

---

**desarrollo productivo**

**B**usiness development service centres in Italy. An empirical analysis of three regional experiences: Emilia Romagna, Lombardia and Veneto

Carlo Pietrobelli

Roberta Rabelloti



NACIONES UNIDAS



**Restructuring and Competitiveness Network**

Industrial and Technological Development Unit  
Division of Production, Productivity and Management

Santiago, Chile, September, 2002

This document was prepared by Carlo Pietrobelli of the University of Rome III, Law School, Italy and Roberta Rabelotti, Department of Economics and Quantitative Methods, Università del Piemonte Orientale, Novara, Italy, who acts as consultant to the Industrial and Technological Development Unit of ECLAC, with the assistance of Tommaso Ciarli, in the context of the project on Small and medium-sized industrial enterprises in Latin America which is financed by the Government of Italy.

The views expressed in this document, which has been distributed without formal editing, are those of the authors and do not necessarily reflect the views of the Organization.

---

**United Nations Publication**

LC/L.1781-P

ISBN: 92-1-121368-1

ISSN printed version: 1020-5179

ISSN online version: 1680-8754

Copyright © United Nations, September 2002. All rights reserved

Sales No.: E.02.II.G.96

Printed in United Nations, Santiago, Chile

---

Applications for the right to reproduce this work are welcomed and should be sent to the Secretary of the Publications Board, United Nations Headquarters, New York, N.Y. 10017, U.S.A. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and inform the United Nations of such reproduction.

## Contents

---

<b>Abstract</b> .....	7
<b>I. Introduction</b> .....	9
<b>II. Business Development Service (BDS) Centres in Italy</b> .....	13
<b>III. The methodology</b> .....	17
<b>IV. The three regions</b> .....	19
A. Emilia Romagna.....	21
B. Lombardia .....	23
C. Veneto .....	24
<b>V. The survey</b> .....	27
A. The creation of BDS centres .....	28
B. The supply of services .....	33
C. The clients .....	43
D. The turnover.....	45
E. Internal organisation .....	47
F. External linkages.....	49
G. Self-evaluation .....	53
H. A summary of the main survey findings .....	55
<b>VI. An evaluation of BDS Centres</b> .....	57
<b>VII. Conclusions and implications for policies</b> .....	65
A. Lessons learned from the analysis of the Italian experience .....	65
B. Implications for Latin America.....	67
<b>Bibliography</b> .....	71
<b>Appendix</b> .....	75
<b>Serie Desarrollo productivo: issues published</b> .....	81

## Tables

Table 2.1	BDS Centres supplying technological services.....	15
Table 4.1	Industrial and total employment, regions and Italy, 1998.....	20
Table 4.2	Manufacturing Employment, by firm-size (Regions and Italy, 1996) .....	20
Table 4.3	Exports by Sector, Regions and Italy, 1998 .....	20
Table 4.4	Number of industrial districts according to different definitions.....	21
Table 4.5	BDS centres in Lombardia promoted by Law 33 (1981) .....	23
Table 5.1	Geographical distribution of the sample .....	28
Table 5.2	Sector-specialisation of the sample .....	28
Table 5.3	Location inside or outside districts .....	28
Table 5.4	Year of creation .....	29
Table 5.5	Main initiative .....	29
Table 5.6	Main initiative per region.....	29
Table 5.7	Main initiative per sector-specificity of centres.....	31
Table 5.8	Equity distribution per main initiative .....	32
Table 5.9	Equity distribution per type of centres .....	32
Table 5.10	Equity distribution per region .....	32
Table 5.11	Classes of services.....	33
Table 5.12	Number of services.....	34
Table 5.13	Number of centres supplying each service .....	34
Table 5.14	The most profitable class of services .....	35
Table 5.15	Main vocation of centres and per sector specialisation.....	35
Table 5.16	Main vocation of centres per region.....	40
Table 5.17	Main vocation of centres per year of creation.....	40
Table 5.18	Main vocation of centres per main initiative.....	41
Table 5.19	Main vocation of centres per equity distribution .....	41
Table 5.20	Ways to identify customers' needs.....	41
Table 5.21	How BDS Centres set their prices.....	42
Table 5.22	Price discrimination.....	42
Table 5.23	Reasons for price subsidisation in the centres' perception .....	42
Table 5.24	Centre's certification.....	42
Table 5.25	Perceived need of future certification of the centre .....	43
Table 5.26	Number of customers .....	43
Table 5.27	Main vocation of centres: mean, minimum and maximum number of customers .....	44
Table 5.28	Main location of customers.....	44
Table 5.29	Areas of collaboration with customers.....	45
Table 5.30	Strategies of promotion of BDSC activities .....	45
Table 5.31	BDS centres' turnover .....	46
Table 5.32	Turnover composition: public subsidy larger than 50% of sales .....	46
Table 5.33	Grants (subsidy) allocation .....	46
Table 5.34	Sale of services larger than $\geq 50\%$ of total turnover.....	47
Table 5.35	Average turnover per main vocation .....	47
Table 5.36	Number of employees.....	48
Table 5.37	Share of technicians and employees with a university degree .....	48
Table 5.38	Share of technicians per main vocation.....	48
Table 5.39	Share of employees with a university degree per main vocation .....	49
Table 5.40	Training activities for employees .....	49
Table 5.41	Channels of knowledge accumulation.....	49
Table 5.42	External linkages .....	50

Table 5.43	Collaboration with international BDS centres per main vocation .....	50
Table 5.44	Institutions with which BDS centres interact.....	52
Table 5.45	Areas of collaboration.....	52
Table 5.46	External linkages per number of employees .....	53
Table 5.47	External linkages per turnover .....	53
Table 5.48	Self-evaluation .....	53
Table 5.49	Self-evaluation per turnover composition.....	54
Table 5.50	Self-evaluation per main vocation .....	54
Table 5.51	Utilisation of self-evaluation results .....	54
Table 5.52	Main strengths.....	54
Table 5.53	Urgent future objectives.....	55
Table 5.54	BDS centres: an ex-post classification.....	56
Table 6.1	Variables for an evaluation of centres' performance: effectiveness, efficiency and sustainability .....	59
Table 6.2	Effectiveness: alternative measures .....	59
Table 6.3	Efficiency: alternative measures .....	60
Table 6.4	Sustainability: alternative measures.....	61

## Boxes

Box 1	Three examples of initiatives to create a BDS centre .....	30
Box 2	Certification centre: CERMET ( <i>Certificazione e Ricerca per la Qualità</i> ).....	36
Box 3	Research and Innovation centre: Democenter.....	37
Box 4	District centre: CLAC (Wood and furniture centre, Cantù) .....	38
Box 5	Training centre: G. Rumor Foundation–CPV (Centre for Productivity Veneto).....	38
Box 6	Territorial development centre: PROMO .....	39
Box 7	Three examples of linkage creation and collaboration activities.....	51

## Graphics

Graph 1.	Centre's efficiency .....	62
----------	---------------------------	----



---

## Abstract

---

The notion of “business development service” (BDS) is quickly gaining popularity among policy makers and scholars of management, industrial organisation and development. Similarly, attention is increasingly paid on the institutions and centres offering BDS, as an essential part of the “local” or “regional innovation system”. The notion that most clearly portrays the actual nature and function of these centres is that of providers of “real services”, to indicate the impact those services have on structural features of company behaviour, and notably on their competitiveness.

This paper analyses the experience of BDS centres in three highly developed Northern Italian regions (Emilia Romagna, Lombardia and Veneto) and evaluates their performance and contribution to the regions’ industrial, and notably SME, development in light of its possible relevance for Latin American countries. The study is especially relevant as these centres have often been deemed responsible for the outstanding international competitiveness of Italian SMEs. Moreover, almost no detailed evaluations of these centres exist either in Italy or elsewhere, that go beyond the sole anecdotal evidence. The paper is based on a survey of thirty BDS centres in the three regions, which was carried out during 2001. It uses quantitative together with qualitative evidence as much as possible, in order to portray the details of a reality that is often quoted as a “success-story”, sometimes beyond the actual empirical evidence. Furthermore, considerations on the evaluation of the performance of the BDS centres investigated are put forward.

Finally, on the basis of the analysis, conclusions and implications for public policies are suggested, and the reasons for their public and subsidised provision are discussed. Useful lessons may be learned for countries at lower levels of industrial development, and specifically for Latin America.



## I. Introduction and theoretical hypotheses

---

The notion of “business development service” (BDS) is quickly gaining popularity among policy makers and scholars of management, industrial organisation and development. Similarly, attention is increasingly paid on the institutions and centres offering BDS, as an essential part of the “local” or “regional innovation system” (Cooke *et al.*, 1997).<sup>1</sup>

Several expressions are frequently found in the English-language literature to designate similar concepts with sometimes varying nuance, including industrial extension services, support services, advisory services, or business services. Among all these labels, the notion that most vividly portrays the actual nature and function of such services is that of “real services”, to indicate their impact on structural features of company behaviour, and notably on their competitiveness.<sup>2</sup> Thus, “real” should not be interpreted as the opposite of “financial”: also the latter services may be real, to the extent that they have a structural impact. Ideally, the provision of these services may transfer knowledge and technology, and facilitate learning, thereby modifying in a structural, non-transitory way their organization of production and their relation with the market (Bellini, 2000).

---

<sup>1</sup> The authors wish to thank the representatives of the BDS centres and of the regional and local institutions interviewed for sharing their insights on the three regions and on the support services and policies for SMEs industrial development with us. Furthermore, we would like to thank S. Bertini, M. Cariola, G. Corò, C. Ferraro, G. Fontana, P. Gurisatti, J. Katz, S. Kluzer, A. Lassini, W. Peres for their comments, and G. Stumpo for his interest and constant support.

<sup>2</sup> The expression appears to be derived from the Italian “servizi reali”, often employed in policy documents as well as in academic papers by several Italian scholars (Bellini, 2000 and 1985, Bianchi, 1985, Brusco, 1992).

In a developing country context however, this emphasis on new knowledge and innovation should be somehow moderated. Notwithstanding the central role of learning at all levels of industrial development, BDS in developing countries may target the promotion of a wide range of business skills and capabilities, even of a simpler and routinely kind, with varying degrees of innovativeness (Donor Committee on Small Enterprise Development, 1997).

However, in principle all these firm-specific skills and competencies could be available within the firm's boundaries, thereby eliminating the reason for the existence of a market for BDS, and of 'centres' and institutions supplying them. Why then may enterprises prefer to outsource, or buy from the market, all or some of these services, thereby creating a demand for such centres?

Several theoretical and empirical analyses exist on the firms' rationale for outsourcing advanced BDS.<sup>3</sup> Among the main factors are:

- cost factors: when the costs of building up and upgrading the in-house competencies to perform the functions that could be otherwise performed by services are too high in relation to the transaction costs of buying them from the market, firms prefer to outsource BDS. Often also excessive minimum costs and indivisibilities occur;
- quasi-cost factors: the firm may prefer a flexible organisation, focusing on core and strategic activities, and externalising all or part of its non-core activities; this strategic choice may vary overtime, and may imply also risk-reducing considerations;
- technology factors, related to the rising technological and organisational complexity of the environment in which firms currently operate. Thus, enterprises may lack the knowledge required, and its rapid evolution imposes to purchase it from outside, from highly specialised entities. Moreover, the need to fulfil international technical and quality standards is increasing, and this further induces outsourcing of specialised technical functions.

In addition, the acknowledgement of the localized nature of knowledge creation and utilisation, and the need for continuous user-producer interactions (Lundvall, 1988) further advocate in favour and explain the existence of local providers of BDS. This need is even stronger with more complex technologies, that evolve fast, and that make very problematic and often impossible the standardisation of the information flows that are relevant to the enterprise.

A different, but related issue regards the justification for subsidising service provision. Such a subsidy generally hinges on the evidence of the especially noteworthy and costly failures of the information market. The transaction costs for private sector (collective) suppliers to identify and market their services to SMEs are high relative to the demand schedule of these firms, and this makes servicing them unprofitable. Moreover, the information needed by SMEs is often *generic* with public goods characteristics (i.e. information that is both non-rivalrous and non-excludable), and this limits the profitability of its provision even more (Feller, 1997).

Dynamic considerations are also appropriate in this context. Therefore, the public sector may help underwriting the risks associated with technical uncertainties and the costs of aggregating and creating markets, that private agents would not be ready to bear otherwise. An interesting variant of this argument, especially desirable for developing countries, is that BDS tend to have *positive externalities of consumption*: as a consequence of imitative mechanisms, higher quality standards are introduced within the companies and in inter-company relations, and this is likely to have a multiplier effect on industrial and SME development. In other words, a local endowment of real services adds to the collective assets of a region, and generates positive externalities. For all these reasons, public subsidies to BDS Centres are often justified in theory.

---

<sup>3</sup> For a detailed study of this issue see Bartoloni, 2001, and the references therein.

The objective of this paper is to analyse the experience of BDS Centres in three Northern Italian regions, and evaluate their performance and contribution to the regions' industrial, and notably SME, development in light of its possible relevance for Latin American countries. The study is especially relevant as these centres have often been deemed responsible for the outstanding international competitiveness of Italian SMEs. Moreover, almost no detailed evaluations of these centres exist either in Italy or elsewhere, that go beyond the sole anecdotal evidence (Feller, 1997:194). The paper is based on a survey of thirty BDS Centres in three highly developed Italian regions, Emilia Romagna, Lombardia and Veneto, which was carried out during 2001. It uses quantitative together with qualitative evidence as much as possible, in order to portray the details of a reality that is often quoted as a "success-story", sometimes beyond the actual empirical evidence. Furthermore, some considerations on the evaluation of the performance of the BDS centres investigated are put forward. Finally, on the basis of the analysis, conclusions and implications for public policies are suggested, and the reasons for their public and subsidised provision are discussed. Useful lessons may be learned for countries at lower levels of industrial development, and specifically for Latin America.



## **II. Business Development Service (BDS) Centres in Italy**

---

Since the beginning of the 1980s, in Italy the BDS centres have become popular mainly as policy instruments to improve the innovation capability and competitiveness of SMEs. The proliferation of BDS centres, generally established with public or jointly public/private initiatives, was induced by the increasing awareness among policy makers, economists and representatives of the industrial sector of the need to support and encourage the modernisation of the Italian manufacturing system, characterised by a predominance of SMES specialised in traditional sectors. The underlying principle was the existence of a market failure to explain under-investments in product and process innovations among SMEs, and therefore the opportunity to support them both through financial subsidies and the supply of services such as information, training, technological assistance and development of innovative projects (see Section 1 on this). Therefore, BDS centres were created mainly to supply services with a public good nature, generally aimed at the modernisation of the national or local economic system.

Moreover, during the 1980s there was an increasing decentralisation of industrial policy at the regional level, allowing the support of many local initiatives, highly customised to the specific industrial tradition of each area. Consequently, the Italian BDS centres have generally been established in a de-centralised and uncoordinated approach rather than as a result of nation-wide SME support programmes (Clara, 2000).

Most of the Italian literature available on BDS centres is either on general policy issues or it is based on case studies, very often concentrating on success stories. Probably the most analysed centres are from Emilia Romagna.<sup>4</sup>

Nomisma undertook the first study aimed at a national census of the existing BDS centres in 1988 (Nomisma, 1988). The study counted 75 BDS centres in Italy, classified according to the type of services supplied, and located mainly in the Northern regions (40%) and in the Centre (36%), with only 24% in the South of Italy. As far as we know, there are two more recent censuses at national level: one was undertaken in 1997 by Ceris-Cnr (Calabrese *et al.*, 2001) and the other was produced by Agitec and updated at 2000. The Ceris-Cnr study counted 161 institutions supplying technological services<sup>5</sup> to firms, but only 80 of them are proper BDS centres, the remaining being business innovation centres, science parks, business incubators and national research agencies. In Table 2.1 the BDS centres analysed by Ceris-Cnr, are desegregated according to their location within or outside industrial districts and the region where they are located. Considering the regional distribution, it clearly appears that most of the centres are located in the Northern and Central regions and particularly in Lombardia, Veneto, Emilia Romagna and Toscana. Besides, in these four regions there is also a majority of centres located in districts, given their high density of these specialised concentrations of firms.

The Ceris-Cnr study also presents abundant information about the services supplied by these centres, the number of customers and their location, turnover, number of employees and external consultants. The main conclusion is that both centres located inside and outside districts supply many different services. They do not try to achieve a specialisation, and therefore their aim at supporting innovation is rarely achieved.

The census prepared by Agitec includes any institution supporting and contributing at technological innovation, and therefore also universities, business associations, national research centres, innovation agencies, science parks, business incubators (Farinelli, 2000). The total number of institutions counted is 691 and among them the BDS centres are 90, somehow confirming the previous surveys.

The little contribution to innovation of most of the BDS centres is also confirmed by a study undertaken on Lombardia (Cusmano *et al.*, 2000), one of the most industrialised regions and characterised by the most innovative industrial sector in Italy.<sup>6</sup> Based on a sample including both innovative enterprises<sup>7</sup> and firms making use of services supplied by BDS centres, the authors conclude that there is clearly "adverse selection": the service centres' customers are the less innovative firms while innovative enterprises interact more with universities, research centres and technical advisors in order to improve their innovative capability. Moreover, most of the BDS centres adjust their supply of services to the demand of their customers to improve their financial self-sufficiency. Thus, they mainly supply information, training, laboratory tests and quality certifications.

---

<sup>4</sup> On policy issues see Bellini (1985), Bianchi (1985) and Brusco (1992). Among the case studies see for example Bellini and Pasquini (1998).

<sup>5</sup> According to this study, technological services include: quality certification, R&D projects, laboratory tests, technological training and technological information.

<sup>6</sup> In the years 1980-94, 40% of patents registered by Italian enterprises at the European Patent Office were from firms located in Lombardia (Cusmano *et al.*, 2000).

<sup>7</sup> The innovative enterprises are defined on the basis of two criteria: the enterprises which registered a patent in the period 1980-1994 and those which received a regional grant for innovation.

**Table 2.1**  
**BDS CENTRES SUPPLYING TECHNOLOGICAL SERVICES**  
(Number)

Region	Inside districts	Outside districts	Total
Valle d'Aosta	-	1	1
Piemonte	4	-	4
Lombardia	11	4	15
Veneto	3	6	10
Trentino A.A.	-	-	-
Friuli V.G.	1	2	3
Emilia-Romagna	7	4	11
Toscana	11	5	16
Marche	4	1	5
Umbria	1	-	1
Lazio	1	1	2
Molise	-	1	1
Abruzzo	-	1	1
Campania	-	4	4
Puglia	-	2	2
Basilicata	-	-	-
Calabria	-	2	2
Sicilia	-	1	1
Sardegna	-	1	1
<b>Total</b>	<b>42</b>	<b>38</b>	<b>80</b>

Source: Calabrese, Cariola, Rolfo (2001).

