

E-Commerce in Theory and Practice

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Introduction to E-Commerce

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E-Commerce in Theory and Practice

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The series aim to help readers comprehensively understand the concepts, principles and practical applications of e-commerce, to master the basic knowledge and skills of e-commerce from different dimensions, and to improve the readers' understanding and applications in the field of e-commerce. For different groups of readers, this book series combines theoretical research with engineering application research and combines typical cases with practical experience, which focuses on the scientific, technical, as well as systematic and complete knowledge system of e-commerce, and provides readers with forward-looking, academic, and applied reference materials in e-commerce.

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Introduction to E-Commerce

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Sequence

In the new era of changes in the past century, fruitful scientific research achievements have been made in the fields of information science and related science and technology. Especially in recent decades, the wide application of new scientific and technological achievements in the world has promoted the changes in many fields of society, and also made people's daily lives have undergone earth-shaking changes. President Xi has important instructions on science and technology, "We must insist that science and technology are the primary productive forces, talents are the first resources, and innovation is the first driving force, and implement the strategy of rejuvenating the country through science and education and strengthening the country through talents in depth". E-commerce is an important field on the road of strengthening the country through science and technology. Focusing on the innovation of e-commerce and combining with President Xi's judgments in different periods, we have done scientific, basic and theoretical research, reflecting President Xi's thought of strengthening the country through science and technology. Nowadays, a large number of advanced scientific and technological achievements such as big data, Internet of Things, blockchain, artificial intelligence and cloud computing provide many new development opportunities for digital economy, network economy, platform economy and sharing economy. It is also under this background that e-commerce majors and disciplines have achieved leap-forward construction and development from quantity to quality. E-commerce affects the business behavior of enterprises, governments and consumers on a global scale, and it also has a wide range of social, cultural and political impacts.

E-commerce is an interdisciplinary field, which aims to study and understand all aspects of e-commerce, including business model, market structure, laws and regulations, technology application and user experience. As an independent discipline, e-commerce also includes the knowledge of marketing, information technology, management, economics, psychology, law and other disciplines.

The development of e-commerce is driven by the development of e-commerce itself and market demand. In the past decades, e-commerce has been continuously innovated and developed, from the initial e-mail and website to today's mobile e-commerce, social e-commerce and O2O. At the same time, with the increasing trend

of globalization and digitalization, the development prospect of e-commerce in the future is also broad. In the field of e-commerce education, universities and research institutions have also continuously strengthened the curriculum and research results of e-commerce.

This book aims to help readers understand the basic concepts, development and current situation of e-commerce, and give some practical advice. This book is mainly from the basic part, the technology part, the management part of the practice part, the case part of five chapters to give an overview of the field of e-commerce. The basic part describes the basic concept and cultural concept of e-commerce from the perspective of e-commerce basic knowledge and e-commerce culture. The technology part focuses on three areas of e-commerce support technology, e-commerce payment technology, e-commerce security technology to summarize the current e-commerce core technology. The management part focuses on the legal content related to e-commerce and compares the similarities and differences between e-commerce law and the law before the emergence of e-commerce. The practical part focuses on the architecture of e-commerce and summarizes the system structure, transaction mode and decision-making strategy paradigm in the current e-commerce system through mobile e-commerce and e-commerce network application psychology. The case chapter describes the influence of e-commerce system on the world through the relevant cases of famous Chinese and foreign enterprises and summarizes the experience of these enterprises.

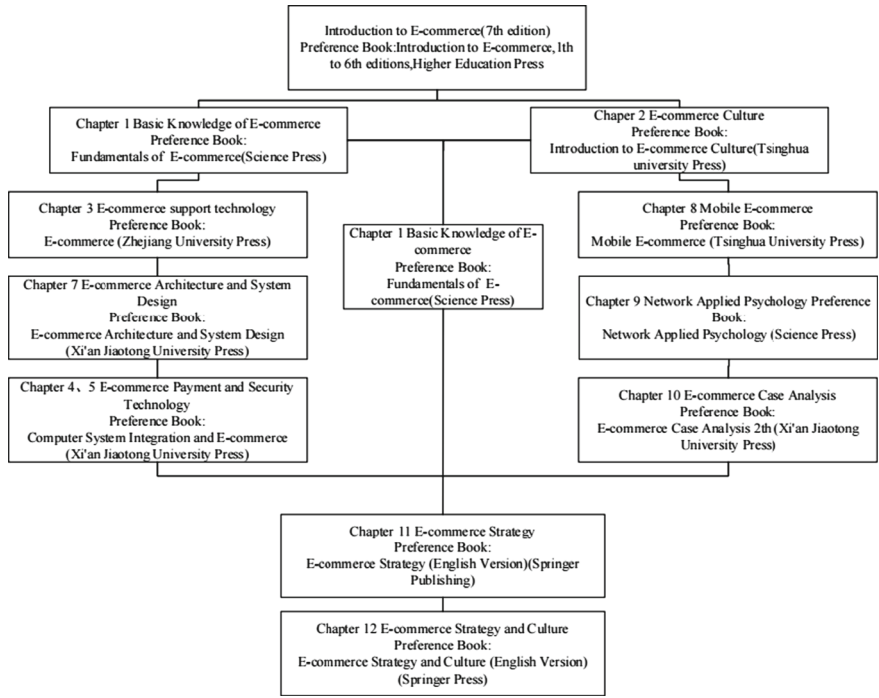
This book has updated and revised the relevant content of the sixth edition in light of the current development of e-commerce. For example, in the section of technology, new e-commerce supporting technologies such as meta-universe and digital twin are added. In the management section, on the basis of the investigation of the content of the e-commerce law, the introduction of the development of e-commerce laws at home and abroad and the analysis of the “E-commerce Law of the People’s Republic of China” are added. In addition, the new laws and regulations promulgated after the publication of the sixth edition are updated, and the structure of Chap. 6 is modified. In the case section, the e-commerce case is updated, and the Xiaohongshu e-commerce case is added. In the strategy chapter, supplement and update Amazon’s e-commerce strategy analysis.

