# Contents

Preface xiv  
About the authors xxv  
Acknowledgements xxvii  
Publisher's acknowledgements xxviii

## Part 1

### 1 Introduction to digital business

**Learning outcomes** 3  
**Management issues** 3  
**Links to other chapters** 3  
**Introduction** 4  
**The impact of digital communications on traditional businesses** 6  
  - Inbound marketing 6  
  - Social media marketing 7  
  - Trends update: Social media usage 7  
  - Case study 1.1: The Uber business model 8  
  - Mobile commerce 10  
  - Trends update: Mobile usage 10  
**What is the difference between a digital business and an e-commerce business?** 11  
  - E-commerce defined 11  
  - Trends update: E-commerce growth rates 12  
  - Digital business defined 13  
  - Intranets and extranets 13  
  - Different types of sell-side e-commerce 14  
    - Digital marketing 16  
    - Trends update: Social network usage 17  
    - Options for organisations to reach a digital audience 17  
      - Owned, earned and paid media options 17  
      - The six key types of digital media channels 18  
      - The social internet and user-generated content 20  
      - Supply chain management 21  
  - Business or consumer models of e-commerce transactions 22  
    - Dot Gov defined 23  
**Digital business opportunities** 24  
  - Drivers of digital technology adoption 25  
    - Cost/efficiency drivers 25  
    - Competitiveness drivers 26  
  - Barriers to the adoption of technology by digital business stakeholders 27  
    - Evaluating an organisation's digital business capabilities 28  

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>xiv</td>
</tr>
<tr>
<td>About the authors</td>
<td>xxv</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>xxvii</td>
</tr>
<tr>
<td>Publisher's acknowledgements</td>
<td>xxviii</td>
</tr>
</tbody>
</table>

### 2 Opportunity analysis for digital business and e-commerce

**Learning outcomes** 36  
**Management issues** 36  
**Links to other chapters** 36  
**Introduction** 37  
**Business and revenue models for e-commerce** 37  
**Digital marketplace analysis** 38  
  - Case study 2.1: How Boden grew from an eight-product menswear catalogue to an international brand with over £300 million in sales 39  
  - Strategic agility 41  
  - Case study 2.2: Unilever demonstrates strategic agility 41  
**A process for digital marketplace analysis** 42  
  - Case study 2.3: Macy's – using omnichannel growth strategies to improve customer experience 44  
    - 1 Customer segments 46  
    - 2 Search intermediaries 46  
    - 3 Intermediaries, influencers and media sites 47  
    - 4 Destination sites 47  
**Location of trading in the marketplace** 49  
  - Review of marketplace channel structures 49  
  - Location of trading in the marketplace 52  
  - The importance of omnichannel marketplace models 52  
  - Commercial arrangement for transactions 54  
  - Different types of online intermediary and influencers 54  
  - Summary of the types of intermediary 55  
  - The importance of search engines 56  
**Business models for e-commerce** 56  
  - Revenue models 58  
  - Online publisher and intermediary revenue models 58  
  - Calculating revenue for an online business 60  
**Focus on Digital start-up companies** 63  
**Assessing digital businesses** 63
3 Managing digital business infrastructure

Learning outcomes
Management issues
Links to other chapters
Introduction
Supporting the growing range of digital business technology platforms
Desktop, laptop and notebook platforms
Mobile phone and tablet platforms
Trends update: Mobile usage
Other hardware platforms
Augmented reality
Digital business infrastructure components
A short introduction to digital technology
Management issues in creating a new customer-facing digital service
Domain name selection
Uniform resource locators (URLs)
Domain name registration
Managing hardware and systems software infrastructure
Layer II – systems software
Managing digital business applications infrastructure
Focus on The development of customer experiences and digital services
Benefits of web services or SaaS
Application programming interfaces (APIs)
Challenges of deploying SaaS
Cloud computing
Examples of cloud computing web services
Virtualisation
Service-orientated architecture (SOA)
Selecting hosting providers
Managing service quality when selecting Internet service and cloud hosting providers
ISP connection methods
Issues in management of ISP and hosting relationships
Speed of access
Availability
Service level agreements
Security
Managing internal digital communications through internal networks and external networks
Intranet applications
Extranet applications
Encouraging use of intranets and extranets
Streaming TV
Voice over IP (VoIP)
Widgets
Technology standards
Examples of XML applications
Semantic web standards
Microformats
Focus on Internal and external governance factors that impact digital business
The Net neutrality principle
The Internet Corporation for Assigned Names and Numbers (ICANN, www.icann.org)
The Internet Society (www.isoc.org)
The Internet Engineering Task Force (IETF, www.ietf.org)
The World Wide Web Consortium (www.w3.org)
How can companies influence or take control of Internet standards?
Open-source software
Case study 3.1: Innovation at Google (2017 update)
Summary
Exercises
References
Web links

