

E-commerce: From Theory to Practice
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This textbook will be targeted toward undergraduate and graduate e-commerce classes. Recommended pre-requisites include Introduction to Marketing, Introduction to Management, and Introduction to Information Systems.

E-commerce Course Challenges:

Teaching e-commerce can be a challenge for several reasons. First, e-commerce technology and practices are rapidly expanding and evolving. This makes it difficult to balance course content on emerging technologies with core principles. Second, students often have significant experience as users of e-commerce that biases their focus on course concepts, often over emphasizing user experience and under emphasizing other considerations. Third, it is often difficult to understand how the different pieces fit together into a coherent strategy, integrating things like search engine optimization, social media integration, email lists, mobile strategies, blogging, e-commerce management systems, advertising, web analytics, various online revenue models, and much more. This inherently involves tradeoffs between various goals, technologies, designs, and policies. Students not only struggle with understanding the strategy, but how certain tradeoffs must be made.

Approach:

The textbook will be unique in three ways:

- To meet the first challenge above, the book will be structured using the spiral theory of knowledge, starting with coverage of simple and foundational topics, with more advanced, complex, abstract, and timely topics reserved as supplements to the book. These supplements will consist of additional chapters, video tutorials and lectures, case studies, and other online resources. Because this textbook will be electronic and these supplements will be external to the book and online, dynamic links within the book can point to resources immediately as they become available to instructors. These supplements offer additional benefits by enabling greater flexibility to students and instructors for customizing their learning objectives. It would also enable alternative educational paradigms such as “flipped” classrooms, educational “badges”, and experiential learning.
- To address the second challenge, the book will be structured around various stakeholder points of view to give readers a more holistic and objective understanding of website challenges. By focusing on four primary stakeholders – the manager, the user, the marketer, and the IT professional – students can better appreciate various tradeoffs necessary in real websites and better understand how theories, such as design theory, IT/business strategic alignment, sales funnel, and systems development interact with each other.
- Lastly, the book will tightly integrate theory and practice by focusing on the process of running e-commerce sites. The structure would include detailed running case studies demonstrating this process and a chapter specifically on analyzing existing websites based on the four stakeholders. The goal with this focus is to delve into the details of real world websites that are messy and involve trade-offs between conflicting goals. By reviewing how theory works within these messy environments, students get a better grasp of the concepts. The focus on practice should be the core of the book, not an after-thought or supplement.

Table of Contents: (Subject to change)

To support each chapter, this book will contain chapter summaries, list of key terms, review questions, references, and hands-on exercises. The core of the book, chapters 3-7, will also contain instructions for a semester long class project conducting an in-depth analyses of an existing web site, reviewing each of the four stakeholder perspectives to find the most useful opportunities for improvement.

<p>Chapter 1: Principles and concepts</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Motivate student to study e-commerce • Provide background knowledge and context 	<p>1.1 Why study electronic commerce</p> <p>1.2 E-commerce defined</p> <p>1.3 Brief history of computing and commerce</p> <p style="padding-left: 20px;">History of commerce and technology</p> <p style="padding-left: 20px;">History of communications</p> <p style="padding-left: 20px;">History of the Internet</p> <p>1.4 What is the Internet</p> <p style="padding-left: 20px;">World wide web</p> <p style="padding-left: 20px;">Mobile</p> <p>1.5 Who are the major stakeholders</p> <p>1.6 Summary</p>
<p>Chapter 2: Digital commerce</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce basic terminology • Provide framework for running e-commerce site 	<p>2.1 E-commerce categories</p> <p style="padding-left: 20px;">B2C, B2B, C2C</p> <p style="padding-left: 20px;">Bricks & Mortar, Bricks & Clicks, Pure Play</p> <p>2.2 Business models</p> <p style="padding-left: 20px;">Online retail</p> <p style="padding-left: 20px;">Infomediaries</p> <p style="padding-left: 20px;">Online communities</p> <p style="padding-left: 20px;">Online exchanges</p> <p style="padding-left: 20px;">Content providers</p> <p style="padding-left: 20px;">Online software</p> <p style="padding-left: 20px;">Gaming</p> <p>2.3 Mobile commerce</p> <p>2.4 Multiple business models</p> <p>2.5 Online revenue models</p> <p>2.6 Summary</p>
<p>Chapter 3: The manager</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce manager as stakeholder • Help students understand major concerns of managers 	<p>3.1 Who is the manager and what do they want</p> <p>3.2 Online strategy</p> <p style="padding-left: 20px;">Strategic vision</p> <p style="padding-left: 20px;">Governance</p> <p style="padding-left: 20px;">Resource allocation</p> <p style="padding-left: 20px;">Operational infrastructure</p> <p style="padding-left: 20px;">Management team</p> <p>3.3 Organizational structure</p> <p>3.4 Using goals with online strategy</p> <p style="padding-left: 20px;">Business-online goal alignment</p> <p style="padding-left: 20px;">Website goals</p> <p style="padding-left: 20px;">Key performance indicators</p> <p style="padding-left: 20px;">Metrics</p> <p>3.5 Summary</p>