Professor Qin determined the overall structure of this book, reviewed and finalized it. Xu Shuhao, Wang Guolong, Deng Wanqiu, Zhang Zixin, Wu Xun, Dang Xuan, Zhang Pu are responsible for updating the contents of this book.

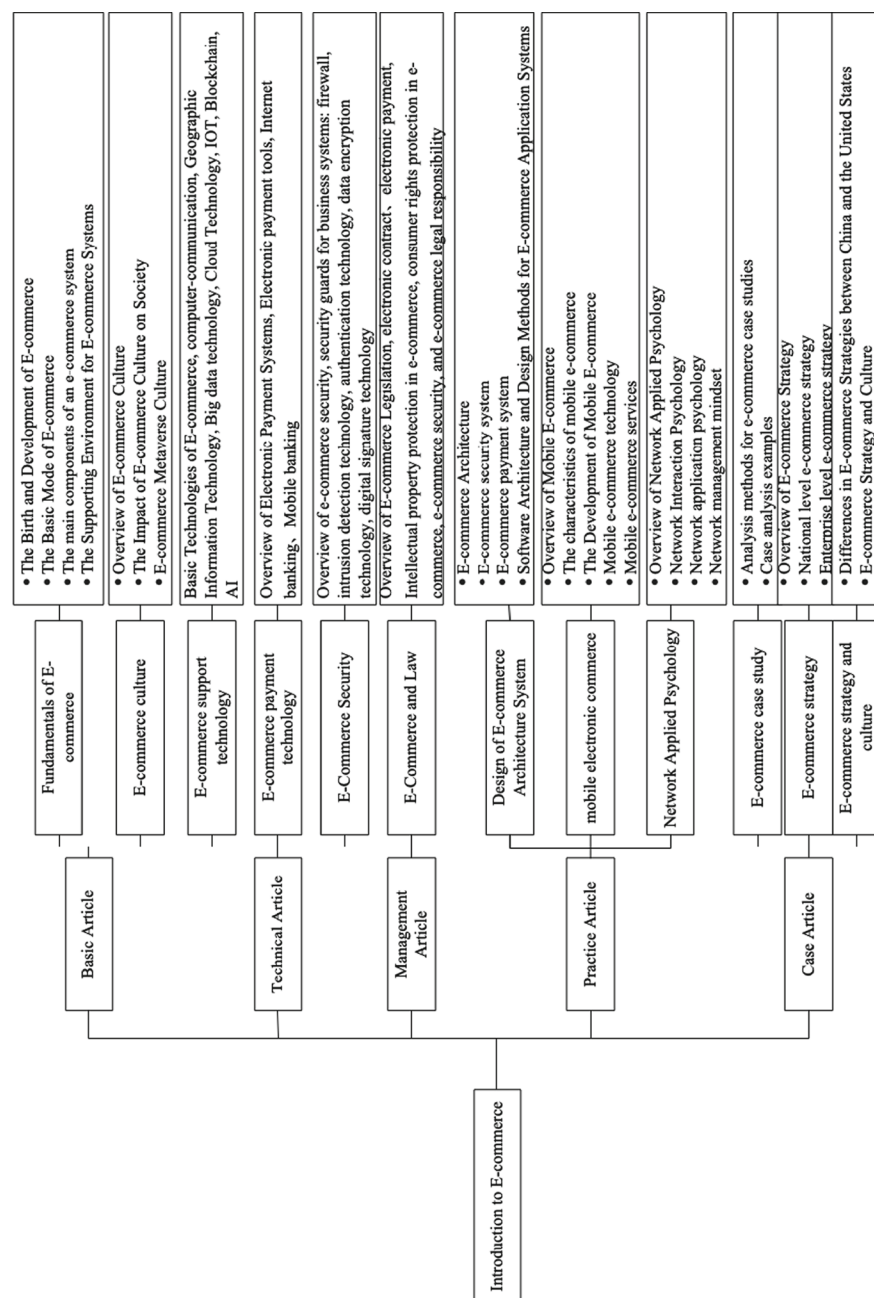
In the process of republishing this book, it has been supported by academicians, professors and experts from School of Information Science and Technology, School of Software, School of Law, School of Information Science and Technology, Peking University, Institute of Software, Chinese Academy of Sciences, School of Computing, Xi’an Jiaotong University, School of Computer Science and Technology, Zhejiang University, School of International Business Administration, Shanghai University of Finance and Economics. Here I would like to express my heartfelt thanks to Profs. Li Shundong, Han Yi and Cao Hui, authors of the 1st to 6th editions of *Introduction to Electronic Commerce*. In the process of writing this book, a large number of materials have been used for reference, and the latest research results and

some cases in related fields have been cited. I would like to express my sincere thanks to the authors and providers of these materials.

The theoretical basis of this book is as follows:



Through the study of this book, readers will be able to better understand e-commerce and be able to use it to improve their own productivity and quality of life. It is hoped that this book will be a useful resource for readers to further study and explore e-commerce. The main knowledge structure of the book is shown in the figure below.