Some further evidence is presented in a recent study on the outsourcing of advanced services in Lombardia (Bartoloni, 2001). Using the 1997 industrial census database, Bartoloni concludes that there is a positive correlation between demand for innovative services, firm-size and technological level. Moreover, R&D services are mainly supplied in the metropolitan area of Milan, while centres located in industrial districts are more specialised in information and engineering services to satisfy the demand of their majority of small and medium-sized firms.

The empirical studies presented here agree on one major result: most Italian BDS centres lack adequate capabilities to enhance innovation. BDS centres supplying technological services were mainly created by local, bottom-up initiatives and they have adjusted their supply to the local demand of more traditional services, such as information, laboratory tests, training. This approach has at the same time positive and negative implications: BDS centres often succeed in increasing their financial self-sufficiency, as they supply services demanded by firms; however, their contribution to induce new demand for innovative services is minimal.

Innovative firms prefer to interact with other institutions, such as universities and research centres, to improve their innovation capability (Cusmano *et al*, 2000). In the experience of other countries, particularly Germany with the well-known case of *Steinbeis-Stiftung* in the region of Baden-Wurttemberg, BDS centres play a more crucial role in enhancing innovation and diffusing technologies, when they act as co-ordinators of a network of institutions, universities, research centres, and innovative firms (Schmitz, 1992).

According to some of the studies available this is not happening in Italy: BDS centres are good at adapting to the needs of local firms, but they often miss the opportunity to contribute to the modernisation of the local industrial economic system.





### III. The methodology

---

The fieldwork for this study was carried out in Emilia Romagna, Lombardia and Veneto from January to June 2001. According to the existing surveys (Cariola *et al.*, 2001; Farinelli, 2000 and Nomisma, 1988) these are the Italian regions, together with Tuscany, with the highest concentration of BDS centres (Table 2.1). Besides, as explained in greater detail later, Emilia Romagna, Lombardia and Veneto represent three different patterns of industrial development and regional policy: in Emilia Romagna there is a strong concentration of industrial districts and an old tradition of industrial policy at local and regional levels; in Veneto industrial development is a more recent phenomenon than in the other two regions, and districts also characterise the economic system; finally Lombardia is an old-industrialised region with a mixed economic system characterised by large industrial firms, SMEs' districts and a strong presence of tertiary sector.

The investigation is based on a questionnaire distributed to a sample of 30 BDS centres and on in-depth interviews with key informants, such as representatives of local and regional public bodies, business associations and chambers of commerce, scholars and practitioners on local development.

The current sample is selected from a list of BDS centres obtained from an up-to-date inventory of all institutions supporting industrial development in the three regions, based on existing data bases (Cariola *et al.*, 2001; Farinelli, 2000 and Nomisma, 1988) and on broad research in the Internet. Given the high heterogeneity of these institutions, the following criteria of selection are adopted:

1. A first general criterion is to select only those institutions that offer **also** technological services because:

- Innovation processes are necessary to acquire competitiveness;
- The characteristics of technology and technological change (imperfect information, uncertainty, incomplete/imperfect appropriability of the results of the investment, externalities, free-riding) determine an investment in technology that is lower than what it would be socially optimal, justifying public intervention and subsidies

2. The second criterion refers to the opportunity of excluding the institutions that **only** carry out theoretical research activities, although enterprises can also take advantage of it. In fact, basic research cannot be thought of as a service directly usable from the enterprises.

3. The third criterion reflects the need to exclude the centres linked to large national, international or multinational enterprises. They might offer useful services to other enterprises, but in this case service provision follows a more complex logic, and very different from the one of the development of the three regions analysed.

4. The fourth criterion aims at excluding business innovation centres (BIC), science and technological parks, business incubators, experimental stations, technological and industrial poles. Although similar in several respects, these are different in their aims, and in their operative and strategic logic from business development centres. The analysis and the questionnaire geared to this kind of actors should be different. In a similar way we exclude the laboratories that are involved only in technical tests and the like.

5. A fifth criterion eliminates also those centres of the chambers of commerce that supply only services as basic training and general information.

In sum, to our present aims *we* define a Business Development Service Centre as an institution which can be private, public or mixed and which offers also technological services. It should also target small and medium-sized enterprises, develop and transfer applied research and technology, and offer services directly usable by the enterprises. In such a way we define a list of BDS centres sufficiently homogeneous to permit comparisons and meaningful assessments within the sample (Table A-1).

From this list, and taking into account the different number of centres in each region, we choose 11 centres out of a universe of 27 in Emilia Romagna, 12 out of 33 in Lombardia and 7 out of 13 in Veneto. In each region, we take into account the wide variety of institutions in order to select centres that differ by type of clients, geographical and sector specialisation. The choice of the centres selected on an *a priori* basis and according to the criteria spelled out above, is complemented and enriched by the informed advice of local experts, and more general experts and practitioners in this field. Finally, the actual possibility to visit the selected centres and the availability of the directors, personally interviewed by one of the authors, to fill up the questionnaire further integrate the final selection mechanism.

In designing the questionnaire, the objectives are to gather information about the centres and to collect some indicators useful for their evaluation. Concerning the centres, the questionnaire investigates their origin and history, the supply of services, the customers, the turnover, their internal structure, the linkages with other institutions and their self-evaluation efforts. Then some quantitative indicators, such as cost per customer and per employee and self-sufficiency index, are also calculated to evaluate their effectiveness, efficiency and financial sustainability.

As with any survey of this kind there are potential problems surrounding the accuracy of the results. The reliability of the answers varies with the questions, and in fact some findings are left out of the analysis because there are problems of inconsistency, misunderstandings or lack of trustworthiness. To overcome some of the problems related to accuracy of the data, they are complemented and cross-referenced with interviews to other key informants and with secondary information available in the literature.

To conclude this section we must emphasise the very positive reaction to the survey on the part of the directors of the BDS centres, especially in Emilia Romagna and Veneto. We could interview almost all the centres selected and the directors were particularly keen to participate in a research project sponsored by the United Nations and promoted by an institution located in Latin America. They often saw the interview as an opportunity for future international contacts.

## IV. The three regions

---

The three regions under analysis are large and important in the Italian economy. They account for a large share of the active employment in Italy (36.6%), and even more, of its industrial employment (45.2%) (Table 4.1).

Moreover, the industrial structure of these regions is characterised by a large presence of small and medium-sized enterprises (Table 4.2). The largest enterprises (> 500 employed) are under-represented relative to the national average. Medium-sized enterprises (between 100 and 499 employed) constitute over 20 percent of total manufacturing employment. However, looking at smallest firm-size, Veneto has the largest percentage of small firms: 40 per cent are firms from 10 to 49 employed, higher than Lombardia and Emilia Romagna, with 34 per cent.

Furthermore, these three regions have been very dynamic during the past decades, and have achieved remarkable success in international markets, as revealed by their large shares of Italy's manufactured exports (Table 4.3). Lombardia enjoys a clear specialisation in metalworking – partly shared by Emilia Romagna, with the latter as a stronger exporter of agri-based food. Veneto and Lombardia are remarkably specialised in 'traditional' manufactures, such as textiles, clothing and leather, to a greater extent than Emilia Romagna, that shows a relative 'de-specialisation' in such traditional productions.

Table 4.1

**INDUSTRIAL AND TOTAL EMPLOYMENT, REGIONS AND ITALY, 1998***(Thousands and %)*

Regions	Industry	% of Italy	% Industry/ Total	All sectors	% of Italy
Lombardia	1 552	24.0	41.4	3 750	18.6
Veneto	778	12.0	42.0	1 851	9.2
Emilia Romagna	594	9.2	35.0	1 695	8.4
Italy	6 470	100.0	32.0	20 194	100.0

Source: ISTAT – Confindustria - IPI (2000), *Quindici anni di statistiche provinciali*, Roma: SIPI.

Table 4.2

**MANUFACTURING EMPLOYMENT, BY FIRM-SIZE (REGIONS AND ITALY, 1996)**

Regions	1 - 2	3 - 9	10 - 19	20 - 49	50 - 99	100 - 249	250 - 499	> 500	Total
Lombardia	78 912	205 809	201 275	228 981	146 369	177 178	101 009	131 867	1 271 400
	6.21	16.19	15.83	18.01	11.51	13.94	7.94	10.37	100.00
Veneto	41 393	110 627	123 852	133 394	78 533	73 373	40 459	47 416	649 047
	6.38	17.04	19.08	20.55	12.10	11.30	6.23	7.31	100.00
E. Romagna	35 707	95 505	87 388	87 972	54 329	79 247	35 868	36 752	512 768
	6.96	18.63	17.04	17.16	10.60	15.45	6.99	7.17	100.00
Italy	418 040	866 483	764 994	832 413	501 972	584 860	327 069	559 946	4 855 777
	8.61	17.84	15.75	17.14	10.34	12.04	6.74	11.53	100.00

Source: ISTAT – Confindustria - IPI (2000), *Quindici anni di statistiche provinciali*, Roma: SIPI.

Table 4.3

**EXPORTS BY SECTOR, REGIONS AND ITALY, 1998***(Million Euro and %)*

	Regions	Exports	% of Italy
Total exports	Lombardia	62.86	29.0
	Veneto	30.04	13.9
	E. Romagna	25.54	11.8
	Italy	216.84	100.0
Metalworking	Lombardia	28.06	36.3
	Veneto	10.64	13.8
	E. Romagna	11.04	14.3
	Italy	77.29	100.0
Food and beverages	Lombardia	1.70	18.9
	Veneto	0.93	10.3
	E. Romagna	1.66	18.4
	Italy	9.00	100.0
Textiles, clothing and leather	Lombardia	9.20	26.7
	Veneto	6.93	20.1
	E. Romagna	2.70	7.8
	Italy	34.48	100.0

Source: ISTAT – Confindustria - IPI (2000), *Quindici anni di statistiche provinciali*, Roma: SIPI.

Finally, the economic systems of the three regions investigated are characterised by a strong presence of industrial districts. Table 4.4 presents the number of districts located in each region according to different possible definitions. The *local labour market areas* (LLAs) are defined on the basis of the daily homework displacements of population and are used to identify industrial districts. Istat (1996) uses a more restrictive definition: a LLA is an industrial district when it is specialised in manufacturing industry and it is characterised by a predominance of SMEs (with less than 250 employees). Afterwards, regions have tried to adjust the list proposed by Istat taking into account the bordering districts characterised by the same industrial specialisation.<sup>8</sup> Some Regions, such as Lombardia and Veneto, have also officially recognised the districts in order to identify the areas where to implement specific plans of industrial development. On the contrary, Emilia Romagna has not formally recognised any district, preferring a bottom-up approach and therefore leaving to local actors the opportunity to propose policy interventions targeting specific territorial areas.<sup>9</sup>

Table 4.4  
**NUMBER OF INDUSTRIAL DISTRICTS ACCORDING TO DIFFERENT DEFINITIONS**

	Local labour market areas	Industrial districts according to Istat	Industrial districts officially identified by regions
Emilia Romagna	48	16	N/A
Lombardia	70	42	21
Veneto	48	34	19
Italy	784	199	-

Source: Caloffi (2000).

## A. Emilia Romagna

The experience of local industrial policy of Emilia Romagna reflects a “top-down” design planned by the Region’s policy-makers, to lead the market and drive private enterprises and their associations towards the objectives planned (Bianchi and Giordani, 1993). Within this context Emilia Romagna Region founded Ervet (*Ente Regionale per la Valorizzazione Economica del Territorio*) as a financial holding company in 1974. Its mandate was “... to act as a policy tool to implement economic and industrial policies, translate regional programming into actual projects, and design and implement innovative projects together with the local economic actors” (from the institution’s website, [www.ervet.it](http://www.ervet.it)). The Region still holds 80 percent of ERVET equity, with other banks and financial institutions holding about 18 percent, and Chambers of Commerce and Enterprises’ Associations holding the rest (source: Ervet website).

During the eighties, in order to support the regional industrial system’s competitiveness, Ervet created a network of centres located throughout the region to serve the specific local needs. The set of Ervet Centres is known as the “Ervet System”, and includes nine specialised bodies, the so-called *Centri di Servizio* i.e. Service Centres. These are:

- ASTER, *Agenzia per lo sviluppo tecnologico dell’Emilia-Romagna*, Agency for the regions’ technological development;
- *BIC Emilia Romagna* – Business Innovation Centre
- *Centro Ceramico*, for the ceramics industry;
- CERCAL, *Centro emiliano romagnolo calzature/pelletterie*, in the shoe and leather district of San Mauro Pascoli (Forlì);
- CERMET, *Certificazione e ricerca per la qualità*, quality certification centre mainly active in manufacturing;

<sup>8</sup> For a detailed presentation of the different criteria adopted to identify districts see Caloffi (2000).

<sup>9</sup> For more information about industrial policies adopted by the three regions under investigation see later.

- CESMA, *Centro servizi meccanica per l'agricoltura* in Reggio Emilia, providing mechanization services for agricultural activities;
- CITER, *Centro informazione tessile dell'Emilia Romagna* in Carpi (Modena) for the textile-knitting industry;
- DEMOCENTER, *Centro servizi per l'automazione industriale* in Modena, for industrial automation;
- QUASCO, *Qualificazione e sviluppo del costruire* in Bologna, for the construction industry.

Some of these centres have been included in our survey and interviewed (see Table A.1)

This network has played a central role in the Region's local industrial policy: to give a very rough idea of the size of the network's projects, in the period 1995-97 the overall turnover generated amounted to about EUR 60 million.

Several of these centres are by now financially self-sufficient, but they could hardly have been sustainable since their inception. In the early years they played a useful "signalling" role for private enterprises, pointing to specific activities and issues that would have turned out of strategic importance in due course (e.g. quality certification, metrology and industrial standards). Specifically, they showed the importance of the 'real services', an unknown concept only two decades ago.

The example of CERMET is especially instructive in this respect (see also Box 2). CERMET was created in 1985 following a joint initiative of the University of Bologna, the Region and some private enterprises to carry out laboratory tests and certify production and management quality, much earlier than the current widespread trend towards standardisation and certification. After 15 years of activity, the Centre has 4000 clients (the largest number in our sample), employs 140 people (70 percent of them hold university degrees), and has a yearly turnover of about EUR 7 million, with new offices also in Rome and Turin. The Centre operates in several fields related to quality management, services and infrastructures, information diffusion, product certification, research for product and process innovation ([www.cermet.it](http://www.cermet.it)). By now CERMET is amongst the top ten certification companies in the country, including some foreign competitor operating in Italy. It would be unjustified to subsidise with public funds a company of this nature in the present environment. However, this policy proved very useful in the early years and contributed to the region's SMEs competitiveness. The market would have never made available these services in the early years without an explicit subsidy due to prominent market failures related to imperfect information and foresight, difficult appropriability of the results, high lump-sum minimum costs.

Thus, such a "top-down" approach, always in close collaboration with the private productive sector, helped anticipate some market trends, and lead firms' efforts towards pursuing technological changes. This system was probably better suited to a phase of incipient industrialisation (Amin, 1997), and is currently undergoing a thorough process of restructuring. The main reforms aim at (Russo *et al.*, 2000), Leoncini and Lotti, 2001):

- boost Centres' financial sustainability;
- subsidising with public financing only highly innovative projects, always subjected to competitive tenders;
- boost the collaboration among Centres and the creation of networks with the Research and University system.

Contrary to a widespread tendency, although Emilia Romagna quickly modified its legislation to account for the larger role that the Regions should play in the design and implementation of local industrial policies, it decided not to formally recognise any district. This reveals a preference for a bottom-up approach, and a shift away from the earlier top-down approach

governed by the Region and its institutions. Thus, the current approach leaves to local actors the opportunity to propose policy interventions targeting specific territorial areas, and therefore allows substantial local flexibility in the definition of what an industrial district is.

Only for the year 2002, a whole set of initiatives amounting to EUR 41 million, provides incentives to: (i) spin-offs and high-tech start-ups promoted by (former) researchers, (ii) transfers of technology between the university and research system and the industrial enterprises via exchanges of personnel and joint projects ([www.regione.emilia-romagna.it](http://www.regione.emilia-romagna.it)).

## B. Lombardia

In Lombardia the promotion of BDS centres as an industrial policy tool to support SMEs has a long tradition. Already in the early 1980s the Regional Government approved a Law (33/1981) according to which the promotion of BDS centres was one of the main instruments adopted to modernise the regional industrial structure and enhance innovation among SMEs. This regional law promoted more than 100 projects in areas related with innovation, R&D, technology transfer, export promotion and assistance for managerial and organisational innovation. The same law sponsored the creation of 14 new BDS centres (Table 4.5). Nevertheless, in all these centres, excluding Cestec, the Regional Government had a promotional role but since the beginning it did not provide direct financial support. The policy adopted was to get other local public institutions, such as Provinces or municipalities, as well as private actors, such as Chambers of Commerce or business associations, involved since the initial creation of the centres. This approach produced independent, very decentralised initiatives strongly linked with their local environment.

**Table 4.5**  
**BDS CENTRES IN LOMBARDIA PROMOTED BY LAW 33 (1981)<sup>a</sup>**

Name	Location
Agenzia di Innovazione e sviluppo	Sermide (Mantova)
AQM (Centro di assistenza e qualificazione metalmeccanica)	Brescia
Associazione Tessile	Como
CATAS (Centro di R&D per il settore del mobile e dell'arredamento)	Lissone (Milano)
Centro Servizi alle Imprese	Vigevano (Pavia)
Centro Servizi Calza	Castel Goffredo (Mantova)
Centrocot	Busto Arsizio (Milano)
Cesap (Centro europeo sviluppo applicazioni plastiche)	Zingonia (Bergamo)
Cestec (Centro Lombardo per lo Sviluppo Tecnologico e Produttivo delle PMI)	Milano
Clac (Centro Legno Arredo)	Cantù (Como)
CRSLP (Centro Ricerche e Servizi per il Legno)	Sustinente (Mantova)
ISVAL (Istituto di promozione delle Attività Economiche Valtellina/Vachiaevna)	Sondrio
Lumetel (Agenzia Lumezzane Telematica)	Lumezzane (Brescia)
Secas (Sebino Camuno Società)	Darfo (Bergamo)

Source: Regione Lombardia, 1995.

