Faculty of Computer Science & Information Technology

Department of Information Technology

4th year – 7th Semester

E-commerce

Chapter 3(A): Building an E-commerce Presence: Websites, Mobile Sites, and Apps

Dr. Hassan Fadlallah   UST - 2018/2019

Imagine Your E-commerce Presence (1 of 3)

- What's the idea? The vision includes:
  - Mission statement
  - Target audience
  - Intended market space
  - Strategic analysis
  - Marketing matrix
  - Development timeline
  - Preliminary budget

Imagine Your E-commerce Presence (2 of 3)

- Where's the money?
  - Business model(s)
  - Revenue model(s)

- Who and where is the target audience?
  - Demographics, lifestyle, consumption patterns, etc.

- What is the ballpark? Characterize the marketplace
  - Size, growth, demographics, structure
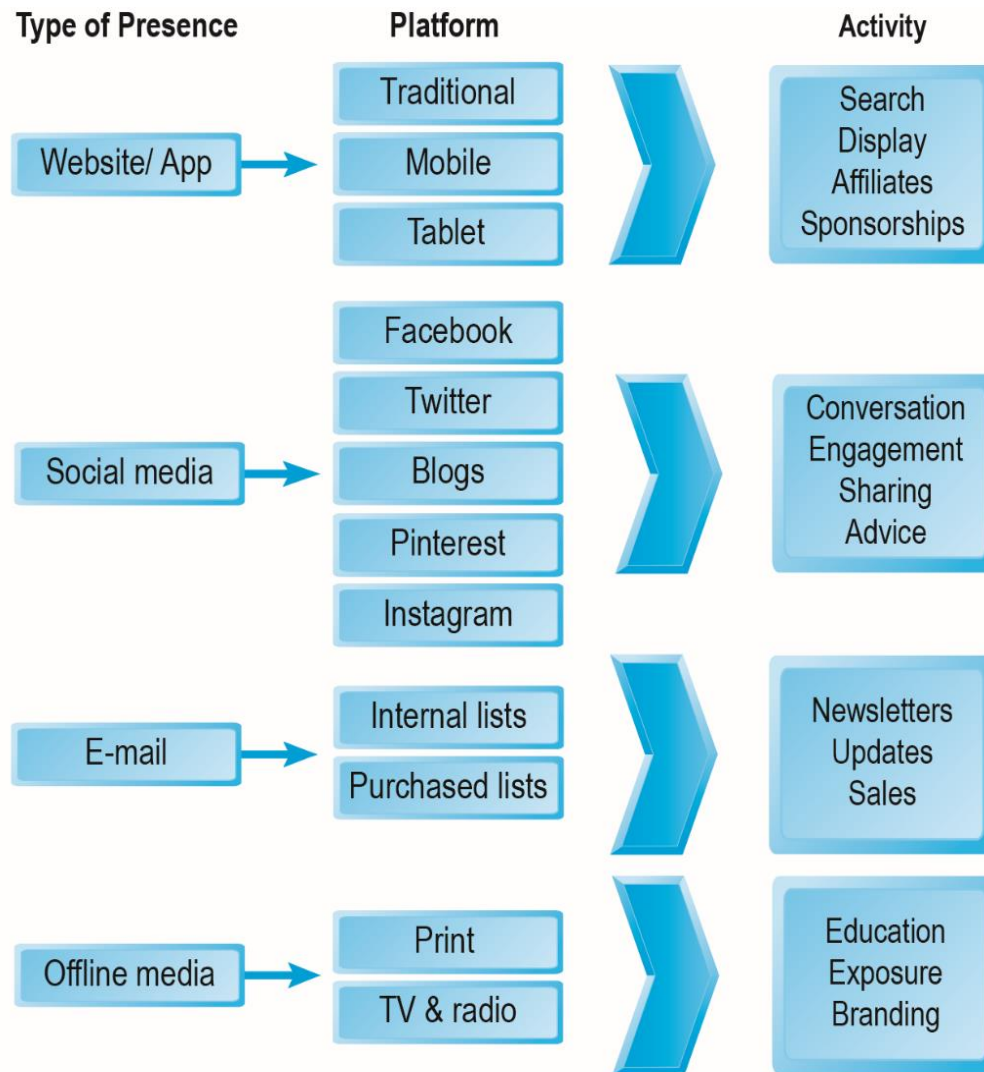
Imagine Your E-commerce Presence (3 of 3)

- Where's the content coming from?

