

Contents

<i>List of figures</i>	vii
<i>List of tables</i>	ix
<i>List of contributors</i>	xi
<i>Prologue</i>	xvii
Alfonso Molina	
1 Introduction: the meso-foundations of national innovation systems	1
<i>Roberto E. López-Martínez and Andrea Piccaluga</i>	
PART I THEORETICAL CONTRIBUTIONS	
2 National systems of innovation, industrial clusters and constituency-building in Scotland's electronics industry	15
<i>Alfonso Molina and Tony Kinder</i>	
3 Systems of innovation, knowledge and networks: Latin America and its capability to capture benefits	56
<i>Mario Cimoli and Roberto Constantino</i>	
PART II REGIONAL INDUSTRIAL CLUSTERS AND SOCIOTECHNICAL CONSTITUENCIES IN EUROPE AND LATIN AMERICA	
4 Constituency-building in the development of the City of Rome's telematics strategy	85
<i>Alfonso Molina and Mirta Michilli</i>	
5 The role of the university in constituency-building for industrial and territorial innovation: reflections on an Italian experience	122
<i>Nicola Bellini and Andrea Piccaluga</i>	
6 University-enterprise linkages in the area of biotechnology	155
<i>Carlos M. Correa</i>	
7 The role of the biotechnology and pharmaceutical scientific and productive clusters in the Cuban innovative activity	168
<i>Leonardo de la Rosa and Blanca Esther Martín</i>	

PART III POLICYMAKING FOR CONSTITUENCY-BUILDING
IN EUROPE AND LATIN AMERICA

8	Policymaking for constituency-building in Mexico <i>Alma Rocha-Lackiz and Roberto E. López-Martínez</i>	187
9	Industrial policy of providing support to clusters: the case of the Basque Country <i>Pere Escorsa and Jaime Alberto Camacho</i>	217
10	Policies and shared values in the promotion of competitiveness: the Peruvian case <i>Mercedes Inés Carazo, Isaías Flit and Ángel Hurtado</i>	248
	<i>Index</i>	291

Figures

2.1	Porter's determinants of national advantage	18
2.2	Relations between Porter's industrial clusters and Lundvall's national systems of innovation	19
2.3a	Example of a possible sociotechnical constituency	22
2.3b	Example of a possible sociotechnical constituency	23
2.4	Intra- and inter-organizational diamond of cluster alignment	27
2.5	Relations between national systems of innovation, industrial clusters and sociotechnical constituencies	32
2.6	Breadth (quantity) and depth (quality) of clustering inter-organizational relations	35
2.7	Input-output of Scottish electronics	37
2.8	Breadth (quantity) and depth (quality) of clustering in Scottish electronics	40
4.1	Relations between national systems of innovation, industrial clusters and sociotechnical constituencies	87
4.2	Integrated NSI and cluster 'diamond'	89
4.3	Overview of the strategic telematics development of the City of Rome	113
5.1	The strategic matrix of local policy consensus	139
5.2	Relations between Porter's industrial clusters and Lundvall's national systems of innovation	142
5.3	Multi-local co-projecting	150
8A.1	Growth of GDP, 1989-98	209
8A.2	Federal R&D expenditure as share of GDP	210
8A.3	Evolution of the National Researchers System	211
9.1	General scheme structure of the Science and Technology Plan	223
10.1	Technological specialization index: Peru's historical performance	253
10.2	Foreign investment stock in Peru, 1997	254
10.3	R&D expenditure as GNP percentage	255
10.4	Requests for registered patents in Peru	257
10.5	Doctorates offered by universities in Peru	258
10.6	Master's degrees offered by universities in Peru	258
10.7	Peruvian business according to the number of workers	259

10.8	SWOT matrix	262
10.9	Porter's competitive diamond applied to technological development	263
10.10	Technological innovation network – clusters	265
10.11	Non-integrated and hierarchical systems	270
10.12	Integrated system	270
10.13	SIPAN	272
10.14	National network of business services modules	276
10.15	Value chain of leather and footwear center of technological innovation – CITEccal	278
10.16	Porter's competitive diamond applied to the technological development of the leather and footwear sector	280
10.17	Relationship between the competitive diamond and national innovation systems	284

Tables

2.1	Examples of inter-organizational relations by type and depth	34
2.2	Scotland's electronics industry: major firms	37
2.3	Application of NSI/cluster diamond to Scottish electronics	47
2.4	Application of constituencies' diamond of alignment to Scottish electronics	49
4.1	Summary of application of NSI/cluster diamond to Lazio-Rome ICT sector	98
4.2	Overview of initial alignment conditions	102
4.3	Summary of major governance factors in the development of Rome's ICT industry	104
4.4	Eurolab's European projects	106
4.5	Areas to advance Rome's process of strategy making	117
4.6	Areas for intelligence and knowledge gathering	117
4.7	Actions for wide dissemination of results	118
6.1	Internal and external sources of innovation	157
6.2	Importance of different sources of technological knowledge	162
6.3	Impact of university-enterprise linkages	164
6.4	Importance of factors creating obstacles to university-enterprise linkages	164
7.1	Scientific-productive clusters	171
7.2	Information about the scientific-productive clusters	175
7.3	Workers taking part in the scientific-productive clusters	176
8.1	Current science and technology policy instruments	198
8.2	Current STPs in Mexico according to the NIS approach	200
8A.1	National Researchers System by institution, 1997	212
8A.2	National Researchers System by state, 1997	212
9.1	Sectors analysed in the industrial technology plan	221
9.2	Technological areas of the industrial technology plan	222
9.3	Funding for the Science and Technology Plan, 1997-2000	224
9.4	Key developments in the industrial policy based on providing support to clusters	225
9A.1	Evolution of R&D in the Basque Country	243
9A.2	Evolution of indicators in the Basque Country	243

9A.3	International comparison of R&D in 1994	243
9A.4	Evolution of R&D funding and expenditure in the Basque Country	244
9A.5	International comparison of R&D funding and expenditure in 1994	244
9A.6	Evolution of R&D in companies in the Basque Country	245
9A.7	International comparison of R&D in companies in 1994	245
9A.8	Evolution of R&D funding in companies in the Basque Country	245
9A.9	International comparison of R&D funding in companies in 1994	246
9A.10	Comparison of R&D in autonomous communities in Spain	246
10.1	Exports with high technological content as a proportion of total exports	251
10.2	Technological innovations accomplished by personnel of Peruvian companies	256
10.3	Economic units according to their sales range	260
10.4	Goals of enterprises that have access to the fund at the end of a three-year period	282