<sup>a</sup> The centres interviewed for the present study in shaded cells.

During the 1990s, a similar approach was carried on until the most recent Law 35 in 1996 governing the regional support to SMEs. According to this law, the main policy instrument is the financial support granted to projects in the areas of product and process innovation, R&D and environmental control. The projects may be presented directly by firms or groups of them or by BDS centres and consortia, and the grant for each project cannot exceed 50 per cent of the whole investment with an upper limit of EUR 100,000. In 2000, the number of projects financially supported was around 100, with a total expenditure of about EUR3.6 million.

Besides these interventions generically open to all SMEs located in Lombardia, the Regional Government also promoted some specific measures in favour of enterprises and BDS centres located in

industrial districts. In 1993, Lombardia was the first region in Italy to enact a regional law to formally recognise industrial districts. Then in 1994 the Regional Government defined a specific development program for its 21 districts. The main policy measures of the program are the establishment of BDS centres aimed at supporting innovation, the creation of research centres and laboratory tests, the creation of consortia among firms and initiatives aimed for the promotion of districts within Italy and internationally. In the period 1995-2000, 150 projects were sponsored, corresponding to a total investment of EUR 52 million, with a regional subsidy of about EUR 20 million.

From what has been said so far, in Lombardia two different patterns of industrial policy can be identified:

- A first phase going from the 1980s to the beginning of the 1990s, during which the Regional Government promoted the creation of a number of BDS centres, without getting directly involved in the centres but linking local public institutions and private actors to the initiatives;
- Since the mid-nineties, a second phase characterised by a focus on financial support to relatively small but innovative projects, either presented by individual firms, groups of them or existing BDS centres.

It may be worth reminding the findings of a recent survey of innovative firms and BDS centres in Lombardia (Cusmano *et al.*, 2000) that stressed the existence of a gap between firms and centres:

- Innovative firms are very rarely among the customers of BDS centres but they prefer to interact with universities, research centres and technical advisors;
- On the contrary, the customers of BDS centres are not among the most innovative firms in the region and their demand of services to BDS centres is rather traditional. Accordingly, BDS centres have adapted their supply of services to the existing demand with good records in terms of financial self-sufficiency and integration with the local environment but without really contributing to SME innovation and competitiveness in the Region.

In sum, both inside and outside districts, in Lombardia the Regional Government is currently choosing to play a rather neutral role. It provides financial support to relatively small innovative projects, but it does not try to play any active role in promoting innovation or co-ordination of economic activities within the industrial system.

## C. Veneto

In Veneto, *private* initiatives by firms and institutions have played a central role in the promotion and development of local industry, to a much greater extent than the local government and public sector institutions. Therefore, an analysis of local industrial policy that only looked at regional laws would be misleading, and underplay the relevance of local institutions, often the outcome of spontaneous processes of self-organisation from below, and inter-related through networks of exchanges, relations, and competition that rarely have a consciously-pursued regional dimension. Perhaps paradoxically, the *strength of some private structures* and institutions, and of their networks, often invisible but real, *lays in the weak linkages with the public* administration (Corò, 2001).

Several studies attempt to describe the main characteristics of these local networks of active private institutions:

- first of all, they appear to have been generated by the need to *react to a local and specific problem*, urgently felt by local enterprises;



- secondly, they have been mainly the result of initiatives undertaken by *private actors*, such as firms and associations, and sometimes Chambers of Commerce;
- thirdly, they have used and built upon the valuable and long-established tradition of *local technical and professional Schools*. Initially often founded by private entrepreneurs, these schools have later become essential nuclei of agglomeration for the exchange and diffusion of information. Some of them provide training but also offer technical and management advice to private enterprises. Remarkable examples are the marble School in Valpolicella, the graphics School in San Zeno, the School of arts and professions in the goldsmiths sector in Vicenza, and the Industrial and Technical School for chemical and leather dyeing “Galileo Galilei”, created in 1960 in the leather district of Arzignano, Vicenza (Fontana, 2000);
- Fourthly, these schools have often operated in close collaboration with local and rural banks;
- Fifthly, very few and weak links have occurred between firms and Universities: the drivers of innovation in the Veneto region have mainly been machinery and equipment producers.

In other words, a system of joint private provision of public goods has prevailed, closing the possible gap between needs and responsibilities of the final users (Corò, 2001, p.8). The enterprises themselves have often contributed to the creation and financing of institutions strengthening the ‘industrial atmosphere’ and the local external economies. The final outcome has been an efficient service infrastructure, without substantial public resources and interventions. Interesting examples of such realities are the Brenta Shoe Producers Association (*Associazione dei calzaturieri della Riviera del Brenta* (ACRIB), founded in 1961 (Rabellotti, 2001), and the Museum of Mountain Shoes (*Museo dello Scarpone*) in Montebelluna (Corò, Gurisatti, Rossi, 1998).

However, such a set-up inevitably suffers from substantial weaknesses: the lack of public planning and support has hindered the co-ordination of initiatives, which have arisen casually and in response to specific and localised demands. In addition, the forward-looking nature of some service provision by subsidised public institutions (like in Emilia Romagna) was absent, and this has limited the possibility to upgrade the whole industrial system, still largely specialised in traditional sectors. In fact, the regional industrial structure is still heavily specialised in traditional, simple-technology manufactures, with little success in upgrading to higher-tech sectors. It has been reported that Veneto has a much lower (-30%) expenditure in R&D per worker, and lower enrolments in secondary schools (as a percentage of the population), than the Italian average.

Only recently the Region is aiming at playing a role of ex-post co-ordination of the already existing activities and centres, acknowledging their existence and role, and planning its support to industrial development accordingly. Overall, a rather passive attitude towards BDS centres has prevailed. Following the national Law 317/1991 that defined the industrial district as a legal entity that could be supported through specific measures, in 1993 and 1997 early efforts were made to define and single out the industrial districts in the Region (Anastasia and Corò, 1993). In November 1999 the Region officially recognised 19 industrial districts that could in principle be beneficiary of specific support measures (D.C.R. 79/1999). However, since then no further policy has been activated.



## V. The survey

---

This section is based on the fieldwork carried out in Emilia Romagna, Lombardia and Veneto from January to June 2001. As explained in section 3, information was collected through a questionnaire survey covering a sample of 30 business development service centres and in-depth interviews with key informants, such as representatives of local and regional public bodies, business associations and chambers of commerce, researchers and practitioners on local development.

The sample, although not representative of the universe of BDS centres in the three regions, is built in order to provide a carefully balanced perspective of the reality. Therefore given the total number of centres located in the three regions (Table A-1), our sample selection, reflecting the geographical distribution of the centres, is the following: 12 centres are in Lombardia, 11 in Emilia Romagna and 7 in Veneto (Table 5.1). Furthermore, the sample composition takes into account the variety of institutions located in the three regions. Regarding sector-specialisation, 14 centres in the sample do not target any specific sector while the rest has a precise specialisation, mainly in traditional sectors such as footwear, wood, agro-industry and textiles, reflecting the importance of the different sectors in the three regional economic systems under investigation (see section 4), as well as specific niches of specialisation (e.g. biomedical, glasses, ceramics) (Table 5.2). Finally, centres located in industrial districts, defined according one of the possible frequently used criteria compose half of the sample (Table 5.3).<sup>10</sup>

---

<sup>10</sup> See section 4 for a brief discussion about the different criteria adopted by various Italian institutions to identify industrial districts.

The rest of this section presents the main findings of the questionnaire survey, analysing the origin of the centres, their supply of services, customers, turnover, internal structure, linkages with other institutions and self-evaluation efforts.

Table 5.1

GEOGRAPHICAL DISTRIBUTION OF THE SAMPLE		
	Number of centres	%
Emilia Romagna	11	36.7
Lombardia	12	40.0
Veneto	7	23.3
<b>Total</b>	<b>30</b>	<b>100.0</b>

Source: Authors' survey.

Table 5.2

#### SECTOR-SPECIALISATION OF THE SAMPLE

(Number of centres)

	Multi-sector	Foot-wear	Ceramics	Wood	Plastics	Metal-working	Bio-medical	Agro-industry	Glasses	Hosiery	Textile	Total
E. Romagna	4	1	1	1	1		1	1			1	11
Lombardia	6	1		2		1				1	1	12
Veneto	4	1						1	1			7
<b>Total</b>	<b>14</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>309</b>

Source: Authors' survey.

Table 5.3

#### LOCATION INSIDE OR OUTSIDE DISTRICTS

(Number)

	Inside districts	Outside districts
Emilia Romagna	5	6
Lombardia	7	5
Veneto	3	4
<b>Total</b>	<b>15</b>	<b>15</b>

Source: Authors' survey.

## A. The creation of BDS centres

In Italy, the business development service centres became popular as policy tools to improve SMEs innovation and competitiveness since the beginning of the 1980s. Accordingly, the majority of the sample service centres are relatively young: 47% were established during the '90s, 43% in the '80s and only 10% before 1979 (Table 5.4). Concerning the idea to set up a BDS Centre, in 43% of the centres there was a joint public-private initiative, while in 37% of the cases the initiative was fully public and in the remaining 20% fully private (Table 5.5). This finding is very important because it shows that the involvement of the private sector has been very noteworthy in a large number of centres. This confirms the prevalence of a bottom-up approach characterised by the collaboration between the local manufacturing system and the local public institutions in the creation of BDS centres. Finally, Table 5.6 shows how the different types of initiatives are distributed in the three regions.

Our sample presents a wide variety of ways in which the BDS centres were initially set up and some interesting cases are described in Box 1. Nonetheless, some common characteristics may be identified. Considering the joint public-private initiatives, the centres often originate from the collaboration between business associations and local or regional public institutions. Through their direct contact with firms, business associations identify their need to outsource particular services, and find support from public institutions. The latter justify such subsidy with the public good content of some of these services, and thereby jointly create BDS centres to satisfy these necessities.

Table 5.4

YEAR OF CREATION		
	Number of centres	%
Before 1979	3	10.0
1980-1989	13	43.3
After 1990	14	46.7
<b>Total</b>	<b>30</b>	<b>100.0</b>

Source: Authors' survey.

Table 5.5

MAIN INITIATIVE		
	Number of centres	%
Fully public	11	36.7
Fully private	6	20.0
Jointly public-private	13	43.3
<b>Total</b>	<b>30</b>	<b>100.0</b>

Source: Authors' survey.

Table 5.6

MAIN INITIATIVE PER REGION				
	Fully public	Jointly public-private	Fully private	Total
Emilia Romagna	4	5	2	11
Lombardia	4	6	2	12
Veneto	3	2	2	7
<b>Total</b>	<b>11</b>	<b>13</b>	<b>6</b>	<b>30</b>

Source: Authors' survey.

When the initiative comes from the public sector, it is sometimes part of a regional comprehensive policy of industrial development, such as in Emilia Romagna with the network of centres co-ordinated by Ervet (Bellini and Pasquini, 1998). Otherwise, service centres often originate from the initiative of municipalities or provincial bodies as policy tools of local development to revitalise declining industrial areas, or depressed regions. This is the case of ASNM aimed at the revitalisation of an old de-industrialised area in Milan, or of Secas, located in a mountain district. A further pattern of public centre creation is represented by Promo, an institution focused on spatial planning of economic activities, territorial marketing and promotion of new innovative services in the province of Modena.

Finally, in some cases the initiative is fully private: it often comes from local branches of sector-specific business associations, creating centres aimed at supplying services to firms located in specialised districts. This is for instance the case of Centro Veneto Calzaturiero created by Acrib, the business association of footwear firms located in the Brenta shoe district in Veneto. In other cases the initiative comes from business bodies at the national level and it is aimed at supplying sector-specific services. Finally, initiatives coming directly from enterprises are rare and in these cases centres are created by informal groups of firms looking for a shared solution to common problems (e.g. Consobiomed in Box 1).

**THREE EXAMPLES OF INITIATIVES TO CREATE A BDS CENTRE**

The initiative to start a BDS Centre may explain the later evolution of the Centre. However, the cases shown below reveal that a fully private or public initiative may be equally effective and successful. In all cases reviewed here the notable collaboration between private and public actors has been a crucial element.

**Private initiative: CONSOBIOMED**

The CONSOBIOMED consortium was founded by 9 firms of the biomedical district of Mirandola, with the support of the local business association, in 1990. The aim was to build an institution that could provide advice to local SMEs in the biomedical sector. Thus, it was a completely private initiative of the few firms, increasingly involving others. They are presently 22, with 28 clients. They supply services to small firms that couldn't have internal certifying laboratories due to their small dimension and had to share common structures and fixed costs. The client firms represent about 33% of the district's firms. All the participants paid a small initial fee (EUR 1,800) in order to constitute the social capital and start the activities on the basis of a survey.

As the biomedical production needs complying with several rules and sanitary controls, at the beginning the founders essentially intended to provide legal information and advice. Due to the scarce initial resources they could count on, Consobiomed started with a small office offered by the National Craftsman Association (CNA, Confederazione Nazionale degli Artigiani) and a part time technical person in charge. Her task (at the beginning a reference point for the Ministry of Health) was to give advice to the associated firms and to help them adjust their technologies and their final products to fulfil the sanitary requirements for the certification control.

Since 1998 the centre and its members are considering to change its mandate and shift towards export and commercial services (market researches, trade fairs, export assistance and promotion activities). Before this change all their budget (EUR275,826) was gained only through the sale of services; in 2000, for the first time, they obtained a financing from the Foreign Trade Ministry amounting 20% of their total budget.

**Mixed public-private initiative: Centuria**

In 1994 a group of local firms together with local institutions established the Scientific and Technological Park of Centuria to serve a sector that is particularly strong in the area, the agro-industry. In spite of its name, the Park is an actual service centre. On the one hand the local large firms wanted a centre to which externalise some of their activities, such as the establishment of networks, the creation of synergies in the network, the diffusion of knowledge, information, commercial opportunities, partnership, etc. On the other hand the local public institutions (Municipality of Cesena and Province of Forlì – Cesena) wanted to revitalise all the sector filière, including SMEs in complementary sectors.

The centre was founded after two years of discussion between the public and private sector, and after consultations with external advisors and experts. Initially, it was proposed to create a physical production site involving Universities, research centres and firms. However, these conditions and agents were already present in the area, and the main problem was actually to reinforce them and their linkages, and offer essential services to the firms. The Centre has undergone several changes in the nature of its activities over time. The first activity of the centre was to create synergies among local agents and institutions, and develop a system of relations among them. In a second stage they provided non-customised information on markets, technologies, patents. In a third stage they started selling more individual services directly to the firms, not necessarily to its members, such as management of projects, market surveys, technology transfer, training, development of joint ventures, sale and acquisition of know-how and patents. Presently they have more or less 50 clients, and collaborate with international BDSC and technological parks. While during the first phases they counted mainly on the associative fees (70%) and public contribution (EUR210,000 of total budget), presently the direct sale of their services contribute for 49% of the budget (EUR500,000).

## Box 1 (conclusion)

**Public initiative: CSQA (Certificazione Qualità Agroalimentare) (Agro-industrial Quality Certification)**

CSQA has a long history, that traces back to the Dairy and Agro-industrial Biotechnology Institute (CDIAB) (Istituto Lattiero Caseario e di Biotecnologie Agroalimentari), founded in 1926 as a public body to supply technical and information services to the cheese and milk sector, especially strong in Veneto and in the area around Thiene. Before 1926 it was a vocational school for dairy workers.

In 1991 the management of CDIAB considered useful to add some services related to the enterprise certification, due to the new binding requirements of quality and standardisation for export activities. Some of the locally based large enterprises were starting to go to France to buy the certification service. Thus, CDIAB decided to start its own certifying laboratory in order to offer the service also to the smaller firms. Only in 1997 it decided to constitute a new independent centre, CSQA, with the specific mandate to follow up this activity. This centre still closely collaborates with CDIAB, with growing flexibility, and it has widened its range of activities, providing certification services along the whole production chain, including machinery, tourism and environmental management. Now CSQA employs 11 workers (8 technicians), has 500 clients (mainly SMEs), from all over Italy. The yearly budget amounts to EUR1.9 million only from the sale of their services, even if their capital is 94% public.

In sum, the three experiences seem to be positive, even if their inception was quite different. Their different origins do not appear to affect their later performance. In all cases we they have chosen an approach that follows and collaborates with enterprises very closely.

**Sources:** Interviews with Centres' Directors and staff, Centre leaflets, and web sites; [www.consobiomed.it](http://www.consobiomed.it), [www.pstcenturia.com](http://www.pstcenturia.com), [www.csqa.it](http://www.csqa.it).

An interesting finding is that the private sector was always involved in the creation of sector-specific centres, with only one exception. On the contrary, multi-sector centres were mainly created by public initiative and in four cases there was a joint public-private initiative (Table 5.7). This result is corroborated by additional statistical evidence,<sup>11</sup> confirming the stronger private involvement in the creation of sector-specialised institutions.

Table 5.7  
MAIN INITIATIVE PER SECTOR-SPECIFICITY OF CENTRES

	Non sector-specialised centres	Sector-specialised centres
Fully public	10 71.4 %	1 6.3 %
Jointly public-private	4 28.6 %	9 56.3 %
Fully private		6 37.5 %
<b>Total</b>	<b>14</b> <b>100.0 %</b>	<b>16</b> <b>100.0 %</b>

Source: Authors' survey.

Perhaps this is explained by the clearer vision of their needs that firms belonging to one sector have, and the realisation that they share similar needs and look for sector-specialised services. Furthermore in Italy and particularly in the three regions under investigation, sector-specialised industrial districts are very diffused and some of their well known characteristics such as social

<sup>11</sup> The dummy variable indicating sector-specialised centres is statistically significantly correlated with the origin of the initial initiative. The variable initial initiative is based on a qualitative ordering from fully public to jointly public-private and finally to fully private. Correlation coefficients are presented in Table A-2 in Appendix.

cohesion, intensity of interactions among firms and the important role played by the local business associations facilitate the involvement of the private sector in the setting up of service centres.

Considering the legal form, all BDS centres in our sample are non-profit companies and the most frequent forms are the consortium partnership (*società consortile*), the limited liability company and the joint-stock company. Furthermore with regard to equity composition, in half of the sample the majority of capital is owned by public bodies such as municipalities, provincial and regional governments. Business associations, private firms, banks, co-operatives and consortia of enterprises are among the private actors owning most frequently part of the equity.