<p>Chapter 4: The user</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce user as stakeholder • Help students understand major concerns of users 	<p>4.1 Who is the user and what do they want</p> <p>4.2 User goals</p> <ul style="list-style-type: none"> Experience goals End goals Life goals <p>4.3 Design for the user</p> <ul style="list-style-type: none"> Considerate Design Smart Design Social Design <p>4.4 User experience</p> <ul style="list-style-type: none"> Strategy Scope Structure Skeleton Surface Multiple platforms <p>4.5 Summary</p>
<p>Chapter 5: The marketer</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce marketer as stakeholder • Help students understand major concerns of marketers 	<p>5.1 Who is the marketer and what do they want</p> <p>5.2 Common marketing terms</p> <ul style="list-style-type: none"> 4 P's <p>5.3 Sales Funnel</p> <ul style="list-style-type: none"> Acquisition Conversion Retention Landing pages Email campaigns Search engine optimization Viral marketing Online advertising <p>5.4 Developing a digital marketing plan</p> <p>5.5 Summary</p>
<p>Chapter 6: The IT professional</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce IT professional as stakeholder • Help students understand major concerns of IT professionals 	<p>6.1 Who is the IT professional and what do they want</p> <ul style="list-style-type: none"> Automation Modular Hierarchy <p>6.2 Web development languages and software</p> <ul style="list-style-type: none"> HTML, CSS, JavaScript Server-side programming Libraries and Frameworks Content management systems <p>6.3 Domain names</p> <p>6.4 Hosting</p> <ul style="list-style-type: none"> Hosting options Platforms Virtual servers Server farms <p>6.5 Security</p>

	6.6 Summary
<p>Chapter 7: Putting it together</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Walk through how to create new e-commerce initiatives • Emphasize how to mitigate personal biases and minimize subjective opinions 	<p>7.1 Creating a new online initiative</p> <p>Common e-commerce mistakes</p> <p>7.2 Systems requirements</p> <p>7.3 Systems analysis, design, and development</p> <p>7.4 Systems implementation</p> <p>7.5 Operations and maintenance</p> <p>7.6 Summary</p>
Advanced topics	Some of these chapters may become online supplements
<p>Chapter 8: Internet, business, and society</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce major e-commerce social, legal, and ethical issues • Provide context for thinking through each issue 	<p>8.1 Societal trends online</p> <p>8.2 Legal issues</p> <p>Copyright</p> <p>Sales tax</p> <p>Net neutrality</p> <p>8.3 International e-commerce</p> <p>International law</p> <p>Censorship</p> <p>8.4 Ethical issues</p> <p>Ethical guidelines</p> <p>E-commerce ethical issues</p> <p>8.5 Privacy</p> <p>8.6 Summary</p>
<p>Chapter 9: Enterprise web programming</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce advanced web programming concepts and considerations • Walk through how to plan e-commerce sites using these technologies 	<p>9.1 Enterprise online programming considerations</p> <p>9.2 Web services</p> <p>Web services</p> <p>Mashups</p> <p>APIs</p> <p>9.3 Enterprise integration</p> <p>Service oriented architecture</p> <p>Middleware</p> <p>Cloud computing</p> <p>9.4 Online Project Portfolio Management</p> <p>9.5 Summary</p>
<p>Chapter 10: Infrastructure</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce key technologies and organization of the Internet • Walk through how to plan for bandwidth 	<p>10.1 Internet architecture</p> <p>Packet switching</p> <p>TCP/IP</p> <p>Domain name system</p> <p>10.2 Internet governance</p> <p>Internet Engineering Task Force</p> <p>ICANN</p> <p>Domain name registers</p> <p>World Wide Web Consortium</p> <p>10.3 Internet service</p> <p>Internet service providers</p> <p>Internet Backbone</p> <p>10.4 Planning for Internet bandwidth</p>

	10.5 Summary
<p>Chapter 11: Web analytics</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce web analytics terms and practices • Walk through how to use analytics for business decisions 	<p>11.1 Why website analytics</p> <p>11.2 Analytics concepts and terms</p> <p>11.3 From key performance indicators to key performance metrics</p> <p>11.4 Using Analytics for business decisions</p> <p>11.5 Summary</p>
<p>Chapter 12: Security</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce security threats to e-commerce sites • Walk through how to mitigate those threats 	<p>12.1 Why security matters</p> <p>12.2 Methods of attack</p> <ul style="list-style-type: none"> OWASP top ten Spoofing Tampering Repudiation Information Disclosure Denial of Service Elevation of Privilege <p>12.3 Information assurance</p> <ul style="list-style-type: none"> Confidentiality Integrity Availability <p>12.4 Security principles</p> <ul style="list-style-type: none"> Authentication Authorization Browser Security Database security File security <p>12.5 Non-technical defense</p> <ul style="list-style-type: none"> Training Passwords Business continuity and disaster recovery <p>12.6 Summary</p>
<p>Chapter 13: Monetization</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce various technologies and terms used in making money online • Walk through how to choose from various monetization technologies 	<p>13.1 Payment methods</p> <ul style="list-style-type: none"> Credit cards Debit cards Digital currency Virtual currency Digital wallets <p>13.2 Payment channels</p> <ul style="list-style-type: none"> Point of Sale Mobile payments Online payments Integrated voice response Converged channels <p>13.3 Payment gateways</p> <ul style="list-style-type: none"> Merchant solutions Payment Service Providers <p>13.4 Global issues</p>

	13.5 Summary
<p>Chapter 14: Advanced digital design</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce design best practices • Walk through how to work with design and function 	<p>14.1 Working with Personas</p> <p>14.2 Functional and Content</p> <p>14.3 Information architecture</p> <p>Navigation</p> <p>Search</p> <p>Vocabularies</p> <p>14.4 Interaction design</p> <p>14.5 Mobile design best practices</p> <p>14.6 Trade-offs between design and functionality</p> <p>14.7 Summary</p>
<p>Chapter 15: Search engine optimization</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce how search engines work • Walk through how optimize a website for higher search engine rankings 	<p>15.1 How search engines work</p> <p>15.2 Identifying Keywords</p> <p>15.3 Content optimization</p> <p>15.4 Authority links</p> <p>15.5 Dangerous practices</p> <p>15.6 Multi-channel optimization</p> <p>15.7 Summary</p>
<p>Chapter 16: Digital advertising</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce how online advertising works. • Walk through optimization strategies for advertising online and from earning revenue from displaying ads. 	<p>16.1 Why advertising</p> <p>Two sides to advertising – buyers and sellers</p> <p>Types of online ads</p> <p>16.2 Running advertisements</p> <p>Elements of online ads</p> <p>Advertising campaigns</p> <p>Key words</p> <p>16.3 Ad networks</p> <p>16.4 Revenue from advertising</p> <p>16.5 Mobile advertising</p> <p>16.6 Summary</p>
<p>Chapter 17: Community/social engagement</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce the purpose and technologies for online communities, social media publishing, and mobile interactivity • Walk through how to engagement customers and users through online communities, social media, and mobile technologies 	<p>17.1 Why create communities</p> <p>17.2 Types of communication –</p> <p>Synchronous vs. asynchronous</p> <p>Group conversations</p> <p>Types of social media</p> <p>17.2 Types of social behavior</p> <p>Collecting</p> <p>Sharing</p> <p>Broadcasting</p> <p>Feedback</p> <p>17.3 Engagement</p> <p>Community forums</p> <p>Social media</p> <p>Mobile</p> <p>17.4 Summary</p>
Chapter 18: Enterprise productivity and	18.1 Intranets

<p>B2B commerce</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce common online technologies used for organization productivity and integration • Walk through why these technologies add value to an organization 	<p>18.2 Collaborative software</p> <p>18.3 Virtualization of business processes</p> <p>18.4 Supply chain management</p> <p>EDI</p> <p>Extranets</p> <p>18.5 Industry marketplaces</p> <p>18.6 Summary</p>
<p>Chapter 19: Information economics</p> <p>Teaching Objectives:</p> <ul style="list-style-type: none"> • Introduce topics on information goods, information economics, and how the changing marketplace • Walk through how to plan e-commerce initiatives for the future 	<p>19.1 Information goods</p> <p>19.2 Emerging business models</p> <p>19.3 Information economics</p> <p>19.4 Ubiquitous computing</p> <p>19.5 Internet of Things</p> <p>19.6 Planning for the future</p> <p>19.7 Summary</p>

Suggested 12 chapter combinations of advanced topics:

IT focus – Chapters 9, 10, 12, 14, 18

Marketing focus – Chapters 8, 11, 15, 16, 17

Business focus – Chapters 8, 13, 17, 18, 19

Author Bios:

John Drake is an Assistant Professor of Management Information Systems at East Carolina University. He holds a BS in Physics from Southern Illinois University at Edwardsville and a Ph.D. in Management of Information Technology and Innovation from Auburn University. His research has appeared in journals such as *Journal of Business Ethics*, *IEEE Transactions on Professional Communication*, *Journal of Information Technology Theory and Application*, *Journal of Theoretical and Applied Electronic Commerce Research*, and the *Journal of Information Technology Education*. His current research interests focus on e-commerce, social media privacy, online education, and business ethics. Prior to academia, John was a web developer and consultant for 5 years.

Jeffrey Bohler is an Assistant Professor in the Sorrell College of Business at Troy University where he has been a faculty member since 2008. He works at the Phenix City, Alabama campus where he teaches Information System courses that include programming, database, networking, knowledge management, and information assurance courses. His research interests include E-Commerce innovations, the impact on innovative technologies on educational processes, Internet application development, decision making, and supply chain management technology. He has consulted with organizations on educational and decision making projects.

Jeff completed his Ph.D. at Auburn University and his undergraduate studies at the Georgia Institute of Technology. He has been recognized by professional associations with awards for excellence in teaching and program effectiveness and is a member of the Association for Information Systems and the Institute for Operations Research and the Management Sciences.