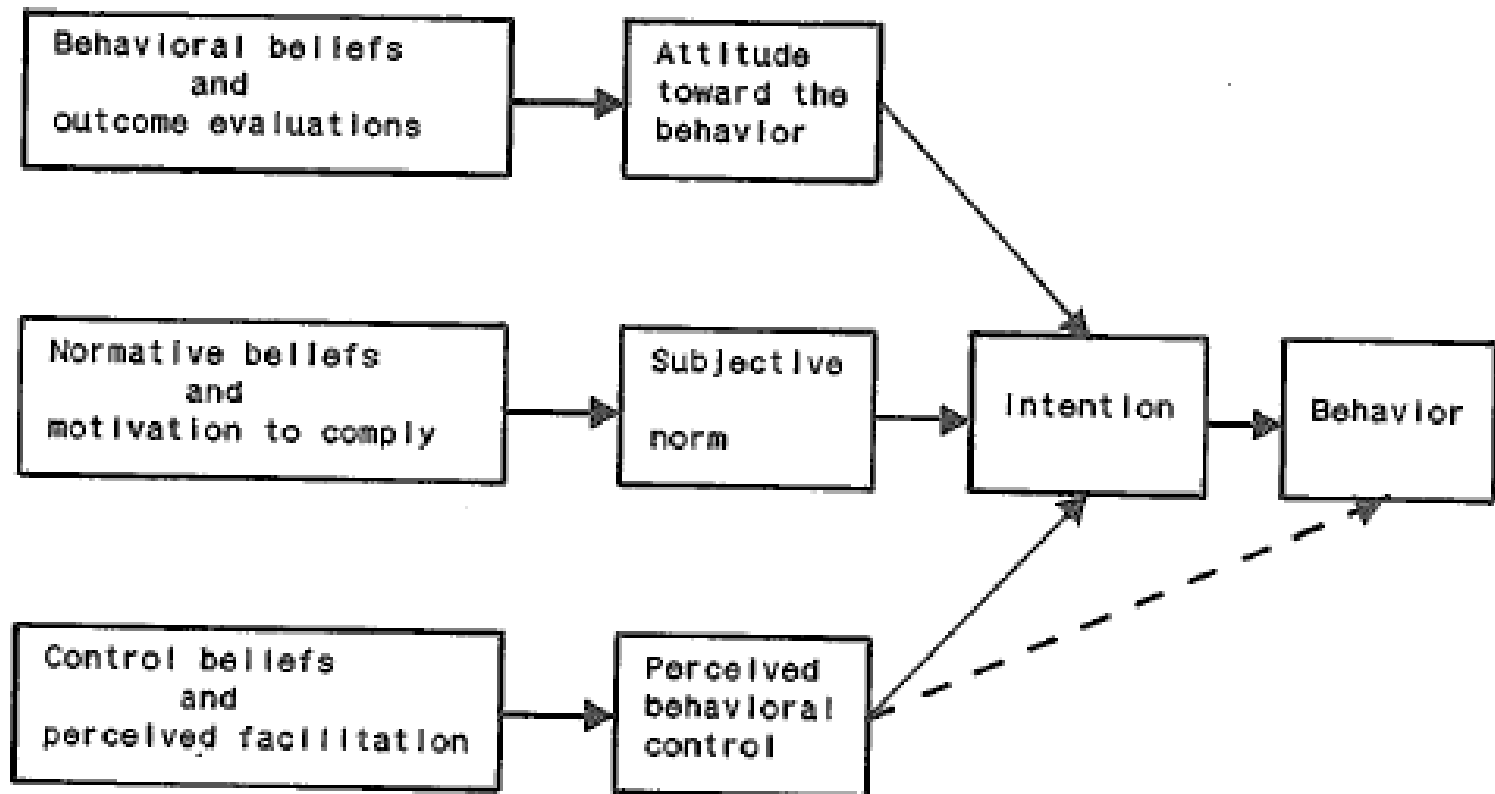


FIG. 10.2. Theory of planned behavior.

Ajzen, I., (1989) "Attitude Structure and Behavior," in A. R. Pratkanis, S. J. Breckler, and A. G. Greenwald(Eds.), Attitude Structure and Function, Lawrence Erlbaum Associates, Hillsdale, NJ, 1989, pp.241-274.

# TPB (1991)

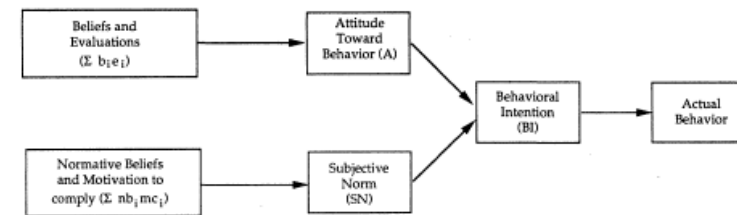


FIGURE 1. Theory of Reasoned Action (TRA).

