Introduction:
Strategic Aspects of Developing Asia’s Knowledge-Based Economies

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The increasing importance of knowledge as a new factor of production is a significant consequence of the process of globalization (Drucker, 1994; Evers, 2003; Foss, 2005). Actionable knowledge is crucial to deal with very diverse issues such as creating robust knowledge clusters in emerging markets (Evers et al. in this volume) or the need to develop innovations in service-related industries (Kogut and Zander, 1992; Chan and Mauborgne, 1997; Wirtz et al., 2008). The creation and effective governance of knowledge represents a key driver of sustainable knowledge economies in an era of rapid globalization and latent knowledge conflicts (Tallman et al., 2004; Neo and Chen, 2007; Willke, 2007; Menkhoff, Evers and Chay, 2010). This represents new opportunities, challenges and threats for policy makers, leaders, managers and employees in both public and private sector organizations in Asia and beyond tasked with managing knowledge effectively (Talisayon, 2008). Several broad research questions and issues are of interest:

- What is the role of knowledge as an engine of growth for Asia’s increasingly knowledge-centric development?
- How fit are Asian countries for the knowledge economy in terms of their knowledge architectures and national information and communication technology frameworks?
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- Which role do governments and the state play in related transformation processes in terms of knowledge governance, technology and innovation management, science and technology, e-governance, institutional arrangements and so forth so as to leverage on glocal knowledge flows and to ensure sustainable development?
- What happens in multi-cultural (diverse) knowledge contexts when members of different (ethnic) groups interact and collaborate (e.g., in knowledge-intensive teams) aimed at achieving development progress, e.g., by creating new knowledge and innovative products?
- How effective are present knowledge governance systems in Asia in terms of managing knowledge traps and to ensure development progress? How can public policy contribute in leveraging on knowledge for development (K4D)?
- Where are the Asian role models who have succeeded in building up sustainable knowledge architectures? What can Asian societies learn from each other in this respect? What development lessons can be drawn from Asian case studies?

These were some of the issues which were intensively discussed during the Fourth International Research Conference on Asian Business entitled “Knowledge Architectures for Development” jointly organised by the Lee Kong Chian School of Business and the Wee Kim Wee Centre, Singapore Management University, in March 2008. This book features selected papers presented at the conference which is a follow-up of three earlier international conference projects on business and governance issues conducted in Germany and Singapore (Menkhoff and Gerke, 2002; Menkhoff, Pang and Evers, 2008).1

1 The 3rd international conference was held in Singapore in March 2006. It was funded by both the Lee Kong Chian School of Business and the Wee Kim Wee Centre, Singapore Management University and chaired by Pang Eng Fong and Thomas Menkhoff. The various contributions were published as a Special Triple Issue of the Journal of Asian Business in 2008.
A key objective of the 2008 meeting was to bring different groups of scholars (representing various disciplines from management to area studies) together to advance both relevant conceptual frameworks and empirical knowledge about the specifics of sustainable knowledge governance in Asian societies in a globalised world. Additional papers written by staff members of the Centre for Development Research (ZEF) at Bonn University, Germany, were also included. ZEF has been at the forefront of critical reflections about the rise of knowledge as evidenced by the innovative works of its research group “Culture, Knowledge and Development”.

The current volume is a sequel to the earlier book Governing and Managing Knowledge in Asia, whose 2nd edition was published in 2010 (Menkhoff, Evers and Chay, 2010). Whereas the earlier book discussed conceptual issues and theories, the current volume leans more heavily on empirical research and detailed case studies. This clearly shows the advance in research on knowledge-based economies and societies.

Topics related to knowledge such as knowledge policy, access to knowledge, dynamic governance, innovation systems, comparative advantages of local knowledge or learning clusters remain high on the agenda of policy-makers and business leaders in Asia-Pacific and elsewhere (Evers, 2003; Pan, 2004; ADB, 2007; Neo and Chen, 2007). Reflective, empirical-theoretical material on these issues is still rare. Therefore, this monograph is timely as it attempts to advance both conceptual frameworks and empirical knowledge about the specifics of moving towards sustainable knowledge governance in Asian business and society. We believe that the various chapters will offer valuable insights into the varied experiences of Asian countries such as Singapore, South Korea, Malaysia, Thailand, Indonesia, Vietnam and Uzbekistan and their attempts to make knowledge work. We hope that the monograph will be useful for leaders in development and that it will be used as required reading material in courses on Asian Business, Public Policy, Knowledge and Innovation Management (TIM), Knowledge Economy Development etc.
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Challenges Ahead

