

Enterprising Worlds

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# Enterprising Worlds

A Geographic Perspective  
on Economics, Environments & Ethics

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## **Dedications**

To my favorite editor, s., and our children, f., m. and e.—JDG

To Lori and my beautiful daughters Kirsty and Fiona—NR



# Table of Contents

Acknowledgements.....	xiii
<b>1 Economics, Environments &amp; Ethics</b> <i>J. Gatrell and N. Reid</i> .....	1
1.1 About this book.....	1
<b>2 Industrial and Technology Clusters: An Everyday Topic of Popular Conversation</b> <i>Frank J. Calzonetti</i> .....	5
<b>3 Which Mode of (CLUSTER) Promotion for which aspect of Entrepreneurship? A differentiating view on institutional support of automotive clusters</b> <i>M. Fromhold-Eisebith</i> .....	13
3.1 Abstract.....	13
3.2 Introduction.....	13
3.3 Differentiating variants of entrepreneurship.....	15
3.4 Differentiating types of cluster promotion.....	17
3.5 Impacts of public versus private cluster promotion on entrepreneurship.....	19
3.5.1 Public top-down cluster promotion and entrepreneurship.....	21
3.5.2 Private bottom-up cluster promotion and entrepreneurship.....	23
3.6 Conclusions.....	24
<b>4 The Dynamics of FDI of the TFT-LCD Cluster: A Study of Japanese Firms in Taiwan</b> <i>W.C. Wang</i> .....	29
4.1 Introduction.....	29
4.2 The Dynamics of Japanese FDI in Taiwan.....	30
4.3 Methodology.....	32
4.4 Flying-Geese Model and Scalar Fixes.....	34
4.5 Conclusions.....	36
<b>5 Collaborating to Compete: The Case of Northwest Ohio's Greenhouse Industry</b> <i>N. Reil and M. Carroll</i> .....	41
5.1 Introduction.....	41
5.2 Cluster-Based Economic Development.....	42
5.3 Northwest Ohio's Greenhouse Industry.....	45
5.4 The Development of Northwest Ohio's Greenhouse Cluster.....	47

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5.5	Branding and Marketing: The First Cluster Project.....	51
5.6	Conclusion .....	53
<b>6</b>	<b>Specialized Agriculture: Local Markets &amp; Global Competitors in Ohio's Greenhouse Industry</b>	
	<i>E. W. LaFary, J. Gatrell, N. Reid and P. Lindquist</i> .....	57
6.1	Introduction.....	57
6.2	Globalization, Local Dependence and Greenhouses.....	58
6.3	The Greenhouse Industry: Background and Trends in Floriculture .....	59
	6.3.1 Floriculture Import Patterns .....	60
	6.3.2 Canada-US Floriculture Trade Patterns .....	61
6.4	Data and Methods .....	62
6.5	Results.....	63
	6.5.1 Globalization .....	63
	6.5.2 Markets and Sales .....	65
6.6	Discussion.....	67
6.7	Conclusion .....	69
<b>7</b>	<b>High Technology and Urban Development in Bangalore, India</b>	
	<i>R. Kalra</i> .....	71
7.1	Introduction.....	71
7.2	High technology and Urban Development: A Conceptual Review .....	72
	7.2.1 What is High Technology?.....	72
	7.2.2 High Technology in Developing countries .....	73
	7.2.3 High Technology in India .....	74
7.3	Bangalore: Transformation of a Garden City to the Silicon Valley.....	76
7.4	Conclusion .....	79
<b>8</b>	<b>An Evolutional Model of U.S. Manufacturing and Services Industries</b>	
	<i>J. Helsel, H. Kim and J. Lee</i> .....	83
8.1	Abstract.....	83
8.2	Introduction.....	83
8.3	Background.....	85
8.4	Methodology.....	87
	8.4.1 Measure of Spatial Concentration .....	87
8.5	Analysis and Discussion .....	89
	8.5.1 Industrial Profiles.....	93
8.6	Concluding Remarks.....	94
<b>9</b>	<b>Clusters and Local Economic Growth: Unpacking the Cluster Model</b>	
	<i>Michael Taylor</i> .....	99
9.1	Introduction.....	99
9.2	The Processes and Drivers of the 'Cluster' Model .....	101



9.2.1	The social construction of local economic processes: trust and reciprocity .....	102
9.2.2	Social capital: a chaotic concept .....	103
9.2.3	The over-simplification of the processes of learning, entrepreneurship and new firm formation .....	104
9.2.4	The fetishing of proximity .....	105
9.2.5	The de-powering of network relationships .....	106
9.2.6	The one-sided interpretation of institutional support .....	107
9.3	The deeper underlying problems of the cluster model .....	108
9.3.1	Normative instrumentalism .....	109
9.3.2	Time and the institutional instantaneous .....	109
9.3.3	Complexity .....	110
9.4	Conclusion .....	111
<b>10</b>	<b>Towards Reconceptualising Enterprise, Entrepreneurship and Entrepreneurial Processes for Sustainable Futures: Contributions from Economic Geography</b>	
	<i>R. Le Heron</i> .....	119
10.1	Introduction .....	119
10.1.1	Positioning my viewpoint and argument .....	119
10.1.2	Economic and ecological processes in their institutional settings .....	121
10.1.3	Competing narratives and different knowledge frontiers .....	124
10.2	Further Directions .....	127
<b>11</b>	<b>Attitudes, Behaviours and Outcomes of Different Types of Entrepreneurs: Toward a Better Understanding of the Multiple Entrepreneurship Phenomenon</b>	
	<i>C. Tamásy</i> .....	131
11.1	Introduction .....	131
11.2	Survey Design .....	132
11.3	Entrepreneurial attitudes and behaviours .....	133
11.4	Outcomes of different types of entrepreneurs .....	135
11.5	Discussion .....	141
<b>12</b>	<b>The Business and Sustainability of Water Supply in Singapore: The Case of Hyflux</b>	
	<i>S. Y. Wong</i> .....	145
12.1	Introduction .....	145
12.2	Restructuring Singapore Industry – the New industry Clusters .....	147
12.3	The Economics and Politics of Water Supply – Catalysts of Water Industry .....	148
12.4	The Water Solution – The Role of the State and Public-Private Partnership .....	150
12.5	The Birth of Hyflux – Building the Foundation from Home .....	156