4 Key issues in the digital environment

Learning outcomes
Management issues
Links to other chapters
Introduction
Social factors
Legal and ethical factors
Economic factors
Political factors
Technology factors
Cultural factors
Factors affecting e-commerce buying behaviour
Understanding users' access requirements
Consumers influenced by using the online channel
Motivation for use of online services
Business demand for digital business services
E-commerce sales across the EU
Privacy and trust in e-commerce
Privacy legislation
Why personal data is valuable for digital business
Worldwide regulations on privacy and electronic communications
Viral email marketing
Other e-commerce legislation
1 Marketing your e-commerce business
Part 2

5 Digital business strategy

Learning outcomes

Management issues

Links to other chapters

Introduction

What is digital business strategy?

The imperative for digital business strategy

Digital channel strategies

Platform strategy

Strategy process models for digital business

Strategic analysis

Resource and process analysis

Stage models of digital business development

Application portfolio analysis

Organisational and IS SWOT analysis

Human and financial resources

Competitive environment analysis

Demand analysis

Assessing competitive threats

Competitive threats

Sell-side threats

Buy-side threats

Competitor analysis

Resource-advantage mapping

Strategic objectives

Defining vision and mission

VMOOST

How can digital business create business value?

Case study 5.1: Arriva Bus redesigns its m-ticket app and boosts revenue by over 17%

Objective setting

The online revenue contribution

Conversion modelling for sell-side e-commerce

Case study 5.2: Setting the Internet revenue contribution at Sandvik Steel

The balanced scorecard approach to objective setting

Strategy definition

Selection of digital business strategy options

Decision 1: Digital business channel priorities

The diversification of digital platforms

Decision 2: Market and product development strategies

Decision 3: Positioning and differentiation strategies

Decision 4: Business, service and revenue models

Decision 5: Marketplace restructuring

Decision 6: Supply chain management capabilities

Case study 5.3: Zappos innovates in the digital marketplace

Decision 7: Internal knowledge management capabilities

Decision 8: Organisational resourcing and capabilities

Strategy implementation

Failed digital business strategies

Digital business strategy implementation success factors for SMEs

Case study 5.4: Boo hoo – learning from the largest European dot.com failure

Focus on Aligning and impacting digital business strategies

Elements of information systems (IS) strategy

Investment appraisal

Decisions about which business applications to invest in

The productivity paradox

Summary

Exercises

References

Web links

6 Supply chain and demand

Learning outcomes

Management issues

Links to other chapters

Introduction

Case study 6.1: Fast-fashion retailer Zara uses its supply chain to achieve competitive advantage
Contents