Table 5.8 shows that there is a tendency of equity composition to reflect the nature of the original initiative: 82% of the centres fully created by public initiative maintain a majority of public sector equity, and similarly for the centres created with private sector initiative. Moreover, in sector-specialised centres the majority of equities are in the hands of private actors while in multi-sector centres the majority is public (Table 5.9), confirming the greatest involvement of the private sector in sector-specialised centres.<sup>12</sup> Finally, Table 5.10 illustrates the equity distribution of the centres selected in the three regions under investigation, showing that according to our sample in Emilia Romagna 73% of the centres have a majority of privately owned equities while in Veneto and Lombardia the centres with public sector majority dominate. In Emilia Romagna, the predominance of centres with private sector majority is the result of the recent restructuring undergoing in the regional industrial policy.

Table 5.8

EQUITY DISTRIBUTION PER MAIN INITIATIVE			
	Fully public	Jointly public-private	Fully private
Majority of equity owned by private actors	2 18.2 %	8 61.5 %	5 83.3 %
Majority of equity owned by public actors	9 81.8 %	5 38.5 %	1 16.7 %
<b>Total</b>	<b>11</b> <b>100.0 %</b>	<b>13</b> <b>100.0 %</b>	<b>6</b> <b>100.0 %</b>

Table 5.9

EQUITY DISTRIBUTION PER TYPE OF CENTRES		
	Sector-specialised centres	Non sector-specialised centres
Majority of equity owned by private actors	11 68.8 %	4 28.6 %
Majority of equity owned by public actors	5 31.2 %	10 71.4 %
<b>Total</b>	<b>16</b> <b>100.0 %</b>	<b>14</b> <b>100.0 %</b>

Table 5.10

EQUITY DISTRIBUTION PER REGION			
	Emilia Romagna	Lombardia	Veneto
Majority of equity owned by private actors	8 72.7 %	5 41.7 %	2 28.6 %
Majority of equity owned by public actors	3 27.3 %	7 58.3 %	5 71.4 %
<b>Total</b>	<b>11</b> <b>100.0 %</b>	<b>12</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>

Source: Authors' survey.

<sup>12</sup> The robustness of this finding is strengthened by the statistical significance of the correlation coefficients presented in Table A-2: -0.548 between the variables —main initiative and equities owned by public actors— and -0.451 between sector-specialisation and equities owned by public actors (both at 1% level of significance).



From what it has been said so far, a few interesting conclusions can be drawn: first, the involvement of the private sector, by means of business associations and/or individual enterprises, has been significant in the creation of BDS centres in all the three regions analysed. This is particularly important to be stressed in Emilia Romagna, where during the last two decades the role played by the public sector to promote the development of a regional network of BDS centres has been crucial. Nevertheless, in this region there was an important involvement of the private sector also in the establishment of the centres.

Second, the private sector has been more involved in the creation of sector-specialised centres than in wider oriented institutions, more often created by the public sector as part of an industrial strategy of local development, often in depressed areas and regions.

## B. The supply of services

Given that one of our selection criteria to build the sample was to include centres providing some technological services, this is likely to produce overestimation of these types of services in the sample.<sup>13</sup> Nevertheless, one of the findings of the survey is that BDS centres generally supply a variety of services, belonging to different categories. In the questionnaire, in accordance with other surveys (Donors' Committee, 1997), five classes of services are identified:

1. design, including information about fashion trends and services related with computer aided design (CAD) technology;
2. marketing services such as market research, export promotion and organisation of trade fairs;
3. technological services such information about new technologies, R&D projects, development and implementation of hardware and software solutions, laboratory tests, quality certification and information on environmental regulations;
4. training for managers, technicians, technical engineers and trainers;
5. business management such as investment planning, legal and bookkeeping assistance and patent registration.

According to our sample, the two most common areas of services are technology and training, delivered by 90 % of the centres. There appears to be a substantial variety in the provision of services: all the centres interviewed deliver services at least in two of the classes identified in the questionnaire, and 80 per cent offer services in at least three classes (Table 5.11).

**Table 5.11**  
**CLASSES OF SERVICES**

Number of classes supplied by each centre	Number of centres	%
2	6	20.0
3	11	36.7
4	9	30.0
5	3	10.0
Missing	1	3.3
<b>Total</b>	<b>29</b>	<b>96.7</b>

Source: Authors' survey.

Considering a finer classification that the five classes of services considered above, 83% of the centres supply at least 6 different services and among them, 30% more than 10 services (Table 5.12), suggesting some degree of scale and scope economies in service provision. The most common services supplied are (Table 5.13).

<sup>13</sup> There are only three centres which do not supply technological services: two of them are centres of territorial development, namely Promo in Modena (Emilia Romagna) and Secas in a mountain community in Lombardia and one is a centre specialised in training, located in Veneto and created during the Marshall Plan after the second World War (CPV).

- in the technological area: the supply of information; the participation to applied research projects and the development of hardware and software technological solutions; laboratory tests and quality certification;
- in the training area: managerial and technical training.

**Table 5.12**  
**NUMBER OF SERVICES**

Number of services	Number of centres	%
≤ 6	4	13.3
from 6 to 10	16	53.3
> 10	9	30.0
Missing	1	3.3

Source: Authors' survey.

**Table 5.13**  
**NUMBER OF CENTRES SUPPLYING EACH SERVICE<sup>a</sup>**

Classes	No.	%	Services	N°	%
<b>a. Design</b>	12	40.0	1. Information on new trends in design	8	26.6
			2. CAD/CAM	6	20.0
			3. Other	5	16.6
<b>b. Marketing</b>	15	50.0	1. Market research	8	26.6
			2. Export assistance	5	16.6
			3. Trade fair organisation and assistance	7	23.3
			4. Product promotion	8	26.6
			5. Other	8	26.6
<b>c. Technology and Production</b>	27	90.0	1. Information on new technologies	17	56.6
			2. Applied research and development of new technologies (hw and sw)	15	51.7
			3. Selection of technology suppliers	6	20.0
			4. Laboratory tests on components and products	16	53.3
			5. Machine sharing	4	13.3
			6. Quality certification	15	50.0
			7. Environmental regulation	9	30.0
			8. Other	10	33.3
<b>d. Training</b>	27	90.0	1. Managerial training	17	56.6
			2. Technical training	21	70.0
			3. Training of engineers	8	26.6
			4. Training of trainers	10	33.3
			5. Other	12	40.0
<b>e. Business Management</b>	15	50.0	1. Investment plans	8	26.6
			2. Legal assistance	3	10.0
			3. Book-keeping	2	6.6
			4. Financial assistance	11	36.6
			5. Database on customers' solvency	1	3.3
			6. Intellectual property rights	5	16.6
			7. Management of the supply chain	5	16.6
			8. Other	1	3.3
<b>f. Other services</b>	12	40.0		12	41.4

Source: Authors' survey.

<sup>a</sup> 1 centre did not answer this question. Therefore the total number of observations is 29.

Some caution should be used in interpreting the findings presented in Table 5.13, particularly with regard to technological services. According to our survey, more than 50% of the centres supply services in the area of R&D, and development and implementation of technological solutions, and this result may be interpreted as contrasting other studies, such as the survey undertaken in Lombardia by Cusmano *et al.* (2000) discussed in section 2. However, this is only apparent, as if we also consider the information on the human resources devoted to different services, then technology services of a routinely and simple nature like laboratory tests and quality certification assume a predominant role in most of the cases and, as discussed more extensively later, only three centres in our sample out 30 are mainly committed to the supply of advanced technological services.

Centres were also asked for their most profitable area of services and, as shown in Table 5.14, technological services are indicated as the most profitable by 43% of the centres and training by 20% of them. Among technological services, the majority as the most profitable mentions laboratory tests and quality certification. With respect to training, its profitability is mostly due to the large availability of EU funds in this field.

**Table 5.14**  
**THE MOST PROFITABLE CLASS OF SERVICES**

	Number of centres	%
Design	2	6.7
Marketing	3	10.0
Technology	13	43.3
Training	6	20.0
Business management	2	6.7
Other	1	3.3
Missing	3	10.0
<b>Total</b>	<b>27</b>	<b>90.0</b>

Source: Authors' survey.

Accordingly, we classify the 30 centres of our sample in 5 categories with the following characteristics (Table 5.15):<sup>14</sup>

- 9 centres (30% of the sample) are specialised in laboratory tests and quality certification. As shown in Table A-3 (in Appendix), 5 of them devote at least 70% of their human resources to supply laboratory tests and quality certification. For the remaining 4 centres classified in this category the exact amount of human resources is not available but nonetheless they are specialised in these services, which they regard as the most profitable;
- 10 centres (33% of the sample) are aimed at territorial development and are located in areas that are not sector specialised (Table 5.15). Furthermore, all of these centres supply a variety of services;
- 7 centres (23% of the sample) are aimed at the development of industrial districts with a clear sector specialisation (Table 5.15). Also these centres are not specialised in any specific service but supply a variety of them;
- 3 centres (10% of the sample) are specialised in innovative technological services. These centres devote at least 65% of their human resources to provide this type of services.
- Finally, there is only one centre specialised in training and devoting to this activity 70% of its human resources.

Case studies on Centres belonging to each specific category are presented in Boxes 2 to 6.

**Table 5.15**  
**MAIN VOCATION OF CENTRES AND PER SECTOR SPECIALISATION**  
*(Number of centres and percentages)*

	Number of centres
Laboratory tests and quality certification	9
Territorial development	10
District development	7
Innovative technological services	3
Training	1
<b>Total</b>	<b>30</b>

Source: Authors' survey.

<sup>14</sup> In Appendix, Table A-3 shows how each centre is classified in detail.

**CERTIFICATION CENTRE: CERMET (*CERTIFICAZIONE E RICERCA PER LA QUALITÀ*)**

CERMET was founded in 1985, after 7 years of discussions among industrialists' associations, CNA (Craftsmen and Small Business National Association) and the Institute of Metallurgy of the University of Bologna. The latter was receiving too many requests of certification from the local firms and could not fulfil this demand. In this period the first European norms for the certification had been issued and the firms were beginning to understand the importance of this activity, and CERMET became the first Italian laboratory to be accredited in 1989 by SINAL for products and material testing. Presently the centre is owned partly by the public sector (35% ERVET and the Ministry of Industry), business associations (60% API - Association of the Small firms - and CNA), and some firms (5%).

After a period of activity the Centre decided to make a substantial investment effort to buy new equipment to improve efficiency and thereby gain the confidence of the productive sector. Afterwards they decided to become an independent centre and reduced the public sector share of the Centre's equity.<sup>a</sup> Although initially aiming mainly at certification of the metalworking sector, CERMET later expanded its activities, toward a wide range of sectors. Thus, it also provides testing laboratory services (20%), training in quality management and design harmonisation. The success of the Centre is confirmed by its new opening of two branches, one in Torino (in 1998) and one in Rome (in 1995), where it provides only certification. SMEs still represent 85% of its clients, about 4,000 firms in 2000, mainly based in the Region (90%). Over these years, revenues have increased remarkably. In 1997 they amounted to EUR 3.6 million (with direct sales of services at 84% of total revenues) and in 2000 they reached EUR 7 million, (with 90% of direct sales).

Public sector financing (the Region), constant in nominal terms but in fact decreasing as a percentage of the total, mainly finance research activities, normally conducted in collaborations with the Universities and other public research centres. CERMET also collaborates with other regional BDSC (CITER, CESMA, DEMOCENTER) for research, and with international BDSC for joint certification. It presently employs 70 people (43 technicians and 10 engineers) with 70 additional quasi-permanent advisors (14 technicians and 56 engineers). Almost all of them are graduated, and enjoy substantial internal training.

Perhaps this success story mirrors other examples in other countries in this emerging sector of business services. The Centre initially rightly benefited from a public financing and usefully diffused the concept of quality management and certification among enterprises. Now that it has turned into a successful consulting firm, competing on a very competitive market, the public subsidy rightly goes into research for innovative services and is gained only by participating to open tenders.

---

**Sources:** interview with the director, material provided by the centre, web site: [www.cermet.it](http://www.cermet.it)

<sup>a</sup> The director interviewed insisted a lot on the need to be independent from the public body, in order to have the possibility to be impartial and give a good image to the firms that are never too confident on the public intervention.

## BOX 3

## RESEARCH AND INNOVATION CENTRE: DEMOCENTER

Democenter was founded by the Region Emilia Romagna through ERVET in 1993, with the aim of establishing a centre to diffuse the knowledge and use of the technologies of factory automation among SMEs, mainly in the metalworking sector, in automation systems, technology and telecom sectors. Presently public bodies (ERVET and ProMO), business associations and private firms own the centre: each group holds one third of equity. The initial idea was to build a computer-based hangar where to install all the automation machinery and shown it to the enterprises to foster their learning for free and diffuse innovation thereby. Then it was decided to develop temporary demonstrative activities, training, research and laboratories.

Presently almost a half of the services provided are in the area of technology: monitoring for new process innovations in the market, R&D projects, laboratory testing, pilot-experimentation of innovative activities and practical demonstration of complex (and computer-driven) producing systems. Training in technology and production accounts for 30% of total services, and the rest includes industrial design, CAD/CAM and techniques of fast production (the capability to build rapidly departing from CAD design).

Training and industrial design services are most easily sold, and account for about 50% of the Centre's revenues. All the other services are largely subsidised (70% in 1993) by ERVET and PROMO. Since its inception (1993) the Centre's revenues have increased remarkably, from EUR175,000 to EUR2.85 million (2000). The justification for public subsidies seems to be due to long term returns of the services, and to their highly innovative nature. According to the director, the centre tries to stay ahead the enterprises, and anticipate their needs.

The choice to provide services mainly to medium-sized firms (50%) is partly purposeful and strategic. The Director believes that medium-sized firms better diffuse the knowledge to their smaller suppliers and their larger clients, creating a cascade effect. In 2000 the centre had about 60 client enterprises for the applied research activities, 200 for the laboratory, 1000 for the demonstrations and 200 (1200 people) for training. Most of its clients come from within Emilia Romagna (77%).

Democenter employs 39 permanent employees or consultants (6 technicians, 8 engineers, 10 computer scientists, and 3 university lecturers). Most of them hold graduate degrees and are regularly trained. The centre also continuously collaborates with other institutions such as: Universities and public research centres with which they share laboratories and machines, and they implement together applied research and training; local schools and business associations, mainly for training activities; other regional (CERMET, CESMA, Laboratorio d'Impresa, R&S Engineering, CITER, ProMo and Aster), national (CSM) and international BDSC. Interestingly, the Centre also has a branch in Belo Horizonte, Brazil. This company has developed with Brazilian funds, and mainly operates to facilitate Italian firms' relations with Latin America.

The private-public ownership, and the ensuing effective partnership, have favoured the research and innovation activities that are within the mandate of this Centre. On the one hand, the public sector has supported innovation policies with long run and uncertain returns. On the other hand, the private sector has helped by directing efforts to its actual priority needs. The flexibility and dynamism in offering a wide range of services has been another remarkable feature of the Centre.

**Sources:** interview with the director, material provided by the centre, web site: [www.democenter.it](http://www.democenter.it)

## BOX 4

**DISTRICT CENTRE: CLAC (WOOD AND FURNITURE CENTRE, CANTÙ)**

CLAC was founded in 1992 upon the request of local institutions and the Chamber of Commerce to the Region Lombardia. In fact the area around Como and Cantù hosts a furniture district with 1881 and 550 firms respectively (Source: ISTAT Production Census). Following a regional law, the centre was designed with the contribution of the business associations, and with the mandate to offer design services. 53% by several business associations.

CLAC has increasingly diversified its services over the years. Thus, while design, monitoring of design changes, CAD services and the preparation of catalogues and CD-ROMs still represent 30% of the total, now marketing accounts for 40% (market research, the organisation of trade fairs in Italy and abroad, the promotion of the Italian design world-wide and scholarships and internships for students and professionals). The remaining resources of the centre are devoted to training activities (25%) and technology services (15%) such as software and innovation monitoring.

Some services are more remunerative for the Centre than others. Sale of services ranges between 30 and 50% of total revenues, depending on the years. Since 1998 the total budget of the centre has increased from EUR 1.5 million to EUR 3.5 million. In 2000 CLAC had 400 client firms, mostly located in the region Lombardia (80%). In order to keep an up to date service the centre regularly develops a customer satisfaction analysis on its services, with enquiries and questionnaires to the firms. This activity, held in conjunction with other self-evaluations, permits to the centre to revise their services and the way to organise and offer them. The centre employs directly 7 workers and 8 permanent consultants, with 3 computer scientists.

The district nature of the Centre is testified by the continuous collaboration with a wealth of local institutions. They are also related with the Polytechnic for research activities and with local schools on specific projects. However, they appear to be open also to partnerships with other regional and international BDSC. Belonging to a district helps them to improve and update their services consistently with what is actually needed by the district firms.

**Sources:** Interview with the director, material provided by the centre, web site: [www.clac00.it](http://www.clac00.it)

## BOX 5

**TRAINING CENTRE: G. RUMOR FOUNDATION–CPV  
(CENTRE FOR PRODUCTIVITY VENETO)**

In Italy, the productivity centres were temporary BDSC created after the second WW as a part of the Marshall plan for less developed regions. Thus, CPV was created in 1955 by the local Chamber of Commerce and became a Foundation in 1994. At the end of the Marshall plan, the Chamber, due to the positive results of the experience, decided to maintain and finance CPV with its own resources.

At the beginning an American development methodology of organisation was used to serve some firms: the organisers were providing training on marketing, industrial reorganisation, and accounting, through the Chamber of Commerce under the advice of US experts. After a while the Chamber decided to increase the number of enterprises involved, mainly in metalworking, and start some "study groups": the entrepreneurs could meet systematically to discuss their problems and understand what the sector needed in terms of training and information. They would not share their core secrets with the competitors, but rather analyse common problems, and refer them to the CPV, at that time still financed by the Marshall plan, and to intervene and provide a solution.

Presently the "study groups" still meet and remain one of the central activities of the centre. The main means to discover the needs of the sectors. Several groups exist on different issues and sectors, and any enterprise can apply and become a member of one study group for a fixed fee. The study groups also sit in the controlling body of the Centre, where they can influence the Centre's strategies and policies. Training still accounts for two thirds of the Centre's activities, together with financial, legal and accounting advice, support to young entrepreneurs, patent information and others. CPV has also experimented distance training for some of its study groups, and plans to continue.

Most services are offered at low (subsidised) prices, being training and patents information sold at full cost. In fact, only one third of the Centre revenues come from direct sales, while another third comes from EU projects and the last one from the Chamber of Commerce for specific projects.