Contents

Part I Basic

1 Basic Knowledge of E-Commerce	3
1.1 The Development Course and Concept Definition of Electronic Commerce	3
1.1.1 Birth and Development of E-Commerce	5
1.1.2 Concepts and Definitions of Electronic Commerce	10
1.2 Basic Models of Electronic Commerce	14
1.2.1 B2B Mode	15
1.2.2 B2C Mode	17
1.2.3 G2G Mode	20
1.2.4 C2C Mode	25
1.2.5 Online to Offline	28
1.2.6 O2ON Mode	34
1.3 The Main Management Link of E-Commerce	35
1.3.1 Web Portal Management	35
1.3.2 Customer Relationship Management	37
1.3.3 Supply Chain Management	43
1.3.4 Logistics Management	47
1.4 The Main Supporting Environment of E-Commerce	51
1.4.1 Technical Environment	51
1.4.2 Legal Environment	54
1.4.3 Credit Environment	59
1.4.4 Financial Environment	64
1.4.5 Ecological Environment	67
1.5 Impact of Related Disciplines on E-Commerce	68
1.5.1 Impact of Basic Disciplines Such as Mathematics on E-Commerce	69
1.5.2 Impact of Information Disciplines on E-Commerce	72
1.5.3 Impact of Management Disciplines on E-Commerce	76

1.5.4	Interdisciplinary Impact on E-Commerce	77
1.6	Summary	83
2	E-Commerce Culture	87
2.1	The Main Component Culture of E-Commerce	88
2.1.1	Commodity Culture in E-Commerce Environment	88
2.1.2	Technology Culture in E-Commerce Environment	102
2.1.3	Community Culture in E-Commerce Environment	109
2.2	Impact of E-Commerce Culture on Social, Economic, Consumer, Organizational, etc.	126
2.2.1	The New Economy Generated by E-Commerce	126
2.2.2	New Consumption Concept Generated by E-Commerce Culture	129
2.2.3	New Marketing Generated by E-Commerce Culture	145
2.2.4	New Enterprise Organizations Arising from E-Commerce Culture	158
2.3	E-Commerce Metaverse Culture	161
2.3.1	Background and Development of Metacosmic Culture Under E-Commerce	161
2.3.2	The Impact of the Metaverse on E-Commerce Culture	164
2.4	Summary	167

Part II Technology

3	Supporting Technology of E-Commerce	173
3.1	Basic Technology of E-commerce	175
3.1.1	Web Technology	175
3.1.2	HTML Technology	177
3.1.3	XML Technology	179
3.1.4	Client Scripting Language and Interaction Technology	181
3.1.5	Server-Side Web Page Technology	183
3.2	Computer Communication Technology	189
3.2.1	TCP/IP Communication Protocol	189
3.2.2	HTTP Communication Protocol	190
3.2.3	WAP Communication Protocol	192
3.2.4	WLAN Communication Protocol	194
3.2.5	4G Communication Protocol and 5G Communication Protocol	197
3.3	Geographic Information Technology	201
3.3.1	Beidou Navigation System and GPS Global Positioning Satellite	201
3.3.2	Geographic Information System	206
3.4	Big Data Technology	210

3.4.1	Database Technology	210
3.4.2	NoSQL (Not Only Structured Query Language) Technology	213
3.5	Cloud Technology	214
3.5.1	Cloud Storage	214
3.5.2	Cloud Computing	217
3.5.3	Distributed Processing Framework	233
3.6	Internet of Things Technology	236
3.6.1	Basic Concepts	236
3.6.2	Key Technologies	239
3.6.3	Application Area	240
3.7	Blockchain	248
3.7.1	Basic Concepts	248
3.7.2	Key Technologies	250
3.7.3	Application Area	254
3.8	Artificial Intelligence	257
3.8.1	Basic Concepts	257
3.8.2	Technical Areas Covered	257
3.8.3	Application Area	265
3.9	Digital Twinning	266
3.9.1	Digital Twinning and Simulation	267
3.9.2	Application of Digital Twin	268
3.10	Summary	269
4	E-Commerce Payment	273
4.1	Overview of E-Commerce Payment System	274
4.1.1	Composition of Electronic Payment System	275
4.1.2	Electronic Payment Classification	276
4.1.3	Electronic Payment Transaction Model	277
4.2	Electronic Payment Instruments	278
4.2.1	Micropayments	279
4.2.2	Smart Cards	290
4.2.3	E-Wallet	292
4.2.4	Digital Currency	299
4.2.5	Digital RMB	301
4.3	Internet Banking	303
4.3.1	Development of Internet Banking	304
4.3.2	Functions of Internet Banking	308
4.3.3	Internet Banking Technology	309
4.4	Mobile Banking	313
4.4.1	Development Characteristics of Mobile Banking in the World	313
4.4.2	Development Status of Mobile Banking in China	315

4.4.3	Mobile Banking Business Model Change and Upgrade Process	318
4.5	Summary	322
5	E-Commerce Security Technology	325
5.1	E-Business Security Concepts and Development Process	325
5.2	Suspicious Invasion Interception Technology: Firewall	329
5.2.1	Firewall Overview	329
5.2.2	Functions of the Firewall	330
5.2.3	Firewall Classification and Advantages and Disadvantages	333
5.3	Intrusion Detection Technology	335
5.3.1	Overview of Intrusion Detection Technology	335
5.3.2	Intrusion Detection System Classification and Advantages and Disadvantages	337
5.3.3	Intrusion Detection Methods	339
5.4	Authentication Techniques	342
5.4.1	Password Authentication	343
5.4.2	Physical Authentication	345
5.4.3	Biometric Authentication Technology	346
5.4.4	Digital Authentication Technology	349
5.5	Data Encryption Technology	350
5.5.1	Symmetric Encryption System	352
5.5.2	Public Key Encryption Algorithm	354
5.5.3	Hybrid Encryption	355
5.6	Digital Signature Technology	356
5.6.1	Signing a File with a Public Key Algorithm	356
5.6.2	Signing with One-Way Hash Function and Public Key Algorithm	358
5.6.3	SSL Protocol	359
5.6.4	SET Protocol	362
5.6.5	Message Protocol	369
5.6.6	Fault Tolerant Protocol	369
5.6.7	Sharing Protocol	370
5.7	Summary	370

Part III Management

6	Electronic Commerce and Law	377
6.1	Overview of Electronic Commerce Legislation	377
6.1.1	Development of Laws and Regulations Related to E-Commerce	377
6.1.2	Overview of the Electronic Signatures Act	379
6.1.3	Overview of the Measures for the Administration of Payment Services by Non-financial Institutions	381
6.1.4	Overview of the Electronic Commerce Act	384