- Know yourself—SWOT analysis

- Develop an e-commerce presence map

- Develop a timeline: Milestones

- How much will this cost?
  - Simple websites: up to $5000
  - Small web startup: $25,000 to $50,000
  - Large corporate site: $100,000+ to millions

Figure 3.1: SWOT Analysis

STRENGTHS
- Current sites do not address market needs
- Unique approach
- Easy navigation
- Better personalization
- Customer base growing
- High-value market segment
- Superior social strategy

WEAKNESSES
- Limited financial resources
- No prior online experience
- No existing user base
- No media attention
- No Web design expertise
- No computer background

OPPORTUNITIES
- Ability to address large market with unmet needs
- Potential to capture significant share of this market
- Potential to develop related sites

THREATS
- Approach could be copied by competitors
- Advertisers may not want to try a new site
- Rapid pace of technological development
- Low market entry costs

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Figure 3.2: E-commerce Presence Map

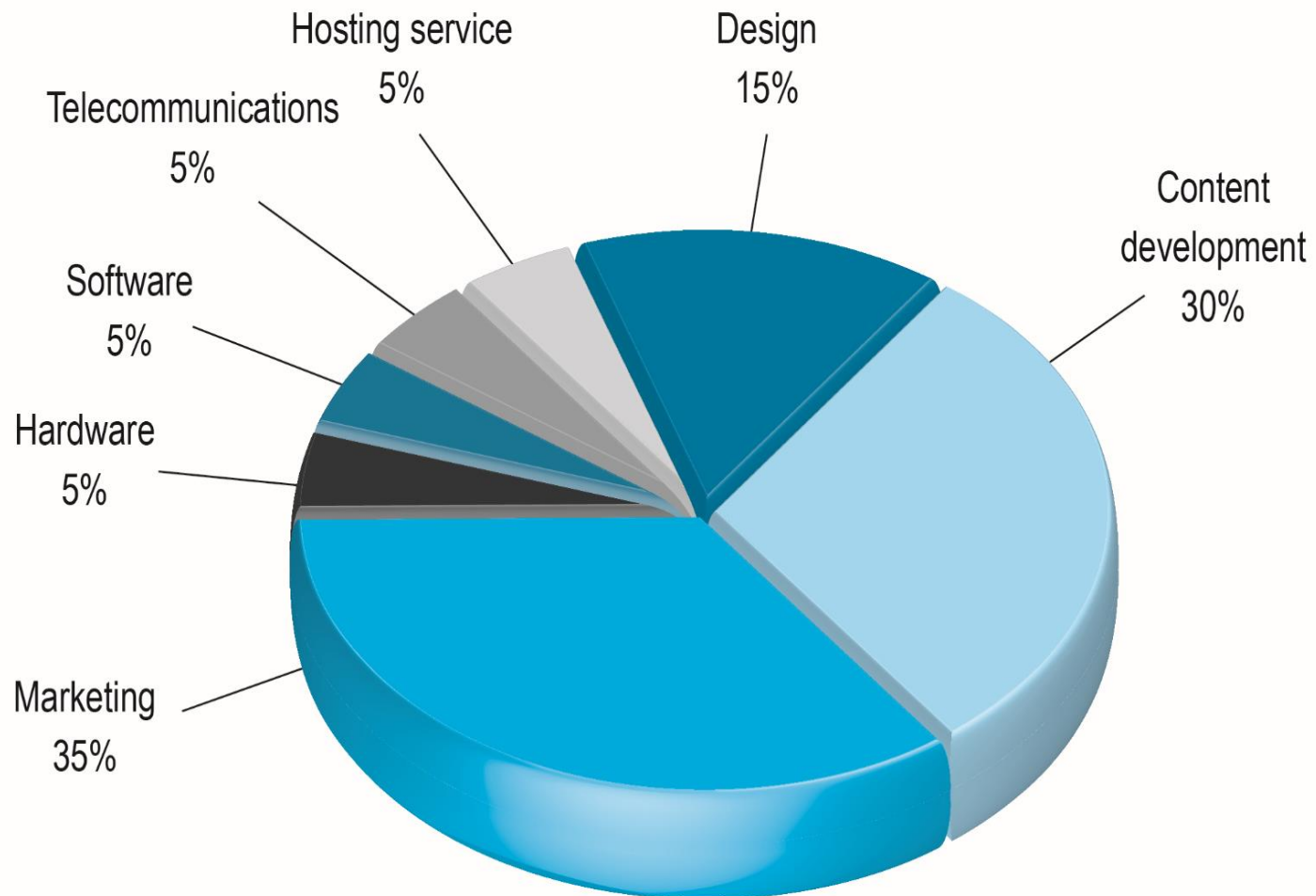Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Figure 3.2: E-commerce Presence Timeline

