

Contents

<i>Preface and Acknowledgements</i>	x
<i>Notes on the Contributors</i>	xi
<i>List of Abbreviations and Acronyms</i>	xxi
Introduction	1
<i>Richard Thorpe and Stephen Little</i>	
PART 1 FRAMING THE CONFERENCE	
1 The Century of the Pacific Rim	21
<i>Gerald Kaufman</i>	
2 A Story of Monetary Mismanagement	26
<i>Patrick Minford</i>	
3 Investing in Asia's Dynamic	36
<i>Willem Noë</i>	
4 Globalization and FDI in Asian Developing Countries	42
<i>John H. Dunning</i>	
5 The European Union and East Asia: Geoeconomics, Economic Diplomacy and Crisis Management	66
<i>Christopher M. Dent</i>	
6 Corporate Governance: Global Issues and Japanese Perspectives	85
<i>Janet Morrison</i>	
PART 2 DIVERSITY	
7 Theories of Japanese Multinational Investment: Critical Comments from the UK Perspective	107
<i>Alexander Roy</i>	
8 Learning from Learning at Toyota	132
<i>Jos Benders</i>	
9 The Japanese Style of Management of Japanese Affiliates in Germany and the UK	146
<i>Koji Okubayashi</i>	

10	Global Companies and Local Markets: The Internationalization of Product Design and Development Activities	175
	<i>Andrew D. James and Jeremy Howells</i>	
PART 3 EAST INTO WEST		
11	Adoption of East Asian Management Practices: Experiences of Some Best-Practice Organizations in the UK	201
	<i>Vas Prabhu and Marilyn Riley</i>	
12	The Impact of British Direct Investment in China since the ‘Open Door Policy’	223
	<i>Kevin A. Lawler and Marcus C.H. Ling</i>	
13	German Exports: Past Development and Future Prospects – Distribution Policy of Mittelstand Firms in the ASEAN Countries	241
	<i>Hans Schmengler and Jürgen Krause</i>	
14	Experiences of JV Companies in China: Management and Operational Issues	255
	<i>Bob Ritchie, Lee Zhuang and Tim Whitworth</i>	
PART 4 CHINA		
15	Strategic Development in China’s Changing State and Non-State Enterprises	273
	<i>David H. Brown and Hantang Qi</i>	
16	China Reconstructs: The Transformation of Management in Two Telecommunications-Technology Producers	291
	<i>Xiaobai Shen</i>	
17	Clusters, Industrial Districts and the Competitiveness of Chinese Industries	323
	<i>Hua Li, Frank McDonald and Giovanna Vertova</i>	
PART 5 SOUTH EAST ASIA		
18	Indigenous Supply-Chain Development: Case Study Evidence from Singapore’s Electronics Cluster	347
	<i>Ross Brown</i>	

19	International Production Networks and Human Resources: The Case of the Malaysian Electronics Industry	366
	<i>Barry Wilkinson, Jos Gamble, John Humphrey and Jonathan Morris</i>	
20	Planning and Partners: The Growth of the Aerospace Industry in South East Asia	386
	<i>David Smith</i>	
21	The Asian Crisis: The End of an Economic Miracle	403
	<i>Hua Li and Frank McDonald</i>	
	<i>Index</i>	423

Introduction

Stephen Little and Richard Thorpe

BACKGROUND

This book is based on papers presented at the second conference on Global Change held at Manchester Metropolitan University in 1998. Its focus was on the role of Asia, both as a source of global paradigms and as region with the potential to inspire global strategies. The first conference, held in 1996 also produced a book (*Organizational Strategy and Technological Adaptation to Global Change*, McDonald and Thorpe, 1997). This identified the key issues in relation to global change and examined the role technology played in global change and its implications for organizations.

The 1996 conference examined the impact that the end of the Cold War had had and the emergence of the transitional economies of Eastern Europe and the former Soviet Union (FSU) as new players in a global economic system. The complexity of our world has become better appreciated following the removal of what Ohmae (1995) terms the 'bi-polar discipline' of the Cold War, a concept that served to obscure the differences within and between members of the Eastern and Western blocs and consigned the remainder of humanity to the disparagingly termed 'Third World'.

However, while globalization has increased the significance of intellectual capital as leveraged by information and communication technology, assumptions that a technically driven globalized economy can solve the remaining problems of differential development are being increasingly challenged. There is mounting evidence that economically marginal performers are being excluded from any influence over the priorities shaping the global economy. Rapid integration has brought together disparate national and regional interests and cultures and these have become increasingly interlinked within networked and globalized organizations. Information technologies have facilitated these changes through the reduction of transaction costs and the alteration of the relative advantages and economies of scale. This, in turn, has led to a complex layering of labour markets, both internal and external to the developed economies driving the process.

Framing the Conference

From the first Global Change conference the theme of the importance of East Asia emerged. At the time of its planning, the dramatic changes that have taken place in Asia were unanticipated, not least by the participants and individuals who selected Asia as the topic for the second conference, whose theme was Asia's impact in the twenty-first century. What resulted is reflected in the chapters contained in this book. The conference attracted a wide range of papers and discussion sessions covering the history of developments in Asia over the last 20 or 30 years, many measuring the changes in growth, but many also attempting to understand the processes of globalization and their effects. Papers were also presented that discussed and characterized local management thinking and local management practices in Asian countries, particularly from the perspective of Western companies working in Asia. However, there were also papers illustrating the learning that can be gained by Western organizations from Asian management practices.

Another feature of the conference was the variety of conceptual frameworks presented. There were papers offering classical economic analysis and organizational development perspectives, while some presented systems theory perspectives, and one even offered a Taoist perspective, for understanding not simply Asia, but the rest of the world! The richness of perspectives offered, it must be said, did not make for simplicity. The very different conceptual frameworks offered made it somewhat difficult for the wide range of academics present to converse with each other.

The main focus for the two days was on the current dynamics of the developments in the whole of Asia as they have emerged from the last 20 or 30 years. This period has seen a perceptible shift in the focus of growth in the world economy across the Pacific to the East Asian mainland. This broad context proved a helpful one as it avoided too close a focus on what might reasonably be claimed to be relatively short-term problems. This book therefore contains a range of chapters reflecting upon the complex consequences of the success of Japan and other Asian economies in transferring, transforming and re-exporting the socio-technical systems which drove the expansion of their economies. The responses of their erstwhile mentors have resulted in the rapid diffusion of product and process innovations in many different directions and the emergence of an incomplete but globalized world economy. Historical and cultural particularities from East and West ensure

diversity and friction throughout an emerging global system that is often presented as a seamless technological artefact. For some time European and North American companies have sought to emulate aspects of Asian strategies and comparative advantage has been eroded as Asian methods, building on the Western industrial model, have been re-exported to the original industrial core of Europe and North America. Nuki (1998) shows that this in turn has engendered a response based on accelerating the product life cycle through the application of information and communication technologies (ICTs) at all stages of development and production. Recent events in the East Asian economies have undermined confidence in the idea of 'miracle economies'. Some acknowledgement of Krugman's (1996) views on the uncritical acceptance of high growth rates over relatively short periods from very low base levels is welcome. Unfortunately, the immediate impact in the West has been to reject out of hand the development strategies which delivered past growth even though the very different forms of crisis across the affected economies and their different responses reflect the diversity of these approaches within the region.