6.1.5	Basic Legal Issues Involved in E-Commerce	386
6.2	Electronic Contracts	388
6.2.1	Concept and Characteristics of Electronic Contract	388
6.2.2	Formation of Electronic Contracts Process	391
6.2.3	Validity of Electronic Contracts	392
6.3	Electronic Payment	394
6.3.1	Electronic Banking	394
6.3.2	Electronic Fund Transfer	396
6.4	Intellectual Property Protection in Electronic Commerce	398
6.4.1	Conflicts Caused by Domain Names	399
6.4.2	Reconciliation of Domain Names and Intellectual Property Conflicts	402
6.4.3	Copyright in Electronic Commerce	405
6.4.4	Protection of Intellectual Property Rights Under the Electronic Commerce Act	407
6.5	Consumer Protection in Electronic Commerce	408
6.5.1	Impact of E-Commerce on Consumers	408
6.5.2	Electronic Commerce and Consumer Privacy Protection	412
6.5.3	Protection of Consumers' Rights and Interests Under the Electronic Commerce Act	415
6.6	E-Commerce Security	418
6.6.1	Protection of E-Commerce Security	418
6.6.2	E-Commerce Security Legal Regime	419
6.6.3	Legal Liability for Undermining the Security of E-Commerce	421
6.7	Legal Liability for Electronic Commerce	422
6.7.1	Civil Liability	422
6.7.2	Administrative Responsibility	426
6.7.3	Criminal Liability	428
6.8	Summary	432

Part IV Practice

7	E-Commerce Architecture and System Design	437
7.1	E-Business Architecture	438
7.1.1	Infrastructure Framework	438
7.1.2	Data Flow for Infrastructure	439
7.1.3	Process Control of Infrastructure	442
7.1.4	Infrastructure Optimization Approach	447
7.1.5	Event Process Control for Infrastructure	450
7.2	E-Commerce Architecture	452
7.2.1	Hierarchical Architecture Style	452
7.2.2	Flexible Architecture Style	453
7.2.3	Event-Driven Architecture Style	455

7.2.4	Cloud Architecture Style	456
7.2.5	Microservice Architecture Style	458
7.3	E-Commerce Security System	460
7.4	Ele4ctronic Commerce Payment System	465
7.4.1	E-Commerce and Online Payment	465
7.4.2	Data Flow and Process Control of Payment Systems	466
7.5	E-Commerce Application System Software System and Design Method	472
7.5.1	Applied E-Commerce System Software System	472
7.5.2	Applied E-Business System Design Method	476
7.5.3	Design Method of E-Commerce Portal Website	478
7.6	Summary	482
8	Mobile E-Commerce	485
8.1	Overview of M-Commerce	486
8.2	Features of Mobile E-Commerce	488
8.3	Development of Mobile E-Commerce	490
8.3.1	Development of Mobile E-Commerce	490
8.3.2	Results of M-Commerce Development in Recent Years	491
8.4	Mobile E-Commerce Technology	497
8.4.1	Mobile IP	497
8.4.2	Wireless MAN	498
8.4.3	Wireless Wide Area Network	500
8.4.4	RFID Radio Frequency Identification Technology	501
8.4.5	Mobile Terminal	504
8.4.6	Mobile Operating System	505
8.5	Mobile E-Commerce Services	507
8.5.1	Mobile SMS Service and WeChat	507
8.5.2	Mobile Location Services	511
8.5.3	Mobile Games	514
8.5.4	Mobile Music	517
8.5.5	Mobile E-Commerce Marketing	520
8.6	Summary	523
9	Network Applied Psychology	525
9.1	Overview of Web Applied Psychology	526
9.1.1	Philosophy and Applied Psychology Adj. Similarities and Differences	527
9.1.2	Limitations of Applied Psychology	528
9.1.3	Emergence of Web Applied Psychology and Development Course	531
9.1.4	Research Contents of Network Applied Psychology	532

9.1.5	Significance of Web Applied Psychology	535
9.2	Network Interactive Psychology	539
9.2.1	Network Interaction Overview	539
9.2.2	Web Interaction Motivation	548
9.2.3	Network Interactive Psychological Advantages	553
9.3	Psychology of Network Application	560
9.3.1	Psychological Characteristics of Network Application	560
9.3.2	Analysis of Psychological Characteristics of Network Application	563
9.4	Network Management Psychology	572
9.4.1	General Psychology of Network Management	572
9.4.2	Behavioral Psychology of Network Management	578
9.5	Summary	580

Part V Case

10	Case Analysis of E-Commerce	585
10.1	E-Commerce Case Analysis Method	586
10.1.1	Evaluation and Analysis Method of E-Commerce Website	586
10.1.2	Evaluation and Analysis Method of E-Commerce Strategy	595
10.2	Case Analysis Examples	599
10.2.1	Financial Commodity E-Commerce Case Analysis	599
10.2.2	Case Analysis of E-Commerce in Petrochemical Industry	608
10.2.3	Brief Introduction of Electronic Commerce in International Trade	615
10.2.4	Ali E-Commerce Case Analysis	630
10.2.5	E-Commerce Case Analysis in JD.COM	632
10.2.6	Business Analysis of Xiaohongshu	641
10.3	Summary	648

Part VI Strategy

11	E-Commerce Strategy	651
11.1	Overview of E-Commerce Strategy	652
11.1.1	Strategies and E-Business Strategies	653
11.1.2	E-Commerce Strategy Research	655
11.2	National E-Commerce Strategies	657
11.2.1	Overview of the United States	658
11.2.2	Strategic Background of Electronic Commerce in the United States	660
11.2.3	US E-Commerce Strategy	662