Case study 8.1: How Warby Parker disrupted the eyewear industry 368
What is eCRM? 371
From eCRM to social CRM 372
Benefits of eCRM 372
Customer engagement strategy 374
Permission marketing 374
Customer profiling 375
Conversion marketing 376
The online buying process 379
Differences in buyer behaviour in target markets 380
Differences between B2C and B2B buyer behaviour 380
Influences on purchase 380
The net promoter score 382
Customer acquisition management 383
Focus on Marketing communications for customer acquisition, including search engine marketing, digital PR, online partnerships, interactive advertising, email marketing and social media marketing 383
The characteristics of interactive marketing communications 383
1 From push to pull 383
2 From monologue to dialogue 384
3 From one-to-many to one-to-some and one-to-one 384
4 From one-to-many to many-to-many communications 384
5 From ‘lean-back’ to ‘lean-forward’ 384
6 The medium changes the nature of standard marketing communications tools such as advertising 384
7 Increase in communications intermediaries 385
8 Integration remains important 385
Assessing marketing communications effectiveness 385
Digital marketing communications 387
1 Search engine marketing (SEM) 388
2 Digital PR 397
Focus on Social media and social CRM strategy 398
3 Online partnerships 409
4 Digital advertising 410
5 Email marketing 413
6 Social media marketing 416
Customer retention management 418
Personalisation and mass customisation 420
Creating personalisation 421
Extranets 422
Opt-in email 423
Techniques for managing customer activity and value 423
Lifetime-value modelling 424
Focus on Excelling in e-commerce service quality 426
Improving online service quality 426
Tangibles 427
Reliability 427
Responsiveness 427
Assurance 427
Empathy 428
Customer extension 429
Advanced online segmentation and targeting techniques 430
Sense, Respond, Adjust – delivering relevant e-communications through monitoring customer behaviour 432
Recency, Frequency, Monetary value (RFM) analysis 432
Technology solutions for CRM 435
Types of CRM applications 437
Integration with back-office systems 437
The choice of single-vendor solutions or a more fragmented choice 438
Data quality 439
Case study 8.2: Tesco.com increases product range and uses triggered communications to support CRM 439
Summary 442
Exercises 442
References 443
Web links 447

Part 3

9 Customer experience and service design 450
Learning outcomes 450
Management issues 450
Links to other chapters 450
Introduction 451
Analysis for digital technology projects 451
Process modelling 454
Process mapping 455
Task analysis and task decomposition 455
Process dependencies 457
Workflow management 457
Flow process charts 457
Effort duration analysis 459
Network diagrams 459
Event-driven process chain (EPC) model 461
Validating a new process model 462
Data modelling 464
1 Identify entities 464
2 Identify attributes for entities 464
3 Identify relationships between entities 464
Big Data and data warehouses 464
Design for digital technology projects 468
Architectural design of digital business systems 469
Focus on User-centred site design and customer experience management 471
Customer experience management framework 477
Customer experience design 478
Implementation 478
Usability 480
Evaluating designs 480
Use-case analysis 481
   Persona and scenario analysis 481
   Stages in use-case analysis 484
Designing the information architecture 487
   Card sorting 488
   Blueprints 488
   Wireframes 490
Customer orientation 491
Elements of site design 493
   Site design and structure 493
   Page design 496
Content design 497
Mobile design 498
   Mobile site design option A. Responsive design 498
   Mobile site design option B. Adaptive design 499
   Mobile site design option C. HTML5 500
   Mobile site design option D. Separate mobile domain (screen scrape) 501
Web accessibility 502
Case study 9.1: Providing a better online user experience in a B2B market 504
Focus on Security design for digital business 506
Secure e-commerce transactions 512
   Principles of secure systems 513
Approaches to developing secure systems 513
   Digital certificates 513
   Digital signatures 514
   The public-key infrastructure (PKI) and certificate authorities (CAs) 514
Virtual private networks 515
Current approaches to e-commerce security 515
   Secure Sockets Layer protocol (SSL) 515
   Certificate authorities (CAs) 515
Reassuring the customer 516
Summary 516
Exercises 517
References 518
Web links 520

