

# DIGITAL BUSINESS AND E-COMMERCE MANAGEMENT

**DAVE CHAFFEY,  
TANYA HEMPHILL  
DAVID EDMUNDSON-BIRD**

**V Pearson**

Harlow, England • London • New York • Boston • San Francisco • Toronto • Sydney • Dubai • Singapore • Hong Kong  
Tokyo • Seoul • Taipei • New Delhi • Cape Town • Sao Paulo • Mexico City • Madrid • Amsterdam • Munich • Paris • Milan

# Contents

Preface	xiv	Drivers of consumer technology adoption	28
About the authors	xxv	Barriers to consumer digital adoption	29
Acknowledgements	xxvii	Case study 1.2: Amazon – the world's largest digital business?	30
Publisher's acknowledgements	xxviii	Summary	32
		<i>Exercises</i>	33
		<i>References</i>	34
		<i>Web links</i>	35
<b>Introduction</b>	<b>1</b>	<b>Opportunity analysis for digital business and e-commerce</b>	<b>36</b>
<b>Introduction to digital business</b>	<b>3</b>	<i>Learning outcomes</i>	36
<i>Learning outcomes</i>	3	<i>Management issues</i>	36
<i>Management issues</i>	3	<i>Links to other chapters</i>	36
<i>Links to other chapters</i>	3	Introduction	37
Introduction	4	Business and revenue models for e-commerce	37
The impact of digital communications on traditional businesses	6	Digital marketplace analysis	38
Inbound marketing	6	Case study 2.1: How Boden grew from an eight-product menswear catalogue to an international brand with over £300 million in sales	39
Social media marketing	7	Strategic agility	41
<i>Trends update: Social media usage</i>	7	Case study 2.2: Unilever demonstrates strategic agility	41
Case study 1.1: The Uber business model	8	A process for digital marketplace analysis	42
Mobile commerce	10	Case study 2.3: Macy's – using omnichannel growth strategies to improve customer experience	44
<i>Trends update: Mobile usage</i>	10	<i>1 Customer segments</i>	46
What is the difference between a digital business and an e-commerce business?	11	<i>2 Search intermediaries</i>	46
E-commerce defined	11	<i>3 Intermediaries, influencers and media sites</i>	47
<i>Trends update: E-commerce growth rates</i>	12	<i>4 Destination sites</i>	47
Digital business defined	13	Location of trading in the marketplace	49
Intranets and extranets	13	Review of marketplace channel structures	49
Different types of sell-side e-commerce	14	Location of trading in the marketplace	52
<i>Digital marketing</i>	16	The importance of omnichannel marketplace models	52
<i>Trends update: Social network usage</i>	17	Commercial arrangement for transactions	54
Options for organisations to reach a digital audience	17	Different types of online intermediary and influencers	54
<i>Owned, earned and paid media options</i>	17	Summary of the types of intermediary	55
<i>The six key types of digital media channels</i>	18	The importance of search engines	56
<i>The social internet and user-generated content</i>	20	Business models for e-commerce	56
<i>Supply chain management</i>	21	Revenue models	58
Business or consumer models of e-commerce transactions	22	Online publisher and intermediary revenue models	58
<i>Dot Gov defined</i>	23	<i>Calculating revenue for an online business</i>	60
Digital business opportunities	24	<i>Focus on Digital start-up companies</i>	63
Drivers of digital technology adoption	25	Assessing digital businesses	63
<i>Cost/efficiency drivers</i>	25		
<i>Competitiveness drivers</i>	26		
Barriers to the adoption of technology by digital business stakeholders	27		
Evaluating an organisation's digital business capabilities	28		