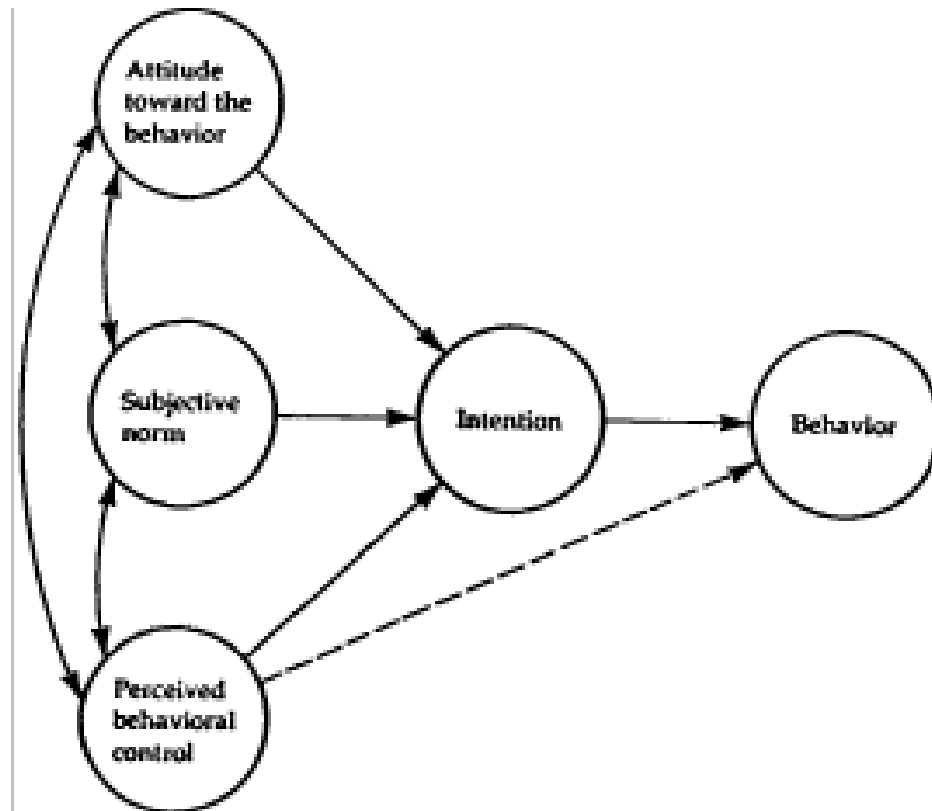


FIG. 1. Theory of planned behavior

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

# TAM (1989)

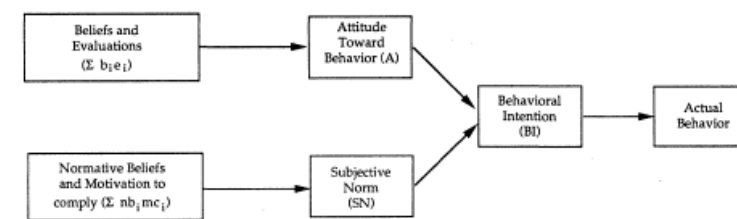


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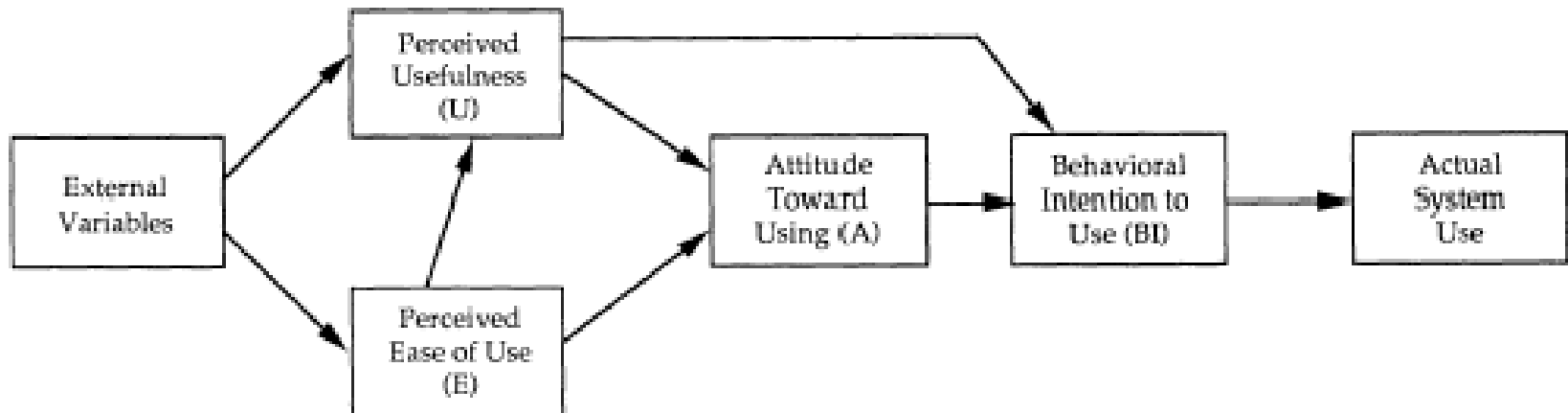


FIGURE 2. Technology Acceptance Model (TAM).

# **A GENERIC PURCHASING-DECISION MODEL**

## **1. Need identification**

## **2. Information search**

- **product brokering**

- Deciding what product to buy.