11.2.4	Effect of US E-Commerce Strategy	667
11.3	Enterprise E-Business Strategy	667
11.3.1	Introduction to Amazon	668
11.3.2	Evolution of Strategy	669
11.3.3	Environmental Analysis	671
11.3.4	Amazon Enterprise Strategy and Effects	674
11.3.5	Inspiration for Us	680
11.4	Summary	683
12	E-Commerce Strategy and Culture	685
12.1	Differences in E-Commerce Strategies Between China and the United States	686
12.1.1	Viewing the Development of E-Commerce in China	687
12.1.2	Enlightenment from China-US E-Commerce Development Strategy	690
12.2	E-Business Strategy and Culture	692
12.2.1	Differences Between Chinese and Western Business Cultures	692
12.2.2	Strategic Impact of Cultural Differences on E-Commerce	697
12.3	Summary	706
	References	709

Abbreviations

3PL	Third-Party Logistics
ACD	Automatic Call Distribution
ADB	Asia Development Bank
ADSL	Asymmetric Digital Subscriber Line
AI	Artificial Intelligence
AMA	American Marketing Association
ANSI	American National Standard Institute
API	Application Programming Interface
ASP	Active Server Pages
ASR	Automatic Speech Recognition
ATM	Asynchronous Transfer Mode
ATM	Automatic Teller Machine
B/S	Browse/Sever
B2B	Business to Business
B2C	Business to Consumer
B2G	Business to Government
BPR	Business Process Reengineering
C/S	Client/Sever
C2C	Consumer to Consumer
C2G	Consumer to Government
CA	Certification Authentication
CAD	Computer Aided Design
CC	Call Center
CC	Collaborative Commerce
CCC	Customer Care Center
CCK	Complementary Code Keying
CCPIT	China Council for Promotion of International Trade
CDMA	Code-Division Multiple Access
CERN	European Laboratory for Particle Physics
CG	Collaborative Government
CGI	Common Gateway Interface

CHAP	Challenge Handshake Authentication Protocol
CORBA	Common Object Request Broker Architecture
CPDM	National Council of Physical Distribution Management
CRM	Customer Relation Management
CRP	Continuous Replenishment Program
CSF	Critical Success Factor
CTI	Computer Telephony Integration
DBA	Database Administrator
DBMS	Database Management System
DCOM	Distributed Component Object Model
DDN	Digital Data Network
DDoS	Distributed Denial of Service Attacks
DECT	Digital Enhanced Cordless Telecommunication
DES	Data Encryption Standard
DHCP	Dynamic Host Configuration Protocol
DHTML	Dynamic HTML
DM	Data Mining
DNS	Domain Name Server
DOM	Document Object Model
DRP	Distribution Requirement Planning
DSA	Digital Signature Algorithm
DSS	Data Signature Standard
DSS	Decision Support System
DTD	Document Type Definition
DTS	Digital Time-stamp Service
DW	Data Warehouse
EAI	Enterprise Application Integration
EAP	Extensible Authentication Protocol
EB	Electronic Business
EC	Electronic Commerce
ECTSG	Electronic Commerce Taxi Searching Group
EDI	Electronic Data Interchange
EIP	Enterprise Information Portal
EJB	Enterprise Java Beans
ELAN	Emulated Local-Area Network
EM	Electronic Market
EMS	Express Mail Service
ERP	Enterprise Resource Planning
FTP	File Transfer Protocol
GDSS	Group Decision Supporting System
GIIC	Global Information Infrastructure Commission
GIP	Government Information Portal
GIS	Geographic Information System
GPRS	General Packet Radio Service
GPS	Global Positioning System

GRM	Government Relations Management
GRP	Government Resource Planning
GSCM	Government Supply Chain Management
GSM	Global System for Mobile communications
GUI	Graphical User Interface
HR	Human Resources
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
I/O	Input/Output
ICM	Incoming Call Management
ICMP	Internet Control Message Protocol
ICP	Internet Content Provider
IDL	Interface Definition Language
IDSS	Intelligence Decision Supporting System
IIOP	Internet Inter-ORB Protocol
IIS	Internet Information Server
IMAP	Internet Message Access Protocol
IP	Internet Protocol
IPX	Internetwork Packet Exchange
ISDN	Integrated Service Digital Network
ISO	International Standard Organization
ISP	Internet Service Provider
IVR	Interactive Voice Response
J2EE	Java 2 Platform Enterprise Edition
J2ME	Java 2 Platform Micro Edition
JDBC	Java Database Connectivity
JEPI	Joint Electronic Payment Initiative
JMS	Java Message Service
JSP	Java Server Pages
JVM	Java Virtual Machine
L2TP	Layer 2 Tunneling Protocol
LAN	Local Area Network
LLC	Logic Link Control Layer
MAC	Medium Access Control
MPS	Mobile Positioning System
NIC	Network Interface Card
NII	National Information Infrastructure
OA	Office Automation
OCM	Outbound Call Manager
ODBC	Open Data Base Connectivity
OECD	Organization for Economic Cooperation and Development
OLAP	On-Line Analytical Processing
OSI	Open Systems Interconnection
PDA	Personal Digital Assistant
PKI	Public Key Infrastructure

POP	Post Office Protocol
POS	Point of Sales
PPP	Peer-Peer Protocol
PPTP	Point-to-Point Tunneling Protocol
QoS	Quality of Service
ROI	Return on Investment
RSN	Robust Security Network
RTK	Real Time Kinematic
SET	Secure Electronic Transactions
SET	Secure Electronic Transfer Protocol
SGML	Standard Generalized Markup Language
SHTTP	Secure- Hypertext Transfer Protocol
SIS	Spatial Information System
SMS	Stores Management System
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SSL	Secure Sockets Layer
STT	Secure Transaction Technology
SVC	Switched Virtual Circuit
TCP	Transfer Control Protocol
TKIP	Temporal Key Integrity Protocol
UDP	User Datagram Protocol
URL	Uniform Resource Locator
VAN	Value-Addle Network
VLAN	Virtual LAN
VPN	Virtual Private Network
WAN	Wide Area Network
WAP	Wireless Application Protocol
WDP	Wireless Datagram Protocol
WEP	Wired Equivalent Privacy
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
WLANA	Wireless LAN Association
WML	Wireless Markup Language
WSP	Wireless Session Protocol
WTLS	Wireless Transport Layer Security
WTO	World Trade Organization
WTP	Wireless Transaction Protocol
XML	Extensible Markup Language
XSL	Extensible Style sheet Language