The emerging system of global production seems to have left the world divided into the 'triad' described by Ohmae (1990): three major regions of North East Asia, North America and Western Europe. Localities within these regions are restructuring rapidly in an attempt to obtain or ensure a continued prosperous place within them. Dunning (1993) has shown that the majority of direct foreign investment is within and between members of this triad.

Europe, North America and East Asia all contain the most advanced levels of economic development juxtaposed with developing economies. Each region therefore faces the challenge of supporting balanced growth in peripheral areas where available infrastructure and skills cannot support full integration into the global economy. There seems some degree of consensus that in the post-Cold War era difference and diversity were themselves resources, and Ohmae (1995) celebrates such variation as evidence of the need to pursue 'zebra strategies' which play to the relative strength of the most developed components of national economies in order to create regional linkages and synergies with the established global players.

The economic turbulence on the Western Pacific rim reflects the diversity of problems facing the participants in this network, but in many respects it is the success of their strategies which has brought these growing economies to the point at which a paradigm shift from a situation of catch-up to a position of sustained production of new

technologies is now required. Some understanding of the dynamics of the strategies employed in East Asia has come through Kim's examination of the historical connection but significant difference between the *chaebol*, *zaibatsu* and *keiretsu* (Kim, 1996); further studies by Redding (1996) and Wong (1996) have added to understanding of Chinese business practices. At least part of the current crisis in East Asia is a reflection of the difference between the problems of technological leadership and those of catching-up with leading economies. Participation in the development of the intellectual resources necessary for this next stage requires direct integration into the emerging world system and a greater institutional alignment within and between regions.

In Part 1, 'Framing the Conference', the keynote speakers offered a variety of perspectives in relation to the current state of the East Asian economies.

Gerald Kaufman (Chapter 1) provided a politician's view of 'The Century of the Pacific Rim', emphasizing that the attention paid to the recent economic crisis in East Asia reflects to some extent the central role of this region in the world economy. In contrast, Patrick Minford (Chapter 2) analysed the current problems in Asian economies in terms of monetary mismanagement following the transfer of production and production technologies from the established manufacturing economies to the 'little dragons' and was not convinced that there were underlying technological drivers for the associated downturn in the global economy.

Peter Dicken provided a wide-ranging reflection on the often simplistic Western construction of a diverse region with complex relationships among its constituents. He considered the re-alignment following the removal of 'Cold War fault lines' and offered an alternative view of the regional impact of Japanese investments from that offered by Patrick Minford.

Willem Noë (Chapter 3) described the background and structure of 'Investing in Asia's Dynamism', a joint EC/UNCTAD report on EU direct investment aimed at both developing and developed regions of Asia. The European Union is particularly keen to encourage European investment into Asia's developing economies, with initiatives such as 'Asia Invest' aimed at smaller and medium-sized companies which may benefit from resource-sharing between European development and Asian manufacture. This latter programme is aimed at the same potential partners as those sought by the more developed Asian economies, and represents an attempt at cross-regional networking.

These chapters serve to raise as well as to frame a number of questions discussed at the conference.

THE DYNAMICS OF EAST-WEST EXCHANGE

Economies such as Korea, which have been highly successful during the catching-up phase of development, have shown that different socio-technical paradigms are needed to sustain an economy in the conditions of lower absolute growth encountered in relatively mature markets. Japan's earlier lead means that the debate over new economic strategies has intensified further since the collapse of the bubble economy, but consensus has not been achieved over exactly what changes should be made to the institutional structures which supported their post-war development. China, as the region's largest economy, has the advantage of size and continuing scope for the established high-growth paradigm. However, this size also increases the problems of regional differentials in development. The successful business networks of Hong Kong can only be developed so far into the wider hinterland before cultural and linguistic differences impede their further extension.

The Institutional Framework

In establishing the institutional framework for the conference, John Dunning (Chapter 4) contributed a substantial review of globalization and FDI in Asian developing countries which draws upon the enormous contribution he has made to the study and analysis of such patterns of investment over the past decades.

Janet Morrison (Chapter 6) addresses specific differences between Anglo-American and Japanese traditions of corporate governance and discusses how the fragmentation of the informal ties between companies and their main banks reflects both the institutional crisis in Japanese banking and the search for more effective monitoring within the framework of traditional values.

Christopher Dent (Chapter 5) analyses evolving forms and issues of governance affecting economic relations between the European Union and East Asia, particularly the growing influence of international institutions and the increasingly important role of multinational business interests.

The cost differentials of the emerging global production system have led developed economies to shift their focus towards the higher added value activities at the end of the production chain. Product differentiation and customer support are seen as the means of maintaining demand for goods and services in mature home markets. At the same time, across the system as a whole specific markets and specific technologies

are at different points in the cycle of growth, maturity and decline. Maintaining a dominant role in this system means meeting the challenge of delivering continuous innovation at the cutting edge while ensuring effective diffusion of more mature technologies. The result of such efforts is the emergence of new forms of locational and functional differentiation across a globalized network of invention, innovation and implementation.

Locational decisions for the components of such a system are further complicated by differences within individual national states in both developed and developing regions. These may be at least as significant as those between them. Using 1991 statistics, Ohmae (1995) shows that China's national average *per capita* GDP of US\$317 masks regional variations in GDP ranging from US\$164 and 197 in Guizhou and Guangxi to US\$1218 and 1527 in Beijing and Shanghai. While such differences may be most marked within economies undergoing rapid development, the logic of the current wave of technology-driven globalization has impacted on significant sectors of the developed economies themselves, giving rise to the concepts of 'sun-belt' and 'rust-belt'. Both Japan and Britain are finding that only specific geographical areas or economic sectors may benefit fully from integration into the global economy. Smaller local organizations and enterprises in particular may gain little. As with technology transfer premised on foreign direct investment (FDI), key resources may be diverted to the support of incoming capital, hampering local development initiatives. Inward investors may 'cherry-pick' demographically, establishing greenfield developments remote from existing competing companies. Such tactics allow them both the inducements offered by local authorities and a workforce whose age structure represents a significant cost advantage in itself. The resulting regional 'beauty contests' may result in supporting technologies, in particular the information and telecommunications infrastructure, optimized for these externally driven actors.

All sizes of organization, whether commercial, regulatory or voluntary, are increasingly being confronted with the need to operate across a multiplicity of boundaries – geographical, political and cultural – in order to function within the emerging global system. Delamaide (1994) mounts a case for the re-emergence of historical geographical and economic synergies across Europe since the end of arbitrary Cold War division. He offers a perspective on the pre-existing historical and cultural linkages which pre-date both the recent Cold War divisions and the emergence of the current nation states. In many areas such

as the Baltic, these older linkages can be seen re-emerging in the pan-European context. The political geography underlying these connections goes back to the Hanseatic League or the Holy Roman Empire. Delamaide attributes the patterns of potential development across an enlarging European Community (EC) to a range of geo-historical connections. Elsewhere, he draws attention to the pivotal role of Turkey as a link between Europe and the Turkic republics of the FSU. Such cultural synergies offer a means of retaining regional coherence in the face of continuing expansion of regional entities such as the European Union.