- **merchant brokering**

- Deciding from whom (from what merchant) to buy products.

## **3. Evaluation of alternatives**

## **4. Purchase decision and delivery**

## **5. Postpurchase behavior**

## EXHIBIT 4.1 Purchase Decision-Making Process and Support System

Steps in the Decision-Making Process	CDSS Support Facilities	Generic Internet and Web Support Facilities
Need recognition ↓	Agents and event notification Blogs	Banner advertising on Web sites URL on physical material Discussions in newsgroups
Information search ↓	Virtual catalogs Structured interaction and question/answer sessions Links to (and guidance on) external sources Search engines	Web directories and classifiers Internal search on Web site External search engines Focused directories and information brokers Search engines
Evaluation, negotiation, selection ↓	FAQs and other summaries Samples and trials Customers testimonials Models that evaluate consumer behavior Pointers to and information about existing customers	Discussions in newsgroups Cross-site comparisons Wikis, blogs Generic models
Purchase, payment, and delivery ↓	Ordering of product or service Arrangement of delivery	Electronic cash and virtual banking; wireless payment PayPal Logistics providers and package tracking
After-purchase service and evaluation ↓	Customer support via e-mail and newsgroups	Discussions in newsgroups Answer function in LinkedIn






# PLAYERS IN THE CONSUMER DECISION PROCESS

- Initiator
- Influencer
- Decider
- Buyer
- User

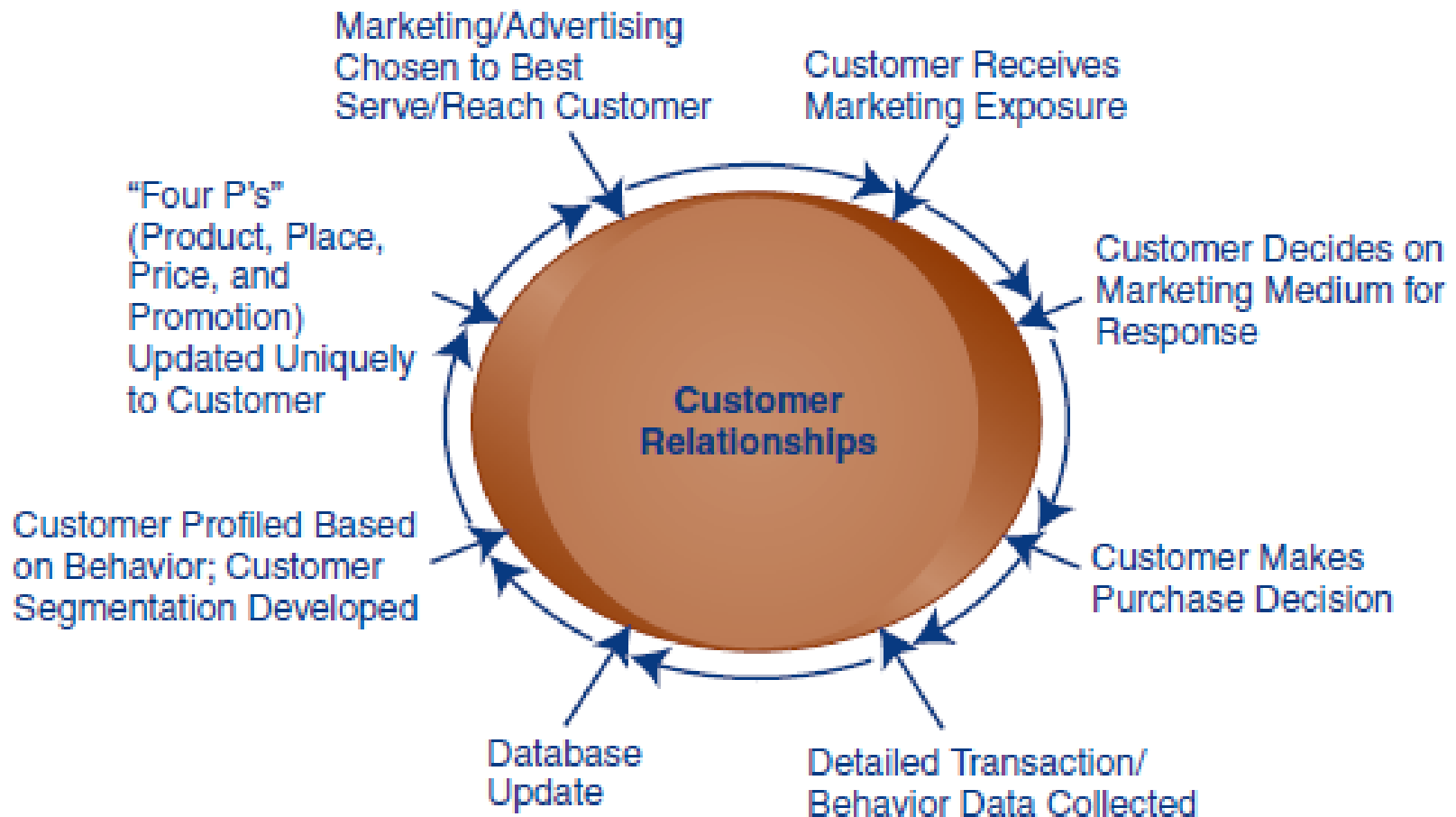
# ONE-TO-ONE MARKETING

- Match products (services) with individual consumers

## EXHIBIT W4.2.1 From Mass Marketing to Segmentation to One-to-One

Factor	 Mass Marketing	 Market Segmentation	 Relationship Marketing (One-to-One)
Interactions	Usually none, or one-way	Usually none, or with a sample	Active, two-way
Focus	Product	Group (segment)	Customer-focused (one)
Recipient	Anonymous	Segment profiles	Individuals
Campaigns	Few	More	Many
Reach	Wide	Smaller	One at a time
Market Research	Macro in nature	Based on segment analysis or demographics	Based on detailed customer behaviors and profiles

