

Hubert Österle • Elgar Fleisch  
Rainer Alt

# Business Networking

Shaping Enterprise Relationships  
on the Internet

With 109 Figures  
and 39 Tables

V» " •>\* «

With Contributions by  
Volker Bach, Vladimir Barak, Roger Benz, Robert Betts, Ralph Dolmetsch,  
Karl Maria Grünauer, Thomas Huber, Roland Klüber, Günter Lehmann,  
Sven Pohland, Thomas Puschmann, Christian Reichmayr,  
Karl-Heinz Schelhas, Jens Schulze, Frederic Thiess, Rudolf Zurmühlen



Springer

# Table of Contents

|       |   |    |
|-------|---|----|
| 1     | Introduction.....   | 1  |
| 1.1   | Networked Enterprise: The Vision.....   | 2  |
| 1.1.1 | Business Networking and the New Economy.....  | 2  |
| 1.1.2 | Five Phases Towards Business Networking.....  | 2  |
| 1.2   | Networking the Enterprise: The Transformation.....                                      | 4  |
| 1.2.1 | Closing the Gap Between Strategy and Reality.....                                       | 4  |
| 1.2.2 | Achieving Networkability.....   | 5  |
| 1.2.3 | Part One: Building the Foundation.....  | 6  |
| 1.2.4 | PartTwo: Business Concepts.....   | 7  |
| 1.2.5 | PartThree: Information Systems Concepts.....  | 7  |
| 1.2.6 | Part Four: Key Success Factors.....   | 8  |
| 1.3   | Research Approach.....  | 9  |
| 1.3.1 | Applied Research: Providing Practical Guidelines.....                                   | 9  |
| 1.3.2 | Action Research: Balancing Rigor and Relevance.....                                     | 10 |
| 1.3.3 | Competence Centers Electronic Business Networking<br>and inter-Business Networking..... | 11 |
| 1.4   | Acknowledgements.....   | 13 |
|       | Part 1: Building the Foundation.....  | 15 |
| 2     | Enterprise in the Information Age.....  | 17 |
| 2.1   | Challenge of the Information Age.....   | 18 |
| 2.2   | Imperatives of Business in the Internet Age.....  | 19 |
| 2.2.1 | Coverage.....   | 20 |
| 2.2.2 | Partnering.....   | 20 |
| 2.2.3 | Critical Mass of Customers and Suppliers.....   | 20 |
| 2.2.4 | Position in the Business Network.....   | 21 |
| 2.2.5 | Focusing.....   | 21 |
| 2.2.6 | Process Efficiency.....   | 22 |
| 2.2.7 | Networkability.....   | 22 |
| 2.2.8 | Change Management.....  | 23 |
| 2.3   | Seven Trends.....   | 23 |
| 2.3.1 | Enterprise Resource Planning.....   | 24 |
| 2.3.2 | Knowledge Management.....   | 28 |
| 2.3.3 | Smart Appliances.....   | 32 |
| 2.3.4 | Business Networking.....  | 36 |
| 2.3.5 | Electronic Services.....  | 43 |

|   |   |           |
|---|---|-----------|
| 2.3.6   | Customer Process Support.....   | 45        |
| 2.3.7   | Value Management.....   | 51        |
| <b>Business Networking: A Process-oriented Framework.....</b> |   |           |
|   |   | <b>55</b> |
| 3.1   | Introduction.....   | 56        |
| 3.1.1   | Entrepreneurial Challenges of CONMAT.....   | 56        |
| 3.1.2   | Business Networking at Strategy-, Process- and Information System-Level.....      | 57        |
| 3.2   | Some Business Networking Cases.....   | 58        |
| 3.2.1   | Dell: Supply Chain Management and Customer Relationship Management.....           | 62        |
| 3.2.2   | Amazon.com: Supply Chain Management and Customer Relationship Management.....     | 63        |
| 3.2.3   | Marshall: Supply Chain Management and Customer Relationship Management.....       | 65        |
| 3.2.4   | SAP: Customer Relationship Management.....  | 66        |
| 3.2.5   | MarketSite.net: Procurement and Sales.....  | 68        |
| 3.2.6   | ÜBS: Procurement.....   | 69        |
| 3.2.7   | Migros Cooperative: Development.....  | 71        |
| 3.2.8   | Commtech: Procurement, Finance, Real Estate and Taxes.....                        | 72        |
| 3.3   | Networked Business Processes.....   | 74        |
| 3.3.1   | Process Orientation as Design Principle for the Networking of Business Units..... | 74        |
| 3.3.2   | Networking Through Coordination.....  | 75        |
| 3.3.3   | Benefits and Options from a Process-oriented Point of View.....                   | 78        |
| 3.4   | Networking Infrastructure.....  | 80        |
| 3.4.1   | Networking Applications.....  | 80        |
| 3.4.2   | Networking Services.....  | 81        |
| 3.4.3   | Networking Technologies.....  | 83        |
| 3.5   | Model of a Networked Enterprise.....  | 84        |
| 3.6   | Consequences for Management.....  | 87        |
| 3.6.1   | Alternative Courses of Action and Procedures for Networking.....                  | 87        |
| 3.6.2   | Orientation for Selecting Services, Applications and Technologies.....            | 88        |
| 3.7   | Conclusion.....   | 91        |