“Opening up access to knowledge is a demand of global justice; it is both a human rights issue and a crucial factor in spurring economic development and technological innovation” (Yale Law School Professor Jack Balkin, founder and director of the Information Society Project at Yale Law School). http://www.law.yale.edu/news/6191.htm

Knowledge is deemed relevant for meeting the Millennium Development Goals (MDG) in three areas: education, internet access and water management (BMZ, 2005). It has been obvious for a long time, however, that knowledge itself has become an essential development factor, if not the most important one of all (Hornidge in this volume: Chapter 3). In a knowledge-based economy, the creation of wealth from immaterial production (services, computer-assisted production, etc.) exceeds that from material production (manufacturing). Levels of education are relatively high in a knowledge society, knowledge workers make up a large part of the workforce, and a considerable portion of gross domestic product is invested in education,

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3 Knowledge management refers to the totality of organisational strategies aimed at creating a smart organisation, which is able to leverage upon its various IC assets, to learn from past experiences, whether successful or unsuccessful, and to create new value through knowledge. At the people level, KM puts emphasis on the competencies, education and learning abilities of organisational members. At the organisational level, KM is concerned about the creation, utilization and development of the collective intelligence of an organisation. Technologically, effective KM requires the efficient organisation of a suitable communication and information infrastructure (e.g., intranet) based on relevant taxonomies and knowledge repositories (Zeleny, 2010). Knowledge governance is both an administrative process and a structure of authority relations; it involves the channelling of resources in building up knowledge management capabilities and improving the competitive advantage of a country in the world market by utilizing knowledge as a factor of production. At the national level, one of the challenges is to govern knowledge effectively by providing governmental support for the development of a knowledge infrastructure via a conducive legal framework, re-organising the educational system and setting up institutions to support research and development activities (Evers, 2003).
research and development. The World Development Report 1998–1999 has drawn attention to these facts (World Bank, 1999). The case of South Korea’s successful knowledge-based development experience (Suh and Chen, 2007) offers many valuable lessons for developing economies in this regard (Chen in this volume: Chapter 2; Lee in this volume: Chapter 7).

According to conventional wisdom, knowledge can be imported quickly and at minimal transaction costs by use of the latest information technology. Governments in countries with few natural resources are thus tempted to try to leap into the post-industrial age. They might even succeed, were it not for the “knowledge trap” (Evers, Gerke and Menkhoff, 2006).

Knowledge is being created on an ever-increasing scale. It is estimated that the volume of knowledge at our disposal (including “junk knowledge”) is currently doubling every five years (Stehr, 2001). However, the creation of new knowledge always goes along with the creation of new unknowns. The more one knows, the better one understands what one does not know. In this regard, the frontiers of science as a knowledge-producing institution are indeed endless (Weingart in this volume: Chapter 5). Anyone who wants to do relevant research, therefore, needs to know about the unknowns. They are important because they provide the stimuli to search for adequate answers. Sometimes, however, even experts get trapped because they simply do not know how to resolve certain problems such as risks associated with the explosion of nuclear power plants (Weingart in this volume: Chapter 5) or because the desire for recognition surpasses the endeavor and will to advance knowledge (Huang in this volume: Chapter 6). In certain situations, even ‘experts’ are unable to make sense of unknowns. This becomes even more critical if entire country development strategies fail to take off due to the inability to troubleshoot hi-tech manufacturing equipment purchased in fully developed knowledge economies or problems to effectively market innovative products and services due to insufficient know how.

The “knowledge trap” lies in the fact that data, information and knowledge are often taken over without any understanding of the corresponding unknowns. This is particularly so when the people...
acquiring such knowledge simply copy solutions. Failing to import an understanding of the unknowns consequently leads to bad investments and stagnation. Desired results are not achieved, and a “knowledge economy” will certainly not be created. Visionary and capable knowledge elites can prevent this from happening provided they manage to effectively leverage on both local and global knowledge depending on their needs (Pasong in this volume: Chapter 8; Menkhoff et al. in this volume: Chapter 11).