12.6	Globalizing and Regionalizing the Technology and Services of Hyflux.....	158
12.7	Hyflux and the Vision of a Global Hydro-hub.....	161
12.8	Concluding Remarks.....	162
<b>13</b>	<b>Entrepreneurship: New Means of Support for Community Colleges</b>	
	<i>M. Rudibaugh</i> .....	165
13.1	Introduction.....	165
13.2	Local Dependence.....	165
13.2.1	Locality as Social Structure and Agent.....	166
13.2.2	Defining the terms of local dependence: Increased Partnerships.....	167
13.3	How Community Colleges Escape Local Dependence.....	169
13.3.1	Customized Contract Training.....	169
13.3.2	Technology Centers.....	170
13.3.3	Workforce Development Partnerships.....	170
13.3.4	Welfare-to-Work.....	171
13.3.5	Business-Based Scholarship Programs.....	171
13.4	The Rise of the “Entrepreneurial” College.....	172
13.5	Summary and Implications.....	175
<b>14</b>	<b>Globalization, Social Protest and the Militarized Landscape of Okinawa</b>	
	<i>S. Banasick</i> .....	177
14.1	Introduction.....	177
14.2	The Base Lease System and Economic Dependency.....	178
14.3	Buying Security – the Political Economy of Compensation.....	180
14.4	The ‘globalization’ of Nago City.....	181
14.5	Conclusion.....	186
<b>15</b>	<b>Paternalism and Struggle at Weirton Steel Corporation</b>	
	<i>Aron Massey</i> .....	191
15.1	Introduction.....	191
15.2	Ernest Tener Weir: The Man Behind the Mill.....	192
15.3	E.T. Weir’s Mill Fosters Development in the Area.....	193
15.4	Struggle at Weirton Steel.....	196
15.5	E.T. Weir and Weirton Steel’s Struggles.....	198
<b>16</b>	<b>Ethics in Economic Geography</b>	
	<i>Christine Tamásy</i> .....	201
<b>17</b>	<b>Whose Development? The Tribal Involuntary Dislocation in the Sardar Sarovar</b>	
	<i>Sutapa Chattopadhyay</i> .....	205
17.1	Abstract.....	205
17.2	Introduction.....	205

17.3	Theoretical Framework .....	209
17.4	Uneven Development.....	210
17.5	Unsustainable Development .....	212
17.5.1	The people's and NGOs resistance movements .....	213
17.5.2	The interface between Resistance movements and Power .....	215
17.6	Conclusion .....	216
<b>18</b>	<b>Geographies of Informalization: Conceptual Dilemmas over Social Standards and Informalization of Labor</b> <i>Hege Merete Knutsen</i> .....	<b>221</b>
18.1	Abstract.....	221
18.2	Concepts of Informality .....	222
18.2.1	International labor standards curb informalization.....	224
18.2.2	International labor standards lead to more informalization .....	225
18.2.3	Civic rights curb informalization .....	226
18.3	The case for a realist Marxist approach .....	227
<b>19</b>	<b>Building or Repairing Institutions: Microcredits in Argentina</b> <i>Martina Fuchs</i> .....	<b>231</b>
19.1	Introduction.....	231
19.2	The conceptual framework of the institutional arrangement and regionally bounded institutions .....	232
19.3	Institutions relevant to microcredit in Argentina .....	235
19.3.1	The institutional arrangement and regionally bounded institutions .....	235
19.3.2	Microcredits .....	238
19.4	Conclusions.....	239
<b>20</b>	<b>Bread or Circus? The Economics of Mega-Sporting Events</b> <i>Jeffrey G. Owen</i> .....	<b>243</b>
20.1	Introduction.....	243
20.1.1	The Fallacy of Economic Impact Studies .....	244
20.2	Conclusion .....	253
<b>21</b>	<b>Social Entrepreneurship and Regional Economic Development: A Conceptual Framework</b> <i>Henry G. Rennie</i> .....	<b>257</b>
21.1	Abstract.....	257
21.2	Social Entrepreneurship and Business Entrepreneurship.....	258
21.2.1	Vision and Mission of Social Entrepreneurship.....	258
21.2.2	Strategy: Competitive versus Cooperative .....	259
21.2.3	Governance .....	259
21.2.4	Funding .....	259
21.2.5	Market.....	259

21.2.6	Public-Private Partnerships, Externalities, & Economic Development .....	260
21.2.7	Typology: Social Entrepreneurship and Business Entrepreneurship .....	260
21.3	Social Entrepreneurship and Economic Development .....	260
21.3.1	Economic Growth versus Economic Development.....	260
21.3.2	Social Welfare and Economic Development.....	261
21.3.3	Economic Efficiency .....	262
21.3.4	Internalities versus Externalities and Economic Development .....	262
21.3.5	A Conceptual Framework Linking Society, Social Entrepreneurship, and Economic Development .....	262
21.4	Empirical Application of the Conceptual Framework: An Example .....	263
21.4.1	Income and Costs of an Automotive Museum .....	264
21.4.2	Economic Impact .....	265
21.5	Conclusions.....	267
21.5.1	Conceptual Framework Applied .....	267
21.5.2	Social Entrepreneurship and Externalities .....	268
21.5.3	Social Entrepreneurship Strategy and Economic Development Strategy .....	269

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# 1 Economics, Environments & Ethics

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## 1.1 About this book

*Enterprising Worlds* represents the culmination of several years of work by geographers, planners, and economists. The papers included in this volume represent the collective efforts of the International Geographical Union's Commission on the Dynamics of Economic Spaces. This collection—like others that precede it—is the result of the 2005 annual meeting in Toledo, Ohio (USA). The papers have been selected based on their quality and potential contribution to the broader community of economic geographers and policymakers. As such, all papers have undergone peer review as part of the publication process. Finally, the papers have been selected from over 30 presented to demonstrate the inherent interconnectedness of these themes (and at times the conceptual tension that exists between ethics, economics, and the environment) insofar as these important issues shape the contours and cleavages of contemporary regional development.

In particular, the papers in the collection represent the diversity of perspectives on these issues as interpreted by scholars situated around the world. While no doubt the papers are diverse, the authors provide insight into the workings of a variety of communities, regions, and nations as they seek to balance economic growth with the growing necessity to simultaneously promote ethical and sustainable regional development. As such, the collection is truly international in both scale and scope and provides the reader with a survey of emerging and established concepts, theories, and conflicts in economic geography.

The collection has been organized into three broad sections. The first section examines the socio-spatial implications and policy issues surrounding “Localized Economic Development and the Cluster Approach.” The contributions are unique in that the cluster concept—adopted from economics and widely seen as a public policy panacea—is examined in place and practice from a geographic perspective. While many geographers are supportive of the notion of economic clusters, the papers illustrate that realizing promise of, and simultaneously rescaling, the concept of clusters as articulated in Porter's (1990) *The Competitive Advantage of Nations* proves both difficult and problematic. Using a combination of case studies and extensive empirical analysis, economic development clusters are examined in

a variety of contexts and across multiple economic sectors in several papers. Each of these studies more or less benchmark industrial clusters at multiple scales—and each albeit unknowingly—demonstrates key silences within the theory that need to be addressed. For this reason, the section outlines the broad support the concept has received and its potential for unlocking a range of local economic development processes. Nevertheless, the section ends with a solid critique of the cluster approach and questions the utility of the explosion of geographic and economic literature that has emerged since the mid-1990s.

Section 2—“Sustainability, Entrepreneurship, & Landscape”—examines two very distinct views of sustainable economic development. First, authors consider the classic question of the exact role of entrepreneurs in promoting and sustaining economic growth. Insofar as the role of entrepreneurs in the geography literature has been under studied, the papers explore a range of issues and considerations (conceptual, methodological, and practical) that must be addressed to articulate the uncertain and shifting geography of the entrepreneur. The papers consider the expansion of the entrepreneurial ethos in higher education, the ability of entrepreneurs to shape a single community, and sometimes serendipitous nature of the successful entrepreneur. Second, the section examines the environmental imperatives that shape local economic development and the key issue of sustainability. In one case study, the themes of the environment and the entrepreneur are considered within the context of water quality in a developing nation and enable the reader to understand the many barriers (and potential for success) that faces environmental entrepreneurs. In concert, the section provides the reader with a real sense of the breadth of research being performed under the rubric of “sustainability”.

Finally, “The Impacts and Ethics of Economic Development” (Section Three) examines what an ethical economic geography might look like and how the deployment of an ethical framework might alter the economic landscape. The section begins with an examination of key concepts and contradictions that must be considered when seeking to establish an “ethical economic geography”. In a similar vein, subsequent papers examine the ethics of economic informalisation and structural reform in the developing world. The section ends with two interesting papers—both by economists—that consider the crucial question of economic development studies, their role in cementing support for costly initiatives, and their utility. Indeed, one chapter politely questions the efficacy of such studies within the context of project growth associated with the Olympic Games. In the end, Section Three identifies several themes within the nascent “ethics” literature in economic geography—transitioning economics, public policy narratives on development, and social capital—that can be used to shape future research.



**Table 1.** Summary of Chapters

	<b>Author(s)</b>	<b>Subject</b>
2	Calzonetti	Clusters in Geographic Research
3	Fromhold-Eisebith	Entrepreneurship & Clusters in the German Auto Sector
4	Wang	Japanese FDI in the Taiwan LCD Industry
5	Reid & Carroll	Developing clusters from Scratch in Ohio
6	LaFary et al.	Assessing and Benchmarking the Ohio Greenhouse Cluster
7	Kalra	High Technology Development in India
8	Helsel et al.	Identifying the Geography of Manufacturing Clusters in the U.S.
9	Taylor	Questioning Clusters
10	LeHeron	Reconceptualising Entrepreneurship in Economic Geography
11	Tamasy	Attitudes and Behaviors of Entrepreneurs in Place
12	Yann-Wong	An Environmental Entrepreneur in Singapore
13	Rudibaugh	Entrepreneurial Colleges
14	Banasick	Sustainable Development in Okinawa
15	Massey	Place-building and Industrialists
16	Tamasy	Ethics in Economic Geography
17	Chattopadhyay	Development in India—Who's Development?
18	Knusten	Informalising the Geography of Labor
19	Fuchs	Volatility in Argentina Economic Institutions
20	Owens	Economic Development Impacts Studies & The Olympics
21	Rennie	Social Capital and the Impacts of Economic Development

The 19 substantive contributions present a wide array of examples of the globalizing economy as it is experienced, charted, and assessed at multiple scales. The diversity of papers—while potentially distracting—underscore the contested definitions of ethics, environment, and development that exist in economic geography, as well as the potential to chart a new exciting research agenda for discipline. Additionally, the papers are inter-disciplinary and many are collaborative and illustrate the many skills and knowledges that are required to unpack and explore globalization.

Finally, the intent of this volume is two fold. First, we hope the volume proves to be an interesting read that highlights the important scholarship of the authors. Second, we anticipate the volume will raise more questions than it answers and recognize that many silences (some we recognize and others that you may identify) exist within and between the papers. While any collection derived primarily from a conference is inherently uneven, the collection is thought provoking and should prove to be an engaging read for any economic geographer.

### **Source**

Porter, M. 1990. *The Competitive Advantage of Nations*. New York: Basic Books.

## 2 Industrial and Technology Clusters: An Everyday Topic of Popular Conversation

**Frank J. Calzonetti**, The University of Toledo, Department of Geography & Planning and Office of Research, Toledo, OH

It is not often that major research themes in geography and regional science are central to national and international discussions of government leaders, the business press, and economic development practitioners working to improve national, regional, state, and local government economies. “Industry clusters,” but particularly its popular cousin “technology clusters” has moved from academia to enjoy widespread press, popular and practitioner attention in both developed and developing economies (see Taylor’s contribution in this book). This is no surprise. It is now recognized that innovation-driven sectors of the economy are yielding great returns and that many of the firms in these sectors are “clustered” in particular regions. Not only do industries in knowledge-driven sectors report higher value added than other manufacturing sectors, but wages rates and growth rates are higher as well (National Science Foundation, 2006, Chapter 6, 9). The NSF reports that over the period 1980–2003 world output by high-technology manufacturing industries grew at an inflation-adjusted average annual rate of 6.4 percent compared to 2.4 percent for other manufacturing industries. It is explained by the NSF and others that high technology industries are intensive users of research and development (R&D) that leads to innovation resulting in gains in market share, the creation of new markets, and the efficient use of resources. Regions with successful clusters are working to retain their advantage and others are seeking to create clusters as a path to economic growth and development.

A cluster-based approach is now a mainstream strategy to promote regional economic development throughout all advanced economies and even by many developing countries (Martin and Sunley, 2003, 12). Although the theory and practice underlying the concept is not new to geographers and regional economists, it is not surprising that the concept is used rather loosely in the press, by those involved in economic development efforts (politicians, various board members, planners, economic development professionals), and perhaps by some in the halls of academia. Even serious scholars argue that the concept is vague and perhaps loosely applied. As shown in this book, the concept is wrapped around related concepts that may also have definitional problems or different interpretations such as “embeddedness,” “social capital,” “new economy,” “corporate complexes,” “entrepreneurship,” “spillovers,” “absorptive capacity,” “knowledge or learning regions,” and “technology-based development” to name just a few. However, most academics and practitioners do understand a cluster to be a concentration of interconnected companies, including suppliers and service providers, who are

supported by various governmental and non-governmental institutions (particularly universities) that both compete with and cooperate with one another within a defined region. What may not be known to the casual observer is the corpus of theory and practice behind the technology cluster concept. A good review of this theory and practice is provided by a number of manuscripts and books, such as that provided by Cooke (2002), so it is not the purpose of this brief introduction to repeat this discussion. But for those new to the topic a few pages are provided on the topic to set the stage for the more focused chapters in this book.

Michael Porter is generally credited for popularizing the industrial cluster concept. Writing about conditions that explained the competitive economic position of nations, he argued through examples that much of the economic power of most advanced countries was concentrated in a few districts that often had elements within four dimensions (Porter's diamond) that affected regional competitiveness—factor conditions; demand conditions; firm strategy and rivalry; and supporting industries (Porter, 1990). “Technology clusters,” an extension of the industrial cluster concept, have in addition to the four dimensions of the Porter diamond the following elements: entrepreneurship, a source of innovation, sources of financial capital and social capital. Social capital describes the trusting relationships among individuals within organizations in a region that promotes the exchange of information and joint action for mutual benefit (Fountain, 1998; Saxenian, 1994).

However well received Porter's his 1990 book was to geographers and regional economists, most understood that the concept of an industrial cluster has been a topic of interest and development for much of the 20<sup>th</sup> century and perhaps could be traced to Ricardo's early 19<sup>th</sup> century concept of comparative advantage (if a country has an absolute advantage over another in two different products, it should still focus on the product in which it has the strongest advantage). If this is a stretch, Marshall's concept of the “industrial district” that capitalized on the value of skilled labor and traditions in addition to resource endowment as fostering a concentration of industrial activity is often referenced as the earliest recognition of the industrial cluster idea (Marshall 1891).