## EXHIBIT W4.2.2 The New Marketing Model



# **PERSONALIZATION, LOYALTY, SATISFACTION, AND TRUST IN EC**

# PERSONALIZATION, LOYALTY, SATISFACTION, AND TRUST IN EC

- **personalization**

The matching of services, products, and advertising content with individual consumers and their preferences.

- **user profile**

The requirements, preferences, behaviors, and demographic traits of a particular customer.

# Major strategies used to compile user profiles

- Solicit information directly from the user
- Observe what people are doing online
  - cookie
- Build from previous purchase patterns
- Perform marketing research
- Make inferences
  - behavioral targeting
    - The use of information collected on an individual's Internet browsing behavior to select which advertisements to display to that individual.

# CUSTOMER LOYALTY

- **e-loyalty**

Customer loyalty to an e-tailer or loyalty programs delivered online or supported electronically.

# SATISFACTION IN EC

- American Customer Satisfaction Index (ACSI)
- Customer Respect Index (CRI)
  - Simplicity
  - Responsiveness
  - Transparency
  - Principles
  - Attitude
  - Privacy



# Customer Satisfaction in EC

## Information Quality

- Accuracy of Content
- Up-to-Date Content
- Information Presentation  
(Visual representation of products)
- Completeness of Content  
(Detailed description of products)

## System Quality

- Privacy and Security
- Simple Design
- Ease of Navigation
- Ease of Use
- Consistency of Web Site

## Service Quality

- Flexibility (Billing and Delivery Option)
- Timeliness of Order Delivery
- Accuracy of Order Delivery
- Condition of Products Received
- Responsiveness
- Fairness of Policies and Procedures
- Empathy (Compensation and Apologies)

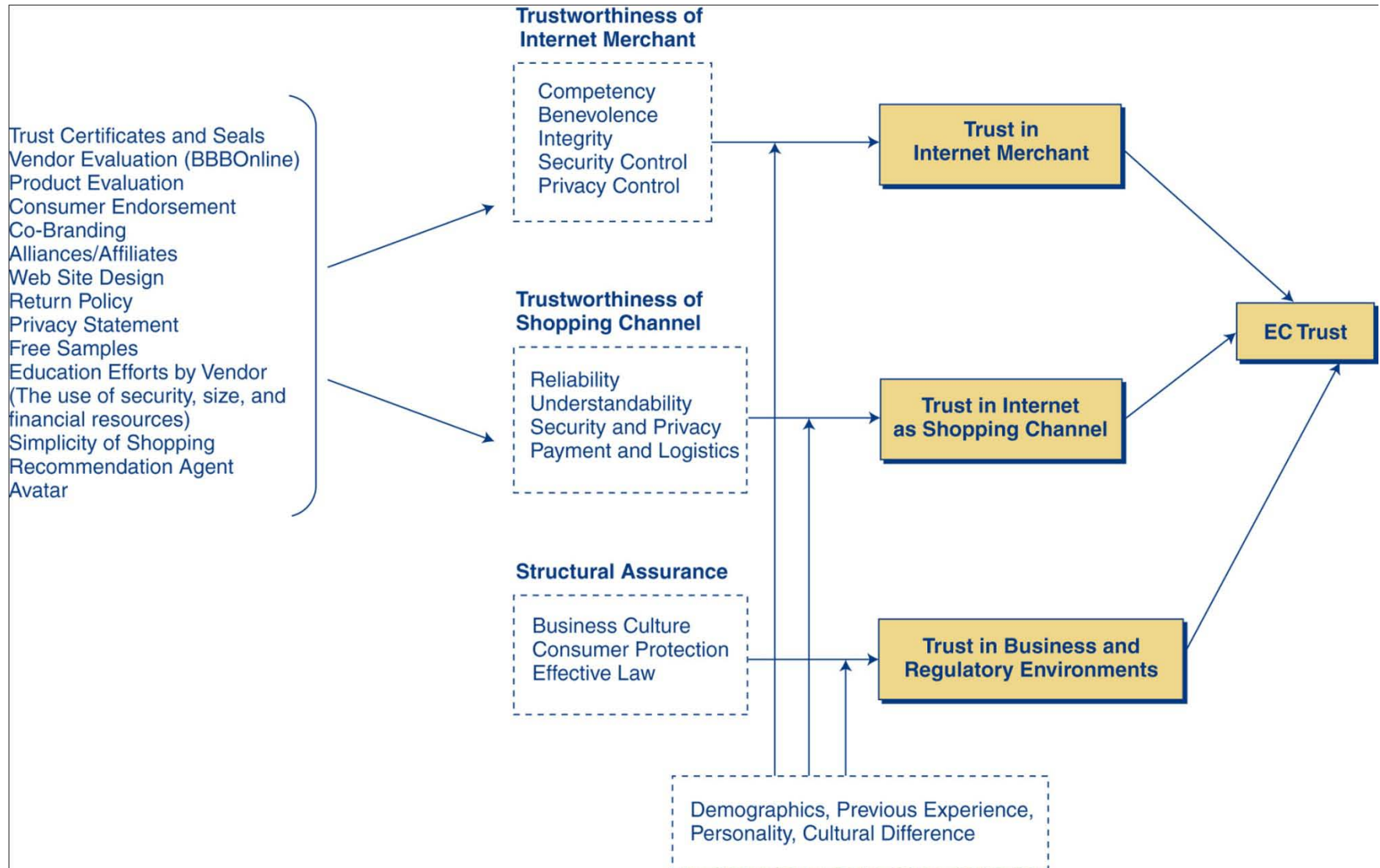
**Consumer Satisfaction  
with an Internet Store**

