

Contents

Preface xi

1 A Brief History of the Web 1

1.1	A new breed of applications: the rise of the Web	2
1.1.1	The arrival of the browser	2
1.1.2	The flattening of the world	7
1.1.3	From linking to searching	10
1.1.4	Commercialization of the Web	22
1.1.5	Peer-to-peer networks and free file sharing	34
1.2	Technological developments in a nutshell	38
1.2.1	IP networking	40
1.2.2	HTML and XML	42
1.2.3	Web services and RSS	46
1.3	User participation and contribution: socialization of the Web	49
1.3.1	Blogs and wikis	49
1.3.2	Social networks	58
1.4	Merging the streams: the arrival of “Web 2.0”	64

2 A Review of the Technological Stream 69

2.1	Developments in Web technology	69
2.1.1	HTML	71
2.1.2	XML	76
2.1.3	CSS	80
2.1.4	Scripting technologies	87
2.2	Web applications of XML	102
2.2.1	Web services	102
2.2.2	Web feed formats	115

2.3 P2P	124	
2.3.1	P2P file-sharing networks	124
2.3.2	Other P2P applications	128
2.4 Summary	132	
3 Enabling Techniques and Technologies		135
3.1 Rich Internet Applications	136	
3.1.1	Sample RIAs: e-mail applications	137
3.1.2	XMLHttpRequest, the link needed for Ajax	146
3.1.3	More RIAs: Office and map applications	155
3.2 APIs, WPCs, and their mash-ups	161	
3.2.1	The situation in Web 1.0	162
3.2.2	Content syndication with Web feeds	167
3.2.3	Mash-ups based on WPCs	172
3.3 Tagging	183	
3.3.1	Flickr and tagging	185
3.3.2	Social bookmarking	195
3.3.3	Folksonomies	201
3.4 Summary	203	
4 Sample Frameworks for Web Application Development		205
4.1 Development methodologies	206	
4.2 Client-side Ajax frameworks	211	
4.2.1	Kabuki Ajax toolkit	212
4.2.2	Development of a Zimlet using AjaxTK	216
4.3 Server-side frameworks	222	
4.3.1	Ruby on Rails	222
4.3.2	Creating a Web application with Rails	224
4.4 Frameworks for other RIA technologies	232	
4.4.1	RIA development with OpenLaszlo	232
4.4.2	Flash versus Ajax	236
4.5 Summary	238	
5 Impacts of the Next Generation of the Web		241
5.1 Business models for Internet and Web	242	
5.1.1	Commission-based brokerage and merchants	243
5.1.2	Advertising	245
5.1.3	Information intermediaries	248
5.1.4	The community and the subscription models	249
5.1.5	Summary	250

5.2 Data ownership	251
5.3 Software as a Service (SaaS)	254
5.3.1 A look back: the ASP model	256
5.3.2 The provider-oriented view	257
5.3.3 The consumer-oriented view and service customization	263
5.4 Socialization and cocreation of content	266
5.4.1 Social search	266
5.4.2 Social aspects of software	271
5.4.3 Impacts of online social networks	273
5.4.4 User-generated content in advertising	275
5.4.5 Second Life	276
5.5 Summary	279

6 The Semantic Web and Web 2.0 281

6.1 Basics	283
6.1.1 Search revisited	283
6.1.2 Data and information integration	287
6.1.3 The Semantic Web idea	289
6.1.4 The structure of the Semantic Web	292
6.2 Languages of the Semantic Web	295
6.2.1 The Resource Description Framework (RDF)	295
6.2.2 RDF Schema (RDFS)	298
6.2.3 Web Ontology Language (OWL)	303
6.3 Ontologies	308
6.3.1 Introduction	309
6.3.2 Design of an ontology	310
6.3.3 OntoMedia: an ontology-based personal entertainment system	320
6.4 From tagging to ontologies and back	323
6.4.1 Micro-formats	325
6.4.2 Collaborative tagging and folksonomies	328
6.5 Summary	334

References 337

Index 345