10 Managing digital business transformation and growth hacking
   Learning outcomes 522
   Management issues 522
   Links to other chapters 522
   Introduction 523
Case study 10.1: Transforming an entire industry and supply chain: Spotify and Spotify Connect 523
Definitions of digital transformation 524
Definitions of digital business transformation 524
Why is digital business transformation not just about IT? 525
   The applications portfolio – a precursor to digital business transformation 525
The emergence of digital transformation as a discipline 530
   History of change and change management 530
   The change in strategic position of digital versus technology 531
   The need for digital transformation 531
Understanding the reasons for digital transformation 532
   The opportunities provided by digital 532
   Where does digital transformation occur? 532
   Customer experience and service design 532
   Customer insight 533
   Adding value 534
   Interfaces with customers 535
   Business process 536
   The business model 537
   New business where digital is at the heart of the opportunity 538
   Adapting the existing business to a digital opportunity 539
The framework of digital transformation 540
   The process of review 540
      What the digital opportunity is 540
      How sure the organisation is of the opportunity 541
      What level of digital the leadership of the organisation possesses 541
      How mature as a digital business the organisation sees itself 541
   The process of strategy 542
      A focus on the objective for the future rather than solving an existing problem 542
      The process of resourcing and planning 543
         The design of the transformation 543
         A programme for change 543
      The process of deployment 543
      The process of living with, and evaluating, digital transformation 544
   What is growth hacking? 545
      Defining goals and KPIs 546
      How to use a single metric to run a start-up 550
      Creating a growth hacking mindset 551
         Ideal skill set of a growth hacking team 551
      Use of Scrum, an agile methodology, in digital marketing 552
         Scrum meetings 554
            Sprint planning 556
            Daily Scrum 556
            Sprint review and retrospective 557
      Developing agile marketing campaigns 557
      The growth hacking process 558
         1 Product/market fit (create an MVP – Minimum Viable Product) 558
            Trigger 558
            Action 559
            Rewards 560
            Investment 560
         2 User data analysis 561
            Main areas of user testing 561
         3 Conversion rate optimisation 562
            Key CRO elements 562
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/B and multivariate testing</td>
<td>564</td>
</tr>
<tr>
<td>Clickstream analysis and visitor segmentation</td>
<td>567</td>
</tr>
<tr>
<td>Budgeting</td>
<td>569</td>
</tr>
<tr>
<td>Case study 10.2: Learning from Amazon's culture of metrics</td>
<td>571</td>
</tr>
<tr>
<td>4 Viral growth</td>
<td>575</td>
</tr>
<tr>
<td>Inherent virality: Skype</td>
<td>576</td>
</tr>
<tr>
<td>Artificial virality: Giffgaff</td>
<td>577</td>
</tr>
<tr>
<td>Word-of-mouth virality: Zappos</td>
<td>577</td>
</tr>
<tr>
<td>Measuring virality</td>
<td>577</td>
</tr>
<tr>
<td>5 Retention and scalable growth</td>
<td>577</td>
</tr>
<tr>
<td>Creating the right environment for growth hacking</td>
<td>579</td>
</tr>
<tr>
<td>Bridging the digital and physical world</td>
<td>580</td>
</tr>
<tr>
<td>Best traditional marketing methods for growth hacking</td>
<td>580</td>
</tr>
<tr>
<td>Case study 10.3: How Leon used PR to growth hack</td>
<td>582</td>
</tr>
<tr>
<td>Growth hacking framework</td>
<td>583</td>
</tr>
<tr>
<td>Twenty traction channels to test</td>
<td>585</td>
</tr>
<tr>
<td>Data analysis</td>
<td>586</td>
</tr>
<tr>
<td>Measuring implementation success</td>
<td>589</td>
</tr>
<tr>
<td>Focus on Web analytics: Measuring and improving performance of digital business services</td>
<td>589</td>
</tr>
<tr>
<td>Principles of performance management and improvement</td>
<td>590</td>
</tr>
<tr>
<td>Stage 1: Creating a performance management system</td>
<td>590</td>
</tr>
<tr>
<td>Stage 2: Defining the performance metrics framework</td>
<td>592</td>
</tr>
<tr>
<td>Focus on Measuring social media marketing</td>
<td>596</td>
</tr>
<tr>
<td>Stage 3: Tools and techniques for collecting metrics and summarising results</td>
<td>598</td>
</tr>
<tr>
<td>Collecting site outcome data</td>
<td>599</td>
</tr>
<tr>
<td>Selecting a web analytics tool</td>
<td>600</td>
</tr>
<tr>
<td>User testing prioritisation</td>
<td>603</td>
</tr>
<tr>
<td>Summary</td>
<td>603</td>
</tr>
<tr>
<td>Exercises</td>
<td>604</td>
</tr>
<tr>
<td>References</td>
<td>605</td>
</tr>
<tr>
<td>Web links</td>
<td>607</td>
</tr>
<tr>
<td>Glossary</td>
<td>609</td>
</tr>
<tr>
<td>Index</td>
<td>623</td>
</tr>
<tr>
<td>Lecturer Resources</td>
<td></td>
</tr>
<tr>
<td>For password-protected online resources tailored to support the use of this textbook in teaching, please visit,</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.pearsoned.co.uk/caffey">www.pearsoned.co.uk/caffey</a></td>
<td></td>
</tr>
</tbody>
</table>