Enduring cultural linkages, whether established through trade, migration or colonization can be identified throughout the emergent global system. In East Asia, as in Europe, the end of the Cold War has seen the admission of Cambodia to the Association of South East Asian Nations (ASEAN) and Vietnam to the Asia Pacific Economic Co-operation forum (APEC). The reassertion of Greater China in regions of former European and Japanese colonization has been of particular benefit to Taiwan, with some 35 000 enterprises now established on the mainland (China Intercontinental Press, 1997). Taiwan's connection to the Japanese economy means that Taiwanese inward investment to the PRC represents a layering of regional cross-influences and a transfer of a range of capabilities and traditions.

Taiwan has followed a classic route of state-sponsored development, particularly in the area of information technology (Tsai, 1993). Companies such as Tatung reflect the same Japanese colonial influence which produced the sprawling portfolios of the Korean *chaebols*. However, the mix of traditional Chinese business networks (Numazaki, 1996) with state-provided or state-sponsored infrastructure has produced a different outcome from both Korea and from Hong Kong, where the British colonial legacy was significant in terms of legal infrastructure as much as technical.

Both Ohmae (1995) and Delamaide (1994) mount arguments for the acknowledgement of complementary regional associations across national boundaries. However, both implicit and explicit in Ohmae's 'zebra strategy' is the view that national or even international regional government no longer has a significant role in development. While this is challenged by the evident success of some national government policies, even in the present period of crisis recovery, there are differences of opinion over which level of government – regional, national or trans-national – is best equipped to deal with negotiations over a particular location's relationship to the wider economy.

Although linkages between the advanced areas of developing economies are creating new regions irrespective of national boundaries, few national governments are prepared to relinquish responsibility for the development of the state as a whole. While the assertion that national or even international regional government no longer has a significant role in development is increasingly being challenged, the differential development that has been entrenched through a dependence on a global infrastructure does threaten the legitimacy of the nation state. This is being driven by the priorities of the dominant developed economies. The development of co-operative economic mechanisms such as NAFTA and ASEAN suggest that there are means of achieving development which retain a role for national governments. However, the emergence of economic groupings as large as APEC, with the imminent addition of Russia, Vietnam and Peru, or the proposals for further expansion of the European Union, challenge the original coherence and logic of these associations.

Chains, Networks and Webs

The logic of a global production has led to the progressive relocation of basic manufacturing processes to the periphery, superseding the geographical separation of a periphery providing raw resources and a basic market from a core containing transformation processes and sophisticated markets. This process has been evident for many years, however, there is a consequent shift in focus in developed economies towards the end of the production chain where product differentiation and customer support can maintain demand for goods and services. This means that although the integration of this emergent system can be overstated, a system of connected markets and technologies at different points in the cycle of growth, maturity and decline cannot be described convincingly as a chain.

The metaphor of 'production chain' is being superseded by the idea of 'global production networks' in which R&D, routine manufacturing, final assembly and after-market support for products or services from a range of sectors may all be present in the same location. The redistribution of these activities during the product life cycle further undermines the traditional concepts of centre and periphery. The orderly transfer of these functions from core to periphery across the product life cycle described by Hirsch (1967) is replaced by an interpenetration of core and periphery in which market and raw materials source, production and consumption are co-located.

Modelling the Web

Information and communication technologies (ICTs) underpin the global system, they also offer opportunities for participation in the 'information economy' to peripheral areas. ICTs have enabled the disaggregation of the production chain into a network by locating each activity specifically at its point of greatest comparative advantage.

The ability to disaggregate the intellectual capital required by the divergent stage of the design and development process from the convergent, focused discipline of the mass production process (see Jones, 1980) has been enhanced by the ability to control production lines from across national boundaries. The phenomenon of design activities located within the target market, with production located in the low-cost periphery, is already well recognized. Lipietz (1992) argues that the ability to separate production from consumption signals the end of the 'Fordist compromise' which drove the expansion of production on a base of strong domestic demand from the industrial work-force. Production workers remote from the destination market no longer need to be paid sufficiently well to consume the products of their own labour.

Castells (1996) offers a related paradigm of the 'network enterprise' which is composed of components from larger corporations, collaborating in specific spatial and temporal circumstances, while the main companies are still pursuing global strategies of direct competition. The framework of the network organization appears to offer an opportunity for contributions from smaller players through access to resources from within global networks. Inoue (1998) describes a 'virtual village' across part of Tokyo in which small enterprises are able to form and re-form alliances in order to provide high-technology services to larger companies. However, the additional accessibility and flexibility of advantage offered to smaller players is accompanied by the capability of larger firms to restructure in such a way that they can enter niche markets yet still draw on their wider resource base. Such firms may de-couple key business units, the better to target customers and markets traditionally served by much smaller firms.

The divisions within the emerging global economic system create additional problems which undermine the broader sustainability of its development. The newly industrializing countries (NICs) that are in the process of catching-up are engaged in a process in which development and growth are synonymous. They are sceptical of advice which suggests that they should adhere to higher standards than those applying at

the equivalent stage in the development of the dominant established economies. Additionally, significant parts of the globe are excluded from this process of catch-up. Their difficulty lies in maintaining even relatively modest economic objectives. Exclusion from policy making processes or from influence over the emerging global production system reduces their ability to negotiate over the sustainable exploitation of the primary resources they have traditionally contributed to the global system. The issues reflect an emergent 'information apartheid' within the global economy and the spatial strategies facilitated through ICTs threaten any prospect of integrated development by allowing a 'cherry-picking' approach to both the human and physical resources of developing regions driven by external criteria.

Design Paradigms and Paradigm Shifts

A broad level of analysis is needed to account for the linkages described above and to examine regional economic activities in the context of the paradigm shift from catch-up based on rapid growth rates to technological leadership. A shift in the view of innovation and product life cycle to that of process life cycles, akin to double-loop learning (Argyris, 1983) is part of the required change. The repositioning of effort across the production network may better be understood from the perspective of the design philosophies and methods that have been applied to both product and processes during the last three decades. Galbraith (1977) staked the claim that information systems' design was in effect organization design. Information systems designers have in turn drawn heavily and effectively on a wide body of more general design research and theory.

In parallel to the development of organization theory through and beyond the framework of systems theory, design methodologies have reflected a changing understanding of the processes and the role of the participants and wider stakeholders in them. Scott (1992) argued that organization theory could be seen as developing from a closed rational systems view of classic management theory to an open natural systems view able to accommodate influences from the institutional and technical environments.

Jones (1980) presents design methods extant in the 1960s and 1970s, and relates them to a generic model of the design process. This model consists of three stages:

Divergent Search → Transformation → Convergence

The *divergent search* stage involves searching the possible solution space of a design problem. The ultimate objectives of a project are unstable and tentative, the problem boundary is unstable and undefined and evaluation is deferred. The aim is to increase uncertainty and widen the range of possibilities.

The *transformation* process is, in effect, the imposition on to the results of the divergent search of a pattern which will allow convergence to a single solution. At this stage objectives, briefs and boundaries are fixed, critical variables and constraints are recognized and the problem is divided into sub-problems for parallel or serial treatment. The freedom to change sub-goals and rapid evaluation of alternative choices is needed. Personal capabilities and orientation of the team are critical at this stage.

The *convergence* stage involves activities to reduce uncertainty. This stage requires a very different orientation. Here persistence and rigidity of mind become a virtue. Unforeseen sub-problems may prove critical at this stage and cause recycling to earlier stages, so it is dependent on the successful handling of the preceding stages. The models used to represent remaining alternatives become more detailed and concrete while the diligence of 'normal science' is used to arrive at a single satisfactory solution.

The received wisdom around this model is that the divergent stage involves the million-dollar decisions, while the convergent stage involves the thousand-dollar decisions.

This essentially linear model of design can be seen in the 'waterfall' model of information systems design (e.g. Birrell and Ould, 1985). Here the need for re-cycling indicated by Jones is accommodated between successive stages of development and refinement.

Considered in conjunction with generic production chains, such as that presented by Dicken (1998), the shifts of intellectual focus across the design stages suggest a paradox. It seems to run counter to the shift to the end of the chain in developed economies. However, the innovation of consumer-based added value services can involve significant divergent analysis, and the associated core technologies are likely to be retained by the most advanced players. The relative success of the NICs can then be seen as a highly effective entry at the convergent stage of the process. This involves efficient production utilizing mature technologies. Arguably Japanese companies have developed considerable competence in the transformation stage with highly innovative products derived from newer technologies. However, with some notable exceptions, these seem less proficient at the divergent stage which can

be likened to the development of basic research strategies and fundamental innovation tracks. The relatively narrowly targeted strategies of Taiwanese firms have delivered world-class performance in key areas of information technology (IT). Dominance in motherboard design and fabrication, together with the manufacturing capability in the 'silicon forge' service provided to overseas designers requiring prototype chips, has allowed participation at key points in the production network. Once this level of performance was achieved, companies such as Acer were able to develop a more integrated presence as full-range manufacturers. In contrast, the evidence presented by Wilkinson *et al.* in Chapter 19 suggests that Malaysia, despite efforts to shift to transformative and divergent activities via the 'Multimedia Super Corridor' and related initiatives may still be stuck with the essentially convergent tasks of global commerce.

Just as views of organizational relationships have moved towards a network or web paradigm, so have models of the design process shifted to accommodate less linear and more situational views of design. The implications of a shift from a hierarchical to a network or web view of organizations is foreshadowed by Thompson (1967) in terms of coalition-formation across the organization, and by Mintzberg (1979) in the form of work constellations. Within design, the acknowledgement of design participation of users (e.g. Cross, 1972) also shifted models of the design process into less hierarchical and more situated paradigms.

Learning to be Global

Marvin (1988) describes the social learning curve associated with the introduction of new electrically-based technologies at the turn of the last century. Given the time taken for a general understanding of the appropriate use of the telephone to emerge, it is not surprising that a global consensus on the more recent generation of information and communication technologies underpinning the current wave of globalization is still to emerge. What is clear is that the necessary paradigm for the new global system will not emerge on its own.

Kaplinsky and Posthuma (1992) demonstrate the transferability of organizational technology in the form of Japanese manufacturing practice without high levels of capitalization. Marginal players – in this case, East African manufacturing companies – made significant improvements in their performance without substantial capital investment. The adoption of the organizational approaches utilized in Japan can

transform efficiency and effectiveness in companies in developing economies without the supporting technology usually associated with it; the opportunity exploited was the gain from relatively capital-free reorganization. These gains were achieved through the use of intellectual resources which needed some consonance with cultural assumptions embedded within the imported techniques, but Kaplinsky and Posthuma argue that to be fully competitive with developed economies a similar level of capital resources is required.

If access to state-of-the-art technology is necessary for full participation in the global economy, access to such technology is no guarantee of its appropriate use. Sproull and Kiesler (1991) demonstrate that a process of organizational learning is needed to move beyond the technical effects of direct substitution of IT for manual processes. The transformative gains in effectiveness represented by the 'informed organization' (Zuboff, 1988) will come about in the globalized arena only through an understanding of the meaning of cultural interoperability at both pre-competitive and competitive stages of development (Kaye and Little, 1998). Vygotsky's 'zone of proximal development' (see Cole, 1985) offers a paradigm of how adjustment to a new consensual culture might be assisted. Actors, whether individuals or organizations, may be supported mutually by a scaffolding provided by institutionalized practices and structures, until the underlying values and assumptions are internalized. The use of activity theory in information systems development (Kutti, 1991) and the emphasis on group cognition in current computer-supported cooperative research (CSCW) provides some evidence of the practicality of the approach.

STRUCTURE OF THE BOOK

This book is divided into five main parts. Part 1 (Chapters 1–6) contains the keynote contributions and three other chapters dealing with the institutional framework which underlies both the difficulties and opportunities of the current situation. Part 2 (Chapters 7–10) deals with the diversity of mutual influences between East Asia and the remainder of the global economy, while Part 3 (Chapters 11–14) contains four chapters dealing with the influence of Western practices and investment resources on the East. Part 4 (Chapters 15–17) deals with north east Asia, specifically China, and Part 5 (Chapter 18–21) with South East Asia, Malaysia and Singapore.

Dealing with Diversity

The ‘production web’ metaphor is an attempt to capture the complexity and diversity of intra-and inter-firm linkages, and Part 2 examines the complex exchange of ideas between Asia and the rest of the global economy.

Koji Okubayashi contributes a study (Chapter 9) which reports on the findings of extensive research into the adjustment of Japanese management practices in Japanese affiliates in Germany and the UK. Two distinct approaches to adapting to external conditions have been observed, and these are described and discussed in relation to their impact in Japan and on the host economies.

Alexander Roy in Chapter 7 points out that while Japan’s investment in the UK is the largest in Europe, it is predominantly directed to the service sector. The service sector is complex, and is not well integrated into theories of international investment. However, Roy suggests that the impact of financial and commercial services on the host economy requires careful investigation, since *a priori* impressions question whether the sectors can produce the benefits attributed to the manufacturing sector.

Jos Benders in Chapter 8 looks at one of the most influential Japanese manufacturing companies, Toyota, and considers the extent to which we can learn about the process of technology transfer and adaptation of systems from responses to the Toyota model.

Andrew James and Jeremy Howells in Chapter 10 examine the internationalization of product design and development through case studies of the activities of three Asian companies in the UK. Internationalization of innovative activities appears to be driven by both a desire to get closer to foreign customers, and a desire to access technological capabilities specific to national innovation systems.

West into East

Part 3 shows that the strength of economic linkages between Asia and the rest of the world is demonstrated by the return flow of influence.

Prabhu and Riley in Chapter 11 describe the results of an extensive survey into the adoption of East Asian management practices by UK companies which can be regarded as ‘best-practice’ organizations.

Hans Schmengler and Jürgen Krause in Chapter 13 report on the reaction of customers in the ASEAN countries to the service provided by German Mittelstand firms in the construction sector. They examine

the balance between local subsidiaries and reliance on sales representation by agents.

Kevin Lawler and Marcus Ling in Chapter 12 examine the issue of British direct investment in China in the period since 1979. As the largest investment partner within the European Union, and with increasing government support for an Asian-oriented investment, British experience offers indications of best practice in penetration of the Chinese market.

North East Asia: China

China, as potentially the largest economy in the region, merits special attention in Part 4. The continuing economic reforms have presented a succession of challenges to the orientation of both domestic and foreign companies operating there.

Bob Richie, Lee Zhuang and Tim Whitworth in Chapter 14 provide an analysis of the reported experiences of companies engaging in joint venture enterprises in China in relation to managerial and operational issues.

Hua Li, Frank McDonald and Giovanna Vertova in Chapter 17 present a theoretical framework to explain the clustering process and its influence on domestic and international competitiveness. They provide a taxonomy of clusters and industrial districts illustrated by data from Shanghai and Beijing indicating that separate domestically and internationally oriented clusters are discernible.

David Brown and Hantang Qi in Chapter 15 explore the readiness of Chinese enterprises to meet the challenge presented by the continuing programme of economic reform. Both state and private enterprises are required to play their part, the former by increasing efficiency and shedding workers, the latter by continuing their dramatic growth and providing replacement employment opportunities. The difficulties of strategic implementation are illustrated by two case studies.

Xiaobei Shen in Chapter 16 compares the transformation of management in two telecommunication technology producers, one an established state-owned company, the other a more recent joint venture, and finds comparable difficulties in the development of appropriate technological capabilities.

South East Asia: Singapore, Malaysia

Part 5 addresses the problems of later entrants to the global manufacturing web. Ross Brown in Chapter 18 examines the role played by

foreign direct investment (FDI) in the establishment of linkages in the electronics industry in Singapore. Both foreign investments and the development of indigenous local suppliers are dealt with.

Barry Wilkinson *et al.* in Chapter 19 show that Malaysia's attempt to repeat Singapore's success in moving to higher-grade activities within a globalized electronics production chain has met with relatively limited success.

David Smith in Chapter 20 examines the growth of the aerospace industry in South East Asia. Both national government strategies and the development of strategic alliances by established Western companies have played a part in this. The growth of activity in the region represents a significant development in the world aerospace industry.

Hua Li and Frank McDonald in Chapter 20 conclude the book with a review of the main lessons to be learned for management from the Asian crisis of 1997–8. The chapter explores the various causes put forward to explain the crisis and provides an overview of the lessons that might be drawn.

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Index

Abbreviations used in index:

EAMPs	East Asian Management Practices
EU	European Union
FDI	foreign direct investment
JVs	joint ventures
R&D	research and development
SAR	Special Administrative Region
SEZ	Special Economic Zone (in China)
SOEs	state-owned enterprises
TNCs	transnational companies
UK	United Kingdom
USA	United States of America

-
- Abdullah, R.S. 379, 381
Abegglen, J.C. 87
Abo, T. 379
aerospace industry
 East Asian 386–401
 Japanese 135, 386–91,
 399–400
Aérospaciale 394
Airbus Industrie consortium
 386, 396
Allied Signal: JV in Taiwan 393
Amtek Engineering 363n1
Angel, D.P. 190
Anthony, Doug 366–85
APEC (Asia–Pacific Economic
 Co-operation) 8, 39, 67
Appelbaum, R.P. 347
Apple Computers 357
Arora, D. 123
ASEAN (Association of Southeast
 Asian Nations) 40, 72, 75, 77
 distribution strategies of German
 firms in 241–53
 electronics industry in 368–73
ASEM (Asia–Europe Meetings)
 79, 80
Asia Invest Programme 40
Asia–Pacific Economic Co-operation
 (APEC) 8, 39, 67
Asian capitalism 403–5, 414–19
Asian developing economies
 aerospace industry in 386–401
 Dunning’s human development
 categories 62
 indices of globalization 44–7
 inward and outward foreign
 investment 37, 38, 48–55
 in South Asia 24
Asian NICs (newly industrializing
 countries)
 development and growth 3–4,
 9–10
 electronics industry in 369
 FDI in Europe 73
 trade with EU 69–71
 see also individual countries
automotive industries 21–2, 38,
 116, 133, 180, 190
 Japanese affiliates in UK 147–74,
 184–6, 189, 190, 191, 193–5
 South Korean affiliates in
 UK 186–7, 189
Toyota Production System
 (TPS) 133–43

- Bagehot, Walter 32
 Bank for International Settlements (BIS) 411
 Bank of Japan 31, 101
 Bank of Tokyo 98
 banks and financial services
 in Asian financial crisis 404, 407, 411, 412–14
 and ‘crony capitalism’ 405, 414–19
 in Japanese corporate governance 87–8, 89, 92, 94, 96
 TNCs 116, 122–5, 263
 Beaney, P. 350–1
 Beech (US company): JV in Taiwan 394
 Belgium: JV in China 306–15
 Bell Telephone Manufacturing Company (BTM) 296, 306–15
 Behrman, J.N. 182
 Benders, Jos xi, 14, 132–45
 BIS (Bank for International Settlements) 412
 Blackburn, R. 352
 Boeing 386, 389–90, 391, 392, 394, 397, 400
 Boisot, M. 279
 Booz, Allen and Hamilton 47
 Brown, David H. xi, 15, 273–90
 Brown, Ross xi–xii, 15, 347–65
 Brusco, S. 325, 326

 Cable & Wireless 232–3, 264
 Cadbury 266
 Carlsson, B. 176
 CASA (Spanish aerospace manufacturer) 394–5
 Casson, M.C. 122
 Castells, M. 9
 Cherry Valley Farms 232, 235–6
 Chesnais, F. 177
 Child, J. 279, 291–2
 Chile 24
 China, People’s Republic of (PRC)
 aerospace industry 386, 397, 400
 British direct investment in 223, 226–39
 clusters and industrial districts in 323, 328–41
 economic reforms 24, 277–80, 291–4, 296, 316–19, 333–5
 EU investment in 72, 223, 226, 228, 256, 264
 expansion in manufacturing 29
 foreign investment in 22, 37, 38, 49, 50, 82n8, 223–31, 333–4
 Hong Kong SAR (Special Administrative Region) 37, 77
 Jiang Zemin, President 284
 Jiangsu Cement Industrial Group 282–4, 286–9
 JVs with Western multinationals 224–6, 229–39, 255–69, 284, 306–15, 317, 397
 labour costs 27
 Luoyang Telephone Equipment Factory 294–306, 316–18
 managerial methods, transformation of 291–319
 ‘Open Door Policy’ 224–6, 292, 293
 outward FDI 51
 petrochemical SOE (‘Sino-Oil Company’) 280–2, 284, 286, 287
 problems of economic development 5, 6, 293–4, 334
 Special Economic Zones (SEZs) 224–5, 333–4
 state (SOEs) and non-state enterprises 273–89, 294–319
 township enterprises (TVEs) 278, 282–4, 329
 trade with EU 69, 70–1, 75, 76–7
 Clarke, T. 350–1
 clusters and industrial districts 323–41, 347, 362
 Coase, R.H. 110
 Compaq 357
 Conner Peripherals 357–8
 corporate governance
 Anglo-American system 85, 94
 in Japan 85–102
 Cowling, K. 115

- Cranfield University/Management Today awards 204
- 'crony capitalism' 405, 414–18
- Curran, J. 352
- Daewoo
 aerospace division 391–3, 393
 Daewoo Automotive 183–4, 186–7
 Worthing Technical Centre (DWTC) 189–95
- Dai-ichi Kangyo Bank 99, 100
- Daimler-Benz Aerospace 392
- Dassault 393
- Delamaide, D. 6–7, 7
- Deming, W. Edwards 141
- Dent, Christopher xiii, 5
- Department of Trade and Industry (DTI), UK 203, 204, 206
- Design Council 196n
- Dicken, P. 4, 11, 127n7
- distribution strategies
 German firms in SE Asia 241–53
 JVs in China 257–9
- Dore, Ronald 87, 126n2
- Dunning, John xii, 3, 5, 121–2
- East Asian Management Practices (EAMPs), adoption by UK companies 201–21
- East Asian states
 aerospace industry 386–401
 economic relationship with EU 66–74
 industrial development 21–3
 intra-regional trade 69
 investment and GDP 23–4
 outward FDI in Europe 73–4
see also individual countries
- economic crisis in Asia 79–81, 403–19
 causes 23, 30–2, 47, 48, 410–14
 effects 3, 40, 50–1, 68, 81, 176, 393, 395
 remedies 6, 32
- economic diplomacy 74
- Economist Intelligence Unit 259
- education
 in East Asian countries 23
 in Western countries 23, 34–5
- electronics industries 116, 180, 187–94, 330, 334
 Japanese affiliates in Germany and UK 147–74
 in Malaysia 366–85
 supply-chain linkages in 347–62
- employees
 and adoption of EAMPs 206–7, 212–21
 in Chinese SOEs 295–6, 297–300
 in Chinese JVs 260–8, 301–2, 311–12, 314–15
 in Japanese production system 138–41, 152–68
 in Malaysian electronics sector 377–83
- Euro-China Business Association 256
- European aerospace industry 386, 393, 397
- European Commission 36, 40
- European Investment Bank (EIB) 60
- European Quality Award (EQA) 204, 219
- European Round Table 36
- European Union (EU) (formerly European Community)
 ADDs (anti-dumping duties) 75, 76
 economic relationship with East Asia 66–81
 FDI in Asia 36–41, 51–60, 69–73, 390
 FDI in China 72, 223, 226, 228, 256, 264
 Japanese affiliates in 146–74, 184–6, 189–96
 Japanese FDI in 107–10
 Korean affiliates in 186–92
 SEM (Single European Market) 38–9, 75, 109, 124
 monetary union 33
 and world FDI 37
- Fachhochschule Bochum 244–5
- Ferdows, K. 192
- Fiat 390

- financial crisis in Asia *see* economic crisis in Asia
 financial services *see* banks and financial services
 firms *see* multinational enterprises; SMEs; *see also* clusters and industrial districts
 Fischer, W.A. 182
 Florida, R. 383
 Ford Motors 133, 134–5, 135, 140
 foreign investment
 in Asian developing economies 45–7, 48–55
 European attitudes towards Asia 56–60
 and importing technology 34
 Japanese FDI in EU 107–26
 and local management 156–8, 165–73
 and local supply chains 347–62
 and uneven development 6
 world FDI 37, 107, 108
 see also under European Union; governments; *and under specific countries*
 France 33, 391, 395
 Freeman, C. 176
 Fuji Bank 96
 Fuji Heavy Industries 95, 387, 388, 389

 G7 75
 Galbraith, J. 10
 Gamble, Jos xii–xiii, 366–85
 GATT (General Agreement on Tariffs and Trade) 75–6
 General Dynamics 392
 Gereffi, G. 372, 382
 Germany
 distribution strategies of firms in Asia 243–53
 economic policies in 35
 exports 241–3
 investment in education 23
 Japanese affiliates in 146–74
 JV in Japan 390
 labour costs 27, 34, 116
 Gillette 260–1
 Gilson, R.J. 95, 96

 Glasmeier, A. 349
 Global Change conferences 1–2
 globalization
 and capital mobility 33–4
 causes of 43–4
 defined 43
 and differential development 1, 3, 6, 8, 10
 effect on economic superpowers 67
 global financial integration 43, 405, 419
 global production system 3, 5–6, 8–9, 383
 and labour markets 26–30
 Goldsmith, Sir James 26
 governments
 and aerospace industry 399
 and Asian economic crisis 48, 404, 408, 411, 414–19
 and investment in R&D and education 34–5
 lessons to learn from Asian economic crisis 414–19
 role in globalization 7–8, 43–4
 role in Japanese economic development 90, 100–2
 support for inward FDI 107, 239, 306–7, 312–13
 support for outward FDI 39
 Gray, H.P. 123, 125
 Gray, J.M. 123, 125
 Grubel, H.G. 123
guanxi 286, 329–30

 Hahn, D. 243
 Hamel, G. 285
 Hanjin (Korean Air) 391
 Hashimoto, Y. 121
 Hayward, T. 195
 Henderson, J. 347
 Henkel 263
 Hewlett-Packard 357
 Hirsch, S. 8
 Hitachi 99, 184
 Hong Kong
 affected by Asian economic crisis 405–6
 Chinese investment in 51

- economic relationship with
 EU 77–8
 FDI in China 226, 227, 228
 investment and GDP 23–4, 413
 outward foreign investment
 49, 50, 82n8
 trade with EU 69
 Hong Kong Bank 263
 Hong Kong Institute of Human
 Resource Management 259
 Howells, Jeremy xiii, 14, 175–98
 Hui, T.B. 348
 Human Development Index 42
 human resource management
 (HRM)
 issues facing JVs in China 255,
 259–69, 307
 in Japanese enterprises 147,
 152–68
 in Malaysian electronics
 industry 379–83
 see also employees; training
 Humphrey, John 366–85
 Hymer, S. 110, 111, 115, 123
 Hyundai 63n7, 73, 391, 392, 393

 IBM JV in China 258
 IBM UK Ltd survey 203
 ICT (information and
 communications technology)
 in Asian developing
 economies 45–6
 and differential development
 1, 10
 effect on production chain 9
 and global R&D networks 180
 and organizational learning 13
 IMF (International Monetary
 Fund) 68
 and Asian economic crisis 394,
 395, 407–9
 role in global economy 32
 Imperial College, London 147
 Imrie, R. 351
 India
 economic reform 24
 European investment in 40, 60
 Indonesia
 aerospace industry 394–5, 399
 economic crisis in 405, 406, 408,
 410–11, 412
 inward FDI in 51
 labour costs 384
 relationship with EU 77
 industrial districts *see* clusters and
 industrial districts
 industrial relations
 in Japanese affiliates in
 Europe 163–5
 in Malaysian electronics
 firms 382
 trade unions 216, 267
 information technology *see* ICT
 innovation 28, 34
 internationalization of innovative
 activities 175–96, 375–6
 under centrally planned
 economies 293
 see also product design and
 development
 Inoue, T. 9
 international financial system,
 weaknesses of 405, 409,
 418–19
 International Monetary Fund
 see IMF
 Ishikawajima-Harima 387, 388,
 390
 IUIKE (Inside UK Enterprise)
 scheme 203, 204, 206
 Iwama, X.X. 124

 Jacoby, S. 112–13
 James, Andrew D. xiii, 14, 175–98
 Japan
 aerospace industry 386, 387–91,
 399, 400
 automotive manufacturing 21–2,
 23, 119, 132–43
 economic relationship with
 EU 69, 70–1, 75–6, 112
 FDI in Asia 21, 37–9, 51–5, 72–3,
 116, 118–19, 368–71
 FDI in China 226, 228
 FDI in EU 107, 108, 109–10, 116,
 150–1
 FDI in USA 116
 financial crisis 23, 31, 32, 404

- Japan (*continued*)
 government's economic policies 31, 35
 industrial development of 88–92
 inward FDI 37
 labour costs 27, 32–3
 trade in electronics 370–1
 uneven effects of globalization 6
- Japanese companies
 corporate governance 85–102
 European affiliates 146–74
 in Malaysia 366–82
 production systems 132–44, 149, 151–5
 R&D in Europe 184–6
 transnational corporations (TNCs) 110–25, 366–82
see also individual companies
- Jenkins, R. 117–18
- jidoka* 133, 135
- Jones, J.C. 10–11
- Juran, Joseph 141
- 'Just-In-Time' production system (JIT) 136–8, 142
- kaizen* 378–9
- Kaplinsky, R. 12–13
- Kaufman, G. xiv, 4, 21–5
- Kawasaki 387, 388, 389, 390
- Kay, J. 285
- Keenoy, T. 379, 381
- keiretsu* 92, 93–4, 98, 115, 116–117
- Kenney, M. 383
- Kester, W.C. 87, 95
- Keynes, J.M. 31
- Kiesler, S. 13
- kigyo shudan* 117
- Kim, J.M. 4
- Kindleberger, C. 32, 123
- Knickerbocker, F.T. 115
- Koito Manufacturing 95
- Kojima, K. 119
- Korea, South
 aerospace industry 391–3, 399, 400
chaebol multinationals 72
 economic crisis in 405, 406, 408, 409
 economic development 5, 21, 23
 economic relationship with EU 69, 78–9
 inward FDI in 51
 outward foreign investment 49, 73–4, 227
 UK affiliates 184, 186–95
- Krause, Jürgen xiii, 14–15
- Krugman, Paul 3, 26, 404, 414, 415
- labour markets
 and capital mobility 115–16
 and global production 26–30, 33–4, 109–10, 383
- Lawler, Kevin A. 15, 223–40
- liberalization of financial markets 405, 416, 419
- Li, Hua xiv, 15, 16, 323–43, 403–21
- Li, Peter Ping 286
- Ling, Marcus C.H. xiv, 15, 223–40
- Lipietz, A. 9
- Little, Stephen xiv
- Liu Changhui 277
- Lock, Andrew 26
- Lockheed 388, 392, 393, 396
- London Business School survey 203
- Lorenz, C. 179
- Lundvall, B.-A. 178
- McDonald, Frank xv, 1, 15, 16, 323–43, 403–21
- McDonnell-Douglas 388, 394, 397
- McGrew, Anthony 43
- McVitie's Cakes 236
- Malaysia
 aerospace industry 396–7, 399
 economic crisis in 405, 406, 408, 411, 412
 electronics industry in 366–84
 European FDI in 51
 industrial strategy 12, 370, 383
- management
 adoption of EAMPs in UK 201–22
 in Chinese telecommunications producers 291–319
 in Japanese enterprise 92–3, 141–2, 143–4

- of Japanese affiliates in
 - Europe 146–74
- in Malaysian electronics firms 377–83
- of Western JVs in China 255–69
- Management Today/Cranfield University awards 204
- Manchester University Business School 265
- manufacturing
 - adoption of EAMPs in UK enterprises 205, 211–12
 - Chinese telecommunications producers 291–319
 - in East Asia, study of 366
 - effect of globalization on 8, 28–9
 - electronics plants in
 - Malaysia 372–7
 - German exports 242–3
 - Japanese FDI in UK 108–10
 - UK FDI in China 233–5, 236
- Manufacturing Winners report 203
- markets and global strategies 150–1, 176–9, 185, 188, 190–3
- Marshall, A. 323–4, 325, 327
- Marvin, C. 12
- Mason, M. 116, 124
- Matsushita Electric 93
- Meiki Plastic Industries (MPI) 354–5
- mergers and acquisitions 49, 110
- Mexico 31
- Microsoft 25
- Minford, Patrick xv, 4, 26–35, 415
- Mintzberg, H. 12
- Mitsubishi 91, 98, 99, 387, 388, 389, 390
- Mitsui 91
- Moore, J.B. 113
- morris, J. 351
- Morris, Jonathan xv, 366–85
- Morrison, Janet xv, 5
- motorcycle industry 23
- MTU (German company) 390
- Myanmar 49, 60, 77
- multinational enterprises (MNEs)
 - and FDI in Asia 34, 56, 57–60, 71–2, 383
 - Japanese TNCs 110–25, 366–82
 - national differences among 86
 - and product design and development 175–96
 - and supply-chain development 347–63
- Nabisco 258
- Nee, V. 274–7
- Nepal 49
- Netherlands 41
- networks 285–6, 323, 325–30
- New, C.C. 203
- New Zealand 24
- Newcastle Business School 203
- Nissan Motor 95, 142, 183–6, 189–95
- Noë, Willem xv–xvi, 4, 36–41
- Nomura Securities 98, 99
- Nowell, Eric 29
- Nuki, T. 3
- NUMMI (New United Motor Manufacturing) 163
- OECD (Organization for Economic Co-operation and Development) 40
- Ohmae, K. 1, 3, 6, 7
- Ohno, Taiichi 134–40, 142–3
- Okubayashi, Koji xvi, 14, 146–74
- Ozawa, T. 50, 119
- Pacific Rim, economic growth
 - of 24–5
- People's Republic of China
 - see* China
- Pepsi 259
- Perot, Ross 26
- Perry, M. 348
- Philippines
 - economic crisis in 405, 408, 411, 412
 - US FDI in 51
- Philips 354–5
- Pilkington Glass 234–5
- Plaza Accord (1985) 75
- Pomfret, R. 229
- Porter, M. 330–1, 337–41, 347
- Posthuma, A. 12–13

- Prabhu, Vas xvi, 14, 201–22
- Prahalad, C.K. 285
- Pratt and Whitney 390, 398
- Proctor and Gamble 259, 266
- procurement *see under* supply chain
- product design and development
- design process 10–12
 - in Malaysian electronics industry 375–6
 - internationalization of 9, 175–96
- production methods
- adoption of EAMPs in UK 210–12
 - in Chinese SOEs 304–6
 - Japanese 132–44, 149–52
 - in Malaysian electronics industry 373–9
- quality control
- in Chinese JV 308–11
 - in Chinese SOE 302–6
 - Japanese total quality control (TQC) 141–2
 - in Malaysian electronics companies 377
 - quality circles 143, 154
- Qui, Hantang xvi–xvii, 15, 273–90
- R&D (research and development) 34–5, 179–83, 375–6
- Ray, D. 195
- Raytheon 393
- Redding, S.G. 4
- regionalization 47, 50
- Reich, R. 177
- Riley, Jonathan 29
- Riley, Marilyn xvii, 14, 201–22
- Ritchie, Bob xvii, 15, 255–70
- Roe, M.J. 95, 96
- Rolls-Royce 390
- Roy, Alexander xvii–xviii, 14, 107–31
- Sabbagh, Karl 398
- Samsung Aerospace 391, 393–4
- Samsung Electronics 63n7, 183–4, 187–94
- San Miguel Brewery 266
- Sanderson, S. 190
- Savage, L.A. 190
- Scher, M.J. 116
- Schmengler, Hans xviii, 14–15
- Schmitz, H. 324
- Schonberger, R.J. 202
- Scott, W.R. 10
- Scottish Enterprise National 363n1
- service sector
- adoption of EAMPs in 205, 212
 - British high-growth firms 243
 - FDI in 120–5, 232–3
 - Japanese FDI in UK 108–9, 113–14
- Shangri-La Hotels 267–8
- Shen, Xiaobai xviii–xix, 15, 291–322
- Shingo, Shigeo 138
- ship building 21
- shojinka* 135–6
- Siemens 262
- Singapore
- aerospace industry 395–6, 399, 400
 - affected by Asian economic crisis 406
 - economic policies 362
 - electronics sector suppliers 347–9, 353–62, 368
 - European FDI in 51
 - high-tech industries 22
 - investment in China 50, 226, 228
 - investment and growth 23, 414
 - outward FDI in Europe 74
- SMEs (small and medium-sized enterprises)
- Chinese 274, 330
 - German Mittelstand firms in Asia 243–53
 - investment in Asia 39, 40
 - Japanese 113
 - networks among 9, 327
- Smith, David xix, 16, 386–402
- sogo shosha* 114
- sokaiya* 99
- Sony Corporation 98, 184, 190
- Soros, George 405, 415
- South Asia 24, 40
- South Korea *see* Korea, South

- Soviet Union 224
- Spain: JV in Indonesia 395
- Sproull, S. 13
- Stalk, G., Jr 87
- steel industry 21
- Sugden, R. 115, 122
- supply chain 255, 347–62
 marketing and distribution
 241–53, 257–9, 376
 procurement and sourcing 233–7,
 258, 310–11, 376
- Szwejczewski, M. 203
- Taiwan
 aerospace industry 393–4,
 400
 Chinese investment in 51
 economic development 7, 23
 economic relationship with
 EU 78
 FDI in China 226, 228
 IT industry 12
 multinationals in Malaysia 367,
 373, 381
 outward FDI 7, 49, 50
 trade with EU 69
- Taylor, B. 243
- team working 213–14, 221, 378
- technology transfer 6, 181–3,
 193–5, 237, 358
- telecommunications industry
 Chinese manufacturers
 291–319
 FDI in Asian enterprises 232–3
- Thailand
 economic crisis in 405, 406, 408,
 409, 411, 412, 414
 FDI in 32, 51
- Thorpe, Richard xix, 1
- Tiananmen Square demonstration
 22, 229, 236, 278
- Tickell, A. 127n7
- Tomlinson, P. 115
- Tootal Group 233–4
- Toshiba 99, 354–5
- Toyoda, Kiichiro 133, 142
- Toyoda, Sakichi 133
- Toyoda Spinning and Weaving
 133, 134, 138, 139
- Toyota 21–2, 95
 Toyota Production System
 (TPS) 132–44
- trade
 of Asian developing
 economies 45–6, 55
 East Asia–EU 68–72
- trade unions 216, 267
- training
 in adoption of best practice in
 UK 207–10, 216, 220–1
 in Chinese enterprises 262–4,
 291–2, 302, 313, 318–19
 in Japanese production
 system 138–41, 159–60
 in Malaysian electronics
 industry 377, 380–1
- transnational corporations (TNCs)
 and theories of FDI 110–26
 see also multinational enterprises
- trans-pacific trade 81n1
- Turner, L. 195
- Turok, I. 351–2
- UK *see* United Kingdom
- UNCTAD (United Nations
 Conference on Trade and
 Development) 36
- United Biscuits 258–9, 263
- United Kingdom (UK)
 adoption of EAMPs 201–21
 Asian multinational subsidiaries
 in 146–74, 183–96
 Best Factory Award 203
 industrial stagnation in 21–2,
 23
 investment in Asia 41, 223,
 226–39, 390
 inward and outward FDI 108
 Japanese FDI in 107, 108–10,
 122–4
 uneven integration into global
 economy 6
- United Nations Development
 Programme 42
- United States of America (USA)
 Asian subsidiaries 60
 branches and local sourcing
 349–50

- United States of America
 (USA) (*continued*)
 and development of Asian
 aerospace industries 388,
 389, 392, 396, 397
 economic relationship with
 Japan 75–6, 112
 FDI in Asia 37, 38, 39, 51–5, 72–3
 FDI in China 226, 228
 FDI in UK 108
 JVs in Asia 389–90, 392
 labour costs 27, 32–3
 response to Asian financial
 crisis 68, 80
 Uzumeria, M. 190
- Venture Manufacturing Ltd 355–6
 Vertova, Giovanna xix, 15, 323–43
 Vietnam 49
 Von Hippel, E. 178
- Walsh, V. *et al.* 192–3
 Wangle gas appliance factory 267
- Wank, D.L. 286
 Warner, M. 291
 Wheatley, M. 203
 Whirlpool 263
 Whitworth, Tim xix, 15, 255–70
 Wilkinson, Barry xx, 366–85
 Williamson, O.E. 110, 122
 Winning report 203
 Wissenschaftliche Hochschule für
 Unternehmensführung-
 Koblenz 147
 Womack, J.P. *et al.* 203
 Wong, S.-L. 4
 WTO (World Trade Organization)
 40, 75–6, 77, 78
- Yamaichi Securities 96, 99, 100, 101
 Yeung, H. 127n7
 Yoshitomi, M. 119
- zaibatsu* 90–1
 Zhu Huayou 277
 Zhuang, Lee xx, 15, 255–70