**Box 5 (conclusion)**

The latter has substantially diminished its relevance during the last ten years. The total budget of the centre has increased from EUR 1.25 million in 1990 to EUR 3 million in 2001. In 2000 they trained 11,368 workers, during 2,470 training days, and they provided 531 advices through their "technology window". Eighty per cent of the firms served are small and medium, localised in Veneto, mostly (65%) in the province of Vicenza. CPV employs 20 workers (11 trainers, 1 director, 1 manager and 1 engineer). It also collaborates with several institutions, including the University and local technical schools.

The methodology developed around the "study groups" fosters a continuous interaction between the Centre and the firms and among the firms themselves, and this improves the focus of the services offered. As such, this experience may also be useful for developing countries, where inter-firm horizontal and vertical linkages are often scarce or absent.

**Source:** interview with the Director, material provided by the Centre, web site: [www.cpv.vi.it](http://www.cpv.vi.it)

**BOX 6****TERRITORIAL DEVELOPMENT CENTRE: PROMO**

Promo was set up in 1987 mainly through a public sector initiative to promote the development of the province of Modena, in accordance with private business association and banks. The centre languished until 1995, when a new director was appointed. At the beginning of the new phase (1995) the centre realised a feasibility study to understand the needs of local productive actors and changed its objectives and strategy. Presently ProMo addresses mainly the sectors that are not already supported from other existing BDS Centres. In a way, the centre is not a real BDSC because it doesn't directly offer business services to enterprises, it just discover them. It defines itself a centre of area, which is a centre that aims at the development of the locality, and not of specific sectors or enterprises. This means that the activity of the centre can change continuously over time, such as the sector served. Recently the main aim of the centre has been to co-ordinate the objectives of different local centres, institutions, consortiums, and development areas, in order to establish synergies and to make each intervention more efficient. Thereby, it tries to understand the scope of the different institutions and use their efforts and resources.

The methodology that ProMo adopts is the following. First, it tries to identify the necessities of specific enterprises or of an entire sector in the locality with formal or mainly informal channels of information. It often relies on studies already made by other, more specialised, institutions. Once the problem has been identified, ProMo studies different ways to solve these problems, and experiments with them. Once their interventions begin to have some results, the centre commits it to another centre already existent, or asks public institutions and private bodies for the creation of a new centre. Usually the centre to which they commit the services is Democenter (ProMo is a partner of Democenter, see Box 3). Moreover, ProMo normally studies the financial sustainability of the project.

Among their projects, a success story is, for example, the set up of a virtual agency searching and selecting technological information available on the web relevant to mechanical and electronic firms. After a trial period, the service is now sold to a number of subscribed firms by Democenter.

The director of the centre has substantial autonomy of decision, and does depend only formally on the main partners, which are the local institutions, with which ProMo intensively collaborates. ProMo's approach that has been repeatedly emphasised by the Director during the field interviews first looks for the problem to solve, and design a consistent project. Only later it searches for financing, whereas sometimes the availability of public (Regional or EU) funds diverts Service Centres from their central objective. Admittedly however, such approach is also made possible by the stability of the public financing that ProMo receives every year and that amounts to 50% of its resources. Anyway since 1997 ProMo has doubled its revenues, from a budget of EUR 350,000 in 1997 to EUR 620,000 in 2000, of which a very small percentage is gained through direct sale of services.

If we try to draw a balance, the experience seems to be positive. The activities developed, and their impact, appear remarkable in comparison with the resources available. Perhaps a possible weakness is the excessive reliance on only one imaginative Director, with a total staff of only four people.

**Sources:** Interview with the Director, material provided by the centre, [www.promonline.it](http://www.promonline.it)

Consistently with expectations, centres providing laboratory services and quality certification and centres aimed at district development are very sector-specific and the opposite applies to BDS centres targeting more broadly territorial development (Table 5.15).

Table 5.16 shows the regional distribution of our sample according to the different vocations of the centres. Furthermore, Tables 5.17, 5.18 and 5.19 identify some stylised facts characterising the different categories of the centres:

- centres supplying innovative technological services are all younger and have been established in the 1990s and always with some active participation of the public sector, but with larger equity shares held by the private sector;
- a prevalence of public initiatives characterises the creation of centres for territorial development, whose majority of equity is owned by public institutions;
- district centres have been established by the private sector alone or in collaboration with some public bodies and in all, but one, the majority of equities are owned by private actors.

This evidence confirms the expectation of a wide variety of BDS centres, each with an original —sometimes idiosyncratic mandate— that makes any generalisation very problematic.

**Table 5.16**  
**MAIN VOCATION OF CENTRES PER REGION**  
(Number of centres)

	Emilia Romagna	Lombardia	Veneto	Total
Laboratory tests and quality certification	2 22.2 %	5 55.6 %	2 22.2 %	9 100.0 %
Territorial development	2 20.0 %	6 60.0 %	2 20.0 %	10 100.0 %
District development	5 71.4 %	1 14.3 %	1 14.3 %	7 100.0 %
Innovative technological services	2 66.7 %	0	1 33.3 %	3 100.0 %
Training			1 100 %	1 100 %

**Table 5.17**  
**MAIN VOCATION OF CENTRES PER YEAR OF CREATION**  
(Number of centres and percentages)

	Before '79	1980-1989	After '90	Total
Laboratory tests and quality certification	2 22.2 %	4 44.4 %	3 33.3 %	9 100.0 %
Territorial development	0	5 50.0 %	5 50.0 %	10 100.0 %
District development	0	4 57.1 %	3 42.9 %	7 100.0 %
Innovative technological services	0	0	3 100.0 %	3 100.0 %
Training	1 100.0 %	0	0	1 100.0 %

A major issue often detected in the literature is the mismatch between services supplied and firms' demand. This problem is especially prominent in countries at lower levels of development.<sup>15</sup> Thus, a further issue investigated in the questionnaire is how the centres identify firms' necessities and consequently define their supply of services. A first important finding is that the majority of centres try continuously to adapt their supply to the evolving needs of their customer firms. In order to monitor these needs, the most common ways are frequent informal contacts with customers, and the organisation of meetings with them, as well as frequent interactions with business associations (Table 5.20).

<sup>15</sup> On Africa see Lall and Pietrobelli (2002).



**Table 5.18**  
**MAIN VOCATION OF CENTRES PER MAIN INITIATIVE**

*(Number of centres and percentages)*

	Fully public	Fully private	Jointly public-private	Total
Laboratory tests and quality certification	2 22.2 %	3 33.3 %	4 44.4 %	9 100.0 %
Territorial development	7 70.0 %	0	3 30.0 %	10 100.0 %
District development	0	3 42.9 %	4 57.1 %	7 100.0 %
Innovative technological services	1 33.3 %	0	2 66.7 %	3 100.0 %
Training	1 100.0 %	0	0	1 100.0 %

**Table 5.19**  
**MAIN VOCATION OF CENTRES PER EQUITY DISTRIBUTION**

*(Number of centres and percentages)*

	Majority of equity owned by public actors	Majority of equity owned by private actors	Total
Laboratory tests and quality certification	4 44.4 %	5 55.6 %	9 100.0 %
Territorial development	8 80.0 %	2 20.0 %	10 100.0 %
District development	1 14.3 %	6 85.7 %	7 100.0 %
Innovative technological services	1 33.3 %	2 66.7 %	3 100.0 %
Training	1 100.0 %	0	1 100.0 %

Source: Authors' survey.

**Table 5.20**  
**WAYS TO IDENTIFY CUSTOMERS' NEEDS**

	Number of centres	% of total sample
Organised meetings	23	76.7
Informal contacts	26	86.6
Contacts with business associations	20	66.7
Surveys	15	50.0
Monitoring of sector evolution	19	63.4

Source: Authors' survey.

All the centres interviewed also maintain a web site providing information about their activities and in 63 % of the cases firms can subscribe and receive on-line services such as training courses or workshops. However, today only 23% of the sample BDS Centres provides more sophisticated on-line services to subscribers, reflecting their scarcely innovative nature.

A crucial issue, especially for policy design, is how the Centres should set the prices charged for their services. This issue has long been debated, with those in favour of pricing services at their real costs as a means to ensure a better, more efficient use of resources and those supporting the subsidisation of services in order to induce their demand. Of course, the answer partly depends on the type of services: some services are demanded by firms which are available to pay their full cost; other services, such as innovative technological services, have a public good content and in this case subsidies are justified by market failure.

In our sample, in 80% of the cases prices are fixed on the basis of costs and in 47% on the basis of prices charged by competing institutions, suggesting that some degree of competition is

beginning to appear in an activity traditionally characterised only by supply-side consideration (Table 5.21). Table 5.22 shows that in some cases (37% of the centres) firms may pay a subscription to the centre to obtain a discount on services. On the contrary, price discrimination according to firm size is not yet a very common practice.

Table 5.21

**HOW BDS CENTRES SET THEIR PRICES**

On the basis of:	Number of centres	% of total sample
Costs	24	80.0
Competition of other centres	14	46.6
Availability of subsidies	9	30.0
Firms' availability to pay	7	23.3

Table 5.22

**PRICE DISCRIMINATION**

On the basis of:	Number of centres	% of total sample
Size of firms	5	16.6
Subscription to the centre	11	36.6
Membership to business associations	6	20.0

Moreover, a large majority (60%) of the centres interviewed agree that sometimes services need to be promoted subsidising their price. The two main reasons for subsidising services are the short-run vision of firms that would not see the advantages of the services provided and therefore would not be prepared to pay (according to 40% of the sample), and the small size of the majority of their customers that could not pay anyway (37% of centres) (Table 5.23).

Table 5.23

**REASONS FOR PRICE SUBSIDISATION IN THE CENTRES' PERCEPTION**

	No. of centres	% of total sample
Short run vision of firms	12	40.0
Firms not aware of their needs	5	16.6
Firms not aware of value of services	3	10.0
Free riding	4	13.3
Size of customers	11	36.6
Services need to be promoted	18	60.0
Lack of financial means to pay services	9	30.0

Source: Authors' survey.

Certification of the BDS Centres is not a common practice yet, except for centres specialised in laboratory tests, because law often requires certification (Table 5.24). However, many centres acknowledged that reputation matters more than certification in their business. An interesting result is presented in Table 5.25 showing that centres with more than 50% of their turnover deriving from sales are more keen to obtaining future certification, meaning that market demand and competition is perhaps beginning to bite, but few centres have full realisation of this market trend.

Table 5.24

**CENTRES' CERTIFICATION**

(Per main vocation)

	Laboratory test and quality certifications	Territorial development	District development	Innovative technological services	Training
Yes	9 100.0 %	1 10.0 %	1 14.3 %	1 33.3 %	
No		9 90.0 %	6 85.7 %	2 66.7 %	1 100.0 %
<b>Total</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

**Table 5.25**  
**PERCEIVED NEED OF FUTURE CERTIFICATION OF THE CENTRE**

*(Per turnover composition)*

	Yes	No	Total
Sale of services ≥ 50% of total revenue	11 64.7 %	6 35.3 %	17 100.0 %
Sale of services < 50% of total revenue	5 50.0 %	5 50.0 %	10 100.0 %

Source: Authors' survey.

To summarise our main findings on the supply of services, the following issues may be stressed:

- the centres investigated supply a variety of services in several areas confirming that they are a very heterogeneous phenomenon;
- among the variety of services supplied, laboratory tests and quality certification are the most profitable;
- the main vocation of the centres under study allow an interesting 5 fold categorisation: centres for laboratory tests and quality certification, non sector-specialised centres for territorial development, sector-specialised centres aimed at the development of specific industrial districts, research centres supplying innovative technological services and finally one remaining centre focused mainly on training services. This categorisation is used in the rest of this section in order to identify stylised facts characterising homogeneous groups of centres;
- a public initiative and a majority of public capital characterise centres aimed at territorial development; instead, the private sector is more involved in the creation of sector-specific centres, and especially in centres located in industrial districts;
- as it could be expected, there is a wide agreement among the centres interviewed on the need to subsidise the price of some services in order to stimulate firms' demand.

## C. The clients

The number of clients of the centres interviewed varies a great deal: 40% of them has 300 or less client firms, 27% between 301 and 999 clients, and 20% 1000 or more customers (Table 5.26). In Tables 5.26 and 5.27 the main specialisation of the BDS centres is considered in order to find an explanation about these large differences. Thus, in most cases laboratory and quality certification centres have more than 300 clients with an average of 1,155 customers, while the large majority of district centres and centres specialised in innovative technological services have less than 300 clients, with an average of 200-odd customers. Finally, centres aimed at territorial development have an average of 710 customers.

**Table 5.26**  
**NUMBER OF CUSTOMERS**  
*(Total and per main vocation<sup>a</sup> of centres)*

	All centres No. of centres and %	Laboratory tests and quality certification	Territorial development	District development	Innovative technological services
Less than 300	12 40.0	1 8.3 %	3 25.0 %	6 50.0 %	2 16.7 %
301-999	8 26.7	5 62.5 %	1 12.5 %	1 12.5 %	1 12.5 %
More than 1000	6 20.0	3 50.0 %	3 50.0 %		

Source: Authors' survey.

<sup>a</sup> For the training centre the number of customers is not comparable with the rest of the sample because it is referred to the number of people attending training courses and not to enterprises as in the remaining categories of centres. There are 4 missing values (4 among territorial development centres).

Table 5.27

**MAIN VOCATION OF CENTRES: MEAN, MINIMUM AND  
MAXIMUM NUMBER OF CUSTOMERS**

	Laboratory tests and quality certifications	Territorial development	District development	Innovative technological services
Mean	1 155.33	710.43	213.29	223.33
Minimum	300.00	120.00	28.00	80.00
Maximum	4 000.00	1 667.00	400.00	460.00

Source: Authors' survey.

These differences may be explained by the nature of the centres and the services they offer. Thus, centres offering laboratory tests and quality certification offer relatively standardised services to a very large number of customers, whereas district centres and technological innovation centres supply more customised (personalised) (*ad hoc*) services that require closer interaction between the centres and firms. Centres for territorial development are in between, targeting a wider variety of firms without a specific sector specialisation and with a looser relationship with their customers.

Most of the customers are small firms (<100 employees) and this can be explained by at least two factors:

- the size distribution of Italian firms, particularly in regions such as Veneto and Emilia Romagna, is typically biased towards small firms (see section 4);
- large firms often internalise some of the services supplied by BDS centres. For instance, they have their internal laboratories for testing raw materials and components, or their own marketing departments.

The questionnaire also investigates clients' location introducing a distinction between local (i.e. in the district), regional, national and international customers. According to the main location of their clients, centres are classified as mainly local centres (43 % of the sample) with a majority of customers coming from the district or the surrounding area, regional centres (37 %) when there is a majority of regional customers and national centres (17 %) when there is a majority of national customers (Table 5.28). Considering the location of customers together with centres' main vocation, the main finding is that the very few centres with a national orientation are all specialised in laboratory tests and quality certification, the kind of services that require the least close interaction among the services considered.

Table 5.28

**MAIN LOCATION OF CUSTOMERS**

*(Total and per main vocation of centres)*

Customers:	All centres No. of centres and %	Laboratory tests and quality certifications	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Local (district)	13 43.3	2 25.0 %	6 60.0 %	4 57.01 %	1 33.3 %	
Regional	11 36.7	1 12.5 %	4 40.0 %	3 66.7 %	2 66.7 %	1 100.0 %
National or international	5 16.7	5 62.5 %				
<b>Total</b>	<b>29</b> <b>96.7</b>	<b>8</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey (1 missing observation).

Collaboration between the BDS centres and their customers is a very frequent phenomenon: only 24% of the centres are not collaborating in some way with clients. Collaboration regards customers orienting the supply of services through informal and continuous interactions with firms

or, sometimes, the organisation of meetings and seminars. In 45% of the sample, feedback from clients is also used to evaluate the centres' performance (Table 5.29).

Table 5.29

**AREAS OF COLLABORATION WITH CUSTOMERS**

<b>BDSC-firm collaboration in:</b>	<b>Number of centres</b>	<b>% of total sample</b>
Policy design	14	48.3
Choice of services to supply	15	51.7
Decision of how to supply services	16	55.2
Pricing of services	2	3.5
Evaluation of centre performance	13	44.8

**Source:** Authors' survey (1 missing observation).

The centres investigated are very active in promoting their activities: in 59% of them there is a marketing department in charge of these issues and very often (76%) centres' activities are promoted with leaflets and meetings with firms. 55 % of the centres also participate in trade fairs and conferences in order to promote their activities (Table 5.30).

Table 5.30

**STRATEGIES OF PROMOTION OF BDSC ACTIVITIES**

	<b>Number of centres</b>	<b>% of total sample</b>
Customers come spontaneously	13	44.8
There is a marketing department	17	58.7
Information through leaflets	22	75.9
Meetings with firms	22	75.9
Financial incentives are offered to firms	9	31.1
Promotion at trade fairs, meetings, conferences	16	55.2

**Source:** Authors' survey.

**Note:** The sum of percentages exceeds 100 as many centres use various promotion strategies.

In sum, these are the main stylised facts on centres' clients:

the average number of customers of BDS centres depends on the type of services supplied: when services are relatively standardised the number of clients can be very high, such as in the case of laboratory tests and quality certification; when centres supply customised services, they have a smaller number of clients;

- small firms are the main customers of the centres;
- service centres have mainly local or regional customers;
- they make a great deal of efforts to collaborate with their clients in the definition of their activity and in their self-evaluation;
- they also actively promote their services through several means.

## D. The turnover

In the year 2000 turnover of the BDS centres considered varies widely, ranging from Eur0.5 million to Eur7.2 million: 40% of the centres have a turnover of Eur1 million or less, 43% a turnover between 1 and 3.5 million and 17% a turnover of more than Eur3.5 million (Table 5.31). Considering the main vocation of centres helps to understand the differences about turnover size: turnover is larger in the centres specialised in laboratory tests and quality certifications and in those targeting territorial development, while the majority of district centres have a smaller turnover of Eur1 million or less.

**Table 5.31**  
**BDS CENTRES' TURNOVER**

*(Total and per main vocation)*

(EUR million)	All centres No. of centres and %	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Less than 1	12 40.0	2 22.2 %	3 30.0 %	5 71.4 %	2 66.7 %	
Between 1 and 3.5	13 43.3	6 66.7 %	4 40.0 %	1 14.3 %	1 33.3 %	1 100.0 %
More than 3.5	5 16.7	1 11.1 %	3 30.0%	1 14.3 %		
<b>Total</b>	<b>30</b> <b>100.0</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

In the questionnaire survey we also collected data about turnover composition, finding that in 7 out of 30 centres public subsidies, mainly received by regional and other local institutions and by EU, either directly or channelled through the Regions, represent at least 50% of the total yearly turnover (Table 5.32). Among the different main vocations, territorial development centres are the category more heavily subsidised: in 44% of them public funds represent more than 50% of total turnover.