| TABLE 3.1	E-COMMERCE PRESENCE TIMELINE	
PHASE	**ACTIVITY**	**MILESTONE**
Phase 1: Planning	Envision e-commerce presence; determine personnel	Mission statement
Phase 2: Website development	Acquire content; develop a site design; arrange for hosting the site	Website plan
Phase 3: Web implementation	Develop keywords and metatags; focus on search engine optimization; identify potential sponsors	A functional website
Phase 4: Social media plan	Identify appropriate social platforms and content for your products and services	A social media plan
Phase 5: Social media implementation	Develop Facebook, Twitter, and Pinterest presence	Functioning social media presence
Phase 6: Mobile plan	Develop a mobile plan; consider options for porting your website to smartphones	A mobile media plan

E-commerce Presence – Website Budget

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Building an E-commerce Site: A Systematic Approach

- Most important management challenges:
  1. Developing a clear understanding of business objectives
  2. Knowing how to choose the right technology to achieve those objectives

- Main factors to consider
  - Management
  - Hardware architecture
  - Software
  - Design
  - Telecommunications
  - Human resources

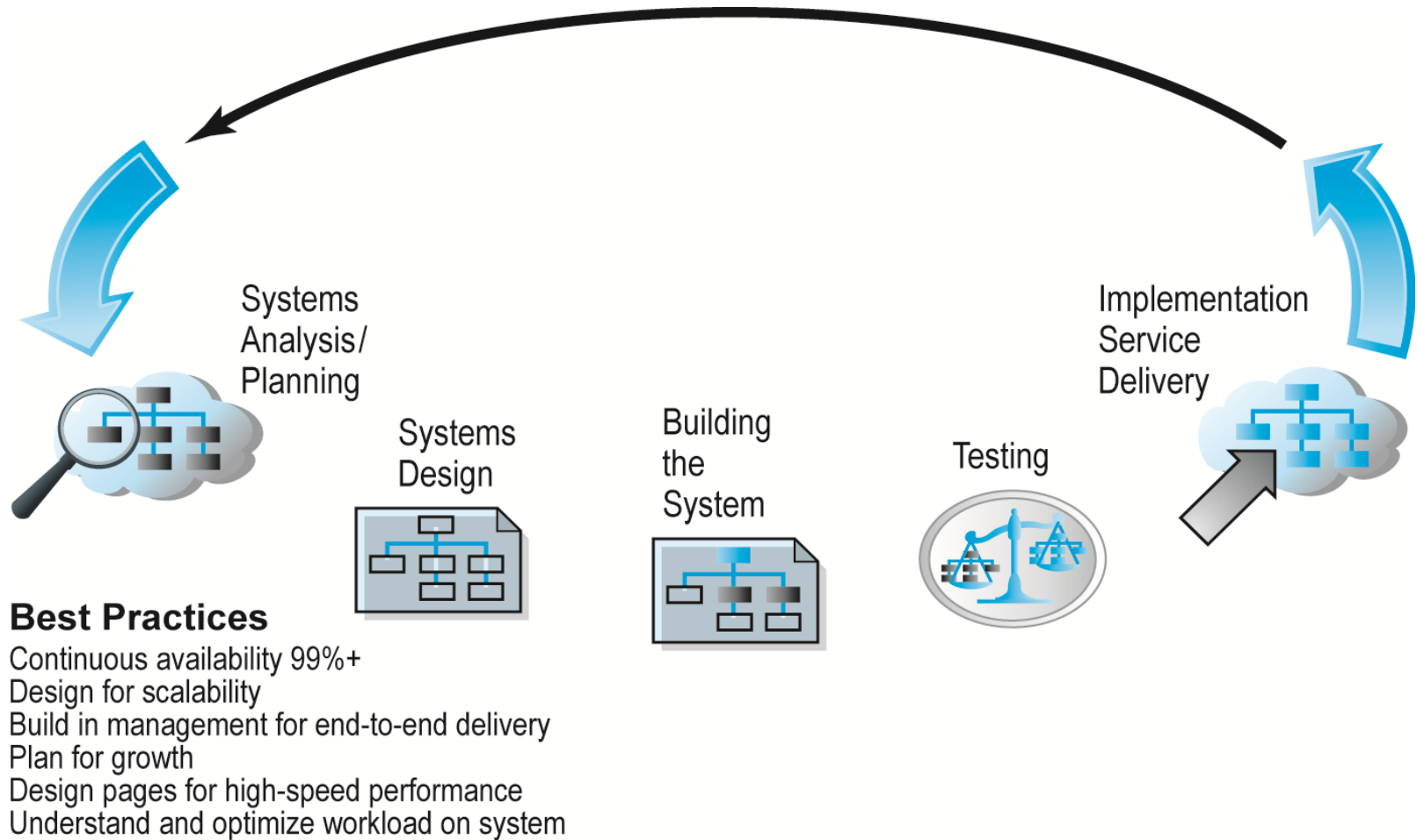# E-commerce Presence – Important Factors
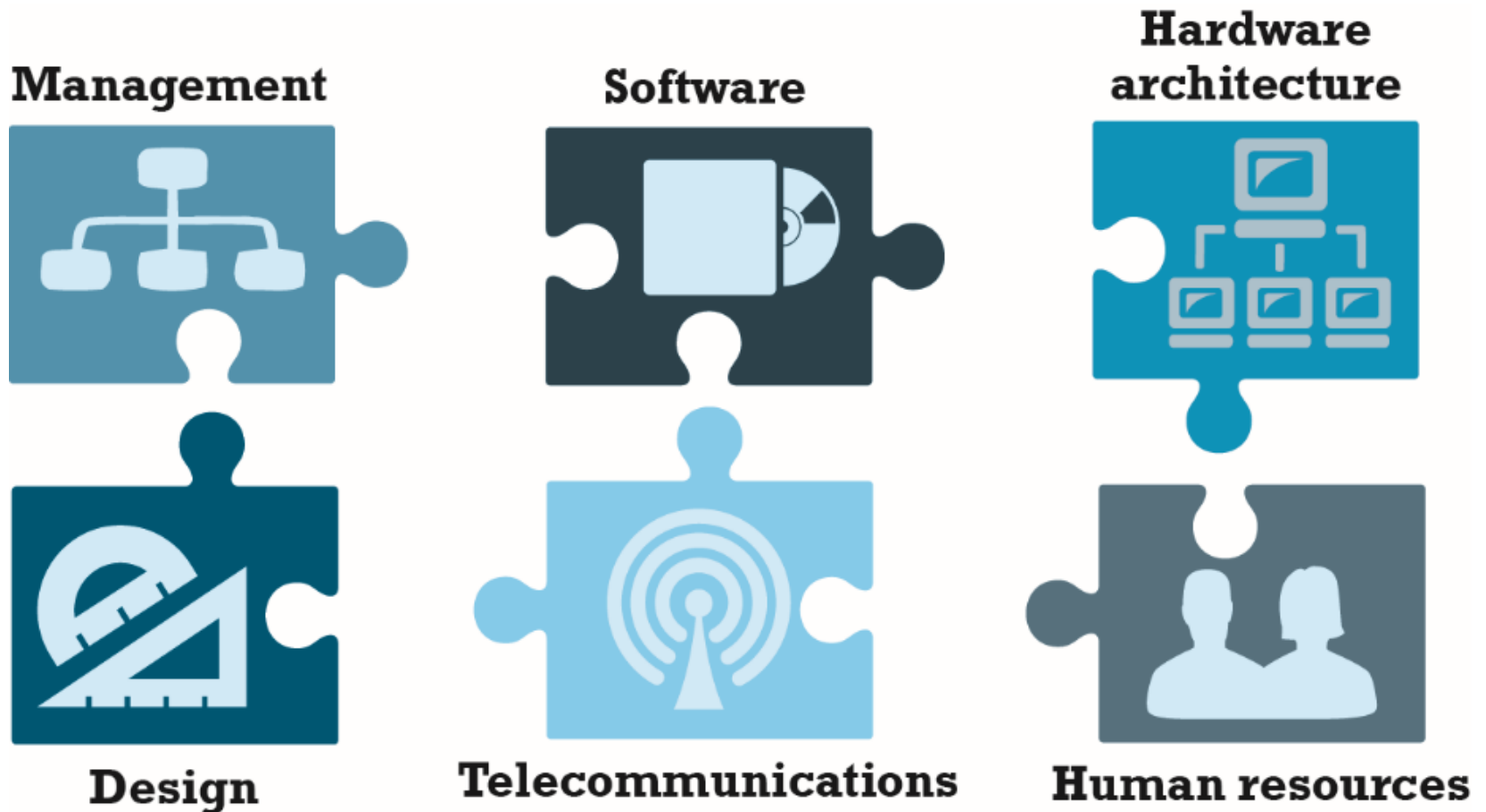
Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Planning: The Systems Development Life Cycle