Part I

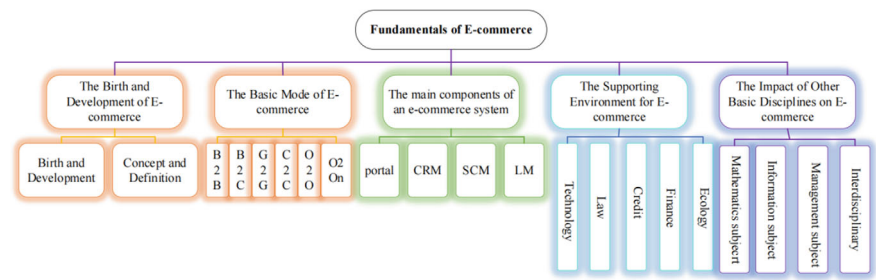
Basic

Chapter 1

Basic Knowledge of E-Commerce



This chapter is an overview of e-commerce and discusses the concept of e-commerce. The main contents include the history of the emergence and development of e-commerce, the influence of the development of related disciplines on e-commerce, the connotation and extension of the basic concepts of e-commerce, the working platform of e-commerce, the basic mode of e-commerce, the composition of e-commerce system, the main supporting environment of e-commerce and mobile e-commerce.



1.1 The Development Course and Concept Definition of Electronic Commerce

Academician Lu Yongxiang of the Chinese Academy of Sciences called the Internet world the sixth continent of the earth, and e-commerce technology produced on the basis of the Internet is one of the most important scientific and technological achievements in the twentieth century. Under the condition of commodity economy, the result of economic law must require the optimal allocation of global resources in the world, thus forming the economic globalization, the internationalization of market, the internationalization of social division of labor and the adjustment of

industrial structure on the global scale. The globalization of economy, the internationalization of market, the internationalization of social division of labor, and the adjustment of industrial structure on a global scale have led to a large number of capital transfers and the emergence of a large number of multinational corporations, which have promoted the development of international trade. International trade has become the engine of world economic growth. Since the Second World War, the growth of international trade has been much higher than that of the world economy. The rapid growth of international trade has led to a surge in the number of traditional paper-based trade documents and documents. The fierce competition in the market makes the production change from large-scale batch production to flexible small-batch multi-variety, so as to adapt to various demands of the rapidly changing market, and the organizational form develops from large-scale, vertical and centralized to horizontal, decentralized and networked. There is an urgent need to improve the speed, space span and accuracy of the transmission and processing of commercial documents and documents among manufacturers, suppliers and consumers, and between multinational companies and their branches. Pursuing paperless commercial trade has become the common demand of all trading partners. The traditional documents and documents are processed manually, which has high labor intensity, low efficiency, high error rate and high cost. Paper-based trade documents and documents have become a key factor hindering the development of international trade. In business activities, the rise of e-commerce has prompted a revolution in the field of circulation. It breaks the boundaries of time and space, changes the form of trade, improves the environment of logistics, capital flow and information flow, accelerates the circulation of goods in the whole society, effectively reduces the production cost of enterprises, and improves the competitiveness of enterprises. In a word, e-commerce enables traditional business activities to be carried out more, faster, better and less expensive.

In addition, the impact of e-commerce is far beyond the business activities themselves, whether it is industry, circulation industry, financial industry or media communication industry, whether it is the government, enterprises and other real economy, scientific research institutions, and even traditional agriculture will be baptized by e-commerce. With the development of e-commerce, its impact on all aspects of human society is becoming increasingly apparent. A new economic revolution based on digitalization and linked by the Internet has arrived. It is no exaggeration to say: E-commerce is the most significant industrial revolution since the industrial revolution, and the impact of e-commerce on human society will be far more than the previous two industrial revolutions, because it can not only greatly improve labor productivity, improve the efficiency of economic operation, reduce the cost of economic operation, and make many previously impossible things possible. And its impact on the way of life of human society and all aspects of social life will completely change people's world view and methodology.

In the new century, whether China's economic strength can gradually narrow the gap with developed countries such as Europe and America, and gradually catch up with or surpass developed countries depends to a great extent on China's participation in the third industrial revolution. Therefore, developing China's e-commerce is

an unavoidable choice for China’s economy to enter the world market, participate in global competition and realize the great rejuvenation of the Chinese nation. So how did e-commerce come into being and develop? How is the e-commerce system organized? What are the e-commerce technologies? What should be the architecture of e-commerce system? What principles should be followed in the design of e-commerce system? What security problems may be encountered in e-commerce transactions, and how to solve these problems? How to design a good website? As the main part of virtual enterprise-how should enterprise website be designed and operated? How to view the relationship between e-commerce and international trade, legal issues arising from the application of e-commerce, and analyze e-commerce cases? This book answers the questions that may arise from the electronization of traditional business activities, whether these problems can be solved, and how to solve them. This book explains in detail which problems need to be solved by technical methods and which problems need to be solved by legal and economic methods, and philosophical questions about the full impact of electronic commerce on human society are beyond the scope of this book.

1.1.1 Birth and Development of E-Commerce

E-commerce is an inevitable requirement for the development of international business activities, and international business is the first driving force for the development of e-commerce. The development of computer science and communication science has laid a material foundation for the emergence of e-commerce. The development of information security technology enables e-commerce based on computer technology and communication technology to be carried out safely. The formulation of relevant laws on e-commerce ensures the legal order of e-commerce activities. As shown in Fig. 1.1, the development of e-commerce has gone through three stages.

The first stage: e-commerce stage based on EDI

EDI (Electronic Data Interchange): EDI originated in 1960s. In 1980s, large enterprises in developed countries basically realized EDI, while EDI in China began in 1980s.

