

Contents



Preface	xiv	Risks and barriers to digital business adoption	32
Guided tour	xxvi	Evaluating an organisation's digital business capabilities	32
About the author	xxviii	Drivers of consumer technology adoption	32
Acknowledgements	xxix	Barriers to consumer Internet adoption	34
		Case Study 1.2 eBay – the world's largest online business?	34
		Summary	37
		<i>Exercises</i>	38
		<i>References</i>	39
		<i>Web links</i>	40
Part 1			
Introduction	1		
1 Introduction to digital business and e-commerce	3	2 Marketplace analysis for e-commerce	41
<i>Learning outcomes</i>	3	<i>Learning outcomes</i>	41
<i>Management issues</i>	3	<i>Management issues</i>	41
<i>Links to other chapters</i>	3	<i>Links to other chapters</i>	41
Introduction	4	Introduction	42
The impact of electronic communications on traditional businesses	6	Business and revenue models for e-commerce	42
Inbound marketing	6	Online marketplace analysis	42
Social media marketing	7	Strategic agility	46
<i>Trends update: Social media usage</i>	7	A process for online marketplace analysis	47
Case Study 1.1 The Facebook business model	8	Location of trading in the marketplace	53
Mobile commerce	12	Review of marketplace channel structures	53
<i>Trends update: Mobile usage</i>	12	Location of trading in the marketplace	55
What is the difference between digital business and e-commerce?	13	The importance of multichannel marketplace models	55
E-commerce defined	13	Commercial arrangement for transactions	57
<i>Trends update: E-commerce growth rates</i>	13	Different types of online intermediary and influencers	57
Digital business defined	14	Summary of the types of intermediary	58
Intranets and extranets	15	The importance of search engines	58
Different types of sell-side e-commerce	17	Business models for e-commerce	58
<i>Digital marketing</i>	18	Revenue models	62
<i>Trends update: Social network usage</i>	19	Online publisher and intermediary revenue models	62
Options for companies to reach their audience online	19	<i>Calculating revenue for an online business</i>	64
<i>Owned, earned and paid media options</i>	19	<i>Focus on Online start-up companies</i>	66
<i>The six key types of digital media channels</i>	20	Assessing online businesses	67
<i>Web 2.0 and user-generated content</i>	23	Valuing Internet start-ups	67
<i>Supply chain management</i>	24	1 <i>Concept</i>	67
Business or consumer models of e-commerce transactions	24	2 <i>Innovation</i>	67
<i>E-government defined</i>	28	3 <i>Execution</i>	67
Digital business opportunities	28	4 <i>Traffic</i>	68
Drivers of digital technology adoption	30	5 <i>Financing</i>	68
<i>Cost/efficiency drivers</i>	30	6 <i>Profile</i>	68
<i>Competitiveness drivers</i>	30	<i>Examples of e-commerce failures</i>	68
		Case Study 2.1 i-to-i – a global marketplace for a start-up company	69
		Why dot-coms failed	70