- Methodology for understanding business objectives of a system and designing an appropriate solution

- Five major steps:
  - Systems analysis/planning
  - Systems design
  - Building the system
  - Testing
  - Implementation

Figure 3.5: Website Systems Development Life Cycle

Systems Analysis/ Planning

Systems Design

Building the System

Testing

Implementation Service Delivery

Best Practices
Continuous availability 99%+
Design for scalability
Build in management for end-to-end delivery
Plan for growth
Design pages for high-speed performance
Understand and optimize workload on system

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

System Analysis/Planning

- Business objectives:
  - List of capabilities you want your site to have

- System functionalities:
  - List of information system capabilities needed to achieve business objectives

- Information requirements:
  - Information elements that system must produce in order to achieve business objectives

Table 3.2: System Analysis, Business Objectives, System Functionalities, and Information Requirements for a Typical E-commerce Site (1 of 2)

BUSINESS OBJECTIVE	SYSTEM FUNCTIONALITY	INFORMATION REQUIREMENTS
Display goods	Digital catalog	Dynamic text and graphics catalog
Provide product information	Product database	Product description, stocking numbers, inventory levels
Personalize/customize product	Customer on-site tracking	Site log for every customer visit; data mining capability to identify common customer paths and appropriate responses
Engage customers in conversations	On-site blog; user forums	Software with blogging and community forum functionality
Execute a transaction	Shopping cart/payment system	Secure credit card clearing; multiple payment options
Accumulate customer information	Customer database	Name, address, phone, and e-mail for all customers; online customer registration

Table 3.2: System Analysis, Business Objectives, System Functionalities, and Information Requirements for a Typical E-commerce Site (2 of 2)

BUSINESS OBJECTIVE	SYSTEM FUNCTIONALITY	INFORMATION REQUIREMENTS
Provide after-sale customer support	Sales database	Customer ID, product, date, payment, shipment date
Coordinate marketing/advertising	Ad server, e-mail server, e-mail, campaign manager, ad banner manager	Site behavior log of prospects and customers linked to e-mail and banner ad campaigns
Understand marketing effectiveness	Site tracking and reporting system	Number of unique visitors, pages visited, products purchased, identified by marketing campaign
Provide production and supplier links	Inventory management system	Product and inventory levels, supplier ID and contact, order quantity data by product

Systems Design: Hardware and Software Platforms

- ## System design specification:
  - Description of main components of a system and their relationship to one another

- ## Two components of system design:
  - Logical design
    - Data flow diagrams, processing functions, databases
  - Physical design
    - Specifies actual physical, software components, models, and so on