EDI is an electronic method of transferring business files from one computer to another according to an accepted standard. Because EDI has greatly reduced the number of paper bills, people once vividly called EDI “paperless trade” or “paperless transaction”. Technically speaking, EDI includes two parts: hardware and software. The hardware is mainly computer network, and the software mainly includes



Fig. 1.1 The development process of e-commerce

computer software and EDI standard. Before 1990s, most EDI was realized through VAN (Value-Add Network) instead of Internet. The main purpose of this is to ensure security and reliability. The software needed by EDI is mainly to translate the information in the user database system into the standard format of EDI for transmission and exchange. Because enterprises in different industries stipulate the information format of database according to their own business characteristics, when EDI files need to be sent, they must be translated into EDI standard format before transmission. EDI is the primary stage of e-commerce. EDI has not been popularized in China, and e-commerce has rapidly developed to the second stage.

The second stage: the e-commerce stage based on Internet

With the application of EDI, the labor intensity, error rate and cost of document making and document processing are greatly reduced, and the efficiency is greatly improved, which greatly promotes the development of international trade and shows great advantages and strong vitality. However, the establishment of EDI communication system needs a large investment and the cost of using VAN is very high, which limits the expansion of the application range of e-commerce based on EDI. Moreover, EDI has less consideration for information sharing, which is more suitable for large multinational companies. With the increasing demand of large multinational companies for information sharing and the desire of small and medium-sized companies for EDI, it is urgent to establish a new electronic information exchange system with low cost and information sharing.

Since the mid of 1990s, the Internet has been popularized rapidly, gradually moving from ivory tower to enterprises and ordinary people's families, and its function has evolved from information sharing to a popular information dissemination tool. After 1991, commercial trade activities that have been excluded from the Internet officially entered this Internet kingdom, making e-commerce the biggest hot spot of Internet application. The Internet has also developed rapidly with the help of commercial applications. For example, Dell, Amazon.com, Google search engine, Taobao, JD.COM Mall, Sina, Sohu and eBay auction websites, which are famous for their direct online direct sales to consumers, have all made great success by using e-commerce. In 1995, there were only 2000 commercial websites like this, and in 1998, there were 424,000. By 2001, the Internet has become the largest network in the world, covering more than 150 countries and regions, connecting more than 25,000 networks and 5.2 million hosts. In 1996, Vint Cerf, known as the "father of Intel", predicted that there would be 100 million Internet users in the world by 2003. However, the fact of the development of the Internet made him fall below his glasses. By the end of 1999, the global Internet users had reached 150 million, three times that of 1997. Since the twenty-first century, the development trend of Internet in the whole world, especially in China, can be called single spark can start a prairie fire. According to the latest statistical report released by CNNIC in July 2016, as of June 2016, the number of Internet users in China has reached 710 million, the total number of domain names is 36.98 million, the number of domain names registered under CN has reached 19.5 million, and the total number of IPv4 addresses in China is 338 million. With the rapid development of the Internet, a large number

of enterprises can't wait to develop enterprise e-commerce. Why is Internet-based e-commerce so attractive to enterprises? This is because it has the following obvious advantages over EDI-based e-commerce:

- (1) Low cost: Open Internet, the use cost is very cheap, generally speaking, its cost is less than one tenth of VAN;
- (2) Wide coverage: The Internet covers all corners of the world, and users can conveniently transmit business information and documents with trading partners through ordinary telephone lines;
- (3) More comprehensive functions: the Internet can fully support different types of users to achieve different levels of business goals, such as publishing electronic business information, online negotiation, establishing virtual shopping malls or online banking, etc.;
- (4) More flexible use: Internet-based e-commerce can be free from the restrictions of special data exchange protocols, and any commercial documents or documents can be completed directly by filling in screen documents in the same format as the current paper documents, without translation, and anyone can understand or use them directly.

Internet overcomes the shortage of EDI and meets the needs of small and medium-sized enterprises for electronic data interchange. As a system with lower cost, wider coverage and better service, Internet has replaced VAN and become the hardware carrier of EDI. The electronic information exchange system established on the basis of Internet has low cost and can realize information sharing, which provides the possibility for popularizing electronic business activities in all enterprises. EDI based on Internet has the common advantages of EDI and Internet, so some people call EDI realized through Internet directly Internet EDI.

Internet-based e-commerce, at first, mainly uses the e-mail function of the Internet for daily business communication, and then develops to use the Internet for information release. Since 1995, enterprises have gradually broken through the application scope of daily communication by e-mail, and rely on the Internet to publish enterprise information, so that the public can know all the information of enterprises through the Internet and obtain the products and related services of enterprises directly through the network. As a result, the information publishing system represented by WEB technology has grown explosively and become the main application of Internet. On June 14, 1996, the United Nations Trade Commission adopted the Model Law on Electronic Commerce as a symbol to develop into real electronic commerce. In 1998, IBM launched a resounding advertisement, "Are you ready for e-commerce?" The upsurge of e-commerce has been set off all over the world.

The third stage: E-concept E-commerce stage

Since the beginning of 2000, people's understanding of E-commerce has gradually expanded from E-commerce to the height of E-concept, and people realize that E-commerce is actually the combination of electronic information technology and business application. Electronic information technology can be combined not only

with business activities, but also with medical, educational, health, military, administrative and other related applications, thus forming the concept of E in related fields. The combination of electronic information technology and education has produced electronic educational administration-distance education; The combination of electronic information technology and medical treatment has produced electronic medical-telemedicine; The combination of electronic information technology and government affairs has produced e-government; The connection between electronic information technology and military affairs has produced electronic military affairs-remote command; The combination of electronic information technology and finance has produced network banking. The combination of electronic information technology and enterprise organization form has formed virtual enterprise and so on. Corresponding to different E concepts, there are different E-commerce models, such as E-B, E-C, E-G and so on. With the development of electronic information technology and the increasing needs of society, people will find new applications for electronic information technology constantly, and more and more E concepts will be produced, and human society will enter the real E era.