Since the late 1990s, it has been debated how to bridge the digital divide, both at national and the international levels. It mostly boils down to development strategies that supposedly allow countries to “catch up”: developing countries should emulate the developed knowledge societies, ensure computer literacy, technical infrastructures and facilities, and increase the number of higher education graduates in each age group. Conventional development strategies therefore include:

— interventions in primary and secondary education,
— the promotion of hardware and software infrastructures,
— the digitisation of governments (E-Government) and
— legal reforms (for instance, copyright protection).

In addition, there are also attempts to use modern information technology in various business sectors, for example, in agriculture.

Not a single one of these approaches takes into account the significance of what is unknown. This is problematic. In the initial stages, at least, the strategies mentioned will widen, rather than close, the gulf between established knowledge societies and the societies which are supposed to catch up. Users in poor countries have less and less understanding of how technologies function, and how they might be further developed to serve their interests.

Steps Forward

What is needed is a strategy that takes the relevance of unknowns into account (Evers et al. in this volume: Chapter 1; Chen in this
Such a strategy would have to be directed at several things, namely:

— knowledge hubs, competence centres and centres of excellence,
— knowledge clusters as “learning regions”,
— the transfer of knowledge through global production networks,
— the use of comparative advantages of local knowledge.

Knowledge hubs: Various developing countries have attempted to pursue strategies of localising knowledge. In the early 1980s, Indonesia declared four of its universities to be “centres of excellence”, and gave them particular financial support. The results were not convincing. Only isolated competence centres were established, and they were not adequately networked with other knowledge and production hubs (Tjakraatmadja et al. in this volume: Chapter 10). Knowledge clusters were not created. Malaysia has followed suit by declaring its Universiti Sains Malaysia (USM) in 2010 an “APEX university”, i.e., a centre of excellence and several others, like Universiti Kebagsaan Malaysia (UKM) as “research universities”. It remains to be seen, whether this policy leads to the formation of vibrant knowledge clusters (Evers et al. in this volume: Chapter 4).

Knowledge clusters: Silicon Valley near San Francisco and Silicon Plateau around Bangalore are examples of cluster formation, as is the knowledge region of Munich. There are also the first indications of cluster formation in the Multimedia Super Corridor in Malaysia. Economic research emphasizes the close inter-connectedness of innovation, local economic growth and cluster formation (Porter, 2000; Pinch et al., 2003). “Clusters” are regional concentrations of companies, manufacturing subsidiaries, research institutes, universities and other institutions which are connected to knowledge utilization and production. What is important is the diversity of the players involved (Kuptsch and Pang, 2006; Chen, Sun and McQueen, 2010). They may complement one another, be in competition, or cooperate (Menkhoff et al. in this volume: Chapter 11). Our research in Asian knowledge cities such as Singapore has
demonstrated the relevance of these structures (Pang, 2006; Chay et al., 2009; Menkhoff et al., 2010). Geographical clustering without knowledge sharing tends to reduce the effectiveness of knowledge production and knowledge output (Evers and Bauer in this volume: Chapter 9; Menkhoff et al. in this volume: Chapter 11).

Global production networks: Today, the production and transfer of knowledge take place against the background of globalization (Mowery and Silverman, 1996). Global production networks (GPNs) are expanding rapidly, and, under certain conditions, ensure the cross-border transfers of knowledge. Typically, knowledge clusters with a high level of diversity are particularly closely involved in such networks. However, the trend towards GPNs is sometimes double-edged. While larger suppliers are furnished with knowledge, even if only to satisfy the quality standards of potential customers, small and medium-sized enterprises at the end of the knowledge chain often become marginalized (Menkhoff et al., 2010; Menkhoff, 2010). They also often lack the skill and the expertise to absorb global knowledge. Given the speed with which knowledge is produced in the already operational knowledge economies, it is hardly possible to catch up simply by closing “knowledge gaps”. Moreover, transnational corporations mainly impart “packaged knowledge”, a type of “fast food” for rapid consumption, which is disassociated from any understanding of the unknowns relevant for enhancing local capacities.