Summary	73	<i>Microformats</i>	116
<i>Exercises</i>	74	<i>Focus on Internet governance</i>	116
<i>References</i>	75	<i>The net neutrality principle</i>	117
<i>Web links</i>	76	<i>The Internet Corporation for Assigned Names and Numbers (ICANN, www.icann.org)</i>	118
3 Managing digital business infrastructure	77	<i>The Internet Society (www.isoc.org)</i>	119
<i>Learning outcomes</i>	77	<i>The Internet Engineering Task Force (IETF, www.ietf.org)</i>	119
<i>Management issues</i>	77	<i>The World Wide Web Consortium (www.w3.org)</i>	119
<i>Links to other chapters</i>	77	<i>Telecommunications Information Networking Architecture Consortium (TINA-C, www.tinac.com/)</i>	119
Introduction	78	<i>How can companies influence or take control of Internet standards?</i>	119
Supporting the growing range of digital business technology platforms	82	<i>Open-source software</i>	120
<i>Desktop, laptop and notebook platforms</i>	83	Case Study 3.1 Innovation at Google	121
<i>Mobile phone and tablet platforms</i>	83	Summary	123
<i>Trends update: Mobile usage</i>	83	<i>Exercises</i>	123
Other hardware platforms	85	<i>References</i>	124
Augmented reality	87	<i>Web links</i>	125
Digital business infrastructure components	88	4 E-environment	127
A short introduction to Internet technology	89	<i>Learning outcomes</i>	127
Management issues in creating a new customer-facing digital service	90	<i>Management issues</i>	127
Domain name selection	90	<i>Links to other chapters</i>	127
Uniform resource locators (URLs)	91	Introduction	128
Domain name registration	92	Social and legal factors	131
Managing hardware and systems software infrastructure	92	Factors governing e-commerce service adoption	131
<i>Layer II – Systems software</i>	93	<i>Understanding users' access requirements</i>	132
Managing digital business applications infrastructure	93	<i>Consumers influenced by using the online channel</i>	133
<i>Focus on Web services, SaaS, cloud computing and service-oriented architecture (SOA)</i>	96	<i>Motivation for use of online services</i>	133
Benefits of web services or SaaS	96	<i>Purchased online</i>	136
<i>Application programming interfaces (APIs)</i>	97	<i>Business demand for digital business services</i>	136
Challenges of deploying SaaS	97	<i>B2B profiles</i>	137
Cloud computing	98	<i>Adoption of digital business by businesses</i>	137
<i>Examples of cloud computing web services</i>	99	Privacy and trust in e-commerce	137
<i>Virtualisation</i>	101	<i>Privacy legislation</i>	139
<i>Service-oriented architecture (SOA)</i>	102	<i>Why personal data are valuable for digital businesses</i>	139
Selecting hosting providers	102	<i>Anti-spam legislation</i>	145
Managing service quality when selecting Internet service and cloud hosting providers	103	<i>Regulations on privacy and electronic communications</i>	145
ISP connection methods	103	<i>Worldwide regulations on privacy and electronic communications</i>	145
<i>Issues in management of ISP and hosting relationships</i>	103	Other e-commerce legislation	150
<i>Speed of access</i>	103	1 <i>Marketing your e-commerce business</i>	150
<i>Availability</i>	105	2 <i>Forming an electronic contract (contract law and distance-selling law)</i>	152
<i>Service level agreements</i>	106	3 <i>Making and accepting payment</i>	153
<i>Security</i>	106	4 <i>Authenticating contracts concluded over the Internet</i>	153
Managing internal digital communications through intranets and extranets	107	5 <i>Email risks</i>	153
<i>Intranet applications</i>	107	6 <i>Protecting intellectual property (IP)</i>	153
<i>Extranet applications</i>	109	7 <i>Advertising on the Internet</i>	154
<i>Encouraging use of intranets and extranets</i>	112	8 <i>Data protection</i>	154
<i>IPTV (Internet TV)</i>	113	Environmental and green issues related to Internet usage	154
<i>Voice over IP (VoIP)</i>	113		
<i>Widgets</i>	113		
Web presentation and data exchange standards	114		
<i>Examples of XML applications</i>	114		
<i>Semantic web standards</i>	115		

Taxation	155
<i>Tax jurisdiction</i>	156
Freedom-restrictive legislation	157
Economic and competitive factors	158
Case Study 4.1 The implications of globalisation for consumer attitudes	160
The implications of e-commerce for international B2B trading	161
Political factors	162
Internet governance	164
E-government	164
Technological innovation and technology assessment	165
Approaches to identifying emerging technology	168
Summary	170
<i>Exercises</i>	171
<i>References</i>	172
<i>Web links</i>	174

<i>The balanced scorecard approach to objective setting</i>	216
Strategy definition	217
<i>Selection of digital business strategy options</i>	217
Decision 1: Digital business channel priorities	218
<i>The diversification of digital platforms</i>	220
Decision 2: Market and product development strategies	220
Decision 3: Positioning and differentiation strategies	224
Decision 4: Business, service and revenue models	225
Decision 5: Marketplace restructuring	228
Decision 6: Supply chain management capabilities	228
Decision 7: Internal knowledge management capabilities	230
Decision 8: Organisational resourcing and capabilities	230
Strategy implementation	232
Failed digital business strategies	232
Digital business strategy implementation success factors for SMEs	234
Case Study 5.3 Boo hoo – learning from the largest European dot-com failure	234
<i>Focus on Aligning and impacting digital business strategies</i>	237
Elements of IS strategy	238
Investment appraisal	238
<i>Decisions about which business applications to invest in</i>	240
<i>The productivity paradox</i>	240
Summary	242
<i>Exercises</i>	243
<i>References</i>	244
<i>Web links</i>	246

Part 2

Strategy and applications 177

5 Digital business strategy	179
<i>Learning outcomes</i>	179
<i>Management issues</i>	179
<i>Links to other chapters</i>	179
Introduction	180
Development of the social business	180
What is digital business strategy?	184
The imperative for digital business strategy	185
Digital channel strategies	186
Strategy process models for digital business	189
Strategic analysis	192
Resource and process analysis	193
<i>Stage models of digital business development</i>	193
<i>Application portfolio analysis</i>	195
<i>Organisational and IS SWOT analysis</i>	196
<i>Human and financial resources</i>	197
Competitive environment analysis	198
<i>Demand analysis</i>	199
Assessing competitive threats	199
<i>Competitive threats</i>	199
<i>Sell-side threats</i>	201
<i>Buy-side threats</i>	202
Co-opetition	203
Competitor analysis	203
<i>Resource-advantage mapping</i>	203
Strategic objectives	203
Defining vision and mission	203
How can digital business create business value?	207
Case Study 5.1 Debenhams creates value through mobile commerce	208
Objective setting	209
<i>The online revenue contribution</i>	211
<i>Conversion modelling for sell-side e-commerce</i>	211
Case Study 5.2 Setting the Internet revenue contribution at Sandvik Steel	213

6 Supply chain management	247
<i>Learning outcomes</i>	247
<i>Management issues</i>	247
<i>Links to other chapters</i>	247
Introduction	248
Problems of supply chain management	251
What is supply chain management?	252
Using technology to support supply chain management – an example	253
A simple model of a supply chain	255
Case Study 6.1 Shell Chemicals redefines its customers' supply chains	259
What is logistics?	263
Push and pull supply chain models	265
<i>Focus on The value chain</i>	266
Restructuring the internal value chain	267
The value stream	268
Value chain analysis	268
Value networks	270
Towards the virtual organisation	271
Options for restructuring the supply chain	272