The fourth stage: the whole process of e-commerce

In January, 2006, Treasure Island (Beijing Netcom Online Network Technology Co., Ltd.) first publicly proposed to build a “whole-process e-commerce platform”. In July of the same year, Chongqing Golden Abacus Software Co., Ltd. also put forward the strategy of transforming to “full-course e-commerce” and launched its own full-course e-commerce platform. The concept of full-course e-commerce began to enter the public’s field of vision [6].

With the development of Internet technology and the maturity of application software, Software-as-a-Service (SaaS), a completely innovative software application model, began to rise in the twenty-first century. It is precisely because of the emergence of SaaS software service mode that software has landed on the Internet one after another, extending the e-commerce chain and forming the concept of “full-course e-commerce”.

According to the current mainstream definition, “full-course e-commerce” is an integration of e-commerce resources, penetrating into the whole process of every business activity of enterprises, taking the management mode required by the e-commerce era as the core, providing online management and e-commerce services for enterprises, and realizing the effective coordination of internal management and business processes among enterprises. It is a business model for future enterprises to stand out in the business sea. With the constant changes in the number and quality of netizens, the improvement of payment methods and the rapid development of logistics enterprises, the whole process of e-commerce will usher in an outbreak period in the next three years, which will change the consumption pattern of the whole Chinese public, the business model of enterprises and the distribution model of the whole wealth. Therefore, the whole process of e-commerce has become the only way for enterprises.

The fifth stage: smart e-commerce

In 1995, IBM put forward the slogan of e-commerce. Sixteen years after the concept of “e-commerce” was born, with the fragmentation of Internet information and the gradual maturity of cloud computing technology, IBM put forward the concept of “Smarter Commerce” in March 2011, and launched a smart business solution at the same time.

Social networking, mobile computing, cloud computing and other technologies have promoted the emergence of smart commerce. Qian Daqun, former CEO of IBM Greater China, pointed out that social networks and mobile communications will give more and more power to customers, and the e-commerce market has turned to customer-centered. Enterprises need closer-connected and more responsive suppliers and partnership networks to ensure that enterprises can provide products or services at reasonable prices and meet customer needs in a timely and appropriate manner. In this evolving environment, the key to business success is to predict market trends in advance and automate market feedback in advance to eliminate the gap between buying and selling, supply and demand. These new requirements give birth to smart business. IBM defines smart business as a method, which helps enterprises find smarter ways to integrate operational processes, strengthen interaction and increase the value provided to customers, partners and stakeholders through community, collaboration, process optimization and analysis in the rapidly changing environment of digital technology.

With the continuous development of China's economy and the continuous progress of Internet technology, more resources will be optimized in a wider range. China will usher in the era of intelligent e-commerce. Smart e-commerce will bring greater power to China's economy. With the continuous development of information technology, China has the basic conditions for building an intelligent society. China's economy has entered a “new normal” and will enter a new stage of development in the future. The decline of economic growth rate will make China face the pressure and challenge of economic structure transformation and upgrading. To promote the sound and rapid development of China's economy, we must rely on transformation and upgrading to enhance China's economic strength and enhance the overall quality and international competitiveness of China's economy. In such a transformation and development environment, innovation is needed to achieve greater and better development. We must give full play to the decisive role of the market in resource allocation and play a more active role in promoting economic development. Smart e-commerce will be more conducive to China's macroeconomic regulation and control, industrial structure adjustment and internal management of enterprises, and will have a significant impact on the whole national economy.

Smart Electronic Commerce Connectivity (SE) is a brand-new business model with cloud computing as its core. It is the innovative application of Internet technology and e-commerce concept in modern society, and it is also the product of e-commerce development to a certain stage. The era of smart e-commerce is an era of informationization, intelligence and data. With the application of information technology, especially mobile internet (mobile phone) and cloud computing in various

industries, the market scale of e-commerce in China will be continuously improved, and it will penetrate into the whole world at a faster and faster speed. In order to accelerate the transformation of traditional trade circulation mode and enhance the competitiveness of the real economy. E-commerce will continue to play an important role in the future. Smart e-commerce platform will bring great changes to the whole business ecology! With the improvement of people's living standards, the deepening of information technology and network applications, and the acceleration of the deep integration and application of new generation information technology such as cloud computing and manufacturing industry, e-commerce will also usher in a new period. For traditional enterprises, this not only means transformation, but more importantly, it transforms the business model in the Internet age, accelerates the adjustment of traditional industries and seeks new growth points of emerging industries. Changing the development mode and adjusting the economic structure have become the only way and key support for China to move from an industrial power to an industrial power.

Not only IBM, but also internationally renowned companies such as Amazon and Alibaba have put forward the concept of "smart commerce", hoping to upgrade the e-commerce mode under the background of social networks, mobile computing, cloud computing and other technologies, realize the process of e-commerce with a better business model, and occupy a place in the intelligent era. The core advantages of smart e-commerce are the progress of information technology and the deep application of big data. Smart e-commerce platform makes e-commerce industry have more possibilities, and will effectively solve many problems faced today. At the same time, it can help traditional industries to achieve transformation and upgrading, promote the optimization of economic structure, and promote social and economic fields to have a huge impact in various fields. Smart electronic e-commerce can greatly promote the upgrading of traditional industries and bring new kinetic energy to China's economic development. Smart e-commerce will combine traditional industries with the "Internet plus" era, smart phones and smart terminals, realize business model innovation and upgrading, and give birth to new economic growth points, Make the national economy more dynamic and competitive.

1.1.2 Concepts and Definitions of Electronic Commerce

Electronic Commerce (Electronic Commerce) refers to the use of computer technology, network technology and remote communication technology, to achieve the whole business (buying and selling) process of electronic, digital and networking.

People are no longer face-to-face, looking at real goods and buying and selling transactions by paper documents (including cash). But through the network, through the online dazzling array of commodity information, perfect logistics distribution system and convenient and safe fund settlement system for trading (buying and selling). Many influential international organizations and multinational companies at home and abroad have their own definitions of e-commerce. Such as: