Introduction: the rise of regions: innovation, agglomeration and regional competition

Börje Johansson, Charlie Karlsson and Roger R. Stough

The importance of the nation state as a unit of value added and wealth creation has receded over the past 20 years or so. The power of the national nexus and its sovereignty has been pulled apart from above, by multinational organizations of which nations have become members, for example, the European Union, NAFTA and the United Nations, and from below, by growing attractiveness and importance of regions (Ohmae, 1993 and 1995; Fukuyama, 2004; and Salazar and Stough, 2006). Why has this happened? There is no fully accepted explanation but it has to do with the forces that motivated the rise of the knowledge age – the knowledge age in which the traditional factors of production have become relatively less important, while knowledge, know-how, R&D and learning (Jin and Stough, 1998) and institutional infrastructure (Stough and Kulkarni, 2001) have become more relevant and powerful inputs to the production process (Karlsson et al., 2006).

Some of the factors responsible for the rise in the importance of regions included, first, the demise of the Fordist or vertically top-down integrated mode of production and the beginning of deindustrialization in the face of more team-oriented and worker committed production, introduced by Japan in the 1960s and 1970s (Womack et al., 1990; Harvey, 1989). The second major factor was the break-up of the Bretton Woods System for managing and balancing international financial transactions at the start of the 1970s. However, as some argue, a third major factor was when the Keynesian macroeconomics model crashed in the face of rising interest rates and unemployment, which contradicted one of its core premises (Mankiw, 2002). At the same time, as these events occurred, a major new generic technology emerged at the interface of computer and information technology. Today we call this the information and telecommunications technology, or ICT, sector of the economy. The development of this sector
has revolutionized the availability and use of information for all forms of societal activity, including elements of business and commercial process such as sales, production, design, marketing, finance, engineering, and so on (Johansson et al., 2006). Today, as a consequence of the development of ICT, massive amounts of information are broadly available. This has led some observers to argue that ‘The world is flat’ (Friedman, 2005) with respect to information availability and access, while others recognize that while information is relatively ubiquitous over space, its production and innovative use is more concentrated in ‘sticky places’, (Florida, 2005), such as functional economic regions like Austin Texas, Silicon Valley, the US National Capital Region, the Third Italy, Singapore, Helsinki and Hong Kong. Beyond the ICT revolution, there are now other potentially new generic technologies unfolding (biotechnology, biomedicine and nanotechnology). These forces together have created a context much more decentralized than at earlier times, and thus have eroded the more central direction and control that was provided by nations until the 1970s and early 1980s.

The rise of the importance of regions has not been only in terms of institutional and technological change but has also been driven by political change, such as the demise of the Soviet Union and the rise of increasingly broad-based support for the adoption of liberalized economic policies. Also, developing countries such as India and China have gone through substantial deregulation and liberalization in recent decades – although one could argue that such change, in these cases, has been in part a function of the other change agents already mentioned. In sum, the interaction of all of these factors has driven change in social and economic processes that, in turn, have made the nation state less important for economic development policy leadership, strategy and policy.

Economic growth at the local level is increasingly driven by endogenous (Romer, 1994) or decentralized local factors such as industrial structure, entrepreneurship, leadership, innovation, R&D, market fit, leadership, institutions, culture and resources – especially institutional ones (Johansson et al., 2001). It is only by configuring these factors around an informed, sensitive and focused strategy for sustained development that successful and sustained economic growth can occur; these factors, for the most part, are found at the local regional level (Johansson et al., 2002). Nation states still have a role, such as defense, foreign relations, helping to guide and negotiate fair and efficient international trade, to some extent marketing the national economy and, for sure, helping regions market their capabilities in foreign markets. The point is that the nation’s role is relatively less important than it once was.

Regions are places where people and resources concentrate. Such
concentration is called agglomeration in that the places with many people and many resources (physical but more importantly human capital, knowledge, learning capability, and facilitative and flexible institutions) are functional economic regions (Karlsson et al., 2005). The themes of this book, innovation, agglomeration and regional competitiveness, are some of the most important aspects and processes that support growing, maintaining, renewing and sustaining regional economic systems in the knowledge age (Stough, 2003). Regions tend to be centers of agglomeration and it is the diversity of knowledge, know-how, learning capability and resources found in these regions that makes them centers of innovation and which in turn, contributes to their competitiveness.

During recent decades it has been possible to observe a renewed role for the region in developed economies. Regions have become major players in political, economic and social affairs. They compete fiercely for mobile investments while, at the same time, forming strategic alliances and networks with neighbor regions as well as with more distant ones.

Despite the fact that some substantial research on regional competition and cooperation has been published, in particular, during the last decade, the current understanding of the new role of regions and their behavior is not well developed. As regards regional competition, the following questions are examples where full answers are still lacking: why do regions compete? How do they compete? Which competitive strategies are successful for different types of regions and which fail? What are the implications of regional competition in terms of resource allocation, the location of economic activities and the distribution of incomes between regions? How are innovation and entrepreneurship affected by regional competition? Is regional competition a ‘zero-sum game’ from a national or international point of view?

In a similar manner, the following questions regarding regional cooperation are still lacking full answers: why are regions cooperating? How do regions cooperate? How successful are regions in their cooperation? What effect does regional cooperation have on resource allocation, the location of economic activities and the distribution of incomes between regions? How are innovation and entrepreneurship affected by regional cooperation?

The different chapters in this book deal with core and fundamental aspects of successful regional economies in the twenty-first century. Because there is considerable economic dynamism in regions, the topics of this book are also fertile areas of research. This occurs because the role of innovation, agglomeration and the form competition takes are embedded in a social and economic dynamism that is relatively new and still evolving (Toffler and Toffler, 1990). Consequently, the meanings of the terms
innovation, agglomeration and competition have a variety of facets, and are complex. Therefore, the book necessarily provides research findings on a variety of aspects of these different elements of the new knowledge age economies of regional systems.

All of the chapters in this book deal with the three topics in the book’s title: innovation, agglomeration and regional competition. However, some are directed to the joint theme of innovation and agglomeration as related to the way these factors influence the location of economic activity, while others deal more directly with the regional competition issue.

Innovation and agglomeration are strong correlates in that agglomeration of people and resources helps define, create and magnify the inputs and conditions needed for innovation and thus competitive regional economies. The chapters in this book deal with different aspects of these elements of competitiveness.

Chapter 1 shows that ICT in Sweden tends to locate in the largest or most agglomerated regions, although for mature sectors and those with low start-up costs (for example, software production), mid-sized regions overcome to some extent the disadvantages of lower levels of agglomeration. Chapter 2 takes a different approach to competitiveness, demonstrating the constraining effect that international borders have on competitiveness of firms on both sides of the border but proximal to it. In Chapter 3, issues of firm succession among the aging owner sector of the population are examined. While the authors conclude that succession is more problematic, particularly when the dominant owner(s) is a senior person and there is a diverse industrial structure (presence of urban agglomeration effects) and few listed firms, they also conclude that successful succession tends to lead to changes that enhance the firm’s competitiveness. The implication is that regions with more balanced industrial structures but with few large listed firms will tend to be impacted more by succession, especially where the owner population is skewed toward older owners. At the same time, regions where succession occurs with greater ease should gain from the fact that succession appears to promote efficiency. In Chapter 4, the effects of different policy scenarios including ones that are cohesion-promoting, efficiency-achieving and incentivizing are simulated (estimated) in an effort to estimate the net effects on peripheral regions. The thesis is that telecommunications in the form of high quality Internet access fully distributed throughout the region contributes to a region’s success, and thus policies that promote this are sought. Chapter 5 presents a case study of the effect of urban policy on economic performance. A conclusion presented in this chapter argues that urban land development and related policies are of only minor importance compared to other factors in the urban governance milieu, and most of those factors reside outside...
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the realm of public policy effectiveness. Chapter 6 demonstrates how the locus of biotechnology R&D now is organized around the research university rather than the transnational (pharma) corporation (TNC) which was the locus of R&D at an earlier time. In Chapter 7 factors other than traditional transport accessibility such as R&D, innovation capacity and human capital are examined to learn how they contribute or not to the competitiveness of peripheral regions in the EU-15. While these factors do contribute to competitiveness problems on the periphery, regional advantage, in the author’s view, will still flow to those peripheral places that can effectively marshal labor and other resources quickly to convert knowledge into commercial initiatives. The problem is that many peripheral regions do not have this capacity. Chapter 8 presents a first step to a formal economic model specifying the role of knowledge management and network learning at the firm level. Chapter 9 examines the question of the welfare effects of competition among regions using two different game theoretic formulations. The results of these simulated analyses, the authors conclude, are that with two or n regions and under either ‘rent-seeking’ or ‘winner take all’ principles, the results of multi-region competition over firm(s) attraction is welfare-decreasing. Chapter 10 presents evidence that within-region accessibility to company R&D has a strong effect on firm location decisions. This is of interest because it shows, in this case, that it is not just raw agglomeration or urban agglomeration effects that are important in making location decisions, it is also a function of industry-related specific agglomeration that is important. In Chapter 11, it is shown that central municipalities in the urban hierarchy have more diversified retail and durable goods industries and have greater customer attraction than other municipalities in their region, thus again illustrating the importance of agglomeration-related economies. Chapter 12 examines the effect of firm control mechanisms and R&D decision-making in Spain. The results show that as control, regardless of form, is increased, R&D decision-making becomes more conservative. In short, in regions where the culture tends to support greater owner participation, debt financing or foreign ownership, the conservative effects may tend to spill over into the region in ways that reduce innovative practices, ceteris paribus. In Chapter 13, a case study analysis of Trento Italy is conducted to illustrate and/or detect a number of best practices for interactive stakeholder strategy development and consensus building. Regional competitiveness begins with an informed strategy for sustained development; some of the attributes of such strategies and their implementation are examined, and defined within this case study. Chapter 14 employs multiple and diverse measures of agglomeration in an investigation of the ICT industry in the Netherlands. It finds that agglomeration economies, regardless of the
several measures used, have stronger effects on entrepreneurship defined in terms of firm formation and have a negative effect on entrepreneurship when defined in terms of incumbent ICT firm growth (the other definition of entrepreneurship used). The research presented in Chapter 15 focuses on cooperation viewed as a partial opposite of competition which is examined between sub-jurisdictions in a large metropolitan region in the US. The research examines, among others, the hypothesis that greater cooperation among jurisdictions promotes stronger growth and development among those cooperating jurisdictions. The research finds that when cooperation increases for jurisdictions that have cooperated little in the past, the performance benefits are relatively large. For high cooperation regions, there is also enhanced benefit to cooperation, but the increment is less.

A more detailed description follows below, where the chapters’ authors and titles are identified and the research question, hypotheses, methods and general findings are more fully presented.

Chapter 1 presents an examination of the relationship between economic diversity and cross-region interaction. The authors are Martin Andersson and Johan Klaesson, and it is entitled ‘Regional interaction and economic diversity: exploring the role of geographically overlapping markets for a municipality’s diversity in retail and durables’. This empirical research uses municipal-based data in Swedish regions to examine the effect of the relative accessibility of regions (municipalities) in terms of the urban hierarchy effects of the structural economic diversity (defined in terms of retail and durable goods) of regions. Municipalities are allocated to three different market types, each with increasing market spheres, intra-municipal, intra-regional and extra-regional. Several significant results are found. These include: (i) diversity in both retail and durable goods is enhanced by access to the intra-municipal market; (ii) retail diversity in the central municipality of a region tends to be higher the greater the accessibility to surrounding municipalities; and (iii) retail diversity is negatively impacted by high accessibility to the regional market in municipalities that have a small internal market relative to the regional market. A general result is that large municipalities gain from proximity to surrounding municipalities while small municipalities do not. Finally, from a policy perspective the results are provocative. Namely, improvements in physical intra-regional infrastructure (better roads, telecommunications, and so on) that increase the accessibility between the central municipality and the surrounding municipalities will be likely to have a negative impact on the retail diversity in surrounding municipalities while at the same time inducing a positive effect on central municipality diversity. Such findings seem to be consistent with empirical results that show the hollowing out
of smaller rural towns’ retail sectors as more and more ‘big boxes’ (for example, Wal-Marts) appear in central places.