Using digital business to restructure the supply chain	275	The future of e-procurement	319
Technology options and standards for supply chain management	275	Summary	320
Adoption rates of digital business applications	277	<i>Exercises</i>	320
<i>Benefits of e-supply chain management</i>	277	<i>References</i>	321
Case Study 6.2 Argos uses e-supply chain management to improve customer convenience	278	<i>Web links</i>	322
<i>IS-supported upstream supply chain management</i>	280	8 Digital marketing	323
<i>RFID and The Internet of Things</i>	280	<i>Learning outcomes</i>	323
IS-supported downstream supply chain management	281	<i>Management issues</i>	323
Outbound logistics management	281	<i>Links to other chapters</i>	323
IS infrastructure for supply chain management	283	Introduction	324
Supply chain management implementation	284	Chapter structure	325
Data standardisation and exchange	284	What is digital marketing?	328
The supply chain management strategy process	285	Marketing defined	328
Goal-setting and performance management for e-SCM	287	Digital marketing defined	330
Managing partnerships	287	<i>Inbound marketing</i>	331
Managing global distribution	289	<i>Content marketing</i>	331
Case Study 6.3 RFID: keeping track starts its move to a faster track	290	Digital marketing planning	334
Summary	292	Is a separate digital marketing plan required?	335
<i>Exercises</i>	292	Situation analysis	336
<i>References</i>	293	Customer demand analysis	338
<i>Web links</i>	295	<i>Qualitative customer research</i>	340
7 E-procurement	297	Competitor analysis	341
<i>Learning outcomes</i>	297	Intermediary or influencer analysis	343
<i>Management issues</i>	297	Internal marketing audit	344
<i>Links to other chapters</i>	297	Objective setting	344
Introduction	298	Case Study 8.1 The evolution of easyJet's online revenue contribution	347
What is e-procurement?	299	Strategy	350
Understanding the procurement process	301	Market and product positioning	351
Types of procurement	302	Target market strategies	352
Participants in different types of e-procurement	303	<i>Content strategy</i>	357
Drivers of e-procurement	304	<i>Focus on</i> Characteristics of digital media communications	358
Examples of the benefits of e-procurement	305	1 <i>Interactivity</i>	358
Case Study 7.1 Cambridge Consultants reduces costs through e-procurement	306	2 <i>Intelligence</i>	359
<i>Focus on</i> Estimating e-procurement costs	308	3 <i>Individualisation</i>	360
The impact of cost savings on profitability	308	4 <i>Integration</i>	361
Barriers and risks of e-procurement adoption	310	5 <i>Industry restructuring</i>	363
Implementing e-procurement	310	6 <i>Independence of location</i>	363
Integrating company systems with supplier systems	312	Tactics	363
<i>Focus on</i> B2B marketplaces	314	Product	366
<i>Why did so many B2B marketplaces fail?</i>	316	Case Study 8.2 Dell gets closer to its customers online	368
<i>Reasons for limited adoption of e-marketplaces</i>	316	Price	371
<i>From neutral to private B2B exchanges</i>	316	Place	374
Case Study 7.2 Covisint – a typical history of a B2B marketplace?	317	Promotion	376
Types of marketplace	318	People, process and physical evidence	377
		<i>Focus on</i> Online branding	378
		<i>Brand identity</i>	379
		The importance of brand online	380
		Actions	381
		Control	383
		Summary	383
		<i>Exercises</i>	383
		<i>References</i>	384
		<i>Web links</i>	386