Valuing tech start-ups	63	Intranet applications	102
1 <i>Concept</i>	64	Extranet applications	102
2 <i>Innovation</i>	64	Encouraging use of intranets and extranets	105
3 <i>Execution</i>	65	Streaming TV	106
4 <i>Traffic</i>	66	Voice over IP (VoIP)	106
5 <i>Financing</i>	66	Widgets	107
6 <i>Profile</i>	66	Technology standards	107
Case study 2.4: i-to-i – a global marketplace for a start-up	66	Examples of XML applications	107
Summary	68	Semantic web standards	108
<i>Exercises</i>	69	Microformats	109
<i>References</i>	70	Focus on Internal and external governance factors that impact digital business	109
<i>Web links</i>	71	The Net neutrality principle	109
<b>3 Managing digital business infrastructure</b>	72	The Internet Corporation for Assigned Names and Numbers (ICANN, <a href="http://www.icann.org">www.icann.org</a> )	111
<i>Learning outcomes</i>	72	The Internet Society ( <a href="http://www.isoc.org">www.isoc.org</a> )	111
<i>Management issues</i>	72	The Internet Engineering Task Force (IETF, <a href="http://www.ietf.org">www.ietf.org</a> )	111
<i>Links to other chapters</i>	72	The World Wide Web Consortium ( <a href="http://www.w3.org">www.w3.org</a> )	112
Introduction	73	Telecommunications Information Networking Architecture Consortium (TINA-C, <a href="http://www.tinac.com">www.tinac.com</a> )	112
Supporting the growing range of digital business technology platforms	77	How can companies influence or take control of Internet standards?	112
<i>Desktop, laptop and notebook platforms</i>	77	Open-source software	113
<i>Mobile phone and tablet platforms</i>	78	Case study 3.1: Innovation at Google (2017 update)	114
<i>Trends update: Mobile usage</i>	79	Summary	115
Other hardware platforms	80	<i>Exercises</i>	116
Augmented reality	82	<i>References</i>	117
Digital business infrastructure components	83	<i>Web links</i>	119
A short introduction to digital technology	85	<b>4 Key issues in the digital environment</b>	120
Management issues in creating a new customer-facing digital service	86	<i>Learning outcomes</i>	120
Domain name selection	86	<i>Management issues</i>	120
Uniform resource locators (URLs)	86	<i>Links to other chapters</i>	120
Domain name registration	87	Introduction	121
Managing hardware and systems software infrastructure	88	Social factors	125
<i>Layer II – systems software</i>	88	Legal and ethical factors	125
Managing digital business applications infrastructure	88	Economic factors	126
<i>Focus on</i> The development of customer experiences and digital services	91	Political factors	127
Benefits of web services or SaaS	91	Technology factors	127
<i>Application programming interfaces (APIs)</i>	92	Cultural factors	128
Challenges of deploying SaaS	92	Factors affecting e-commerce buying behaviour	128
Cloud computing	94	Understanding users' access requirements	131
<i>Examples of cloud computing web services</i>	94	Consumers influenced by using the online channel	131
<i>Visualisation</i>	96	Motivation for use of online services	133
<i>Service-orientated architecture (SOA)</i>	97	Business demand for digital business services	136
Selecting hosting providers	98	E-commerce sales across the EU	139
Managing service quality when selecting Internet service and cloud hosting providers	98	Privacy and trust in e-commerce	140
ISP connection methods	98	Privacy legislation	141
<i>Issues in management of ISP and hosting relationships</i>	98	Why personal data is valuable for digital business	142
<i>Speed of access</i>	98	Worldwide regulations on privacy and electronic communications	145
<i>Availability</i>	101	Viral email marketing	148
<i>Service level agreements</i>	101	Other e-commerce legislation	148
<i>Security</i>	101	1 <i>Marketing your e-commerce business</i>	148
Managing internal digital communications through internal networks and external networks	102		

2 Forming an electronic contract (contract law and distance-selling law)	149
3 Making and accepting payment	151
4 Authenticating contracts concluded over the Internet	151
5 Email risks	151
6 Protecting intellectual property (IP)	151
7 Advertising on the Internet	152
8 Data protection	152
Environmental and green issues related to Internet usage	152
Taxation	153
Tax jurisdiction	153
Freedom-restrictive legislation	154
Economic and competitive factors	155
Case study 4.1: The implications of micro-localisation vs globalisation based on consumer attitudes	157
The implications of e-commerce for international B2B trading	159
Government and digital transformation	161
Internet governance	164
E-government	164
Technological innovation and technology assessment	164
Approaches to identifying emerging technology	167
Summary	169
Exercises	170
References	171
Web links	173

Resource-advantage mapping	205
Strategic objectives	206
Defining vision and mission	206
VMOST	207
How can digital business create business value?	210
Case study 5.1: Arriva Bus redesigns its m-ticket app and boosts revenue by over 17%	210
Objective setting	212
The online revenue contribution	213
Conversion modelling for self-side e-commerce	213
Case study 5.2: Setting the Internet revenue contribution at Sandvik Steel	215
The balanced scorecard approach to objective setting	217
Strategy definition	218
Selection of digital business strategy options	218
Decision 1: Digital business channel priorities	220
The diversification of digital platforms	221
Decision 2: Market and product development strategies	221
Decision 3: Positioning and differentiation strategies	224
Decision 4: Business, service and revenue models	228
Decision 5: Marketplace restructuring	229
Decision 6: Supply chain management capabilities	229
Case study 5.3: Zappos innovates in the digital marketplace	229
Decision 7: Internal knowledge management capabilities	231
Decision 8: Organisational resourcing and capabilities	231
Strategy implementation	234
Failed digital business strategies	234
Digital business strategy implementation success factors for SMEs	235
Case study 5.4: Boo hoo – learning from the largest European dot.com failure	235
Focus on Aligning and impacting digital business strategies	238
Elements of information systems (IS) strategy	239
Investment appraisal	241
Decisions about which business applications to invest in	241
The productivity paradox	242
Summary	243
Exercises	244
References	244
Web links	247



## Strategy and applications

177

<b>5 Digital business strategy</b>	<b>179</b>
Learning outcomes	179
Management issues	179
Links to other chapters	179
Introduction	180
Development of the social business	183
What is digital business strategy?	187
The imperative for digital business strategy	188
Digital channel strategies	188
Platform strategy	190
Strategy process models for digital business	192
Strategic analysis	196
Resource and process analysis	196
Stage models of digital business development	197
Application portfolio analysis	198
Organisational and IS SWOT analysis	200
Human and financial resources	201
Competitive environment analysis	202
Demand analysis	202
Assessing competitive threats	202
Competitive threats	203
Sell-side threats	204
Buy-side threats	205
Competitor analysis	205

<b>6 Supply chain and demand</b>	<b>248</b>
Learning outcomes	248
Management issues	248
Links to other chapters	248
Introduction	249
Case study 6.1: Fast-fashion retailer Zara uses its supply chain to achieve competitive advantage	249

Problems of supply chain management	252	<b>7 Digital marketing</b>	303
What is supply chain management and e-procurement?	253	<i>Learning outcomes</i>	303
A simple model of a supply chain	255	<i>Management issues</i>	303
Case study 6.2: Shell Chemicals redefines its customers' supply chains	258	<i>Links to other chapters</i>	303
What is logistics?	261	Introduction	304
Push and pull supply chain models	262	Chapter structure	305
<i>Focus on</i> The value chain	263	What is digital marketing?	307
Restructuring the internal value chain	265	Marketing defined	307
The value stream	265	<i>Inbound marketing</i>	309
Value chain analysis	266	<i>Content marketing</i>	309
Value networks	267	Digital marketing planning	312
Options for restructuring the supply chain	269	Is a separate digital marketing plan required?	312
Using digital business to restructure the supply chain	271	Situation analysis	314
Technology options and standards for supply chain management	272	Customer demand analysis	314
Case study 6.3: Argos uses e-supply chain management to improve customer convenience	273	<i>Qualitative customer research</i>	318
IS-supported upstream supply chain management	274	Competitor analysis	320
<i>RFID and the Internet of Things</i>	274	Intermediary or influencer analysis	321
IS-supported downstream supply chain management	274	Internal marketing audit	322
Outbound logistics management	275	Objective setting	322
IS infrastructure for supply chain management	275	Case study 7.1: The evolution of easyJet's online revenue contribution	325
Supply chain management implementation	276	Strategy	328
Data standardisation and exchange	277	Market and product positioning	330
The supply chain management strategy process	277	Target market strategies	331
Goal-setting and performance management for eSCM	278	<i>Content strategy</i>	335
Managing partnerships	279	Focus on Characteristics of digital media communications	336
Managing global distribution	280	<i>1 Interactivity</i>	336
Case study 6.4: RFID – keeping track starts its move to a faster track	282	<i>2 Intelligence</i>	337
What is e-procurement?	283	<i>3 Individualization</i>	337
Understanding the procurement process	283	<i>4 Integration</i>	338
Types of procurement	284	<i>5 Industry restructuring</i>	340
Participants in different types of e-procurement	285	<i>6 Independence of location</i>	341
Drivers of e-procurement	286	Tactics	341
Examples of the benefits of e-procurement	288	Product	343
Case study 6.5: Honeywell improves efficiency through SCM and e-procurement	288	Case study 7.2: Dell gets closer to its customers online	346
<i>Focus on</i> Estimating e-procurement costs	289	Price	348
The impact of cost savings on profitability	289	Place	352
Barriers and risks of e-procurement adoption	289	Promotion	353
Implementing e-procurement	291	People, process and physical evidence	355
Integrating company systems with supplier systems	293	<i>Focus on</i> Digital branding	355
<i>Focus on</i> B2B marketplaces	295	Brand identity	356
Types of marketplace	295	The importance of brand online	358
The future of e-procurement	296	Actions	358
Summary	297	Control	360
<i>Exercises</i>	298	Summary	360
<i>References</i>	299	<i>Exercises</i>	361
<i>Web links</i>	301	<i>References</i>	362
		<i>Web links</i>	364
		<b>8 Customer relationship management</b>	365
		<i>Learning outcomes</i>	365
		<i>Management issues</i>	365
		<i>Links to other chapters</i>	365
		Introduction	366
		Marketing applications of CRM	367