While the role of agglomeration and external economies on the concentration of industry has been an area of intense academic focus throughout the 20<sup>th</sup> century (beginning with the work of Alfred Weber, 1909), much of this work centered on the external economies of scale resulting from the clustering of activity that benefited individual enterprises. Given the difficulty economists faced in introducing “technology” into their understanding of factors contributing to per capital economic growth (not recognized until explained by the Solow residual in 1957), it is not surprising that the role of technology and innovation along with other “softer” factors on regional performance has taken decades to unravel. Well prior to Porter's popularization of the industrial cluster concept, others following the tradition of the economist Schumpeter, argued that the role of continuous innovation was central to the performance of firms and on the growth and development of industrial districts (e.g., Piore, M. and C. Sabel 1984). However, the relationship of

innovation and technological advances on regional competitiveness, along with an understanding of the role of social capital, entrepreneurship and government intervention in the development, continuous support, and transformation of clusters continues to offer challenging opportunities for those studying clusters and particularly those interested in creating and promoting clusters.

Much of the literature on the topic, including much of Porter's work and many government sponsored reports, newspaper and magazine articles (see, for example Strempel 2005) focuses on mapping clusters or identifying factors that have contributed to successful clusters. Hundreds of industry cluster case studies have been described in both the academic literature and in various reports printed throughout the globe that are often the result of projects commissioned by states, regions, councils, districts, or municipalities. For instance, Michael Porter's *Cluster Mapping Project* (2002) identified 12 specialized regional economies in the United States<sup>1</sup> and the Brookings Institution identified 14 U.S. metropolitan concentrations of high technology industry "most frequently mentioned in the popular literature" (Cortright and Mayer 2001, 2).<sup>2</sup> But others (who were not Harvard economists) working independent of Porter and did not receive such popular acclaim also identified clusters of technology-related activity driven by external economies through the interaction of related firms that took advantage of a division of labor in a region and the minimization of transaction costs (Scott 1988; Scott and Kwok 1989; and Coffey and Bailly 1991).

Some clusters develop without direct public policy intervention or direction. In other cases, state or regional leaders work to create a cluster in a region that does not have much industrial or supportive activity related to the future cluster. "Created" clusters are often associated with rapidly expanding knowledge-based sectors that are heavily dependent upon universities, entrepreneurship and skilled labor. But, as shown by LaFray *et al* in this book and other examples (see, for example, Akoorie for a good study of the New Zealand thoroughbred industry other sectors such as agriculture can be a focus of a cluster promotion program). In either case, the model is based on the notion that knowledge spills over into a local region if that region has the capacity to "absorb" the knowledge created (Breschi and Malerba 2001).

Throughout the 1980s and into the 1990s many regions were aspired to create new "silicon valleys" to capture part of the information technology boom and "biotechnology clusters" became fashionable as the growth of pharmaceuticals, medical equipment, and related technologies attracted widespread attention and huge public research investment (particularly in the U.S.). The latest trend is nanotechnology that is receiving tremendous public sector investment such that some say it will define the early part of the twenty-first century. As explained by Fromhold-Eisebith in this book, there are different approaches to cluster promotion with "public top-down" and "private bottom-up" being two major categories. A common strategy in the creation of clusters is to encourage increased agglomeration economies around a promising regional core of activities rather than to build an

entirely new foundation from which activities can flourish. This could be a major local industry, a major federal center, or even a major university research institute. It is less common, for regions to invest efforts to create clusters in an emerging technological area that needs to overcome both technical (involving investments in R&D) and competitive market conditions before profitable returns are realized.

Creating clusters is quite popular, but has a questionable record of success, particularly where the task is to transform an “old economy” (industrial plants, hierarchical, skill-based, etc.) into a “new economy” (lifelong learning, risk-taking, teaming, etc) (Cooke 2002, 131-156). Such regions include those that are tied to traditional manufacturing or extractive industries that competed on the basis of proximity to local mineral resources, transportation assets or available labor. As these regional economies suffered with global competition (particularly in the case of rock bottom wages from developing countries) or declines in the price of the local raw material, creating new a new economy around a clusters was an attractive way to revitalize and diversity the region. “Declining” manufacturing regions pose special challenges (Boschma and Lambooy 2000; Asheim and Isaken 2002). Most important, local leadership must redirect thinking away from the view that competing on the basis of low-cost manufacturing or attracting new manufacturing operations will return the area to previous greatness. Even if leaders accept that a new model of development based upon the creation and support of innovative clusters is a means for local revitalization and transformation, the challenge is great if the area does not have knowledge creation sources or entrepreneurs with experience and staying power to develop technology through R&D before it is ready for the marketplace. Likewise, such regions are likely to have sparse investment funds or venture companies who have experience dealing with the uncertainty of technological risk in addition to the expected risk for all start-up businesses.