Local knowledge: The transfer of global knowledge into the local context always requires the use of local knowledge (Evers and Caleb in this volume: Chapter 13; Gerke and Ehlert in this volume: Chapter 14). This provides special opportunities for developing countries which open up to the world market in the course of globalisation, either through choice or because they are forced to do so. Globalisation of local knowledge and localisation of global knowledge are the prerequisites for the use of knowledge as an engine for growth. Poor knowledge governance and knowledge management as well as failure to learn lead to further underdevelopment and knowledge loss (Foss and Michailova, 2009; Madsen and Desai, 2010; Chen et al., 2010) which can be prevented through the development
of sustainable knowledge clusters and good knowledge-based management (Talisayon and Suministrado in this volume: Chapter 12; Luthra and Pan in this volume: Chapter 16).

Contents

**Conceptualizing and strategizing knowledge as an engine for growth**

In Chapter 1, “Knowledge Hubs and Knowledge Clusters: A Knowledge Architecture for Development”, Hans-Dieter Evers, Solvay Gerke and Thomas Menkhoff analyse the internal dynamics of knowledge clusters and knowledge hubs and show why clustering takes place despite globalisation and the rapid growth of ICT. They define a knowledge cluster as a local innovation system which is organized around universities, research institutions and firms which successfully drive innovations and create new industries. Knowledge hubs are localities with high internal and external networking and knowledge sharing capabilities. Both form a new knowledge architecture within an epistemic landscape of knowledge creation and dissemination, structured by knowledge gaps and areas of low knowledge intensity. The basic argument that firms and their delivery chains attempt to reduce transport (transaction) costs by choosing the same location is still valid for most industrial economies, but knowledge hubs have different dynamics relating to externalities produced from knowledge sharing and research and development outputs. With globalisation and knowledge-based production, firms may cooperate on a global scale, outsource parts of their administrative or productive units and negate location altogether. As the authors point out, the extremely low transaction costs of data, information and knowledge seem to invalidate the theory of agglomeration and the spatial clustering of firms, going back to the classical work by Alfred Weber (1868–1958) and Alfred Marshall (1842–1924), who emphasized the microeconomic benefits of industrial collocation. The paper, however, argues against this view and shows why the growth of knowledge societies will rather increase
than decrease the relevance of location by creating knowledge clusters and knowledge hubs. The essay draws on empirical data derived from ongoing research in the Lee Kong Chian School of Business, Singapore Management University and in the Center for Development Research (ZEF), University of Bonn, supported by the German Aeronautics and Space Agency (DLR).

In “Using Knowledge as an Engine for Growth — The Case of South Korea” (Chapter 2), Derek H.C. Chen reconstructs the rise of South Korea’s knowledge-based economy (KBE) which is attributed to effective knowledge accumulation and application. Both represent key determinants of total factor productivity and the “new engine of growth” for many economies. Korea has been experiencing rapid, and more importantly, sustained economic growth since the 1960s. This has resulted in its real GDP per capita increasing rapidly enabling the once low-income country to join the ranks of high-income industrialized nations within a short time span of four and half decades. The majority of this growth can be attributed to knowledge, rather than to the accumulation of traditional factors of production of capital and labor. As Derek Chen shows, Korea achieved this knowledge-based growth by investing heavily in education and training, boosting innovation through intensive research and development, developing a modern and accessible information infrastructure, all coupled with a stable economic and conducive institutional regime that enabled the knowledge-related investments to flourish. Due to this, Korea has ably made its transition to a knowledge economy, that is, an economy that uses knowledge as the key engine of growth. Its successful knowledge-based development experience offers many valuable lessons for developing economies. Conceptually, the paper is based on the Knowledge Economy approach of the Knowledge for Development Program (www.worldbank.org/wbi/k4d) of the World Bank Institute (WBI) which aims at assisting client countries in accessing and using knowledge to enhance their long-term economic growth.