Usability	480	History of change and change management	530
Evaluating designs	480	The change in strategic position of digital versus technology	531
Use-case analysis	481	The need for digital transformation	531
<i>Persona and scenario analysis</i>	481	Understanding the reasons for digital transformation	532
<i>Stages in use-case analysis</i>	484	The opportunities provided by digital	532
Designing the information architecture	487	Where does digital transformation occur?	532
<i>Card sorting</i>	488	<i>Customer experience and service design</i>	532
<i>Blueprints</i>	488	<i>Customer insight</i>	533
<i>Wireframes</i>	490	<i>Adding value</i>	534
Customer orientation	491	<i>Interfaces with customers</i>	535
Elements of site design	493	<i>Business process</i>	536
<i>Site design and structure</i>	493	<i>The business model</i>	537
<i>Page design</i>	496	<i>New business where digital is at the heart of the opportunity</i>	538
<i>Content design</i>	497	<i>Adapting the existing business to a digital opportunity</i>	539
Mobile design	498	The framework of digital transformation	540
<i>Mobile site design option A. Responsive design</i>	498	The process of review	540
<i>Mobile site design option B. Adaptive design</i>	498	<i>What the digital opportunity is</i>	540
<i>Mobile site design option C. HTML5</i>	499	<i>How sure the organisation is of the opportunity</i>	541
<i>Mobile site design option D. Separate mobile domain (screen scrape)</i>	501	<i>What level of digital the leadership of the organisation possesses</i>	541
Web accessibility	502	<i>How mature as a digital business the organisation sees itself</i>	541
Case study 9.1: Providing a better online user experience in a B2B market	504	The process of strategy	542
<i>Focus on Security design for digital business</i>	506	<i>A focus on the objective for the future rather than solving an existing problem</i>	542
Secure e-commerce transactions	512	The process of resourcing and planning	543
<i>Principles of secure systems</i>	513	<i>The design of the transformation</i>	543
Approaches to developing secure systems	513	<i>A programme for change</i>	543
<i>Digital certificates</i>	513	The process of deployment	543
<i>Digital signatures</i>	514	The process of living with, and evaluating, digital transformation	544
<i>The public-key infrastructure (PKI) and certificate authorities (CAs)</i>	514	What is growth hacking?	545
<i>Virtual private networks</i>	515	Defining goals and KPIs	548
Current approaches to e-commerce security	515	How to use a single metric to run a start-up	550
<i>Secure Sockets Layer protocol (SSL)</i>	515	Creating a growth hacking mindset	551
<i>Certificate authorities (CAs)</i>	515	Ideal skill set of a growth hacking team	551
Reassuring the customer	516	Use of Scrum, an agile methodology, in digital marketing	552
Summary	516	Scrum meetings	554
<i>Exercises</i>	517	<i>Sprint planning</i>	556
<i>References</i>	518	<i>Daily Scrum</i>	556
<i>Web links</i>	520	<i>Sprint review and retrospective</i>	557
<b>Managing digital business transformation and growth hacking</b>	522	Developing agile marketing campaigns	557
<i>Learning outcomes</i>	522	The growth hacking process	558
<i>Management issues</i>	522	1 Product/market fit (create an MVP – Minimum Viable Product)	558
<i>Links to other chapters</i>	522	<i>Trigger</i>	558
Introduction	523	<i>Action</i>	559
Case study 10.1: Transforming an entire industry and supply chain: Spotify and Spotify Connect	523	<i>Rewards</i>	560
Definitions of digital transformation	524	<i>Investment</i>	560
Definitions of digital business transformation	524	2 User data analysis	561
Why is digital business transformation not just about IT?	525	<i>Main areas of user testing</i>	561
<i>The applications portfolio – a precursor to digital business transformation</i>	525	3 Conversion rate optimisation	562
The emergence of digital transformation as a discipline	530	<i>Key CRO elements</i>	562

<i>A/B and multivariate testing</i>	564	Principles of performance management and improvement	590
<i>Clickstream analysis and visitor segmentation</i>	567	<i>Stage 1: Creating a performance management system</i>	590
Budgeting	569	<i>Stage 2: Defining the performance metrics framework</i>	592
Case study 10.2: Learning from Amazon's culture of metrics	571	<i>Focus on Measuring social media marketing</i>	596
4 Viral growth	575	<i>Stage 3: Tools and techniques for collecting metrics and summarising results</i>	598
<i>Inherent virality: Skype</i>	576	<i>Collecting site outcome data</i>	599
<i>Artificial virality: Giffgaff</i>	577	<i>Selecting a web analytics tool</i>	600
<i>Word-of-mouth virality: Zappos</i>	577	<i>User testing prioritisation</i>	603
<i>Measuring virality</i>	577	<i>Summary</i>	603
5 Retention and scalable growth	577	<i>Exercises</i>	604
Creating the right environment for growth hacking	579	<i>References</i>	605
Bridging the digital and physical world	580	<i>Web links</i>	607
<i>Best traditional marketing methods for growth hacking</i>	580	Glossary	609
Case study 10.3: How Leon used PR to growth hack	582	Index	623
Growth hacking framework	583		
Twenty traction channels to test	585		
Data analysis	586		
Measuring implementation success	589		
<i>Focus on Web analytics: Measuring and improving performance of digital business services</i>	589		

## Lecturer Resources

For password-protected online resources tailored to support the use of this textbook in teaching, please visit [www.pearsoned.co.uk/chaffey](http://www.pearsoned.co.uk/chaffey)