Despite these challenges, many regions have worked and continue to work on creating new economy clusters in areas in decline and areas lacking a tradition of entrepreneurship, sources of innovation, and financial capital. Success has been reported, for example, in Finland’s efforts in building clusters centered on technology parks that link university research, industry laboratories, and linked companies. For instance, the city of Oulu has been able to transition from its traditional forest products industry to a cluster focusing on telecommunications, software, sensors, optoelectronics and lasers (Cooke 2002, 169-169). Other declining areas such as Appalachia in the U. S. (Feser and Goldstein, 2002) or cities tied to “industrial age” economies in Europe of North America have embraced the cluster approach with some success. For instance, Lehigh Valley Pennsylvania has moved away from its dependence on steel to life sciences that are grounded in university research centers at Lehigh University and elsewhere (Paytas, Gradeck and Andrews 2004, 16-17).

If innovation is central to successful long-lasting clusters, a major question is determining the source of continuous innovation. The likely source of new knowledge creation is from research and development activities (Audretsch 1998, 20).

Universities are prime candidates to produce research and development (R&D), but other sources are industry R&D laboratories, federal R&D laboratories, or even “decentralized industrial creativity” within the collective capacity of small firms within a region (Bellandi 1994 from Asheim 1995). As noted by Maskell (2001), the availability of specialized knowledge and the creation of new knowledge may attract firms from elsewhere into the region, may attract entrepreneurs into the region, and may create new firms through spinoff activities. A problem is that by most measures, knowledge creation is highly concentrated in particular metropolitan areas or regions of advanced economies. A major source of innovation in the U.S. is R&D and this is highly concentrated with the top 10 states accounting for almost two-thirds of total R&D (California accounting for more than twenty percent of the total). Of the 625 institutions surveyed by the National Science Foundation, the 20 leading institutions account for almost one-third of the total academic R&D spending (Shackelford 2004). R&D for important industries are also highly concentrated. For instance, three states (California, Massachusetts and Texas) account for over half of the nation’s R&D in the computer and electronic products industry and two states (New Jersey and Pennsylvania) provide one-third of the nation’s R&D in the chemical sector (National Science Foundation 2006, Chapter 4). National Institutes of Health funding is also highly concentrated as eight states account for over 18 percent of the total NIH.

Recognizing the linkage between technology clusters and R&D, technology parks have grown in popularity across the globe as a way to create sources of innovation to support clusters of activity. According to the Association of University Research Parks, in North America there are 2,900 organizations/companies located in parks that support jobs for over 235,000 people with total investment exceeding \$9 billion (Dean 2005).

An important component in cluster formation is entrepreneurship that is required to take new ideas forward and develop them locally so they are introduced into the marketplace (Feldman and Francis 2004, 131). Independent of clusters entrepreneurship and small and medium sized business have been shown to be a major factor in job creation in the United States (Birch, 1981; Roacha, 2004). Although research shows that entrepreneurship is positively associated with economic growth, but outstanding questions remain on the relationship between clusters and entrepreneurship and particularly how entrepreneurship is measured (Rocha 2004). But fostering entrepreneurship is generally a central feature in cluster promotion efforts. A popular way to support entrepreneurship is through business incubators that provide opportunities for collaborative research with universities and industry, assistance with business plan development, legal assistance, IT assistance, mentoring, information about opportunities, and opportunities for entrepreneurs to sharpen their argument as they approach various sources of financial capital. For the most part, however, academicians and practitioners consider entrepreneurship in the context of new firm formation and not entrepreneurship within firms, universities, or research institutes (see Fromhold-Eisebith’s contribution in this book) that can have a profound impact on regional development.

It appears unlikely that public policy interest in clusters will diminish. What is likely to happen is that the term “clusters” will lose its fascination as communities and regions fail to achieve outcomes as development plans fall short of expectations. Regional concentrations of economic activity will continue to exist as they have for centuries, but new terminology will replace “clusters” and perhaps capture the enthusiasm of academicians and policy planners in the process.

The space limitation of this brief introduction can not possibly do justice to the breadth and depth of theory and practice reported on clusters. However, a reasonable question one may ask is with so much written and spoken about clusters, why is the topic still of great academic interest? Despite the volumes written on the topic, many challenging questions still remain and some are addressed in this book. These include (1) the need for more work on clusters in sectors that are generally outside major technology-based industries (see contribution by LaFary *et al* in this book); (2) a need for a deeper understanding of the different types of entrepreneurship and how they are promoted by clusters and different forms of cluster promotion (see Fromhold-Eisebith in this book); (3) guidance on how to promote clusters in rural areas lacking sources of innovation; (4) more guidance on ways to change development trajectories in declining manufacturing cities toward innovation-based cluster formation; (4) models of building new clusters in emerging technological arenas to gain an national/international advantage; (5) ways to use the knowledge created by local universities in areas that are unlikely candidates to absorb this new knowledge; (6) competitiveness of clusters in an increasingly global village; and finally (7) a need for longitudinal studies that show with detailed data on new firm formation, job creation, wage rates, and development (not just growth) how clusters have developed and performed over time.

<sup>1</sup> These are: Atlanta (Construction Materials; Transportation and Logistics; and Business Services), Boston (Analytical Instruments; Education and Knowledge Creation; and Communications Equipment), Chicago (Communications Equipment; Processed Food; and Heavy Machinery), Denver (Leather and Sporting Goods; Oil and Gas; Aerospace Vehicles and Defense), Houston (Heavy Construction Services, Oil an Gas, Aerospace Vehicles and Defense), Los Angeles (Apparel, Building Fixtures, Equipment and Services, Entertainment), Pittsburgh (Construction Materials, Metal Manufacturing, Education and Knowledge Creation), Raleigh-Durham (Communications Equipment, Information Technology, Education and Knowledge Creation), San Diego (Leather and Sporting Goods, Power Generation, Education and Knowledge Creation), San Francisco area (Communications Equipment, Agricultural Products, Information Technology), Seattle area (Aerospace Vehicles and Defense, Fishing and Fishing Products, Analytical Instruments), Wichita (Aerospace Vehicles and Defense, Heavy Machinery, Oil and Gas).

<sup>2</sup> The 14 areas identified by the Brookings Institution study does not overlap with those of Porter either on the cities mentioned or their major product specialization. Brookings identified the following metropolitan areas: Atlanta (databases), Austin



(semiconductors, computers, SME), Boston (computers, medical devices, software), Denver (data storage, telecommunications equipment and software), Minneapolis-St. Paul (computers, peripherals, medical devices), Phoenix (semiconductors), Portland (semiconductors, display technology, SME, EDA, wafers), Raleigh-Durham (computers, databases), Sacramento (computers, semiconductors), Salt Lake City (software, medical devices), San Diego (communications equipment), San Jose (semiconductors, computers, communications equipment, SME, EDA, data storage), Seattle (software), and Washington, D.C. (databases, internet services).

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## **3 Which Mode of (CLUSTER) Promotion for which aspect of Entrepreneurship? A differentiating view on institutional support of automotive clusters**

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### **3.1 Abstract**

Entrepreneurship is a major driver of regional economic development and restructuring. For analytical and practical promotion purposes, different facets of the notion should be identified. This chapter distinguishes between new firm formation entrepreneurship and innovation based growth dynamics of existing firms. It is argued that both entrepreneurship variants differ with regard to regional support requirements, also reflecting a different role of globalization. A connection is made with the currently popular practice of cluster promotion that regards agglomerations of value chain related firms as a suitable seedbed for entrepreneurial dynamics due to collaboration and other advantages. Cluster initiatives may be institutionalized in various ways, and it is reasoned that, depending on the institutional mode, either the one or the other variant of entrepreneurship is especially supported. This is discussed with respect to the distinction between publicly dominated schemes (like official cluster policies) and efforts that are privately initiated, financed and governed by firms (like thematic regional industry association). Drawing on insights gained from two European automotive cluster initiatives (a public one in Austria and a private one in Germany) it is shown how institutional differences create different support settings for entrepreneurship. Accordingly, public approaches rather favor new firm formation whereas private initiatives better support entrepreneurial dynamics in existing firms, which is relevant for policies.

### **3.2 Introduction**

Entrepreneurship creates crucial opportunities for economic growth and renewal by newly combining production factors and know-how, potentially inciting innovation (Busenitz et al. 2003; Shane 2003; Reynolds et al. 2005). Policy relevance especially emerges from implications of globalization: In high-wage countries the out migration of firms and workplaces towards cheaper locations has started to

hollow out the (regional) economic base, rendering the local activation of entrepreneurship an essential compensation strategy. The question is how to effectively support desired dynamics (Sternberg 2003, 2005; Gilbert et al. 2004; Audretsch et al. 2005).

Recent research emphasizes the role of entrepreneurship for regional development and, likewise, its dependence from regional contexts (Nijkamp and Stough 2002; de Groot et al. 2004; OECD 2005). Hence, promotion should target factors like localization economies, social systemic frameworks and other locally bound assets (Wagner and Sternberg 2004). Generally, entrepreneurs tend to concentrate in some places (Sternberg et al. 2004; Sternberg and Litzemberger 2004), apart from international differences (identified by the Global Entrepreneurship Monitor GEM; see Reynolds et al. 2005; Sternberg and Wennekers 2005). As certain localities offer specifically favorable settings, scholars have started to combine issues of entrepreneurship with the cluster concept (Cooper and Folta 2000; Rocha 2004; Rocha and Sternberg 2005). Commonly understood as spatial agglomerations of value chain related firms and other organizations that derive economic advantages from co-location and collaboration (Martin and Sunley 2003, 10-13), clusters apparently provide a conducive seedbed for entrepreneurship. Empirical studies indicate positive correlations (Sternberg and Litzemberger 2004; Rocha and Sternberg 2005), yet causal relationships remain to be further explored.

Three major research shortcomings are tackled in this chapter: First, studies on clustering and entrepreneurship have neglected to take a differentiated view on the latter (as conceded by Rocha and Sternberg 2005, 289). Most research only addresses the founding of new firms, although entrepreneurship also encompasses innovation-based dynamics of existing firms (Reynolds et al. 2004). Second, work has disregarded the variation of clusters according to sector, time phase and institutional specificities, which probably influence entrepreneurial impacts. The chapter thus follows recommendations to ‘focus on different types of clusters’ in this respect (Rocha and Sternberg 2005, 289). Third, entrepreneurship support has insufficiently been linked with cluster promotion, both from a conceptual and empirical perspective. Suggestions for entrepreneurship policies have just vaguely and not systemically been connected with ideas on cluster measures (Sternberg 2003). And literature on cluster initiatives or policies hardly explicitly addresses issues of entrepreneurship (OECD 2001; Nolan 2002; Raines 2002a; Sölvell et al. 2003; Andersson et al. 2004).

The chapter distinguishes two variants of entrepreneurship and discusses which type of cluster promotion is more supportive in the one or the other case, juxtaposing two institutional modes that significantly differ with regard to entrepreneurial effects: public cluster policies versus private initiatives (Fromhold-Eisebith and Eisebith 2005). Theoretical reasoning is substantiated by project results gained from empirically investigating one public and one private cluster initiative in

Europe, both referring to automotive supply sectors, which may control for sector specificities.<sup>1</sup>

### 3.3 Differentiating variants of entrepreneurship

The notion of entrepreneurship is associated with a range of issues and various definitions (for overviews see Ripsas 1998; Praag 1999; Busenitz et al. 2003; Shane 2003). Accordingly, entrepreneurs are economic agents who are ready to take up risks and uncertainty, are innovators, industrial leaders, decision makers, managers, organizers and coordinators, employers of factors of production, arbitrageurs, alert discoverers, suppliers of financial capital, and/or allocators of resources among alternative uses. Apart from classical economics, new approaches emphasize social systemic, contextual, psychological and behavioral facets of entrepreneurs, advocating interdisciplinary theorizing (Ripsas 1998; Shane 2003). This offers scope for considering spatial contexts as regions seem to be the arena where major explanatory factors of entrepreneurship are co-located (Sternberg et al. 2004; Wagner and Sternberg 2004). Especially (social) networking requirements can be highlighted, which transform over time (Chell and Baines 2000; Lechner and Dowling 2003). Partners are needed for supporting the establishment of new firms (network founding hypothesis) and even more for sustaining success of enterprises (network success hypothesis) (Brüderl and Preisendörfer 1998).

There is no common theory of entrepreneurship due to its manifold qualities, which allows to just broadly conceptualize it as ‘the discovery of opportunities and the subsequent creation of new economic activity’ (Rocha and Sternberg 2005, 269); or, even more simply, ‘entrepreneurship is about creating something new’ (Reynolds et al 2005, 208). It is manifested in several forms, foremost by the formation of new small firms. But not every such venture indicates a positive effort, triggered by opportunity. Labeled necessity entrepreneurship, it may also emerge from a situation of despair and lack of other options which provides less favorable prospects for success and development impacts (Sternberg and Wennekers 2005; Reynolds et al. 2005). Additionally, entrepreneurship is also expressed in outstanding growth dynamics and innovation-based success of longer existing companies or parts of them, hence an attribute of larger corporations (Rocha and Sternberg 2005). How to exactly draw the line between both variants is a matter of debate and can not be discussed here (criterion of age, of product life cycles?). Considering them as opposite ends of a continuum may suffice to use the distinction for analysis.

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<sup>1</sup> The project, financially supported by the ‘Stiftungs- und Förderungsgesellschaft der Universität Salzburg’, investigated the publicly established AutomotiveCluster(AC)Styria initiative, Austria, and the private industry association car/ competence center automotive region Aachen/ Euregio Maas-Rhein e.V., Germany. Special thanks go to my research partner Günter Eisebith.

**Table 1.** External support requirements associated with the new firm formation and dynamic growth variants of entrepreneurship

<b>Aspect</b>	<b>Requirements associated with <u>new firm formation</u></b>	<b>Requirements associated with <u>dynamic growth of existing firms</u></b>
Infrastructure demand	Basic start-up infrastructure (e.g. technology centre), additional to other structural features (transport, public amenities a.o.)	Overall structural features (transport, public amenities, a.o.), not changing much by virtue of added activities
Relationships to universities/ public R&D	Basic spin-off idea; sourcing of basic qualified personnel, including student workers; initial technical support (equipment) and consulting	(Informal) consulting regarding additional know-how requirements; sourcing of additional, specifically qualified personnel for additional tasks
Relationships to suppliers of goods/services	Building up suitable dyadic relationships to reliable suppliers 'from scratch' based on social contacts; 'try and error' processes shaping the network towards functional efficiency	Transformation and modification of a pre-existing approved functional network of suppliers and co-opeting partners, due to specificities of added activities; 'snowball' mechanisms of extension
Relationships to finance providers	Provision of sufficient amounts of founding, venture or risk capital	Either no additional capital necessary or provision of capital just to support new endeavors in the firm, easy accessible
Links to markets	Support to build up a first customer base; help in establishing a reputation for initial marketing purposes	Support to enlarge the market by gaining additional customers; evolution of existing reputation towards new horizons
Impact of globalization	Given framework that forces firms to reactively find their niche of competitiveness	Decisive challenge that makes firms act in order to stay competitive

Source: Depiction by the author

Both types, new business formation and entrepreneurial dynamics in incumbent firms, can induce major local development impulses. Which one should be favored depends on regional preconditions and objectives. New start-ups may be prioritized in regions that are marked by a lack of businesses and/or a dominance of 'old industry' sectors, calling for fundamental structural renewal and diversification. Revitalization of mature firms is required where established companies face competitive challenges from globalization which force them to evolve in leapfrogging ways in order to stay ahead of followers. These differences should be regarded when conceptualizing promotion strategies. Recent research on entrepreneurship has not equally attended to the two variants but focused on new firm formation, especially in the cluster context (Andersson et al. 2004; de Groot et al. 2004; Sternberg and Litzenger 2004; Reynolds et al. 2005; Rocha and Sternberg 2005). This manifestation of entrepreneurship is easier to statistically identify than the other one (Reynolds et al. 2004; Sternberg et al. 2004). Policy implications of