# TRUST IN EC

- **Trust**

The psychological status of willingness to depend on another person or organization.

# EC Trust Models



# **MARKET RESEARCH FOR EC**

- **METHODS FOR CONDUCTING MARKET RESEARCH ONLINE**
- **WHAT ARE MARKETERS LOOKING FOR IN EC MARKET RESEARCH?**
- **MARKET SEGMENTATION RESEARCH**

## **EXHIBIT 4.2    Online Market Research Process**

### **Steps in Collecting Market Research Data**

1. Define the research issue and the target market.
2. Identify newsgroups and Internet communities to study.
3. Identify specific topics for discussion.
4. Subscribe to the pertinent groups; register in communities.
5. Search discussion group topic and content lists to find the target market.
6. Search e-mail discussion group lists.
7. Subscribe to filtering services that monitor groups.
8. Read FAQs and other instructions.
9. Visit chat rooms.

### **Content of the Research Instrument**

1. Post strategic queries to groups.
2. Post surveys on a Web site.
3. Offer rewards for participation.
4. Post strategic queries on a Web site.
5. Post relevant content to groups, with a pointer to a Web site survey.
6. Post a detailed survey in special e-mail questionnaires.
7. Create a chat room and try to build a community of consumers.

### **Target Audience of the Study**

1. Compare audience with the target population.
2. Determine editorial focus.
3. Determine content.
4. Determine what Web services to create for each type of audience.

## EXHIBIT W4.5.1 Consumer Market Segmentation in the United States (a partial list)

Market Segmentation	Bases/Descriptors
Geographic	Region; size of city, county, or Standard Metropolitan Statistical Area (SMSA); population density; climate; language.
Demographic	Age, occupation, gender, education, family size, religion, race, income, nationality, urban (or suburban or rural).
Psychographic (lifestyle)	Social class, lifestyle, personality, activities, VALS typology (see <a href="http://sric-bi.com/VALS/presurvey.shtml">sric-bi.com/VALS/presurvey.shtml</a> ).
Cognitive, affective, behavioral	Attitudes, benefits sought, loyalty status, readiness stage, usage rate, perceived risk, user status, innovativeness, usage situation, involvement, Internet shopping experience.
Profitability	Valued customers are placed in a special category.
Risk score	Low risk customers are placed in a special category.

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# **MARKET RESEARCH FOR ONE-TO-ONE**

- **Direct Solicitation of Information**
- **Data Collection in the Web 2.0 Environment**
- **Observing Customers' Movements Online**
- **Collaborative Filtering**

# Direct Solicitation of Information

- Implementing Web-Based Surveys
- Online Focus Groups
- Hearing Directly from Customers



# Data Collection in the Web 2.0 Environment

- Discussion forums
- polling
- blogging
- chatting
- live chat
- Chatterbots
- collective wisdom for intelligence
- find expertise
- folksonomy
- data in videos, photos, and other rich media

# Observing Customers' Movements Online

- **transaction log**

A record of user activities at a company's Web site.

- **clickstream behavior**

Customer movements on the Internet.

- **Cookies, Web Bugs, and Spyware**

- **Web bugs**

Tiny graphics files embedded in e-mail messages and in Web sites that transmit information about users and their movements to a Web server.

- **spyware**

Software that gathers user information over an Internet connection without the user's knowledge.

- **Analysis of B2C Clickstream Data**

# Analysis of B2C Clickstream Data

- **clickstream data**

Data that occur inside the Web environment; they provide a trail of the user's activities (the user's clickstream behavior) in the Web site.