9 Customer relationship management	387	<i>Reliability</i>	445
<i>Learning outcomes</i>	387	<i>Responsiveness</i>	445
<i>Management issues</i>	387	<i>Assurance</i>	446
<i>Links to other chapters</i>	387	<i>Empathy</i>	446
Introduction	388	Customer extension	448
Marketing applications of CRM	389	Advanced online segmentation and targeting techniques	448
What is e-CRM?	393	<i>Sense, Respond, Adjust – delivering relevant e-communications through monitoring customer behaviour</i>	450
<i>From e-CRM to social CRM</i>	393	<i>Recency, Frequency, Monetary value (RFM) analysis</i>	451
Benefits of e-CRM	394	Technology solutions for CRM	454
<i>Customer engagement strategy</i>	395	Types of CRM applications	455
Permission marketing	395	Integration with back-office systems	456
Customer profiling	396	The choice of single-vendor solutions or a more fragmented choice	456
Conversion marketing	397	Data quality	457
The online buying process	400	Case Study 9.1 Tesco.com increases product range and uses triggered communications to support CRM	457
Differences in buyer behaviour in target markets	400	Summary	459
Differences between B2C and B2B buyer behaviour	401	<i>Exercises</i>	460
<i>Influences on purchase</i>	401	<i>References</i>	461
The net promoter score	402	<i>Further reading</i>	464
Customer acquisition management	404	<i>Web links</i>	465
<i>Focus on Marketing communications for customer acquisition, including search engine marketing, online PR, online partnerships, interactive advertising, email marketing and social media marketing</i>	405		
The characteristics of interactive marketing communications	405		
1 <i>From push to pull</i>	405		
2 <i>From monologue to dialogue</i>	405		
3 <i>From one-to-many to one-to-some and one-to-one</i>	405		
4 <i>From one-to-many to many-to-many communications</i>	406		
5 <i>From 'lean-back' to 'lean-forward'</i>	406		
6 <i>The medium changes the nature of standard marketing communications tools such as advertising</i>	406		
7 <i>Increase in communications intermediaries</i>	406		
8 <i>Integration remains important</i>	407		
Assessing marketing communications effectiveness	407		
Online marketing communications	409		
1 <i>Search engine marketing (SEM)</i>	409		
2 <i>Online PR</i>	416		
<i>Focus on Social media and social CRM strategy</i>	418		
3 <i>Online partnerships</i>	426		
4 <i>Interactive advertising</i>	428		
5 <i>Email marketing</i>	431		
<i>Social media marketing</i>	435		
Customer retention management	436		
Personalisation and mass customisation	438		
<i>Creating personalisation</i>	439		
<i>Extranets</i>	439		
<i>Opt-in email</i>	440		
Techniques for managing customer activity and value	440		
Lifetime-value modelling	442		
<i>Focus on Excelling in e-commerce service quality</i>	443		
Improving online service quality	445		
<i>Tangibles</i>	445		

Part 3

Implementation

467

10 Change management	468
<i>Learning outcomes</i>	468
<i>Management issues</i>	468
<i>Links to other chapters</i>	468
Introduction	469
The challenges of digital business transformation	472
The challenges of sell-side e-commerce implementation	473
Different types of change in business	478
<i>Business process management</i>	479
<i>Discontinuous process change</i>	479
Case study 10.1 Process management: making complex business simpler	481
Planning change	483
The imperative for project governance?	483
The project plan and schedule for a digital business system	487
Prototyping	489
<i>Agile software development</i>	490
Human resource requirements	490
Staff retention	492
Outsourcing	492
Revising organisational structures	494
Approaches to managing change	496
Senior management involvement	497
Models for achieving change	498
Organisational culture	500
<i>Focus on Knowledge management</i>	501