**Table 5.32**  
**TURNOVER COMPOSITION: PUBLIC SUBSIDY LARGER THAN 50% OF SALES**

*(Total and per main vocation)*

	All centres No. of centres and %	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Smaller than 50%	22 73.3	8 88.9 %	5 55.6 %	7 100.0 %	2 66.7 %	
Larger than 50%	7 23.3	1 11.1 %	4 44.4 %		1 33.3 %	1 100.0 %
<b>Total</b>	<b>29</b> <b>96.7</b>	<b>9</b> <b>100.0 %</b>	<b>9</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey (1 missing observation).

Table 5.33 adds some qualifications on the nature of public subsidies: only 13% of the centres receive the subsidies as an endowment without a predefined use while the rest of the sample gains them through competitive tenders or public funds are geared to specific projects. Anyway, public contributions have to be actively sought after, and an active search for new sources of funds is positively and statistically significantly correlated with the share of public grants on total turnover (0.424 at 5% level of significance).

**Table 5.33**  
**GRANTS (SUBSIDY) ALLOCATION**

Means of allocation:	No. of centres	% of total sample
Call for tenders	10	33.3
Donation	4	13.3
Project financing without tenders	10	33.3
Missing	6	20.0
<b>Total</b>	<b>24</b>	<b>80.0</b>

The other main item of BDS centres' turnover is sale of services to the clients, representing 50% or more of total income in 63% of the sample (Table 5.34). This is especially true for the centres specialised in laboratory tests and quality certification.

**Table 5.34**  
**SALE OF SERVICES LARGER THAN ≥ 50% OF TOTAL TURNOVER**

*(Total and per main vocation)*

	All centres Number of centres and %	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Less than 50%	11 36.7		6 60. %	3 42.9 %	1 33.3 %	1 100.0 %
More than 50%	19 63.3	9 100.0 %	4 40.0 %	4 57.1 %	2 66.7 %	
<b>Total</b>	<b>30</b> <b>100.0</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Table 5.35 sums up the differences concerning turnover and its composition in the different categories of centres considered:

- on average the BDS centres supplying certification and laboratory tests have yearly sales of Eur 2.5 million, out of which 75% comes from services sold to clients;
- territorial development centres have an average turnover of Eur 2.6 million with an average public subsidy of 47% and sale of services corresponding to 40% of their total turnover. However, only a very small share of public funds are yearly endowments given irrespective of competitive tenders or not geared to pre-specified projects;
- district centres have a smaller average turnover (Eur 1.2 million) with an average public subsidy corresponding to 31% of the turnover and sales of services equivalent to 57% of it. Their strong linkages with local firms and business associations is confirmed by the important contribution to their turnover of the fees paid by them;
- finally, centres specialised in innovative technological activities have an average turnover of 1.5 million Euro with an average subsidy corresponding to 39 % of total turnover and sales equal to 61 % of it. Given the typical public good content of the technological services supplied by these centres, the share of subsidies on their total turnover is lower than it could be expected.

**Table 5.35**  
**AVERAGE TURNOVER PER MAIN VOCATION**

*(EUR mill. and %)*

	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Average turnover	2.5	2.6	1.2	1.5	3.1
Average subsidy	13%	47%	31%	39%	67%
Average revenue from sales	75%	40%	57%	61%	33%

**Source:** Authors' survey.

## E. Internal organisation

The size of the BDS Centres analysed—in terms of their total employment<sup>16</sup>—varies widely, ranging from 2 to 140 (Table 5.36). In the category of the largest centres there are mainly institutions specialised in laboratory tests and quality certification with an average number of 40 employees, followed by centres targeting territorial development with an average of 24 employees. On average district centres and institutions supplying innovative technological services have a smaller number of employees, respectively 16 and 19.

<sup>16</sup> We include in the number of employees the external consultants having a permanent contract with the centres.

**Table 5.36**  
**NUMBER OF EMPLOYEES**

(Total and per main vocation)

	All centres No. of centres and %	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Less than 10	9 30.0	2 22.2 %	4 40.0 %	2 22.2 %	1 33.3 %	
Between 10 and 25	10 33.3	3 33.3 %	1 10.0 %	4 57.1 %	1 33.3 %	1 100.0 %
More than 25	11 36.7	4 36.4 %	5 50.0 %	1 14.3 %	1 33.3 %	
Mean		40	24	16	19	23
<b>Total</b>	<b>30</b> <b>100.0</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey.

Overall, larger centres tend to have larger employment and turnover, more clients, and longer years of experience. Thus, the number of employees is positively and statistically significantly correlated with the size of turnover (0.617 at 1% level of significance), with the number of customers (0.586 at 1% level of significance) and with the age of the centres (0.378 at 5% level of significance) (Table A-2).

The BDS centres considered also tend to employ a large share of skilled personnel (Table 5.37). Technicians are between 30 and 50% of the workforce in 43% of the centres and the majority in 37% of the sample; employees holding a university degree are respectively 30% and 50%. Expectedly, there is a particularly strong concentration of technicians in the centres specialised in laboratory tests and quality certifications and of employees with a university degree in centres aimed at territorial development and research centres (Table 5.38 and 5.39). The latter evidence may indicate the strategic nature of the services supplied by centres targeting territorial district development and by research centres, whereas the former reflects the technical content of laboratory tests and certification services.

**Table 5.37**  
**SHARE OF TECHNICIANS AND EMPLOYEES WITH A UNIVERSITY DEGREE**

	% of technicians	% of employees with a university degree
Less than 30%	4 13.3 %	5 16.7 %
Between 30% and 50%	13 43.3 %	9 30.0 %
More than 50%	11 36.7 %	15 50.0 %
Missing	2 6.7 %	1 3.3 %
<b>Total</b>	<b>28</b> <b>93.3 %</b>	<b>29</b> <b>96.7 %</b>

**Table 5.38**  
**SHARE OF TECHNICIANS PER MAIN VOCATION**

	Laboratory test and quality certification	Territorial develop- ment	District develop- ment	Innovative technological services	Training
Less than 30%			3 50.0 %	1 33.3 %	
Between 30% and 50%	2 22.2 %	6 66.7 %	3 50.0 %	2 66.7 %	
More than 50%	7 77.8 %	3 33.3 %			1 100.0 %
<b>Total</b>	<b>9</b> <b>100.0 %</b>	<b>9</b> <b>100.0 %</b>	<b>6</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>



Table 5.39

**SHARE OF EMPLOYEES WITH A UNIVERSITY DEGREE PER MAIN VOCATION**

	Laboratory test and quality certifications	Territorial development	District development	Innovative technological services	Training
Less than 30%	3 33.3 %		1 14.3 %	1 33.3 %	
Between 30% and 50%	3 33.3 %	3 33.3 %	3 33.3 %		
More than 50%	3 33.3 %	6 66.7 %	3 33.3 %	2 66.7 %	1 100.0 %
<b>Total</b>	<b>9</b> <b>100.0 %</b>	<b>9</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

The Centres also supply substantial training to their employees, as in 60% of the sample employees receive regularly some kind of training (Table 5.40). Furthermore, the employees of centres appear to receive less training than in the other categories of samples, suggesting somehow the traditional nature of the services supplied by these centres.

Table 5.40

**TRAINING ACTIVITIES FOR EMPLOYEES (TOTAL AND PER MAIN VOCATION)**

	All centres No. of centres and %	Laboratory test and quality certification	Territorial development	District development	Innovative technological services	Training
Yes	18 60.0	6 66.7 %	6 66.7 %	2 28.6 %	3 100.0 %	1 100.0 %
No	11 36.7	3 33.3 %	3 33.3 %	5 71.4 %		
<b>Total</b>	<b>29</b> <b>96.7</b>	<b>9</b> <b>100.0 %</b>	<b>9</b> <b>100.0 %</b>	<b>6</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey (1 missing observation).

Training is also the second most important channel of internal knowledge accumulation after the interaction with external consultants. Other important channels are the internal learning-by-doing, the research activity undertaken internally and the interaction with large firms (Table 5.41).

Table 5.41

**CHANNELS OF KNOWLEDGE ACCUMULATION**

	No. of firms	%
New skilled employees	10	33.3
Training	22	73.3
Internal learning-by-doing	16	53.3
Internal research	16	53.3
External consultants	24	80.0
Interaction with client firms	7	23.3
Interaction with other firms	16	53.3
Interaction with other research centres	18	60.0
Interaction with prestigious research centres	13	43.3

Source: Authors' survey.

## F. External linkages

The intensity of linkages with external institutions, such as universities, other service centres or business associations, is an important indicator of the capability of the BDS centres to interact with the outside world and learn from other experiences. In addition, it also (indirectly) reveals the outside interest in the skills available at the centres and their reputation. As a matter of fact, intense external interactions are one of the main characteristics of a successful concept of BDS centre, playing a role of *facilitator of matchmaking* between the productive sector and the main service providers. This is the model of *Steinbeis-Stiftung* in the region of Baden-Wurttemberg described in section II and recently under implementation also in Emilia Romagna (see section IV).

Although a measure of the *intensity* of interaction would have been desirable, the number and variety of institutions with which the centres interact may represent a useful —though imperfect— proxy. Table 5.42 shows that many centres in our sample have external contacts with various institutions: 50% of them collaborate with between 5 to 9 different institutions and 33% with more than 9. Universities and business associations are the institutions more commonly related with almost the whole sample of centres, but linkages are also intense with local public bodies, public research centres and other BDS centres in the same region (Table 5.44).

Research centres specialised in innovative technological services and institutions targeting territorial development are the two categories with more interactions (Table 5.42).

**Table 5.42**  
**EXTERNAL LINKAGES**  
(Total and per main vocation)

Number of linkages	Total number of centres and %	Laboratory test and quality certification	Territorial development	District development	Innovative technological services	Training
Less than 5	5 16.7	2 22.2 %	2 20.0 %	1 14.3 %		
Between 5 and 9	15 50.0	6 66.7 %	3 30.0 %	4 57.1 %	1 33.3 %	1 100.0 %
More than 9	10 33.3	1 11.1 %	5 50.0 %	2 28.6 %	2 66.7 %	
Mean		6.22	8,10	7.71	9.67	9.00
<b>Total</b>	<b>30</b> <b>100.0</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Moreover, collaborations with international BDS centres may be an especially relevant signal of a very active centre, capable to attract interest from abroad and to interact at an international level. This is particularly noteworthy in global markets, which require firms' skills to combine local and global knowledge and competencies. Table 5.43 shows that 60% of the sample interacts with foreign BDS centres. Perhaps expectedly, centres specialised in laboratory tests, quality certification and technological innovative services centres are the most active internationally.

**Table 5.43**  
**COLLABORATION WITH INTERNATIONAL BDS CENTRES PER MAIN VOCATION**

	Laboratory test and quality certifications	Territorial development	District development	Innovative technological services	Training
Yes	6 66.7 %	4 40.0 %	4 57.1 %	3 100.0 %	1 100.0 %
No	3 33.3 %	6 60.0 %	3 42.9 %		
<b>Total</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey.

Collaboration primarily occurs in training activities, for 70% of the sample, but also in the development of new services (60%) and the participation in research projects (53%) (Table 5.45). Larger centres both in terms of turnover and number of employees interact with a greater number of institutions (Tables 5.46 and 5.47). Between turnover and number of external linkages there is also a positive and statistically significant correlation coefficient (0.292 at 5% level of significance) (Table A-2). Examples of collaborations are further discussed in Box 7.

**THREE EXAMPLES OF LINKAGE CREATION AND COLLABORATION ACTIVITIES****CITER (Centre for Textile Information in Emilia Romagna)**

Local entrepreneurs, business associations and other public and private institutions founded Citer to provide services (initially mainly training) to local firms in 1980. It represents a typical district centre, as it was created for the firms of the district of Carpi, specialised in the textile sector (knitted goods). Presently the centre offers a wide range of services, in the area of design (fashion trends and CAD/CAM); marketing (market surveys, trade fairs, export assistance and promotion activities); technology and production (information on new technologies, R&D projects and provision of several data banks); training and business assistance. In 2000 CITER offered services to 280 firms, reflecting a steady growth since 1980, which accelerated in the last five years. They are mainly SMEs located in the district (32%) and the Region (30%). In the last few years the Centre has been extending its reach to several business associations, BDS Centres in other less developed areas, local development institutions and international organisations. The centre has also increased its budget from EUR 104,000 (only 16% from direct sales of services) in 1980, to almost EUR 1.5 million in 1999 (61% from direct sales). CITER employs seven professionals and four support staff, with nine full time consultants.

The centre, also due to its localisation, has always acted as a hub for a variety of intense linkages with other local actors such as technical schools, universities and research centres, and other local institutions. After twenty years of activity its reputation is well established, also internationally (Clara, 2000), and it collaborates with the Region to detect local firms' needs and design industrial and regional policies. In addition, many national and international institutions (for example UNCTAD and UNIDO) demand its collaboration to design similar policies elsewhere, notably in developing countries. Also our field survey detected an intense collaboration with other Italian BDS Centres (for example *Centro Servizi Calza*), wishing to learn from CITER experience in the initial steps of their activity.

**Certottica (Italian Institute for the Certification of Optical Products)**

In 1992 the national optical business association together with the Belluno Provincial Government (5%), the Mountain Community Centro Cadore and Cadore Longarone, the Municipality of Longarone, and other regional institutions (Veneto Innovazione, Galileo Veneto Science Park) founded Certottica. The Centre was also initially spurred by the huge financial aid allocated after the tragedy of the nearby Vajont dam. However, its activities really started only in 1998, after a long period devoted to the search of partners, and the experimental provision of services in a small local school transformed in a laboratory.

The Centre is located in the main Italian optical district (Longarone, in the province of Belluno) mainly to provide certification services to the SMEs of a sector that needs to follow strict quality and sanitary standards. However, today the centre offers also services in the area of design (fashion, CAD/CAM and analysis of rapid prototype system testing) and training. In 2000 the centre served about 400 firms, mainly small (58%) and medium-sized (38%) throughout Italy, even if 45% of its clients come from the Region. Certottica more than doubled its turnover between 1998 and 2000, from EUR 600,000 in 1998 to EUR 1.5 million in 2000. Half of it derives from direct sale of services, and 10% from the association fees. The centre presently employs 21 workers (14 technicians).

The centre enjoys a lot of collaboration with local institutions for the establishment of training programmes and of other innovative activities regarding quality certification and joint R&D projects. But the centre also collaborates with external bodies and is actually working at the foundation of a new optical centre in Lombardia, near the town of Varese.

## Box 7 (conclusion)

**CIMAC (Italian Centre for the Materials Applied to Footwear)**

CIMAC is the leading Italian certifying body for the shoe sector, including components and accessories, and was founded by the National Association of the Italian Shoemakers (ANCI) in 1985 in the shoe district around Vigevano in the province of Pavia. Presently CIMAC is a branch of the private Business Association of the shoe sector. The centre mainly offers certification services (including environmental certification), laboratory activities and research, together with some training courses. In the year 2000 the centre has served more or less 500 firms, mainly small (80%) and some medium (20%), reflecting the typical features of the industry. Some of these clients are also foreign (10%). The centre has a budget of EUR750,000, all gained through direct sales of services, and employs 9 workers (4 technicians).

The centre collaborates with other national and mainly international BDSC of the same sector, to develop and carry out common research projects and inter-laboratory tests.

An interesting characteristic of both CIMAC and CERTOTTICA is that they collaborate with national and international institutions for the setting of the quality standards for their sectors. More specifically, CERTOTTICA collaborates in research with the departments of Mechanics and Physics of the University of Padova and the Polytechnic of Milan, and has already patented two machines, one for specific certifications and another for the titanium coloration, the latter needs tight controls and quality standards for the prevention of allergy problems. Moreover, the centre has collaborated with international and national public boards (the Ministry of Health and the Ministry of Trade and Industry) for the definition of new quality standards regarding the materials' composition and the production process of frames and lenses.

**Sources:** Interviews with the Directors, material provided by the centres, web sites: [www.citer.it](http://www.citer.it), [www.certottica.it](http://www.certottica.it), [www.cimacpv.it](http://www.cimacpv.it)

Table 5.44

<b>INSTITUTIONS WITH WHICH BDS CENTRES INTERACT</b>		
	<b>Number of firms</b>	<b>%</b>
Universities	27	90.0
Local schools	19	63.3
Consulting firms	10	33.3
Business associations	28	93.3
Public research centres	22	73.3
Private research centres	10	33.3
Regional BDS centres	23	76.7
National BDS centres	16	53.3
International BDS centres	18	60.0
Trade unions	9	30.0
Local public institutions	22	73.3
Large firms	9	30.0
Large firms	9	30.0

Table 5.45

<b>AREAS OF COLLABORATION</b>		
	<b>Number of firms</b>	<b>%</b>
Service brokerage	1	3.3
Service sale	8	26.7
Joint development of services	18	60.0
Joint supply of services	6	20.0
Consulting	11	36.7
Training	21	70.0
Joint research projects	16	53.3
International co-operation	3	10.0

Table 5.46

EXTERNAL LINKAGES PER NUMBER OF EMPLOYEES			
No. of linkages	Less than 10 employees	Between 10 and 25 employees	More than 25 employees
Less than 5	4 44.4 %	1 10.0 %	
Between 5 and 9	3 33.3 %	6 60.0 %	6 54.5 %
More than 9	2 22.2 %	3 30.0 %	5 45.5 %
<b>Total</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>11</b> <b>100.0 %</b>

Table 5.47

EXTERNAL LINKAGES PER TURNOVER (EUR million)			
No. of linkages	Less than 1	Between 1 and 3.5	More than 3.5
Less than 5	5 41.7 %		
Between 5 and 9	5 41.7 %	9 69.2 %	1 20.0 %
More than 9	2 16.7 %	4 30.8 %	4 80.0 %
<b>Total</b>	<b>12</b> <b>100.0 %</b>	<b>13</b> <b>100.0 %</b>	<b>5</b> <b>100.0 %</b>

Source: Authors' survey.

