

Preface

As knowledge has become a major factor of production in the current knowledge-based economy, ideas and intellectual capital have replaced natural resources and mechanical innovations that previously served as the driving force of economic growth. The notion in classical political economy that labor could be treated as homogeneous category was replaced by human capital theories stating the need for a broader concept of capital that includes the skills, knowledge, and know-how workers. Furthermore, the skills and knowledge that increase the capital yields of labor are believed to be from systematic investment. Thereafter, education and other work preparations have been recognized as a form of investment, rather than consumption. The creation of high knowledge and skill economy is seen as an evolutionary process of technological upgrading, compelling national governments and private sectors to invest in the workforce, and individuals to invest themselves, as the demand for technical, managerial, and professional “knowledge” workers increases and the demand for low skilled jobs declines. The high knowledge and skill economy has become a major driving force of national and regional competitiveness. National and regional competitiveness significantly depends upon the nature and speed of the processes by which knowledge and skills are formed and disseminated leading to the opportunities for innovation, development and production.

These developments features the “Knowledge Economy,” in which knowledge is acquired, produced, disseminated, and used effectively to enhance economic development. The successful transition to a knowledge economy often involves many elements such as long-term investment in relevant education, development of innovation capability, modernization of information infrastructure, and improvement of economic environment for market transitions. The World Bank has grouped these mentioned elements as the four pillars of the knowledge economy: (1) an economic incentive and institutional regime that provides good economic policies and institutions promoting efficient allocation of resources and incentives for the efficient creation, dissemination and use of knowledge; (2) an educated and a skilled workforce continuously updating and applying skills to create and use knowledge; (3) an effective innovation system of firms, research

centers, universities, consultants, and other organizations encouraging creation, application and assimilation of new knowledge to local needs; and (4) a modern and an adequate information infrastructure to facilitate the communication, dissemination, and processing of information and knowledge (Chen and Dahlman 2004).

Along with Knowledge Economy, to enhance national and regional competitiveness, the Industrial Cluster framework provides tools for an understanding of regional development processes. Industrial Cluster was defined by Michael Porter (2008) as “concentrations of interconnected companies and institutions in a particular field represent a kind of new spatial organizational form in between arm’s length markets on the one hand and hierarchies, or vertical integration, on the other. A cluster, then, is a new way of organizing the value-chain. A cluster of independent and informally linked companies and institutions represents a robust organizational form that offers advantages in efficiency, effectiveness, and flexibility.” (Porter 1998, p. 78–79). Clusters generally lead to increased levels of productivity, growth, and employment. Clusters are often viewed as a process for promoting national, regional, and local economic competitiveness/development.

The Knowledge Economy and Industrial Cluster framework thus asserts that investment and interaction among key players (namely academe, industry and government) are essential for the generation, adoption, application and use of knowledge in economic production to add value and increases probability of economic success in this competitive and globalized world economy. With the importance of knowledge and its features in the emerging economy, academe or tertiary education (referred to all post-secondary education including universities, technical training institutes, community colleges, etc) play central roles in enhancing economic growth through the different dimensions, especially educating workforce and enhancing effective innovation system.

Among policymakers, academia, and public-at-large, roles of academe or tertiary education have been discussed as they have been dynamic to serve the needs of place and time. Most universities and tertiary educational institutions, especially those receiving either funds or supports from government are believed and expected to provide some sorts of public goods. There would be no need for public support if the outputs of a university are privately-owned. A survey in *The Economist* said “the university is not just as a creator of knowledge, a trainer of young minds and a transmitter of culture, but also as a major agent of economic growth: the knowledge factory, as it were, at the center of the knowledge economy” (David 1997). Rajani Naidoo (2003), Carnoy (1994) and Mongkhonvanit (2009) argued that higher education plays vital roles in the knowledge-economy and industry by the production, dissemination and transfer of economically productive knowledge, innovation and technology. With emphasis on economic growth since the mid-twentieth century in which industrial and scientific revolutions played important roles in society, the priority of university and education has been shifted to become the contributor to knowledge, economy and innovation, while many argue that knowledge and skill becomes a key factor of production.

As industrial clusters were emerged as a mean to improve competitiveness of industry in global and knowledge economy, this book is to investigate the roles and frameworks of academe, or tertiary education, and their dynamics with other relevant players in development of industrial clusters and regional competitiveness. The ten chapters in this book also feature frameworks, concepts, and case studies to understand the roles, dynamics, and development of cooperative system of value creation among key players, namely academe, industry, and government, to enhance knowledge-based industrial cluster and regional competitiveness.

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