What is knowledge?	502	<i>Mobile site design option B. Screen-scrape</i>	564
Objectives of knowledge management	504	<i>Mobile site design option C. Responsive design</i>	564
Implementing knowledge management	504	<i>Mobile site design option D. HTML5</i>	565
Technologies for implementing knowledge management	505	<i>Mobile site design option E. Adaptive design</i>	567
Using collaborative approaches for knowledge management	507	Web accessibility	567
Case Study 10.2 Using collaborative tools to support knowledge management at Janssen-Cilag Australia	507	Case Study 11.1 Providing an effective online experience for local markets	570
Towards the social business	510	<i>Focus on Security design for digital business</i>	572
What is social business?	510	Managing computer viruses	577
Risk management	511	<i>Types of virus</i>	577
Summary	512	<i>Protecting computer systems against viruses</i>	578
<i>Exercises</i>	513	Controlling information service usage	579
<i>References</i>	514	Monitoring of electronic communications	579
<i>Web links</i>	516	<i>Employee monitoring legislation</i>	582
11 Analysis and design	517	Email management	583
<i>Learning outcomes</i>	517	1 <i>Minimising spam (unsolicited email)</i>	583
<i>Management issues</i>	517	2 <i>Minimising internal business email</i>	585
<i>Links to other chapters</i>	517	3 <i>Minimising external business email</i>	586
Introduction	518	4 <i>Minimising personal email (friends and family)</i>	586
Analysis for digital technology projects	521	Hacking	586
Process modelling	522	<i>Protecting computer systems against hackers</i>	587
Process mapping	522	Secure e-commerce transactions	588
Task analysis and task decomposition	523	<i>Principles of secure systems</i>	588
Process dependencies	524	Approaches to developing secure systems	589
Workflow management	524	<i>Digital certificates</i>	589
<i>Flow process charts</i>	525	<i>Digital signatures</i>	590
<i>Effort duration analysis</i>	526	<i>The public-key infrastructure (PKI) and certificate authorities (CAs)</i>	590
<i>Network diagrams</i>	528	<i>Virtual private networks</i>	590
<i>Event-driven process chain (EPC) model</i>	529	Current approaches to e-commerce security	590
Validating a new process model	531	<i>Secure Sockets Layer Protocol (SSL)</i>	590
Data modelling	531	<i>Certificate authorities (CAs)</i>	591
1 <i>Identify entities</i>	531	Reassuring the customer	591
2 <i>Identify attributes for entities</i>	531	Summary	592
3 <i>Identify relationships between entities</i>	531	<i>Exercises</i>	592
<i>Big Data and data warehouses</i>	533	<i>References</i>	593
Design for digital technology projects	536	<i>Web links</i>	595
Architectural design of digital business systems	536	12 Digital business service implementation and optimisation	597
<i>Focus on User-centred site design and customer experience management</i>	538	<i>Learning outcomes</i>	597
<i>Usability</i>	543	<i>Management issues</i>	597
<i>Evaluating designs</i>	544	<i>Links to other chapters</i>	597
Use-case analysis	544	Introduction	598
<i>Persona and scenario analysis</i>	545	Optimisation of digital business services	599
<i>Stages in use-case analysis</i>	547	Alternatives for acquiring digital business systems	602
Designing the information architecture	550	Managing web content	603
<i>Card sorting</i>	552	<i>Web application frameworks and application servers</i>	605
<i>Blueprints</i>	552	<i>Content management systems</i>	606
<i>Wireframes</i>	552	<i>Selecting e-commerce servers</i>	607
Customer orientation	555	Testing	608
Elements of site design	558	The testing process	608
<i>Site design and structure</i>	558	Testing environments	609
<i>Page design</i>	562	Changeover	609
<i>Content design</i>	562	Database creation and data migration	610
Mobile design	562	Deployment planning	611
<i>Mobile site design option A. Simple mobile site</i>	563		

Content management and maintenance	611	<i>5 Channel profitability</i>	627
Managing a content marketing strategy	611	<i>Multichannel evaluation</i>	627
Frequency and scope of content and site updating	614	<i>Focus on Measuring social media marketing</i>	628
Maintenance process and responsibilities	615	Stage 3: Tools and techniques for collecting metrics and summarising results	629
<i>Process for routine content changes</i>	615	<i>Collecting site-visitor activity data</i>	629
<i>Frequency of content updates</i>	618	<i>Comparing apples to oranges?</i>	630
<i>Process for major changes</i>	618	<i>Collecting site outcome data</i>	631
<i>Initiatives to keep content fresh</i>	618	<i>Selecting a web analytics tool</i>	632
<i>Managing content for a global site</i>	620	<i>AB and multivariate testing</i>	635
<i>Focus on Web analytics: measuring and improving performance of digital business services</i>	621	<i>Clickstream analysis and visitor segmentation</i>	637
Principles of performance management and improvement	621	Budgeting	639
Stage 1: Creating a performance management system	622	Case Study 12.1 Learning from Amazon's culture of metrics	642
Stage 2: Defining the performance metrics framework	623	Summary	647
1 <i>Channel promotion</i>	624	<i>Exercises</i>	647
2 <i>Channel buyer behaviour</i>	625	<i>References</i>	648
3 <i>Channel satisfaction</i>	625	<i>Web links</i>	649
4 <i>Channel outcomes</i>	626	Glossary	650
		Index	666