|  |            |
|--|------------|
| <b>Part 2: Business Concepts</b> .....   | <b>93</b>  |
| <b>4 Strategies for Business Networking</b> .....  | <b>95</b>  |
| 4.1 Introduction.....  | 96         |
| 4.1.1 Strategic Relevance of Business Networking.....  | 96         |
| 4.1.2 Overview of Strategies.....  | 97         |
| 4.2 Organization Strategies.....   | 98         |
| 4.2.1 Outsourcing - Externalizing Non-core Competencies.....   | 99         |
| 4.2.2 Insourcing - Strengthening Existing Competencies.....  | 100        |
| 4.2.3 Virtual Organizing - New Segments with Cooperation<br>Partners.....                                  | 101        |
| 4.2.4 Developing New Business Segments.....  | 102        |
| 4.2.5 Summary of Organization Strategies.....  | 104        |
| 4.3 Networking Strategies.....   | 105        |
| 4.3.1 Electronic Commerce - Transaction Perspective.....   | 107        |
| 4.3.2 Supply Chain Management - Flow Perspective.....  | 110        |
| 4.3.3 Customer Relationship Management - Relationship<br>Perspective.....                                  | 113        |
| 4.3.4 Summary of Networking Strategies.....  | 114        |
| 4.4 Interaction of Business Networking Strategies.....   | 115        |
| 4.5 Conclusions.....   | 116        |
| <b>5 Business Networking Lessons Learned: Supply<br/>Chain Management at Riverwood International</b> ..... | <b>117</b> |
| 5.1 Business Networking Is Customer and Supplier Integration.....  | 118        |
| 5.2 Establishing the Business Networking Vision.....   | 119        |
| 5.3 Implementing the Business Networking Vision.....   | 120        |
| 5.4 As the Tide Comes In all Boats Go Up.....  | 121        |
| 5.5 Shaping Competitive Advantage.....   | 122        |
| 5.6 Creating the Coordination Backbone.....  | 123        |
| 5.7 Becoming Part of the Business Networking Infrastructure.....   | 124        |

|       |  |     |
|-------|--|-----|
| 6     | Electronic Commerce and Supply Chain Management at 'The Swatch Group'..... | 127 |
| 6.1   | Introduction.....  | 128 |
| 6.2   | Analysis of Concepts.....  | 128 |
| 6.2.1 | Supply Chain Management - Flow Perspective.....                            | 128 |
| 6.2.2 | Electronic Commerce - Transaction Perspective.....                         | 130 |
| 6.2.3 | Comparison of Concepts.....  | 131 |
| 6.3   | Case Study: EC and SCM at ETA SA.....                                      | 133 |
| 6.3.1 | Goals of EC and SCM at ETA SA.....   | 133 |
| 6.3.2 | Initial Problems at ETA SA.....  | 133 |
| 6.3.3 | Phase I: Re-Engineering the Supply Chain.....                              | 134 |
| 6.3.4 | Phase II: Introduction of EC Solution.....                                 | 135 |
| 6.3.5 | Complementarity of Concepts and Implementation.....                        | 137 |
| 6.4   | Critical Success Factors at ETA SA.....                                    | 138 |
| 6.4.1 | Master Data Management as 'Hidden Success Factor'.....                     | 138 |
| 6.4.2 | Strategic Alignment with Marketing Strategy.....                           | 139 |
| 6.4.3 | Reciprocity of Benefits.....   | 139 |
| 6.4.4 | Common Basis for Communication.....  | 139 |
| 6.4.5 | Method for Structured Procedure.....                                       | 140 |
| 6.5   | Conclusions and Next Steps.....  | 142 |
| 7     | Knowledge Enabled Customer Relationship Management.....                    | 143 |
| 7.1   | Introduction.....  | 144 |
| 7.1.1 | Business Trend: Customer Centricity.....                                   | 144 |
| 7.1.2 | Technology Trend: Tools for Marketing, Sales and Service Automation.....   | 145 |
| 7.2   | Case Study: LGT Bank.....  | 147 |
| 7.3   | Managing Customer Knowledge.....   | 149 |
| 7.3.1 | Knowledge Management.....  | 149 |
| 7.3.2 | Relationship Marketing.....  | 150 |
| 7.3.3 | Knowledge Enabled Customer Relationship Management.....                    | 151 |
| 7.4   | Towards a CRM Reference Model.....   | 153 |
| 7.4.1 | Business Processes.....  | 153 |
| 7.4.2 | Knowledge Structure.....   | 156 |
| 7.4.3 | Knowledge Infrastructure.....  | 158 |
| 7.4.4 | Knowledge Measurements.....  | 159 |

|   |   |            |
|---|---|------------|
| 7.5   | Knowledge in Business Networks.....   | 160        |
| <br>  |   |            |
| <b>Part 3: Information System Concepts.....</b> |   | <b>161</b> |
| <b>8</b>  | <b>Future Application Architecture for the<br/>Pharmaceutical Industry.....</b> | <b>163</b> |
| 8.1   | Introduction - New Business Models Are Emerging.....                            | 164        |
| 8.2   | From Business Model to Application Architecture.....                            | 165        |
| 8.3   | Future Business in the Pharmaceutical Industry.....                             | 167        |
| 8.3.1   | Elements of the Business Model.....   | 168        |
| 8.3.2   | Relevance of Seven the Trends for the Pharmaceutical<br>Industry.....           | 170        |
| 8.4   | Application Architecture of the Information Age.....                            | 172        |
| 8.4.1   | Flexibility.....  | 173        |
| 8.4.2   | Networking - Capability of Integration.....                                     | 173        |
| 8.4.3   | Standardization.....  | 174        |
| 8.5   | Components of the Application Architecture.....                                 | 174        |
| 8.5.1   | Future Application Architecture Areas.....                                      | 174        |
| 8.5.2   | 'Extended' Make-or-Buy Decision.....  | 176        |
| 8.5.3   | Application Architecture Components.....  | 179        |
| 8.6   | Summary and Outlook.....  | 182        |
| <br>  |   |            |
| <b>9</b>  | <b>Information Systems for Supply Chain<br/>Management: An Overview.....</b>    | <b>185</b> |
| 9.1   | Introduction.....   | 186        |
| 9.1.1   | Objectives.....   | 187        |
| 9.1.2   | Supply Chain Pyramid.....   | 187        |
| 9.2   | Planning Processes and Planning Horizons.....                                   | 189        |
| 9.3   | Software Concepts for Supply Chain Management.....                              | 190        |
| 9.3.1   | Transaction and Planning Systems.....   | 190        |
| 9.3.2   | Material Requirements Planning (MRPI).....                                      | 191        |
| 9.3.3   | Manufacturing Resource Planning (MRP II).....                                   | 191        |
| 9.3.4   | Advanced Planning Systems.....  | 193        |
| 9.4   | Brief Overview on Advanced Planning Systems.....                                | 194        |
| 9.4.1   | Rhythm Solutions of i2 Technologies.....  | 198        |
| 9.4.2   | Manugistics of Manugistics.....   | 198        |

|           |  |            |
|-----------|--|------------|
| 9.4.3     | APOofSAP.....  | 199        |
| 9.4.4     | Numerix of J.D. Edwards.....   | 199        |
| 9.5       | Conclusions.....   | 200        |
| <b>10</b> | <b>Electronic Commerce in the Procurement of Indirect Goods.....</b>     | <b>201</b> |
| 10.1      | Challenge in Indirect/MRO Procurement.....                               | 202        |
| 10.1.1    | Introduction.....  | 202        |
| 10.1.2    | Current Procurement Scenarios.....                                       | 203        |
| 10.1.3    | Relevance of Indirect / MRO Procurement.....                             | 205        |
| 10.2      | Vendors of Desktop Purchasing Systems.....                               | 206        |
| 10.2.1    | Ariba Operating Resources Management System of Ariba Technologies.....   | 206        |
| 10.2.2    | Commerce One BuySite / MarketSite of Commerce One.....                   | 207        |
| 10.2.3    | Netscape BuyerXpert / ECXpert of Netscape Communications.....            | 207        |
| 10.3      | Overview of System Components and Functionality.....                     | 208        |
| 10.4      | Process and Workflow Functionality.....                                  | 209        |
| 10.4.1    | Catalog and Sourcing Services.....                                       | 209        |
| 10.4.2    | Purchase Requisition and Order Placement.....                            | 210        |
| 10.4.3    | Delivery and Receipt.....  | 211        |
| 10.4.4    | Payment and Booking.....   | 212        |
| 10.4.5    | Process Management.....  | 212        |
| 10.5      | Content Management.....  | 212        |
| 10.5.1    | Content Classification.....  | 213        |
| 10.5.2    | Content Aggregation.....   | 213        |
| 10.5.3    | Content Personalization.....   | 214        |
| 10.6      | System Administration.....   | 215        |
| 10.7      | Integration with Legacy / ERP Systems.....                               | 215        |
| 10.8      | Potential Savings of Desktop Purchasing Systems.....                     | 216        |
| <b>11</b> | <b>Templates: Achieving Standardization for Business Networking.....</b> | <b>219</b> |
| 11.1      | Introduction.....  | 220        |
| 11.2      | Definition and Approaches to Standardization.....                        | 221        |
| 11.2.1    | Definition and Dimensions of Standardization.....                        | 221        |

- 11.2.2 Requirements of Inter-process Integration.....223
- 11.2.3 Approaches toClose the 'Organization Gap'.....224
- 11.3 Template Handbook.....225
  - 11.3.1 Idea of a Template Handbook.....225
  - 11.3.2 Components of a Template Handbook.....225
  - 11.3.3 Activities in Template Design and Roll-out.....226
  - 11.3.4 Who Should Design and Use a Template Handbook?.....227
- 11.4 Template Handbook at the Robert Bosch Group.....228
  - 11.4.1 Development of the Template Handbook.....228
  - 11.4.2 Overview and Experiences.....229
  - 11.4.3 Example Documents.....231
- 11.5 Benefits of Templates in a Pharmaceutical Company.....234
- 11.6 Conclusions.....236
- Part 4: Key Success Factors.....239**
- 12 Key Success Factors for Transaction-oriented Business Networking Systems.....241**
  - 12.1 Challenges in Designing Business Networking Systems.....242
    - 12.1.1 Adoption-lag of Interorganizational Systems.....242
    - 12.1.2 Gap Between Business and IT Issues.....243
  - 12.2Characterization of Business Networking Systems.....244
    - 12.2.1 Types of Transaction-oriented Business Networking Systems.....244
    - 12.2.2 Specifics of Business Networking Systems.....245
  - 12.3 Key Success Factors in Designing Business Networking Systems.....247
    - 12.3.1 Cases for Business Networking Systems.....247
    - 12.3.2 Setting-up Partner Profiles.....250
    - 12.3.3 Reciprocity: Creating Win-Win Situations.....252
    - 12.3.4 Networking Projects are Business Projects.....253
    - 12.3.5 Nucleus and Rapid Diffusion: 'Grow by Chunking'.....254
    - 12.3.6 Standards and System Integration as a Conditio Sine QuaNon.....254
  - 12.4 Conclusions.....255
- 13 Towards a Method for Business Networking.....257**
  - 13.1 Challenges of Making Business Networking Happen.....258
    - 13.1.1 Relevance of a Method for Business Networking.....258
    - 13.1.2 Existing Approaches and Requirements.....258



|           |   |            |
|-----------|---|------------|
| 13.1.3    | Benefits of an Engineering Approach.....                                | 260        |
| 13.1.4    | Procedure Model of Method.....  | 262        |
| 13.2      | CASE I: eProcurement at Deutsche Telekom AG.....                        | 263        |
| 13.2.1    | Business Context of Deutsche Telekom AG.....                            | 263        |
| 13.2.2    | Options for Organizing Procurement.....                                 | 263        |
| 13.2.3    | Steps Undertaken at Deutsche Telekom.....                               | 265        |
| 13.3      | CASE II: Supply Chain Management at Riverwood<br>International.....     | 267        |
| 13.3.1    | Supply Chain Scenario at Riverwood International.....                   | 267        |
| 13.3.2    | Steps Undertaken at Riverwood International.....                        | 269        |
| 13.4      | Towards a Method for Business Networking.....                           | 271        |
| 13.4.1    | Design Areas of a Method for Business Networking.....                   | 272        |
| 13.4.2    | Techniques for Business Networking.....                                 | 273        |
| 13.5      | Conclusions and Outlook.....  | 275        |
| <b>14</b> | <b>Shaping Business Process Networks at ETA SA.....</b>                 | <b>277</b> |
| 14.1      | Challenge of Designing Process Networks.....                            | 278        |
| 14.1.1    | Introduction.....   | 278        |
| 14.1.2    | Business Networking Potentials.....                                     | 279        |
| 14.1.3    | Actions Required.....   | 280        |
| 14.1.4    | Applying the Three-Level Model of Business<br>Networking at ETA SA..... | 282        |
| 14.2      | Method for Designing Process Networks.....                              | 283        |
| 14.2.1    | Managing Project Complexity.....  | 283        |
| 14.2.2    | Result Model.....   | 285        |
| 14.3      | Case Example: Market Launch of New Products at ETA SA.....              | 287        |
| 14.4      | Conclusions.....  | 289        |
| <b>15</b> | <b>Shaping Applications for Global Networked<br/>Enterprises.....</b>   | <b>293</b> |
| 15.1      | Introduction.....   | 294        |
| 15.1.1    | Challenge of Architecture Planning.....                                 | 294        |
| 15.1.2    | Goals of Architecture Planning.....                                     | 295        |
| 15.2      | Business Architecture.....  | 297        |
| 15.2.1    | Organization Profile.....   | 297        |
| 15.2.2    | Process Architecture.....   | 300        |
| 15.3      | Application Architecture.....   | 301        |
| 15.3.1    | Distribution Concepts in Packaged Software.....                         | 301        |
| 15.3.2    | Integration Areas at the Application Level.....                         | 302        |

|   |            |
|---|------------|
| 15.3.3 Structure of Application Architecture.....                           | 303        |
| 15.4 Methodological Procedure.....  | 305        |
| 15.4.1 Existing Approaches.....   | 305        |
| 15.4.2 Deficits of Existing Methods.....                                    | 307        |
| 15.4.3 Proposed Method.....   | 308        |
| 15.5 Conclusions and Outlook.....   | 310        |
| <b>16 Business Networking - Summary and Outlook.....</b>                    | <b>313</b> |
| 16.1 The Bottom Line of Business Networking.....                            | 314        |
| 16.1.1 Improving Business Efficiency and Creating New<br>Opportunities..... | 314        |
| 16.1.2 Goals of Business Networking.....                                    | 315        |
| 16.1.3 Model of Business Networking.....                                    | 315        |
| 16.2 Next Steps in Business Networking.....                                 | 317        |
| 16.2.1 Changing Face of Business Networking Systems.....                    | 317        |
| 16.2.2 The Advent of eServices.....   | 318        |
| 16.2.3 Networking of Smart Appliances and Real-life<br>Objects.....         | 319        |
| <b>List of Abbreviations.....</b>   | <b>321</b> |
| <b>Glossary.....</b>  | <b>325</b> |
| <b>References.....</b>  | <b>335</b> |
| <b>Index.....</b>   | <b>371</b> |
| <b>Authors.....</b>   | <b>375</b> |