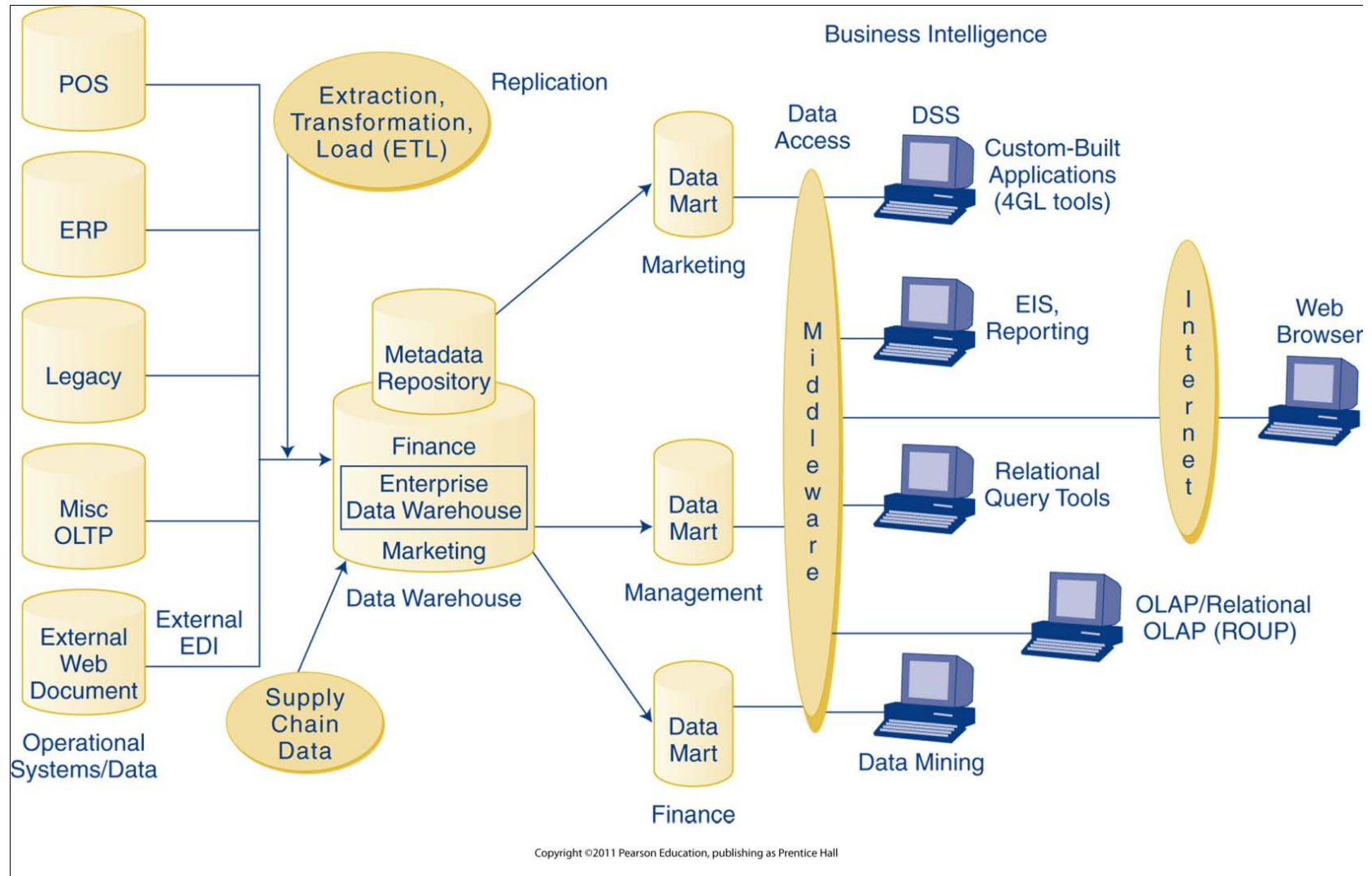
- **Web mining**

The use of data mining techniques for discovering and extracting information from Web documents and Web usage.

# Collaborative Filtering

- A market research and personalization method that uses customer data to predict, based on formulas derived from behavioral sciences, what other products or services a customer may enjoy; predictions can be extended to other customers with similar profiles.
  - **Legal and Ethical Issues in Collaborative Filtering**

# LIMITATIONS OF ONLINE MARKET RESEARCH AND HOW TO OVERCOME THEM



# BIOMETRIC MARKETING

- **Biometrics**

An individual's unique physical or behavioral characteristics that can be used to identify an individual precisely (e.g. fingerprints).

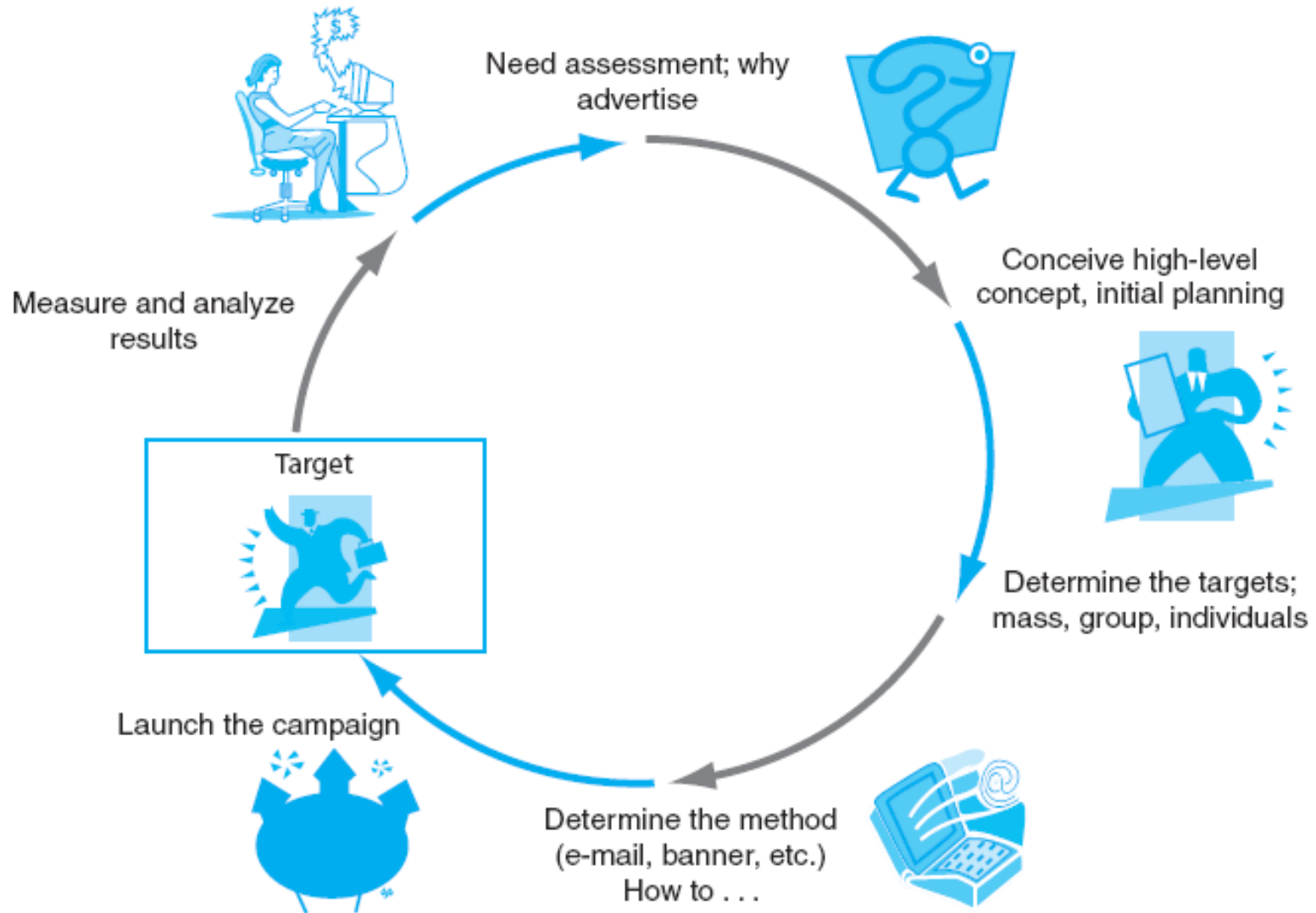
# WEB ADVERTISING

- **OVERVIEW OF WEB ADVERTISING**

- **interactive marketing**

Online marketing, facilitated by the Internet, by which marketers and advertisers can interact directly with customers, and consumers can interact with advertisers/vendors.

## EXHIBIT 4.3 The Advertising Cycle





# WEB ADVERTISING

- **ad views**

The number of times users call up a page that has a banner on it during a specific period; known as impressions or page views.

- **button**

A small banner that is linked to a Web site. It can contain downloadable software.

# WEB ADVERTISING

- **click (click-through or ad click)**

A count made each time a visitor clicks on an advertising banner to access the advertiser's Web site.

- **click-through rate**

The percentage of visitors who are exposed to a banner ad and click on it.

- **click-through ratio**

The ratio between the number of clicks on a banner ad and the number of times it is seen by viewers; measures the success of a banner in attracting visitors to click on the ad.

# WEB ADVERTISING

- **conversion rate**

The percentage of clickers who actually make a purchase.

- **CPM (cost per thousand impressions)**

The fee an advertiser pays for each 1,000 times a page with a banner ad is shown.

- **hit**

A request for data from a Web page or file.

# WEB ADVERTISING

- **page**

An HTML (Hypertext Markup Language) document that may contain text, images, and other online elements, such as Java applets and multimedia files. It can be generated statically or dynamically.

- **stickiness**

Characteristic that influences the average length of time a visitor stays in a site.

# WEB ADVERTISING

- **unique visits**

A count of the number of visitors entering a site, regardless of how many pages are viewed per visit.

- **visit**

A series of requests during one navigation of a Web site; a pause of a certain length of time ends a visit.

# Advertising Online and Its Advantages

- Cost
- Richness of format
- Personalization
- Timeliness
- Location-basis
- Linking
- Digital branding

# **ONLINE ADVERTISING METHODS**

- **BANNERS**
- **POP-UP AND SIMILAR ADS**
- **E-MAIL ADVERTISING**
- **CLASSIFIED ADS**
- **SEARCH ENGINE ADVERTISEMENT**
- **VIRAL MARKETING AND ADVERTISING**

# ONLINE ADVERTISING METHODS: BANNERS

- **banner**

On a Web page, a graphic advertising display linked to the advertiser's Web page.

- **keyword banners**

Banner ads that appear when a predetermined word is queried from a search engine.

- **random banners**

Banner ads that appear at random, not as the result of the user's action.



# ONLINE ADVERTISING METHODS: BANNERS

- **Benefits of Banner Ads**

- The major benefit of banner ads is that, by clicking on them, users are directly transferred to the shopping page of an advertiser's site.
- The ability to customize them for individual surfers or a market segment of surfers.

- **Limitations of Banner Ads**

- The major disadvantage of banners is their cost
- A limited amount of information can be placed on the banner

# ONLINE ADVERTISING METHODS: POP-UP AND SIMILAR ADS

- **pop-up ad**

An ad that appears in a separate window before, after, or during Internet surfing or when reading e-mail.

- **pop-under ad**

An ad that appears underneath the current browser window, so when the user closes the active window the ad is still on the screen.

# ONLINE ADVERTISING METHODS: E-MAIL ADVERTISING

- E-Mail Hoaxes
- Fraud
- E-Mail Advertising Methods and Successes

# ONLINE ADVERTISING METHODS: SEARCH ENGINE ADVERTISEMENT

- **URL Listing**
- **Keyword Advertising**
- **Search Engine Optimization (SEO)**

The craft of increasing site rank on search engines; the optimizer uses the ranking algorithm of the search engine (which may be different for different search engines) and best search phases, and tailors the ad accordingly.

- **Google: The Online Advertising King**

# ONLINE ADVERTISING METHODS:

## Viral marketing

- **Viral marketing**

Word-of-mouth method by which customers promote a product or service by telling others about it.

# ADVERTISING IN SOCIAL NETWORKS AND THE WEB 2.0 ENVIRONMENT

- **social network advertising**

Online advertising that focuses on social networking sites.

# Types of Social Network Advertising

- Direct advertising that is based on your network of friends
- Direct advertising placed on your social network site
- Indirect advertising by creating “groups” or “pages”
- **Sponsored Reviews by Bloggers**

# **ADVERTISING IN SOCIAL NETWORKS AND THE WEB 2.0 ENVIRONMENT**

- **ADVERTISING IN CHAT ROOMS AND FORUMS**
- **VIDEO ADS ON THE WEB AND IN SOCIAL NETWORKING**
  - Video Ads
  - Tracking the Success of an Online Video Campaign
    - Web video analytics

A way of measuring what viewers do when they watch an online video.
- **VIRAL MARKETING IN SOCIAL NETWORKS**



# ADVERTISING STRATEGIES

- **Affiliate Marketing**

A marketing arrangement by which an organization refers consumers to the selling company's Web site.

- **ADS AS A COMMODITY  
(PAYING PEOPLE TO WATCH ADS)**
- **SELLING SPACE BY PIXELS**

# ADVERTISING STRATEGIES

- **PERSONALIZED ADS AND OTHER PERSONALIZATION**

- **Webcasting**

- A free Internet news service that broadcasts personalized news and information, including seminars, in categories selected by the user.

- **ONLINE EVENTS, PROMOTIONS, AND ATTRACTIONS**

- **Live Web Events**

# SPECIAL ADVERTISING TOPICS

- **PERMISSION ADVERTISING**

- **spamming**

- Using e-mail to send unwanted ads (sometimes floods of ads).

- **permission advertising (permission marketing)**

- Advertising (marketing) strategy in which customers agree to accept advertising and marketing materials (known as “opt-in”).

# **SPECIAL ADVERTISING TOPICS**

- **ADVERTISEMENT AS A REVENUE MODEL**
- **MEASURING ONLINE ADVERTISING'S EFFECTIVENESS**
- **MOBILE MARKETING AND ADVERTISING**
  - **mobile advertising (m-advertising)**  
Ads sent to and presented on mobile devices.

# **SPECIAL ADVERTISING TOPICS**

- **AD CONTENT**
- **SOFTWARE AGENTS IN MARKETING AND ADVERTISING APPLICATIONS**
- **localization**

The process of converting media products developed in one environment (e.g. country) to a form culturally and linguistically acceptable in environments outside the original target market.

## **EXHIBIT W4.17.1 What Is Involved in Localization?**

### **Variables Considered in Localization**

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- Branding (names, language)
- Store formats (size, layout)
- Merchandise spaces and assortment (size, color, style, flavor, package design)
- Pricing (range, changes, financing)
- Promotions (types, duration, discount level)
- Vendor policies
- Management programs
- Store service levels
- Vendor services
- Operating policies

### **Location Variables**

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- Consumer characteristics
- Special demand drivers
- Competitor characteristics
- Company's own stores' characteristics versus others

# MANAGERIAL ISSUES

1. Do we understand our customers?
2. Who will conduct the market research?
3. Are customers satisfied with our Web site?
4. How can we use social networks for advertising?
5. How do we decide where to advertise?
6. What is our commitment to Web advertising, and how will we coordinate Web and traditional advertising?

# MANAGERIAL ISSUES

7. Should we integrate our Internet and non-Internet marketing campaigns?
8. What ethical issues should we consider?
9. Are any metrics available to guide advertisers?
10. Which Internet marketing/advertising channel should you use?



# References

- Turban et al., Introduction to Electronic Commerce, Third Edition, 2010, Pearson