In Chapter 3 “‘Knowledge Society’ as Academic Concept and Stage of Development — A Conceptual and Historical Review”, Anna-Katharina Hornidge reconstructs the scientific and political
“construction” of the idea of a ‘knowledge society’ (in short: k-society). Inspired by rapid developments in the information and communication technologies, a wide range of conceptual approaches to ‘knowledge society’, ‘information society’ and ‘knowledge-based economy’ have emerged during the last few decades. Eventually, despite terminological overlaps and the lack of clear-cut definitions, these notions were taken up by governments around the globe for either legitimising ongoing development programmes or pushing future economy and technology oriented activities. Singapore, for example, moved (while economically motivated) within a very short time frame from a purely technological definition to a definition integrating technological, economic aspects with areas such as culture, the arts and creativity. A key question that arises from her paper is this: If knowledge societies are socially constructed and not merely the result of technological and economic developments, which ‘actors’ are the dominant drivers of such processes and how do they achieve legitimacy? According to the author, key driving forces include the scientific community which constructs k-society concepts, political elites who create a vision (sometimes without the active contributions of scientists) of an arguably ‘self-emerging’ k-society and the powerful subsystem state which constructs a k-society as a stage of socio-economic development. According to her analysis, political activities, legitimised by this vision, then actually construct what is commonly believed to emerge by itself. Conceptions of k-society are also strongly influenced by structural realities such as the political and legal system, historical experience, and economic imperatives.

In Chapter 4 “Measuring Spatial Density: Knowledge Clusters in Malaysia”, Hans-Dieter Evers, Pamela Nienkemper and Benjamin Schraven make a case for the construction of knowledge maps to reveal the spatial distribution of knowledge. Knowledge assets, knowledge producing and disseminating organisations are referenced to spatial objects and integrated into a geographic information system (GIS). Knowledge-relevant assets and organisational units are represented in thematic maps and in 3-D perspective graphs. Special attention is given to mapping and measuring knowledge clusters.
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Statistical procedures to measure the degree of spatial density and knowledge clustering are discussed and ways are indicated to compare and determine the emergence of knowledge clusters. Data on Malaysia are used to illustrate the distribution of knowledge clusters in Peninsular Malaysia and within the state of Selangor. The authors conclude that the construction of knowledge maps is useful to show the complexity of epistemic landscapes which will enhance the chances of government agencies, companies and civic organisations to understand and use knowledge for development. This paper is meant as a guideline for GIS-based knowledge mapping analyses at country or regional level.

In “The Moment of Truth for Science — The Consequences of the Knowledge Society for Society and Science” (Chapter 5), Peter Weingart reflects on the fastest growing enterprise in our society, science. Since the 17th Century, every doubling of the population has seen a tripling in the number of scientists. This means that, over the last 300 years, Western societies have invested a major part of their resources into the production, revision and verification of knowledge. It is a process that perpetuates itself if sufficiently nourished — the more resources go into science, the more scientists are educated, the more results they produce and the more questions arise. In this regard, the frontiers of science are indeed endless. The exponential growth of science is seen as the main factor in the shift from an industrialised society to a knowledge society which implies multiple new challenges and risks as evidenced by nuclear catastrophes such as Three Mile Island and Chernobyl, symbols of the loss of public confidence in scientific authority. Nevertheless, science as a knowledge producing institution remains irreplaceable because of the growing need for “reliable knowledge” in business and society (Weingart, 2002).

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4 This is a reprint of an article which first appeared in EMBO (European Molecular Biology Organization) Reports: Weingart, P. (2002). The Moment of Truth for Science. EMBO Reports, 3(8):703–706. The editors gratefully acknowledge EMBO’s permission to reprint the essay in this edition. Any future references should refer to the original publication.
Similar to the importance of reliability and validity in statistics, scientific knowledge works are guided by customary rules of behavior and standards of conduct that coordinate interactions with others. Sometimes scientists transgress the ethical boundaries associated with their work as exemplified by cases of data suppression or plagiarism. How scientific norms evolve and are interpreted by knowledge workers is a fascinating area of research with immense practical implications. Against this background, the 6th Chapter by Kenneth G. Huang entitled “The Conflicting Norms of Science in the Institutionalization of Scientific Knowledge” examines the power of scientific norms as conceptualised by sociologist Robert K. Merton in the 1960s. As the author argues, the idealised conception of the norms or “ethos” of science as originally proposed are not necessarily always adhered to in modern science disciplines such as the life sciences due to the evolving nature of science and the increasing tension between pure scientific inquiry and motivation for commercialization. This makes it necessary to examine more closely the socio-political context in which the scientific community is embedded, including the inter- and intra-group behaviors and dynamics amongst scientists before accurate and meaningful inferences can be drawn to fully depict modern science.

**Governing and managing knowledge as a strategic resource: Asian experiences**

The importance to create a conducive national knowledge governance infrastructure is taken up in Chapter 7 written by Kong-Rae Lee entitled “Korea’s Public Research System as a National Knowledge Infrastructure”. Kong-Rae Lee investigates Korea’s public research system as a case study of a national knowledge infrastructure. It reviews the reform of governance system of government-sponsored research institutes (GRIs) which caused the separation of all GRIs from the ministries to which they belonged in 1999. It was believed that R&D performance and efficiency of GRIs was low because ministries intervene too much in their research activities. As a consequence, the separation of GRIs from their...
subordinate ministries was seen as a viable policy option to activate and increase performance and efficiency of GRIs. R&D performance of government research institutes (GRIs) has been regularly evaluated by social science research institutes like STEPI or private consulting companies based on a research contract with a high level administration body. It is found that GRIs under research councils have recently improved their R&D performance in terms of paper publications and patent applications. The results of the comparison appeared to be similar when compared using the index of publication of SCI papers per 100 million wons. This finding implies that public research institutes in Korea have successfully built up their research capability within a relatively short development history as a result of skillful and dynamic adjustments of the national governance mechanisms.

In “Practicing Knowledge Management — Thailand’s Experience” (Chapter 8), Suparb Pasong examines how knowledge of various kinds and sources plays a role in the development of the Thai economy and society. The study traces the recent history of knowledge management as a development practice in Thailand. It describes how KM has evolved in the public and private sectors, among the state and the civil society actors. Experiences of two organizations representing different approaches towards the practice of knowledge management are documented and analyzed. Both cases offer a comparative analysis of the architecture underlying each practice, people involved and their interactions as well as the mechanisms and institutional arrangements driving the dynamics and the application of knowledge as development inputs. The paper also assesses the outcomes of knowledge-driven development and identifies challenges for the state, society and the corporate world in managing knowledge for development. As the author concludes, to create value in a creative, high power and competitive economy, the strategy is simple: switch on the power of liberal arts and technology.

The objective of Chapter 9 (“Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta”) by Hans-Dieter Evers and Tatjana Bauer is to study the effects of knowledge clusters in Ho Chi Minh City and the Mekong Delta vis-à-vis Vietnam’s path towards a knowledge-based economy. As the paper
suggests, clustering appears to have a positive effect not only on the increase of knowledge output, but also on the economic growth of these regions. Using a GIS-based mapping method, the authors identify two major knowledge clusters — Ho Chi Minh City and Can Tho City and their internal structure in terms of knowledge clustering. Both areas create hubs in the south of Vietnam, with favourable conditions for knowledge production and a large pool of skilled people and an advanced infrastructure. Their own survey data as well as an analysis of databases and economic statistics show that productivity is higher and innovation in terms of knowledge spillovers and cooperation are more likely to take place in knowledge clusters. On the other hand, geographical clustering without knowledge sharing has tended to reduce the effectiveness of knowledge production and knowledge output in the south of Vietnam. This preliminary result is currently further pursued in a larger research project on scientific knowledge management systems in Vietnam to determine the extent to which proximity or clustering have led to inter-organisational networking, knowledge sharing and tangible knowledge outcomes.

Chapter 10 (“Knowledge Sharing in the Indonesian Context: Institut Teknologi Bandung (ITB) as Potential Knowledge Hub To Create Value from Academia, Business and Government Linkages”) by Jann Hidajat Tjakraatmadja, Agung Wicaksono and Lenny Martini examines the knowledge driver potential of ITB Bandung (ITB) which is Indonesia’s oldest and most renowned technology school. As the authors argue, organizational knowledge will grow and develop if the organization has the ability to learn continuously, regardless of whether it is an academic, business or government (ABG) organization. Their research in this area was triggered by the desire to shed light on the antecedents and outcomes of systematic knowledge acquisition, sharing and creation between academia, business and government. To do so, empirical research in nine Indonesian companies was conducted and enriched with empirical findings from a case study of knowledge sharing activities within faculties of SBM ITB, a business school at ITB Bandung. The conceptual framework which resulted from their research is used as reference point to discuss whether ITB plays an important role as a knowledge transformation
hub in bridging ABG sectors to create value through knowledge sharing among participating actors. In view of the track record of Institut Teknologi Bandung (it was here where the idea of creating the so-called ‘Bandung High-Tech Valley’ was launched decades ago), the authors believe that ITB possesses huge potentials to drive the success of knowledge governance in Indonesia. They also briefly highlight the role of the new Knowledge Management Society Indonesia (KMSI) which is aimed at facilitating the implementation of the above ABG linkages.