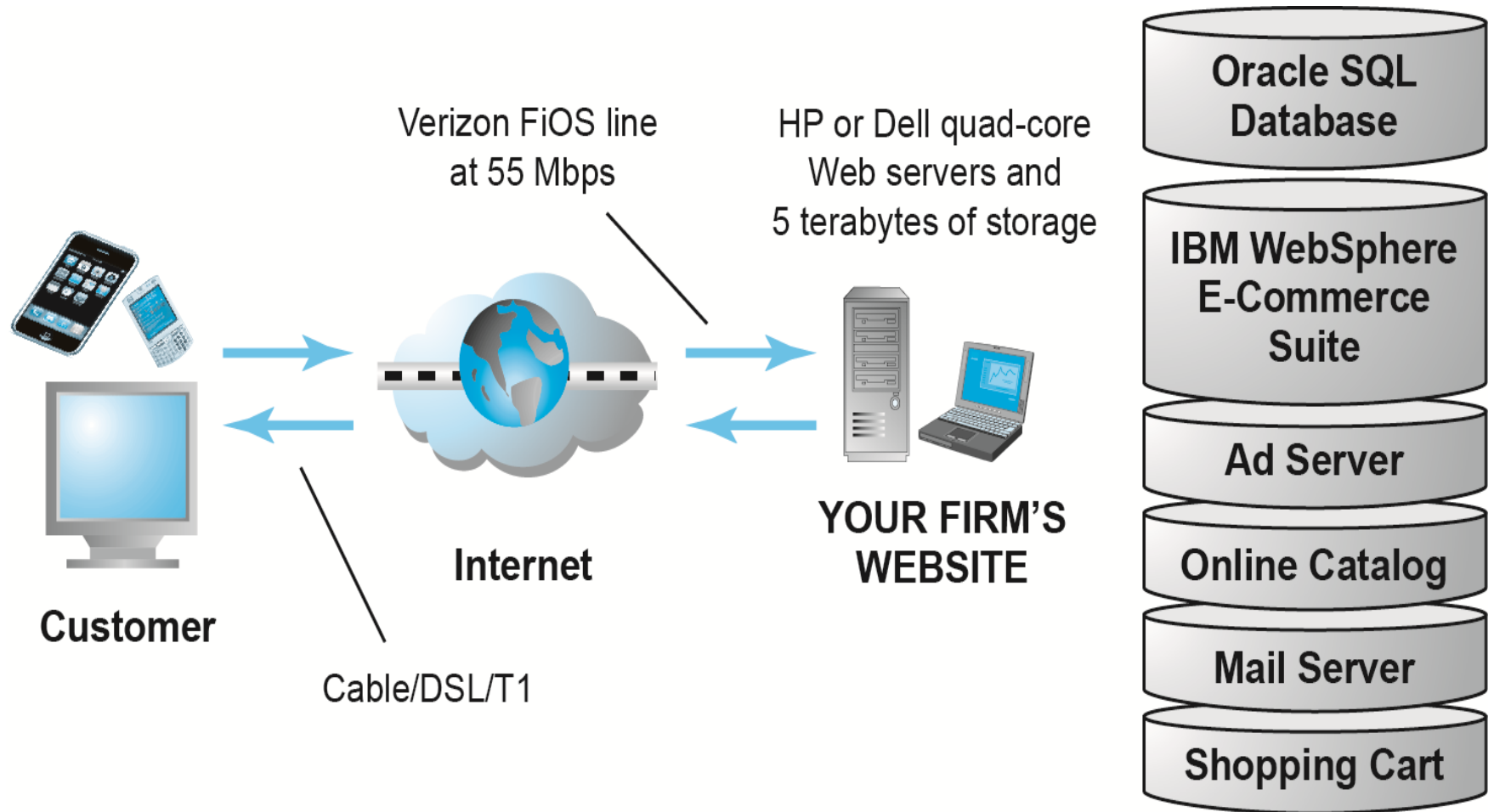# Figure 3.6(a): Logical Design for a Simple Website
