INTRODUCTION

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In the last several years we have studied technological transfer, multinational corporations (MNCs), deregulation and globalization processes (see, for example, Kagami and Tsuji [2000]), and information technology (IT) (Giovannetti, Kagami, and Tsuji [2003]). Questions then arise as to why MNCs choose some locations and not others for their factories and offices. Why do IT-related firms agglomerate in certain locations although the Internet supersedes distance? The former examples are industrial agglomerations in certain Eastern European countries, coastal areas of China and some border cities of Mexico while the latter examples are Silicon Valley in California, Bit Valley in Tokyo and Bangalore in India. Intuitively, MNCs tend to construct their factories near large market places such as Europe, East Asia including Japan, and the US in order to save transportation costs. In addition, locations can provide skilled and quality labor (information spillovers) at relatively low cost as well as affluent funds supplied through various financial institutions and capital markets. In the case of software clusters, the existence of a pool of computer-literate workers is essential. However, this reasoning still fails to provide an answer as to why a specific location was chosen among many possible candidates.

These questions are fundamentally related to the main themes of economic geography or spatial economics such as why certain cities grow and not others or why certain cities decline. There are certain factors which ignite growth of a given location and the process seems to be self-reinforcing or self-organizing once it starts. However, the same location shrinks or decays once some factors work. This concentration and dissolution (or dispersion) has working forces, that is to say, 'centripetal' and 'centrifugal' forces as seen in physics. A standard textbook expresses this as follows: "The spatial structure of an economy is the result of a tug-of-war between external economies and diseconomies, between the linkages and information spillovers that foster concentration, and between congestion and other diseconomies that discourage it" (Fujita, Krugman, and Venables [1999], p. 349). The same authors wonderfully summarize that the Marshallian trinity of external economies includes three factors: linkages, thick market, and knowledge spillovers as well as other pure external economies while counter-

forces opposing agglomeration comprise immobile factors, land rent/commuting, and congestion as well as other pure diseconomies.

Another important concept is increasing returns that are different from perfect competition and constant returns. Krugman [1995] wrote "Increasing returns in production activities are needed if we want to explain economic agglomerations without appealing to the attributes of physical geography. In particular, the trade-off between increasing returns in production and transportation costs is central to the understanding of the geography of economic activities" (cited by Fujita and Thisse [2002], p. 7). If scale merits work, we need different sets of analytical instruments such as imperfect competition and monopolistic competition frameworks combined with dynamic aspects.

In this volume, 'agglomerations' and 'clusters' are treated equally, that means a location where industrial factories, offices and distribution facilities gather together and form a concentrated business area. This concentration includes small-, medium-, and large-scale firms and interactions among them in terms of economic activities are quite frequent and close. Famous examples of industrial clustering are seen in German printing equipment and Japanese robotics in Porter's terminology (Porter [1990]). 'Industrial districts' are used in the original Marshallian sense, or are particularly applied in Italian cases where small-scale firms mainly agglomerate to form an industrial town with a given socio-cultural flavor. More precisely, industrial districts are characterized as (a) a local system portrayed by the active integration between a community of people and a community of industrial firms, and (b) a flexible specialization characterized by the widespread presence of small-sized firms.

Thus far, industrial clusters can be explained successfully by the various existing theories mentioned above. The contemporary world economy, however, has undergone evolution and transformation such as globalization, emergence of newly industrialized developing countries, demand shifts, and rapid technological changes such as the Internet Revolution. Due to these factors, industrial clusters in advanced countries had to adjust to new shocks and survive under new conditions (see for example, Small and Medium Enterprise Agency [1994], [1996], and [1997]). Industrial clusters in developing countries on the other hand may serve as an engine of growth for the nation as a whole. The role of recent software industry clusters in certain developing countries, for example, becomes important day by day to their national economy in terms of employment, income and exports. Such developments require new insights to analyze industrial clusters, since ex-

isting theories cannot fully explain them. This volume thus intends to search for a new theory to analyze these aspects regarding industrial agglomerations.

Three teams were formed in Japan, Italy and the US to examine recent IT clusters including the software industry as well as traditional industries such as automotive and iron and steel. The Japan team studied Toyota Motor's case, an iron and steel city, urban-rural relationships in the Internet era, digital-based communities in Osaka, industrial estates in Vietnam, Korean regional growth with IT-related industries, bridging activities between industrial clusters (the Region-to-Region Initiatives Program by Japan External Trade Organization), and China's regional industrial disparity.

Italy was chosen due to the active role of small and medium enterprises and its unique but vivid industrial districts. The Italian team analyzed the peculiar patterns of Italian specialization and comparative advantage, the involvement of some traditional industries in industrial districts in globalization (subcontracting production processes in the global value chain), the recent evolution of the famous 'Third Italy,' i.e. the Emilia-Romagna region, and agglomeration forces in the Internet industry in spite of the weakening of traditional centripetal forces caused by globalization and IT.

The US team explored the US and Mexican software industries. Well-known software clusters such as Silicon Valley and Route 128 are now being challenged by offshore programming platforms like those in India and Ireland. The US team provided four possible future scenarios for this industry corresponding to advantages of US production and proximity and implied that a possible scenario would be 'nearshore' operations in the same time zones as the US such as Central American and Caribbean countries which have gradually developed their skills and IT-related infrastructure. Especially, the Mexican software industry has grown to be a partner with US traditional software clusters.

This book demonstrates a wide variety of industrial agglomerations from traditional heavy industries to high-tech software industries and geographically covers Asian countries (China, Japan, Korea, and Vietnam), Italy, the US and Mexico. We hope that these undertakings may provide the reader with a better understanding of contemporary patterns of spatial economics under globalization and the rapid progress of the Internet Revolution.

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