Chapter 2 investigates the export capabilities of micro enterprises located in the border region of the two Irelands. This research by Jim Bell, Denise Crossan, Pat Ibbotson and Fred Scharf is entitled ‘Regions in competition and cooperation: opportunities for cross-border collaboration in support of Irish micro-enterprises’. The border is that between Northern Ireland and the Republic of Ireland. A survey methodology was implemented with a sample of firms with 10 or fewer employees taken so that respondents were located on both sides of the border but in counties proximal to the border. The research found that there was a high level of cross-border trade (bona fide and non-bona fide) but that it had a relatively low value. Many of the respondents did not consider this trade to be international in nature as such exports would be considered if going to England or abroad. Major sectors involved on both sides were engineering services and manufacturing, suggesting a good bit of the trade was B2B. However, company growth was viewed as limited in most cases because of the small scale of the activity. The study concludes that public policy support for this trade on both sides is lacking, as are technical support infrastructure such as local industry and marketing expertise, limited mentor availability and absence of role models. This study is a good example of the impediments that borders often create for trade and thus regional competitiveness.

In a rather unique study presented in Chapter 3, entitled ‘Ownership, succession and entrepreneurship in an ageing society: is there a transition problem?’, Per-Olof Bjuggren and Daniel Wiberg examine entrepreneurship among the older population and succession issues that are faced by this group. This empirical study uses survey data from municipalities in the Province of Jönköping, Sweden, for the analysis of several research questions including, and most importantly, pre- and post-succession problems. This is important because of the large group of older people and likewise senior owners of firms in the Province of Jönköping, which is fairly typical of many locations in the developed world. Among the findings is a conclusion that listed firms have less of a problem of succession, as there is a market mechanism for making the ownership transition over unlisted firms, which often have much narrower ownership. The authors also find that a narrower or more concentrated industrial structure in a municipality does not make succession more difficult than in municipalities with more balanced industrial structures. Further, however, municipalities with a diverse industrial structure and a low level of listed firms face greater succession-related problems such as employee lay-offs. Finally, the authors conclude from their analysis that succession and related changes appear to increase the firms’ competitiveness.
Robert Capello examines spatial variation in telecommunications services in Chapter 4, entitled ‘Telecommunications and regional disparities in an era of globalisation: from conceptual issues to measurable policy impacts’. The empirical context is the European Union, with the units of analysis the NUTS 2 level regions of the EU-15 of which it was composed when the research was conducted. The research particularly focuses on telecommunication technology development for lagging regions and examines the impact of three policy scenarios on per capita GDP for the regions. The scenarios include provision of a cheaper, faster and more secure Internet throughout the EU; investment in human capital, that is, building skills; and, stimulus or incentive programs for promoting Internet service development. The research then moves to estimating the territorial impact of these scenarios in lagging and non-lagging regions. The results show that a cohesion scenario (broad development and delivery of Internet services throughout the EU) has a large negative impact with loss of potential per capita GDP growth. Alternatively, an efficiency scenario where investments are targeted to where the greatest positive aggregate impact is achieved would increase regional disparities! These scenarios pose a difficult policy trade-off. A conclusion of the research is that policies should avoid discrimination between lagging technology regions (that is, imitative regions) and advanced technology regions and should be designed to support the development of adaptive regions where telecommunications and related investments are channeled by industrial structure and regional strategies.

‘Spatial policies, planning and urban competitiveness: the particular case of London’ is the title of Chapter 5. It is written by Paul Cheshire. This research is empirically based on the case of London and is supportive of the deductively derived conclusions obtained by Gerhard C. Geerdink and Peter J. Stauvemann in Chapter 9. The London research supports the central conclusion that ‘policies specifically directed towards urban development are in reality responsible for only a small part of what happens in cities and to their competitiveness’. Further in the chapter this is amplified with an observation that ‘[c]ities may have done well but close examination suggests that in most cases specifically urban policy played at most a minor role’. In short, most variability observed in urban performance reflects factors over which local policy has little or no influence. Thus, one should have only modest expectations about what territorially competitive policies may have to contribute. At the same time the author recognizes that territorially competitive policies may have a positive effect at the level of the urban region but not at higher levels of organization, for example, the EU, a region where the negative effects probably exceed the benefits. This is where Cheshire’s work overlaps consistently with that of Geerdink.
and Stauvemann, in Chapter 9. Cheshire does provide guidance on policies that are at least relatively more important for urban competitiveness. These include: (i) efficient public administration; (ii) coordinated public decision-making, provision of generalized transferable skills through education and training; (iii) helping guide the maintenance of a diverse and flexible economy; (iv) infrastructure provision; and (v) flexible and coordinated land use policies. Central among these is efficient public administration, and when not provided it is likely to create considerable damage. For example, Cheshire argues that this can occur in such areas as failure to effectively coordinate planning and design with financial decisions; too restrictive and long delays in land use decisions; and land use systems that are too inflexible.

In Chapter 6, entitled ‘Regional R&D outsourcing in bioscientific industries’, Philip Cooke examines the shift, after the 1970s, from pharmaceutical innovations (that is, new drugs) including discovery, design, marketing and distribution from the stand-alone transnational corporation (TNC) based on in-house capability, to a more interactive orientation between universities and TNC pharmaceuticals. The reason for this, Cooke argues, is embedded in the switch from a dependence on synthetic chemistry innovation to a focus on biotechnology and biomedical-oriented innovation. Several important results occurred during this transformation. First, it did not create Schumpeter’s wave of creative destruction because interfirm relations tend to be symbiotic rather than competitive or ‘creatively destructive’. Second, in the earlier period TNCs had a huge impact on spatial structure because their more Fordist, vertically integrated innovation and production structure created huge local spillover effects. Today the key ingredient for pharmaceutical innovation is the research university, which brings high-end research capability, fund-attracting specialty centers of excellence, and entrepreneurship spillovers in the form of dedicated biotechnology firms. Third, TNCs locate whole research divisions and investigative units in proximity to key research universities to access knowledge and related capabilities through knowledge spillovers, market exchanges and R&D outsourcing. This transformation of the innovation process, Cooke argues, means that while the TNC is important for local and regional development, it is no longer the prime mover in this process. Rather the research university pulls the TNC research function to the region, and thus affects its spatial structure and performance. The chapter examines this thesis both theoretically and empirically.

Juan R. Cuadrado-Roura in Chapter 7, ‘Towards new European peripheries?’, goes beyond the analysis of the economic effects of accessibility or constrained accessibility to consider other important dimensions of the peripherality issue including innovation capacity, research and
development expenses, and human capital investments at the sub-national region level. His analysis uses data from a sample of EU-15 central, peripheral and intermediate regions. The analysis and results show large differences between the three types of regions and at the same time considerable homogeneity within each group. While the central and intermediate regions in each country score higher on the non-transport accessibility dimensions of peripherality, the set of peripheral regions, apparently despite the country, performed more poorly on innovation capacity, R&D and human capital investments. Part of the importance of this chapter is the empirically-based conclusion that peripherality is not just a matter of proximity or distance from markets or transport infrastructure. It has qualitative dimensions that go far beyond transport access, suggesting that these factors may be more important than just the limiting effect on access of the friction of distance. The author concludes that regional advantage will go to places that can attract and quickly mobilize the best people (labor) and channel resources and capabilities most effectively to move down the road from technology and knowledge to commercialization.

Kingsley E. Haynes and Hiroyuki Shibusawa authored Chapter 8, ‘Elements of a knowledge network learning model’. Much research has emphasized the importance of knowledge in regional economic development and economic growth. This chapter presents a first step for a formal economic model that specifies the role of knowledge management and network learning at the firm level. A model of an interactive-knowledge network in an industrial organization is developed. Under a simple production function, the equilibrium, optimum and scale of organization are laid out. The analytic solution is described using a simple static format. The model demonstrates the importance of the learning network on the production activities of the organization, rather than the importance of the market network. An important contribution of this model is the effect of interactive learning through the knowledge network versus no effect of interactive learning.

Gerhard C. Geerdink and Peter J. Stauvermann authored Chapter 9, entitled ‘Is competition between regions welfare-increasing?’. This research is deductive in nature and uses two game theoretic model variants to examine competition among regions for attraction of firms. The first model is based on ‘rent-seeking theory’ and the second on the ‘winner takes all principle’. The former is used to model competition with full liability, meaning that a fixed specific investment needs to be made by each of the competing regions to offer as a subsidy to the firm – there is no guarantee that a region will receive a pay-off after the investments are made. The latter, ‘winner takes all’ approach assumes only limited liability, as only the winner must pay the subsidy and only the winner receives the
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benefits. The deductive analyses produce results for both approaches that support a conclusion that competition among regions cannot be avoided. The analyses are insufficient to determine if full or limited liability is more desirable based on an efficiency criterion. Further, under quite general conditions the outcomes are welfare-decreasing and thus inefficient from a larger entity (national or multinational referent) perspective. Finally, the research concludes that the larger the number of competitor regions, the less efficient the outcome and thus the greater the impact on the welfare.

The topic of Chapter 10 by Urban Gråsjö is ‘Accessibility to R&D and patent production’. This investigation examines the relationship between accessibility to R&D and patent production across Swedish municipalities between 1994 and 1999. The number of patents produced is the measure used for knowledge production among these units of analysis. Accessibility is operationalized with respect to company and university R&D to account for the importance of proximity, and then decomposed into local, intra-regional, and interregional accessibility components. Quantile regression methods are used to examine the relationships in order to control for the tendency of R&D outputs at the regional level, such as patents, to exhibit high degrees of skewness and problems with significant outliers. Aggregate findings support a conclusion that high local accessibility (that is to company R&D) has the greatest positive association with patent production. Local accessibility to university R&D is important for only a limited number of industry sectors and not on an aggregate level. Findings also present evidence that intra-regional accessibility to company R&D has a positive effect on patent production. This research concludes that concentrated R&D investment in companies in municipalities with high levels of patent production would benefit those municipalities, but even more importantly would benefit other municipalities in the functional region.

Börje Johansson and Thomas Paulsson in Chapter 11, ‘Location of new industries: the ICT sector 1990–2000’, provide an empirical study erected on two interrelated models about vertical externalities focusing on input and output demand. These models are then used to propose hypotheses and to explain the location patterns of ICTs in Sweden at the beginning and at the end of the decade that runs up to the beginning of the twenty-first century, a period of huge innovation and consolidation in ICTs. The two types of externalities (demand and supply) from a model perspective favor location in the largest functional urban regions in Sweden. More interesting, however, is that the models also predict that location in smaller regions is enhanced as demand grows, as long as start-up costs (internal scale economies) are not too strong, and are among more mature ICT industry segments. These model predictions are tested
using logit analysis to estimate location probabilities for some 27 ICT industry segments and to investigate how the probabilities vary with the size and diversity of the region’s economy.

Agency (organization) control mechanisms and innovative effort is the topic of Chapter 12 by Raquel Ortega-Argilés, Rosina Moreno and Jordi Suriñach Caralt. This research empirically examines the relationship between different organizational control mechanisms for managing organizational problems and R&D activity levels. The particular focus of this research, based on data collected from a panel of Spanish manufacturing firms between 1994 and 2001, is on the inclusion of owners in the R&D decision-making processes of the firm, concentrated ownership, debt financing and foreign ownership. The authors first review the literature on this topic and then at the start of the empirical work note that the use of control mechanisms in Spanish firms appears to have increased in recent years. They find that owners’ involvement in decision-making is widely used; concentrated ownership has increased as a control mechanism, in keeping with the continental model; few manufacturing companies are listed on stock exchanges (this increases manager control); and debt financing is not just used to address management problems but also for funding issues. More directly, the authors find that these control mechanisms when used (or not used) have a significant impact on R&D decisions and thus help explain R&D activities. Regarding increased owner participation in decision-making, the results show that this lowers the probability of adopting R&D projects. In short, owner participation leads to less risk-taking and more conservative behavior regarding R&D investment. The most commonly applied method in Spanish firms is the concentration of capital in a few owners. This method has several disadvantages including increased owner risk, less liquidity, and fewer opportunities for negotiation of the firm’s values. For these reasons, it does not increase the probability or the amount of funds allocated to make innovation-related investments. Heavier use of debt financing negatively influences the probability and intensity of making R&D investments. The research also investigates the effect of firm size, maturity, technological orientation of the business sector, and geographical extent of the firm’s market, and finds that all are positively related to R&D investment activity, which is consistent with the literature and thus adds a degree of credibility to the other findings. All the findings of this study of Spanish manufacturing firm decision-making and owner control methods are consistent with the literature on agency control techniques and innovative behavior of firms.

In Chapter 13 Knut Koschatzky examines ‘Science-based regional development in a small region’ and further considers the general ‘Scope of collective action for regional governments’. This chapter begins with
a recognition that national development policy is going through a period of decentralization in general, and more specifically, there has been considerable decentralization of technology and innovation policy to the sub-national regional level. He rightly recognizes that regionally-based, collective strategy-building processes emerged to help create a participation framework for public policy formation and social coordination of development strategy. In this context, the author reviews recent developments in regional innovation and development strategy in general, and more specifically in the context of a case study of the Italian autonomous province of Trento. The chapter reviews recent theoretical and political developments as relevant to multi-actor and multi-level governance and policy-making at the sub-national regional level. Four major research questions are examined and conclusions about them are presented at the end of the chapter. The conclusions include: (i) a degree of autonomy is needed whereby the region has the authority to issue its own laws and funding programs; (ii) weaknesses in governance, resources or business attitudes become the focus of strategic development initiatives; (iii) foresight or strategic planning exercised with multiple stakeholder groups are complicated and require considerable patience and expertise to create a consensus strategy plan; and (iv) finally, the complexity of multi-actor and multi-level governance is concluded to be too intertwined with local history and experience to enable emergence of any general guidelines or conclusions. The Trento case study is sufficiently detailed to illustrate the nature of these conclusions and the problems that they mask.

Frank G. van Oort and Erik Stam examine ‘Agglomeration economies and firm growth: testing for spatial externalities in the Dutch ICT industry’ in Chapter 14. They focus on a definition of employment growth in the rapidly developing ICT industry as their measure of entrepreneurship as opposed to the more tradition firm start-up definition. Using multiple indicators of agglomeration including localization and urbanization effects, competition level and data on employment growth for the Dutch ICT industry they examine two research questions: (i) ‘which agglomeration types are related to incumbent firm growth in the ICT industry?’ and, (ii) ‘what conceptual spatial configurations best describe patterns of incumbent firm growth?’. The results of the study are somewhat surprising given findings from similar studies using firm formation data as the measure of entrepreneurship. First, they find that competition has a positive effect on firm formation rate but a negative effect on incumbent firm growth. Second, they find that the other measures of agglomeration produce the same effects, but these effects are somewhat weaker. In short, agglomeration measures such as ICT firm spatial concentration, concentration of business services and competition levels among all firms are
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each found to have a negative effect on incumbent firm growth. Overall agglomeration economies regardless of the measure have stronger effects on new firm formation than on the growth of incumbent firms. Besides its empirical contribution to the debate on the role of localization effects vs. urbanization effects regarding competitiveness, this analysis also contributes to the development of a rationale for incorporating life-cycle aspects of entrepreneurship into the endogenous growth formulation.

Roger R. Stough, Rajendra Kulkarni and Jean H.P. Paelinck in Chapter 15, entitled ‘Competition and cooperation in economic development among local jurisdictions of a large urban area’, examine the economic performance consequences of the cooperation among local jurisdictions in a large metropolitan region, the US National Capital Region. The research is empirical and is based on data provided by local economic development officials in the form of judgments regarding the level of cooperation and competition on economic development between their jurisdiction and other jurisdictions in the metropolitan region. The analysis focuses only on the cooperation judgments. The hypothesis investigated is that the greater the level of cooperation, the stronger the economic performance. This hypothesis is based on the notion that there are considerable knowledge spillovers in a region like the US National Capital region (due to the large agglomeration forces concentrated there) and the more cooperation there is between two jurisdictions, the greater the positive spillovers, whether they are of a market, labor force or resource nature. The results support the hypothesis, but surprisingly they also support a conclusion that for jurisdictions where there has been little cooperation, the benefits are much greater, and where there has been strong cooperation benefits are achieved but are proportionately less. In short, the results imply that a small amount of cooperation where none or little existed makes a relatively large positive difference in performance and, therefore, benefits.

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