In “Achieving Knowledge Economy Status through Good Knowledge Governance: The ‘Singapore KBE story’ Revisited” (Chapter 11), Thomas Menkhoff, Hans-Dieter Evers, Chay Yue Wah and Solvay Gerke identify some of the critical success factors of Singapore’s successful transition to a knowledge-based economy. Singapore, an island city-state located on the southern tip of the Malay Peninsula, south of the Malaysian state of Johor, and north of the Indonesian Riau Islands, has a population of about 5 million people. It is the smallest country in Southeast Asia. When Singapore became fully independent in 1965, having no natural resources, it was faced with severe problems such as unemployment, labor unrest, poverty, poor housing conditions etc. As a consequence, the government, under the People’s Action Party (PAP), embarked on a strategy of export-led growth driven largely by foreign multinational firms (MNCs) and government-linked companies (GLCs). During the last 40 years, fast-paced government-led industrialisation and cluster-based growth has created a robust and increasingly knowledge-based economy with a well-diversified manufacturing industry based on electronics, chemicals, mechanical engineering and biomedical sciences as well as a sophisticated service sector. Important success factors for Singapore’s economic success include efficient and visionary knowledge elites, dynamic knowledge leadership and governance, systematic utilisation of foreign know how and talents, continuous investments into human capital and supportive cultural values. Effective diversity management and the capability to create national value through the absorption of foreign knowledge assets represent other competitive weapons of Singapore.
Chapter 12 (“Knowledge for Poverty Alleviation: A Framework for Developing Intangible Assets of Low-Income Communities”) by Serafin Talisayon and Ms. Jasmin P. Suminstrado describes a framework that brings together two powerful and recent development paradigms — knowledge-based management and sustainable development and presents a new perspective for developing low-income communities. It proposes the Knowledge for Poverty Alleviation (KPA) framework, a new model that can be used in the design and evaluation of anti-poverty projects at the community level to increase chances of project success and sustainability. KPA emphasizes the importance of recognizing a community’s intangible assets, and proposes four criteria for the success of community-based anti-poverty projects: leveraging community intangible assets, neutralization of community intangible liabilities, using its available tangible assets, and the build-up of sustainable structural and stakeholder capital. Sustainability is pursued along the three domains of sustainable development: social empowerment, environmental protection, and economic sustainability. Initial applications of the KPA framework in the analysis of the most successful among several hundred poverty alleviation projects in the Philippines provide initial evidence of its explanatory and diagnostic usefulness. Some directions are indicated for development of program and project management toolkits to deliver better results.

In “Knowledge Loss: Managing Local Knowledge in Rural Uzbekistan” (Chapter 13), Hans-Dieter Evers and Caleb Wall critically discuss an important aspect of the discussion about knowledge, namely the loss of knowledge with special reference to indigenous and local knowledge in rural Uzbekistan. Indigenous knowledge is passed on from generation to generation and is firmly grounded in the tradition of a group, community or society. Local knowledge is acquired through learning and adoption to local conditions. Knowledge that has been brought back from studying abroad, from reading, viewing or listening to mass media or adopted through other channels has become local knowledge, as soon as it has been adopted to local social and cultural conditions and is ready to be applied locally. Local knowledge constitutes a ‘milieu’ within a
network of social interaction. Indigenous as well as local knowledge may be lost. The dialectics of knowledge production leads both to knowing and not-knowing. The more knowledge is produced the more we know what we don’t know. A particular form of creating ignorance is knowledge loss. This process does not indicate that old knowledge is up-dated or replaced by new knowledge but the attrition of a stock of available and usable knowledge. In their paper the authors examine the root causes of knowledge loss and how knowledge seapage has occurred in rural Uzbekistan. Based on empirical field research on livestock production and post-harvest processing, the paper conceptualises knowledge loss, for example with regard to cattle farming know how, as evidence of poor knowledge management. As they stress, in its own right it is a failure of management and governance to allow knowledge resources, expensively produced within the community, to be lost. On a wider level, it evidences a lack of knowledge reproduction and retention, which can be seen as a result of excessive transaction costs and risks to knowledge sharing.

Chapter 14 by Solvay Gerke and Judith Ehlert entitled “Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam” puts emphasis on the crucial role of water in Vietnam’s rural Mekong Delta in the pursuit of diverse livelihood activities. The chapter examines the social interaction of paddy farmers and landless people during the annual flood season from a local knowledge perspective. It is argued that local knowledge turns into a strategic resource in the context of growing competition for decreasing natural water products. Knowledge is not like “light”; hence the strategic moment as well as the tacit component of local knowledge makes its sharing a technically limited form of interaction which is based on a delicate process of trust-building. As the authors stress, the current transformation process of agricultural modernization as pushed forward in the Mekong Delta will probably aggravate livelihood insecurities in the future. Local knowledge as adaptive asset in this process of changing society-water relationships will continue to be of strategic importance for survival and sustained development.
Introduction

In “Integrating Natural and Social Sciences: Developing a Water Information System for the Mekong Delta” (Chapter 15), Thomas Menkhoff, Solvay Gerke and Hans-Dieter Evers describe how the WISDOM project, a joint programme between Vietnam and Germany, is seeking to devise sustainable solutions to life in the Mekong Delta by combining integrated watershed and knowledge management approaches.

Chapter 16 “Implementing Knowledge Management in a Geographically Dispersed Organization: The Case of an NGO” by Poornima Luthra and Shan L. Pan explores ongoing attempts by a non-government cultural relations organization to integrate knowledge across geographical boundaries to yield a competitive advantage. Particular emphasis is put on the internal realignment of knowledge vision and wider organizational structure as well as the challenges of creating a robust knowledge sharing culture so as to leverage on intellectual capital assets.

Conclusion

Knowledge has been widely recognised by economists as the most important factor of production in a “new economy”. The production and utilisation of knowledge is therefore essential for development and the introduction of information and communication technology (ICT) is a precondition for developing a knowledge society. Countries, regions and populations are, however, divided, in terms of access to ICT. Our analyses suggest that the existing global digital divide and the knowledge gap are widening between developing countries and the industrial countries and within individual nations. Access to primary education and the acquisition of reading and writing skills is a basic human right and an internal digital divide between those that have access to further knowledge and others without access is unjust and not acceptable. Furthermore a civilisation needs “meta-narratives” as a common ground, an anchorage for basic cultural values, which have to be disseminated, known and accepted by all members of a society to avoid violent conflict, fundamentalisms of various kinds and alienation.
Some countries such as South Korea, Singapore and Malaysia among others have embarked on an ambitious plan to close the digital divide and to use knowledge as a base for economic development, by-passing earlier stages of industrialisation. Some commentators have, in contrast, asserted “that it is doubtful that the knowledge revolution will let developing countries leapfrog to higher levels of development” as “the knowledge economy will actually expand the gap between rich and poor” (Persaud, 2001). We argue that the digital divide, the knowledge gap and hidden knowledge traps are not natural phenomena. Global knowledge has to be localized and local knowledge utilized in developing a knowledge society.

It can be argued that knowledge gaps are a precondition to development and innovation, and that a knowledge gap will always be found between and within countries. As is the case with any unequal distribution of resources, development ethics and human rights issues have to be considered. The right to education and information should be safeguarded. A global standardisation or total commercialisation of knowledge under the guise of “relevance” is counterproductive to development.

Devaluation of local knowledge by globally operating experts as well as marketing strategies of large corporations are as much responsible for the widening knowledge gap as other factors of global development and governance. A comparison within world regions or with comparable countries will, however, reveal the effective advantage that can be gained by high investments in ICT combined with local knowledge production and dissemination.

Policy-makers in both developing and emerging markets should consider giving greater thought to the development of knowledge clusters. For that to happen, they would have to give up their predominately economy-oriented approach and adopt a more comprehensive one. After all, a complex environment with government institutions, scientific institutions and civil society organisations is necessary to structure local knowledge development successfully. Above all, however, development policy would have to begin dealing once again with higher education, research, science and technology and related issues such as good knowledge governance.
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References


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