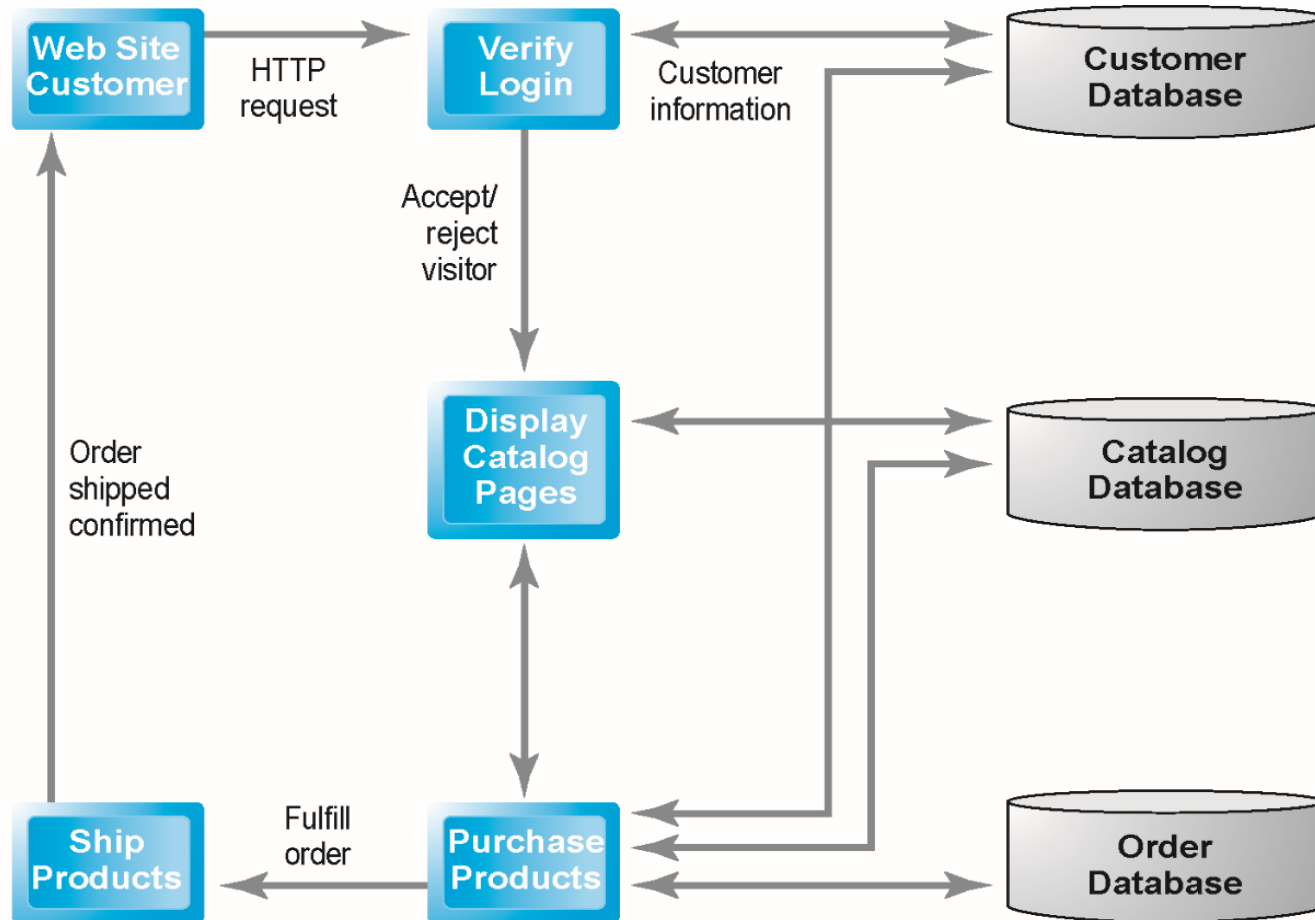
(a) Simple Data Flow Diagram

This data flow diagram describes the flow of information requests and responses for a sample Web site

Figure 3.6(b): Physical Design for a Simple Website

Verizon FiOS line at 55 Mbps

HP or Dell quad-core Web servers and 5 terabytes of storage

Customer

Internet

Cable/DSL/T1

YOUR FIRM'S WEBSITE

Oracle SQL Database

IBM WebSphere E-Commerce Suite

Ad Server
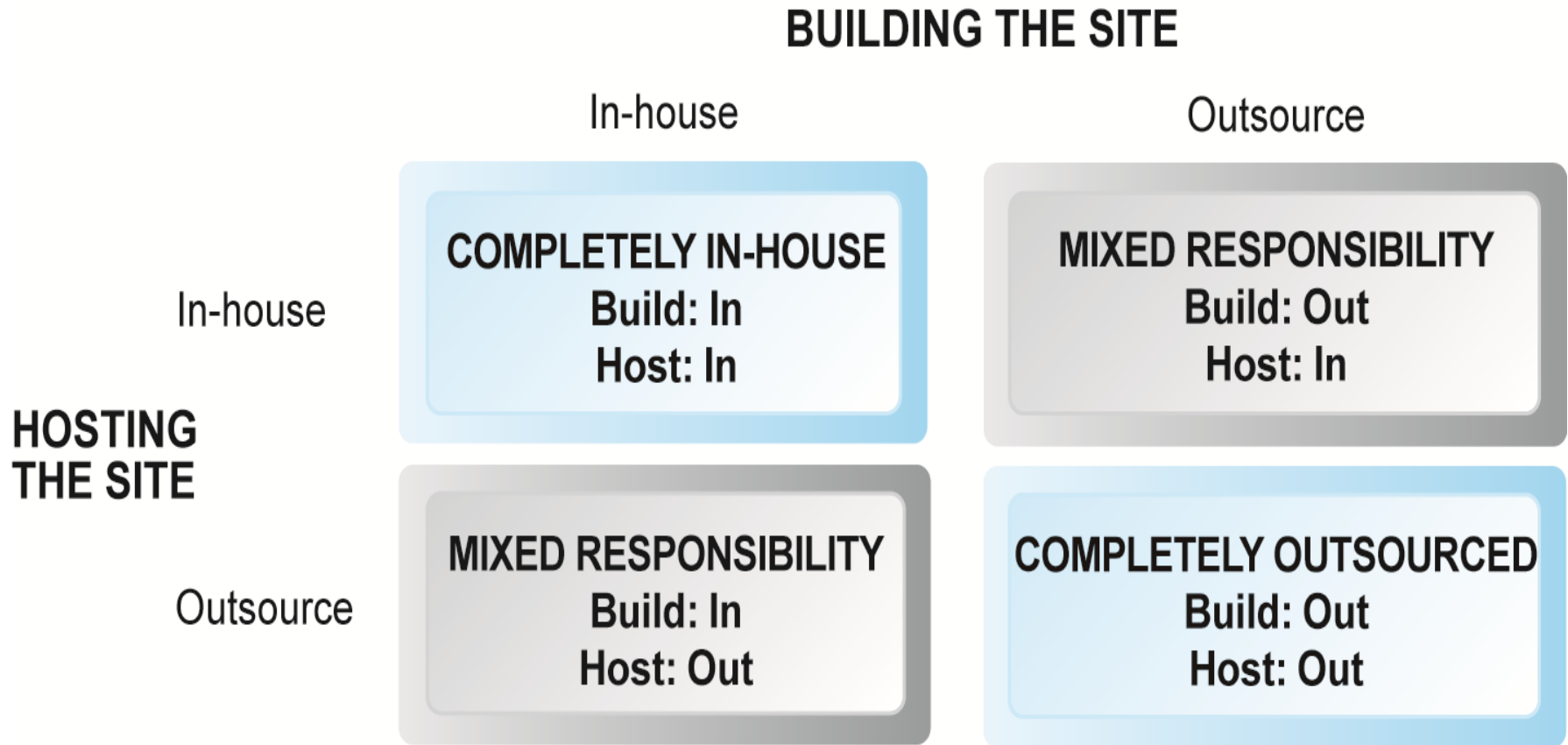
Online Catalog

Mail Server

Shopping Cart

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Building the System: In-house versus Outsourcing

- Outsourcing: Hiring vendors to provide services involved in building site

- Build own vs. outsourcing:
  – Build your own requires team with diverse skill set; choice of software tools; both risks and possible benefits

- Host own vs. outsourcing
  – Hosting: Hosting company responsible for ensuring site is accessible 24/7, for monthly fee
  – Co-location: Firm purchases or leases web server (with control over its operation), but server is located at vendor's facility

Figure 3.7: Choices in Building and Hosting

BUILDING THE SITE

In-house   Outsource

	In-house	Outsource
In-house	**COMPLETELY IN-HOUSE** Build: In Host: In	**MIXED RESPONSIBILITY** Build: Out Host: In
Outsource	**MIXED RESPONSIBILITY** Build: In Host: Out	**COMPLETELY OUTSOURCED** Build: Out Host: Out

HOSTING THE SITE

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

E-commerce Presence – Spectrum of Tools

Least expensive   Most expensive

Use prebuilt templates

Yahoo Aabaco Small Business
Shopify
WordPress
Google Sites

Build from scratch

HTML/HTML5
CGI scripts
SQL databases
Dreamweaver CC
Visual Studio

Use packaged site-building tools

Sitecore Commerce Server
IBM WebSphere

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver

Testing the System

- Testing
  - Unit testing
  - System testing
  - Acceptance testing

Implementation and Maintenance

- Systems break down unpredictably

- Maintenance is ongoing

- Maintenance costs: Similar to development costs
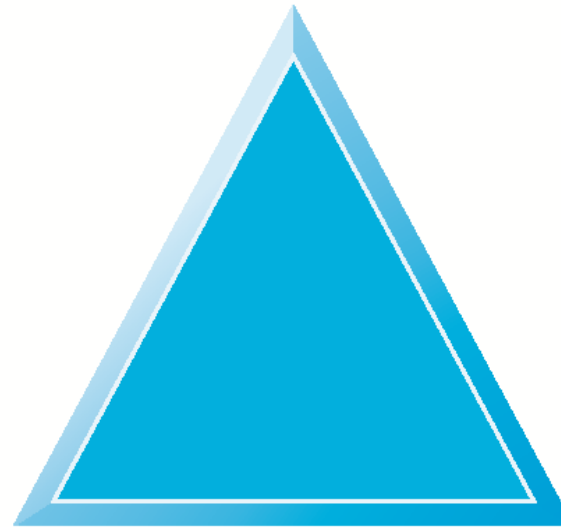   - A $40K e-commerce site may require $40K annually to upkeep

- Benchmarking

Figure 3.10: Factors in Website Optimization

Page Delivery

Content delivery networks
Edge caching
Bandwidth

Page Generation

Server response time
Device-based accelerators
Efficient resource allocation
Resource utilization thresholds
Monitoring site performance

Page Content

Optimize HTML
Optimize images
Site architecture
Efficient page style

Copyright © 2018 Kenneth C. Laudon and Carol Guercio Traver