## G. Self-evaluation

According to our survey, 63% of the service centres regularly undertake some self-evaluation exercises (Table 5.48). This may take the form of benchmarking with respect to their competitors, cost-benefit analysis and monitoring of the impact of services on customers. Self-evaluation is more common among large centres and in centres specialised in laboratory tests and innovative services as well as in centres aimed at territorial development. This is less so for district centres (Table 5.50). An interesting finding is reported in Table 5.49: centres with a larger share of their total turnover accounted for by sale of services are more likely to undertake regular self-evaluations, while centres receiving more public subsidies appear less keen to self-evaluation. This suggests that the latter may feel a less stringent need to perform that those relying more on the private market for their funding. The results of self-evaluation are mainly used by BDS centres to improve their internal organisation and to adjust their service supply to customers' needs (Table 5.51).

Table 5.48

### SELF-EVALUATION

(Total centres and per employment size)

Carry out self-evaluation:	Total number of firms and %	Less than 10 employees	Between 10 and 25 employees	More than 25 employees
Yes	19 63.3	4 44.4 %	7 70.0 %	8 72.7 %
No	19 36.7	5 55.6 %	3 30.0 %	3 27.3 %
<b>Total</b>	<b>30</b> <b>100.0 %</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>11</b> <b>100.0 %</b>

Table 5.49

SELF-EVALUATION PER TURNOVER COMPOSITION		
Carry out self-evaluation:	Sales more than 50% of turnover	Sales less than 50% of turnover
Yes	14 73.7 %	5 45.5 %
No	5 26.3 %	6 54.5 %
<b>Total</b>	<b>19</b> <b>100.0 %</b>	<b>11</b> <b>100.0 %</b>

Table 5.50

## SELF-EVALUATION PER MAIN VOCATION

Carry out self-evaluation:	Total number of firms and %	Laboratory test and quality certification	Territorial development	District development	Innovative technological services	Training
Yes	19 63.3	6 66.7 %	7 70.0 %	4 57.1 %	2 66.7 %	
No	11 36.7	3 33.3 %	3 30.0 %	3 42.9 %	1 33.3 %	1 100.0 %
<b>Total</b>	<b>30</b> <b>100.0</b>	<b>9</b> <b>100.0 %</b>	<b>10</b> <b>100.0 %</b>	<b>7</b> <b>100.0 %</b>	<b>3</b> <b>100.0 %</b>	<b>1</b> <b>100.0 %</b>

Source: Authors' survey.

Table 5.51

## UTILISATION OF SELF-EVALUATION RESULTS

	Number of firms	%
Internal organisation	24	85.7
Setting prices	9	32.1
Adaptation of services	25	89.3
Introduction of new services	21	75.0
Identification of potential clients	11	39.3
Identification of new objectives of the centre	14	50.0

Source: Authors' survey.

Finally, we asked the sample centres to self-evaluate their main strengths and to identify their most pressing future objectives. Regarding strengths (Table 5.52), the two most common answers (both according to 63% of the sample) are the provision of services not easily available elsewhere and their collaboration with other institutions, followed by specialisation in one specific sector (60%). Other two important strength factors are the trust-based relationship with clients and the location close to customers (50% of the sample). The most urgent objectives are the improvement of service quality (46% of the sample) and the increase in their variety (40%) as well as the increase in the number of clients (43%). Therefore, a large number of centres are in favour of an extensive strategy based on an expansion of their activity to cover more areas of services—at a higher quality—and service a larger number of firms. A final interesting finding is that only according to 30% of the sample financial sustainability is an urgent objective (Table 5.53).

Table 5.52

## MAIN STRENGTHS

(As assessed by interviewed centres)

	Number of centres	%
Rare services	19	63.3
Strong network of collaboration with other institutions	19	63.3
Strong sector specialisation	18	60.0
Close location to clients	15	50.0
Trust-based relationship with clients	15	50.0
Part of a larger network of centres supporting firms	13	44.8
Clients involved in the management of the centre	6	20.7
Lower prices than competitors	5	17.2

**Table 5.53**  
**URGENT FUTURE OBJECTIVES**  
*(As assessed by interviewed centres)*

	Number of centres	%
Improve service quality	14	46.6
Increase number of clients	13	43.4
Increase variety of services	12	40.0
Be financially self-sustainable	9	30.0
Increase public funds received	7	23.4
Reach distant clients and markets	4	13.3
Specialise in one particular type of services	3	10.0
Increase variety of sectors	3	10.0
Become specialist provider to a specific industry	1	3.3

Source: Authors' survey.

## H. A summary of the main survey findings

To conclude this section, we may summarise the main empirical findings of our survey as follows:

- Since the beginning, the creation of BDS centres in the three regions investigated has been characterised by a remarkable involvement of the private sector. This is the consequence of a mix of factors: first of all, the bottom-up approach which has characterised the diffusion of BDS centres in Italy; secondly, the social and political cohesion and facility of interaction which are among the main features of Italian industrial districts. As a matter of fact, the highest degree of private involvement has been detected in centres that are sector-specialised.
- BDS centres supply many services covering several different areas. The lack of specialisation and the predominance of rather simple, low tech services seem to confirm the conclusions of other previous surveys (Cariola *et al.*, 2001; Cusmano *et al.*, 2000): Italian BDS centres are not very innovative, and adapt their supply of services to the conventional basic demands of the majority of SMEs.
- Moreover, given their very heterogeneous supply of services, BDS centres are very diverse, and this makes any generalisation very problematic.
- In order to overcome this problem, we derived a classification on the basis of quantitative and qualitative information collected with the questionnaire. This allows us to find some empirical regularity in the experience of Italian BDS centres. Thus, five classes were identified: the centres specialised in laboratory tests and quality certification (9 in our sample); the centres targeting territorial development (10); the centres aimed at district development (7); the centres supplying innovative technological services (3) and one residual category including only one centre specialised in training services.
- Several stylised facts characterise the centres belonging to the different classes. They are summarised in Table 5.54.
- **Centres specialised in laboratory tests and quality certification** are the largest in terms of number of customers, turnover and employment. An average of 75% of their turnover comes from sale of their services to customers not necessarily located near them. They are specialised in services demanded by firms, which are therefore ready to pay for them. Given the relative standardisation of the type of services supplied, some of these centres have grown quite large, extending their market to the whole national market;
- **Centres targeting territorial development** are also large in terms of turnover, although smaller in terms of number of customers and employees. They supply a variety of services

to a wide range of firms, without clear sector specificity. Among the categories considered, these centres are probably the most strongly linked with the public sector. They have been mainly established from public initiative and on average almost half of their turnover depends on public subsidies. Among them, there are very different centres: some are aimed at the revitalisation of depressed or de-industrialised areas, others are specialised in strategic territorial planning and finally some supply rather generic services, such as information, training and business management services;

- **District centres** are small in terms of turnover, number of customers and employees. They supply a variety of services to sector-specialised firms located in industrial districts. Their main characteristic is the strong relationship with the private sector. The services they supply are not very innovative but well suited to the demand of their customers, which are mainly local SMEs;
- **Centres supplying innovative technological services** are only three out of a sample of 30 centres. Their size is smaller in terms of turnover, customers and employees. Given the type of services supplied, it is perhaps surprising to find out that they have a strong relationship with the private sector, and that their turnover on average comes more from sales of services than from subsidies.

Table 5.54

**BDS CENTRES: AN EX-POST CLASSIFICATION**

	Laboratory tests and quality certification	Territorial development	District development	Innovative technological services
Main initiative	Public-private	Fully public	Public-private	Public-private
Majority of equity	Private	Public	Private	Private
Sector specialisation	Yes	No	Yes	No
Average number of clients	1,155	710	213	223
Main location of clients	National	Local	Local	Regional
Main type of clients	SMEs	SMEs	SMEs	SMEs
Average turnover ( <i>Euro mill.</i> )	2.5	2.6	1.2	1.5
Average public subsidy	13 %	47 %	31 %	39 %
Average revenue from sale	75 %	40 %	57 %	61 %
Average number of employees	40	24	16	19
Share of technicians	> 50%	< 50%	< 50%	< 50%
Share of employees with a university degree	< 50%	> 50%	< 50%	> 50%
Internal training	Yes	Yes	Little	Yes
Average number of external linkages	6.22	8.10	7.71	9.67
International collaborations	Yes	Little	Yes	Yes
Self-evaluation	Yes	Yes	Yes	Yes
Centres' certification	Yes	No	No	No

Source: Authors' survey.



## VI. An evaluation of BDS centres

---

The rich empirical evidence presented in the previous section has enabled us to depict a detailed picture of the current situation of the BDS Centres in the three regions. This was a necessary step before attempting an evaluation of the Centres. How can we translate general methodologies that may find applications in a variety of programmes, in an approach useful to our present aims? In fact, with the present exercise we are investigating two crucial and different, but related, issues:

- the evaluation of the performance of BDS Centres in Northern Italy;
- the justification for a public subsidy of their activities, due the Centres' pursuing objectives of public interest or, in other words, providing the public goods that are necessary for SMEs and in general local industrial development.

In the present study we try to approximate these evaluation concepts with quantifiable indicators obtained from our detailed questionnaires. On the one hand, following some studies already carried out in Italy on this issue (Cariola and Rolfo, 2001, Bellini 2001), we analyse and measure some structural elements of the *supply* of 'real' business development services, that may offer elements to assess the overall quality of the service providers. These authors observe for each service provider its yearly turnover, employment, external consultants employed, number and quality of the services provided and of the clients serviced. On the other hand, we add several other indicators to detect, even in a preliminary way the Centres' effectiveness, efficiency and sustainability.

The **relevance** concerns the extent to which the stated objectives correctly address the identified problems and needs. Such evaluation should descend from a comprehensive assessment of the national and regional industrial policies, and specifically of those geared to SMEs, and the role-played by the Centres in this context. This falls beyond the aims of this paper, and cannot be analysed in details here. However, some elements for an evaluation may be grasped from the overview of regional policies presented above.

A direct analysis of the **impact** of the BDS Centres on firms' performance is equally beyond the scope of this paper, as it would require a well-directed analysis of firms' performance before and after (with and without) the existence of the Centres. Only indirect evidence may be collected on this element. In our empirical case, like in many other instances, the size of the whole economy inevitably swamps the effects of any one Centre's impact. Thus while impacts on individual firms or groups of them could be observed, it is often hard to attribute effects on whole industries or regions to one Centre alone. However, the **density** of Service Centres and support institutions — some inevitably more efficient than others— in a defined area is itself likely to boost that location's industrial development. This is in fact what is usually missing in most developing countries.

In principle, one way of assessing the Centres' impact on enterprises' performance may be to measure several indicators of enterprise performance (e.g. sales, productivity, exports). Another possible way could be to measure the "customers' satisfaction" through detailed surveys on the firms serviced by the Centre. However, this latter alternative is riddled by a number of methodological difficulties (Bellini, 2001, McVay, 1999). Firms benchmarking techniques and panels —that allow benchmarking individual firms' performance and business practices in comparison with large populations of firms of the same size and sector of activity— may help create a more systematic evaluation of the Centres' impact.<sup>17</sup> To some extent, performance benchmarking has the features of a classic quasi-experimental evaluation design, combining both "before and after" and "with and without" data, and could substantially help in this regard. However, no such a thing is available for Italian SMEs in the regions under analysis.

The variables that may be used for an evaluation of the Centres interviewed in terms of their activities' effectiveness, efficiency and sustainability are reported in Table 6.1. Some of them are not available for all, or for a large number of Centres, and thereby cannot be used. They have been grouped according to the concept they contribute to measure, that is effectiveness, efficiency and sustainability. Sometimes they overlap, and careful consideration of the specificities of each centre should help in interpreting the variables.

Some of the indicators in table 6.1 have been computed with the data available, and we group our comments according to the evaluation concept that they try to proxy. Several variables may approximate the measurement of the Centres' effectiveness (Table 6.2).

The number of clients often only reveals the different nature of each Centre: if available, its rate of increase would be more useful. Thus, Laboratories and Certification Centres tend to reach larger numbers of client-firms than the other Centres.

---

<sup>17</sup> See the experience of the Performance Benchmarking Service developed at the Industrial Technology Institute in Ann Arbor, Michigan, quoted by Shapira *et al.* (1996). In the UK, large firms use PROBE software with data on thousands of leading European firms, provided by the Confederation of British Industry. SMEs, on the other hand, are provided benchmarking help by the Department of Trade and Industry, which has developed a simple questionnaire to this aim. Around 10 000 SMEs per annum are benchmarked, comparing company performance with national, regional or sectoral standards (Lall and Pietrobelli, 2002).

**Table 6.1**

**VARIABLES FOR AN EVALUATION OF CENTRES' PERFORMANCE:  
EFFECTIVENESS, EFFICIENCY AND SUSTAINABILITY**

	#	Variable	Rationale for their use - Remarks
<b>Effectiveness</b>	1	Number of clients	Rate of increase overtime. Only for few centres.
	2	Repeated clients (%)	Interpretation depends on kind of services. Useful to test whether customers like a provider enough to use it again, although it is understood that not all BDS are designed to be purchased more than once. Insofar as the Centres under analysis offer a wide range of services, this may be interpreted as a (positive) sign of effectiveness
	3	Collaboration with firms (yes/no)	Serviced firms consider the Centre useful and wish to collaborate
	4	No. of overall collaborations	The Centre becomes a nexus for linkages. Others consider its role/activities useful
	5	Collaborations with international BDS Centres	As above, plus international reach
	6	Outreach (no. of serviced firms in an area/no. of firms in the same area)	More meaningful for standardised services repeated and offered to large cohorts of firms. However, the size of the economy often swamps the no. of firms that a Centre may reasonably reach.
<b>Efficiency</b>	7	Self-evaluation (yes/no)	May reveal an attitude, or represent a pre-condition for efficiency
	8	Cost per client firm (.000 EUR)	Only for similar Centres
	9	Turnover per employee (.000 EUR)	Only for similar Centres
	10	No. of Clients / employee ratio	How many clients an employee is capable to reach/serve
<b>Sustainability</b>	11	% of services sold to client firms	
	12	Self-sufficiency index	-(public financing /private financing i.e. services sold)
	13	Pursuing objective of self-sufficiency (high/low priority)	Positive (active) attitude towards sustainability (but also revealing financial hardship). Based on Centres' assessment

**Table 6.2**

**EFFECTIVENESS: ALTERNATIVE MEASURES**

Categories of centres	1	2	3	4	5	6
	Number of clients (Mean)	% repeated clients	Collaboration with firms <sup>a</sup>	Number of collaborations (Mean)	Collaboration with international centres <sup>a</sup>	Outreach
Labs & Certification	1 155.3	35.8	0.78	6.2	0.67	0.53
Territorial development	710.4	55.7	0.56	8.1	0.40	N/A
District	213.3	57.5	0.86	7.7	0.57	0.34
R&D & Innovat. Serv.	295.0	22.5	1.00	9.7	1.00	N/A
Training	N/A	40.0	1.00	9.0	1.00	N/A

**Source:** Authors' survey.

<sup>a</sup> Yes=1, No=0; the mean value for each categories of centres is reported.

The figures on the *outreach*, that is on both the number of firms reached (scale) and the effort to provide services to firms not served by existing markets (access), (McVay, 1999, p.3), may complement this information. In this regard, the Labs & Certification Centres appear to have a solid outreach in their identifiable universe of reference, that is the Region, followed by the District Centres. For the Territorial Development Centres the index does not mean much, as they usually address all kinds of firms in all sectors. However, several authors have shown that the penetration of real services among SMEs is often extraordinarily modest, and indices of outreach have often been very low. In the US only 10 percent of SMEs would have both the skills and the interest to use such services to boost their innovativeness and performance (Feller *et al.*, 1996:311). According to another source, only 7 percent of all SMEs in the US would have used the services provided by the

Manufacturing Modernisation Centres (US Congress, Office of Technology Assessment, 1990). Similar evidence is available for several European countries (Bellini, 2001).

The interpretation of the measure of *repeated clients* (# 2) requires a careful consideration of the kind of services provided. In principle, this indicator is useful to test whether customers like a provider enough to use it again, although it is understood that not all BDS are designed to be purchased more than once. Insofar as the Centres under analysis are not specialised in only few lines, and offer instead a wide range of services, this index may be interpreted as a (positive) sign of effectiveness and clients' confidence in the Centres. The figures confirm this interpretation, as the percentage of repeated clients is higher for less specialised Centres, such as the District and the Territorial Development ones. Regarding the latter, the special feature of the district as a 'socio-economic community' à la Becattini appears confirmed by the data. R&D and innovation Centres have lower percentages because they offer highly specialised services that are not required frequently (and often not more than once).

The most reliable indicators of effectiveness of the BDS Centres analysed are probably the number and variety of *collaborations* (variables 3, 4 and 5). This reveals both the Centres' reputation with other firms and agents active in the area (e.g. Research Centres, Universities, Chambers of Commerce, training centres), and their capability to act as a "nexus" of linkages among agents active in the local development process. The robustness of these indicators is also confirmed by their statistically significant correlation.<sup>18</sup> Collaboration with firms is especially important to provide relevant and effective services, and District Centres and R&D and innovation Centres appear to collaborate with firms to a greater extent than the other categories of Centres. Collaboration with international Centres is also especially important, and revealing the attitude and capability to reach out and interact with distant—and expectedly advanced—business development agents. R&D Centres collaborate with a larger number of institutions, including Universities and other research Centres, and notably have a wide international reach in their collaborations. This is less so for the District Centres, perhaps better at collaborating more with local firms (and agents) than with foreign ones.<sup>19</sup> The assessment of a BDS Centres' *efficiency* is useful and appropriate insofar as they utilise scarce and fungible resources, which might find better alternative uses (Table 6.3).

Table 6.3  
EFFICIENCY: ALTERNATIVE MEASURES

Categories of centres	7	8	9	10
	Self evaluation (yes/no)	Cost per client-firm (.000 EUR)	Turnover / employee (.000 EUR)	Client/ employee
Laboratories and certification	0.67	5.5	145.2	32.60
Territorial development	0.70	9.6	260.9	29.01
District	0.57	11.2	279.4	16.42
R&D and innovative services	0.67	14.0	198.3	14.75
Training	0.00	N/A	181.3	N/A

Source: Authors' survey.

A possible indicator of efficiency, such as the *cost per client* (# 8) should always be used for comparisons across **similar** centres. This index takes lower values for Labs and Certification Centres, confirming that the services offered by these Centres are more standardised, thereby easily replicable at a larger scale with gains in efficiency (i.e. economies of scale). The evidence on the

<sup>18</sup> The Kendall correlation coefficient between the variables indicating collaboration with other firms (dummy) and number of external linkages is 0.416 and the coefficient between number of external linkages and collaboration with international BDS centres (dummy) is 0.385 (all coefficients at 5 % level of significance).

<sup>19</sup> This is one of the outstanding conclusions suggested by the comparative study of Italian and Taiwanese clusters carried out in Guerrieri *et al.*, 2001.

*client/employees ratio* (# 10) (the average number of clients serviced by each BDS Centre employee) reinforces this finding. These values are much lower for the District Centres, suggesting that the services offered by them are more customer-specific, tailored to the needs of each client.

In principle, a short and simple way of portraying a Centre's efficiency may be to relate the Cost per client index to the number of clients serviced, as in Graphic 6.1. However, such an 'easy' use of this comparison should be carefully avoided, as this evidence necessarily reflects Centre-specific factors that should be considered, such as for example the kind of enterprises involved, the socio-economic conditions underlying the service activity, the nature and management choices of the provider, the spillovers generated by the service provision (Bellini, 2001).

Nevertheless, these diagrams are useful in suggesting that economies of scale do exist in the provision of BDS. This proves to be true for the entire sample, although the evidence is somewhat different for different categories of Centres. Thus, scale economies are especially relevant for Labs and Certification Centres that offer relatively standardised services. Also territorial development centres appear relatively homogeneous in their efficiency pattern, with some degree of scale economies. In contrast, District Centres tend to offer customer-specific services, and the efficiency does not improve with the larger number of client-firms. There appears to be much greater variability across the District Centres that differ depending on the nature and characteristics of the local environment.

Should a financially sustainable and self-financing Centre be considered a "success"?<sup>20</sup> This is a central —and politically sensitive— question that has not yet found an undisputed answer. Some authors argue that by targeting self-sufficiency, business support centres would end up neglecting the more innovative services, that are also the most welfare-enhancing and beneficial through the provision of public goods and the intensity of the spillovers generated (see Bellini, 2001, among the many).

As could be expected, laboratory and certification centres are more financially sustainable, and in fact many of them in the sample already self-finance most of their activities. The district centres are also mostly self-sufficient, due to their close relationships with district firms, and they attach greatest priority to the target of self-sufficiency, probably due to the same reason. R&D and innovation centres also sell (at a price) to client firms a high percentage of their services (61%) (Table 6.4).

**Table 6.4**  
**SUSTAINABILITY: ALTERNATIVE MEASURES**

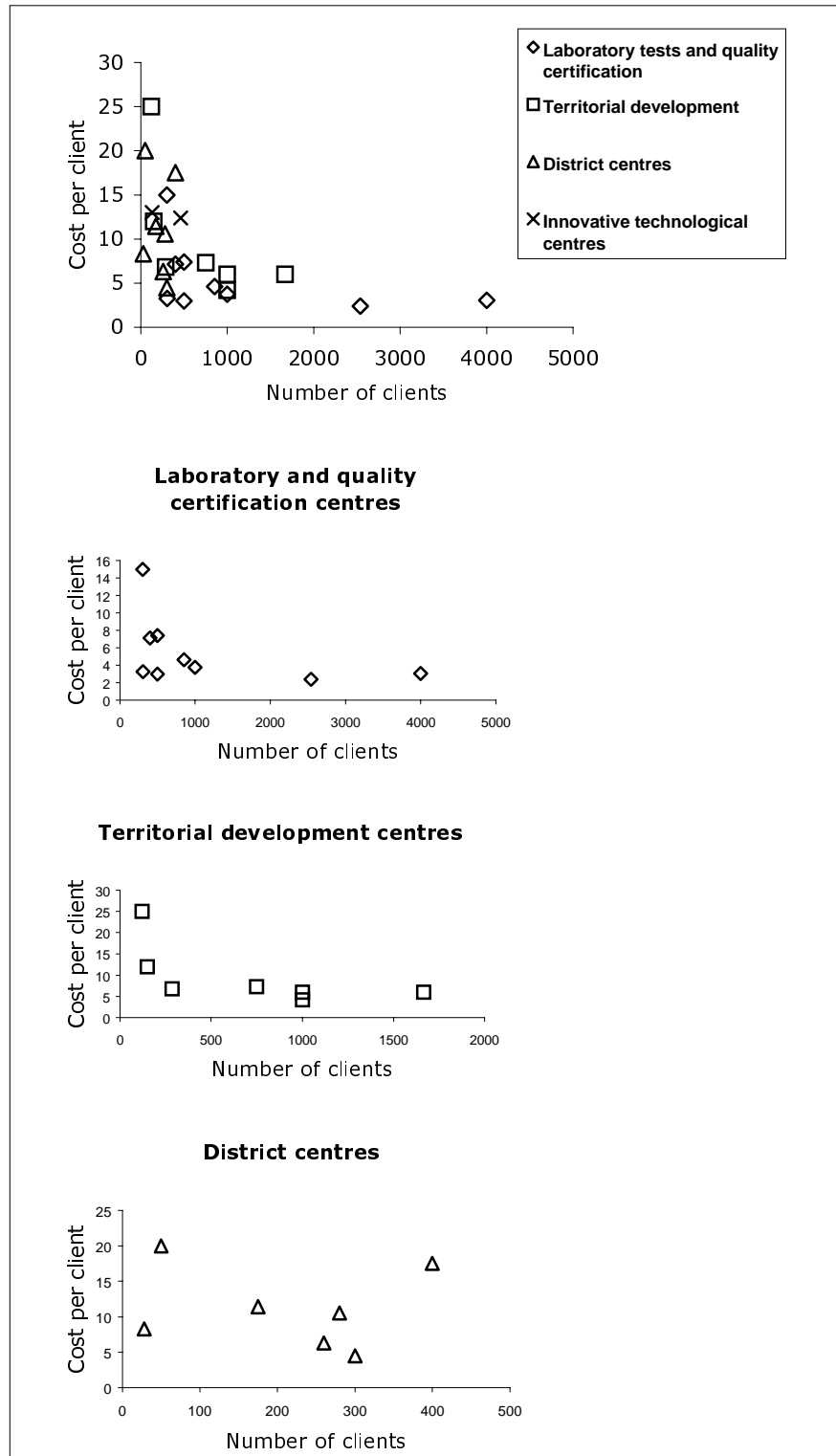
Categories of centres	11	12	13
	% of services sold to client firms	Self-sufficiency index	High priority to objective of self-sufficiency <sup>a</sup>
Laboratory and certification	75.3	0.63	0.2
Territorial development	39.6	-1.66	0.2
District	57.5	0.15	0.4
R&D and innovative services	61.0	-0.07	0.3
Training	33.0	-1.03	1.0

**Source:** Authors' questionnaire.

<sup>a</sup> Yes=1, No=0; the mean value for each categories of centres is reported.

<sup>20</sup> This view is supported by several authors and governments, especially in developing countries, where the balance constraints are usually more stringent and financing mainly relies on foreign assistance (Harper and Finnegan, 1998). In a different context, Katrak (1998) suggests that a more liberal economic policy regime in India would have spurred Industrial Research Institutes to perform better and thereby have a stronger impact.

**Graphic 6-1**  
**CENTRE'S EFFICIENCY**



In sum, an assessment of such a heterogeneous sample of centres is inevitably complex: different centres may be effective and efficient, but not self-sufficient, or even if sustainable and efficient, they may not be effective in achieving their targets. Nevertheless, attempts to measure these concepts are important and should be encouraged, as they help comparisons useful to draw relevant lessons, as recommended by the Donors' Committee (1997). However, in addition to these quantitative indices the specific features of each case should be contemplated, in order to consider the different issues that may contradict the outcome of an evaluation, such as:

- The Centre's specific objectives, which may differ in each case (innovation may be a target for some centres, imposing the use of additional criteria in the evaluation).
- The local context, and whether a market for BDS exists or should be created: e.g. the existence of a non-sustainable centre may be justified on the grounds of fostering the creation of a market for BDS, by providing an example to imitate and by encouraging firms to demand and use services;
- Stage of industrial development and historic considerations: e.g. laboratory tests and certification are highly demanded and paid for now, but they were not necessary in a recent past;
- Budget constraint considerations, that are likely to be tighter in developing countries where BDS Centres are mainly financed with foreign assistance;

In addition, a general call for caution in interpreting any result is in order, and is related to the issue of each Centre's impact, that could not be explored directly here. Across several studies, there is little direct evidence that firms which receive services from BDS centres outperform other firms, that expected benefits are realised or that they equal or exceed total costs of private as well as public service provision (Feller, 1997). Some authors go as far as to suggest even the existence of a process of *adverse selection*: the firms **not** attending BDS centres outperform, at least in terms of innovation, those being serviced (Cusmano *et al.*, 2001, on Lombardia). In a study on the impact of BDS Centres one should have a theory of the time horizon over which services should bring their results, of the nature of services provided and of their relative impact, and sample should be selected to limit the risk of possible selection bias.





## VII. Conclusions and implications for policies

---

### A. Lessons learned from the analysis of the Italian experience

The analysis of the BDS experiences in three of the most industrialised regions in Italy allows to draw some general considerations about the contribution of service centres to the industrial development, competitiveness and innovative capability of economic systems.

A **first** result is the wide heterogeneity of the BDS centres investigated, and overall of such centres in Italy; they differ a great deal in terms of size, specialisation, original initiative, turnover composition, dependence on public subsidies and linkages with firms and other institutions.

However, our field survey detected some regularities within groups of Centres. Thus, as a **second** result, on the basis of our survey evidence, we propose to single out five categories that group centres sharing some of the following stylised facts:

- **Centres specialised in laboratory testing and quality certification** are large, supply standardised services exploiting economies of scale in service provision and are able to sell in the market most of their services;

- **Centres for territorial development** depend on public grants more than the rest of the sample and in some cases this is justified by the services supplied. Some of these centres are in fact playing a co-ordinating role in the allocation of resources that would not easily find their ‘socially-best’ use if left to market forces alone. Some of these centres are providing the market with resources (and opportunities) that would not otherwise be available, and signal the future strategic relevance of services that are not demanded (nor offered) today, but whose role may be crucial in the future.<sup>21</sup> At the same time, however, there are also centres supplying rather generic and simple services to a wide range of firms without a clear justification for their existence, and even more for public subsidies;
- **District Centres** are very much linked with their client firms and very good at supplying them what they need. Thus, firms are willing to pay for these services. However, they often contribute little to the improvement of firms’ innovative capabilities, with rather traditional, low-tech services.
- **Centres specialised in truly innovative technological services** are less frequent (only three in our sample) and they are well linked with the private sector and with other external and often foreign institutions. They often manage to sell their services at a market price.

A **third** result of our analysis is that this variety is somehow the result of a consistent historical evolution, in a context characterised by a notable *absence* of a national policy in this field: in Italy BDS centres have not been established within a national policy framework aimed at supporting industrial development, and sometimes not even within a local (regional) planned framework. They are rather the result of very decentralised, bottom-up and diverse approaches. In most cases the creation of BDS centres has been the result of the collaboration among regional and local public institutions, very often jointly with the private sector, represented by Business Associations, Chambers of commerce, local banks, individual enterprises or groups of them.

BDS centres are often the expression of *local specific needs*, and their strong linkages with the *local* business environment are confirmed by several findings in our survey: the remarkable private involvement in the creation of many centres, the predominance of local firms among clients, and the intense interactions with firms in the Centres’ activities, just to remind some of them.

This strong idiosyncrasy of BDS centres reflects the peculiarity of the Italian industrial system, especially important in the three regions investigated. In fact, they are characterised by the existence of many highly specialised local economic systems, often in “traditional” low-technology activities, strongly export oriented.<sup>22</sup> In other words, **BDS centres are the coherent manifestation of the economic environment from which they originated**. This represents both their strength and weakness.

This pattern has important **positive effects** on the functioning of BDS centres and on their financial self-sufficiency. As they supply services demanded by firms, these in turn consider them useful and are therefore often willing to pay a price. For this reason, a large part of BDS centres, particularly those specialised in laboratory testing and quality certification and the district centres, have reached a good degree of financial sustainability. By adapting their supply to firms’ demand,

<sup>21</sup> On this, see the concept of *expeditionary marketing* (Hamel and Prahalad, 1994, quoted in Bellini, 2001), that recognizes that present customer requirements in emerging markets can only be partially understood, but need to be foreseen, in our case with the help of BDS Centres.

<sup>22</sup> There is a huge literature on the peculiar features of the Italian model of specialisation, that would remarkably differ from what expected for an advanced economy according to the logic of comparative advantage (see Onida, 1999, Guerrieri *et al.*, 2001, Pietrobello, 2002).

BDS centres generally offer relevant services and thereby improve their financial self-sufficiency, which is of course a good achievement in terms of budget constraint.

Italian BDS centres are a very good example of how firms together with local institutions can collaborate in order to set up a business environment conducive to industrial development. The local availability of specialised services is definitely one of the competitive assets of the Italian SMEs production systems in the three regions investigated.

However, this approach has also some weaknesses. Our evidence reveals that Italian BDS centres generally play a limited role to promote technological innovation and management changes in the firms serviced. According to our empirical analysis, the BDS centres really contributing to enhance firms' innovation capabilities and fulfil their needs for new innovative services are only a minority. Most of them contribute to sustain firms' *static* competitive advantages, but they do not help in creating new dynamic competitive advantages. This is coherent with one of the chief findings of a study undertaken in Lombardia by Cusmano *et al.* (2000) on the impact of BDS Centres on a sample of firms. These authors show that the really innovative firms do not search for assistance in their innovation efforts from BDS centres, but they rather interact with universities, research centres and independent advisors. BDS Centres appear to provide a large number of less innovative enterprises with simpler services, such as commercial and technical information, marketing, and training.

This picture looks remarkably different from the ideal pattern of BDS centres acting as co-ordinators of networks of innovative specialised institutions, facilitating the matching of demand and supply of services and, very importantly, stimulating the demand of today hidden and tacit, but in the near future strategic needs. In other words, Italian BDS centres work well within the market but they fail in their role of anticipating market's needs, planning market's evolution, co-ordinating allocation of resources, in sum they are weak in their political role, given that some of them were specifically created as policy instruments at regional or sub-regional level.

In the Italian system, this type of BDS centre does not really exist, unless at a very incipient stage in some isolated examples. Thus, for example in Emilia Romagna there appears to be a tendency to shift the role of some existing BDS centres belonging to the Ervet network towards that of "network-facilitators", almost "brokers" among different institutions, such as Universities and Research Centres, firms and their associations, other service centres. Perhaps this may only occur in a context that has been experiencing with regional industrial policies and service Centres for more than two decades, and has learnt from such experience.

In sum, Italian BDS centres represent good examples of producers of the right kind of services that are presently demanded by firms. However, they are in general very modest in their capability to contribute to the innovation and dynamic competitiveness of the local economic system. In the new competitive environment prevailing today, we may cast doubts on the relevance of their role in advanced industrialised regions such as those analysed in this paper. Insofar as innovation and organisational change are essential conditions for the competitiveness of local systems, BDS Centres more active in fostering firms' and local institutions' innovation and linkages among themselves and with other (foreign) networks, would be desirable.

## **B. Implications for Latin America**

It is always worth reminding that Latin America is not a homogeneous reality, and that very different socio-economic contexts coexist in a very extended territory. Thus, if any generalisation is extremely risky on the issues explored in this paper, this applies to an even greater extent to Latin America. As a consequence, we shall try whenever possible to differentiate the relevance and

policy implications on countries in the sub-region at diverse levels of socio-economic and industrial development. The implications cannot be the same for countries at relatively higher levels of development (at least in some areas within each country), such as Argentina, Brazil or Mexico, or lower down the scale, such as Bolivia, Paraguay and most of Central America.

However, given that most Latin American countries are facing increasingly stringent budget constraints, and that financial resources are fungible and could find alternative uses, it is really crucial for all of them to learn how to provide assistance to SMEs in the most effective, efficient and self-sustainable way. In fact, assistance and services to SMEs provided by BDS centres, which may be public agencies, partnerships between public and private actors or collective initiatives promoted by business associations or groups of enterprises, have a public good content and therefore call for the use of public scarce resources.

The findings of this study forcefully suggest that in Italy there are no easy recipes to copy, and that no 'ideal' best practice BDS centre exists in the real world. Moreover, the typical features of the Italian BDS Centres tend to be consistent with Italy's experience of industrialisation and local development, generated endogenously to the Italian system, and therefore difficult to reproduce in different environments. In addition, the international evidence available on the experience of many developed countries reveals that there is no undisputed successful model to replicate (Cusmano *et al.*, 2000; Feller *et al.*, 1996; Shapira *et al.*, 1996). The successful cases are not many, and the attempts to seriously evaluate BDS centres are rare because evaluation, as seen in section 6, is extremely complicated. Furthermore it is even more complex to assess the impact of services on individual firms and especially on economic systems.

Nevertheless, many useful lessons may be derived from our empirical analysis of the BDS provision in three of the most industrialised regions in Italy to elaborate and implement policy interventions in this field. Let us list some of the main ones below.

1. **BDS centres clearly have a role in supporting the development of a supply of services whenever this is inadequate.** This can be done in two alternative ways: through direct provisions, such as in most of the BDS centres investigated, or supporting other existing institutions in the development of the missing services<sup>23</sup> (Rabellotti and Viganò, 2000);
2. However, the market may do a lot without **public subsidies**, which **should rather focus on specialised areas and functions and take into account the specific features and the historical itinerary of each region.** For example, the Italian experience shows that BDS that deserved public subsidies in an initial stage (e.g. quality management and certification in the early eighties) later became self-sufficient, and their public support lost its justification. Careful location-specific analysis of each case should guide policy-makers.
3. **The capability of BDS centres to provide services demanded by firms depends on their embeddedness in the local business environment.** From this point of view, the Italian experience is very valuable and shows that at least the three following conditions have been necessary for a BDS centre to supply the right set of services as demanded by firms:
  - a deep involvement of the private sector in both the Centre creation and operation;
  - a specific sector specialisation, and
  - a location close to potential customers.

Providing the 'right' services demanded by local enterprises in turn has a positive impact on the Centres' financial sustainability;

---

<sup>23</sup> This is the approach recently promoted by the World Bank and other international organisations using policy tools such as *matching grants* and *training vouchers* (Crisafulli, 1999 and Goldmark, 1999).

4. **Managerial and technical skills and capabilities, entrepreneurial attitudes, and in general human capital are crucial for the success of BDS Centres.** This recommendation remains relevant for all Centres in countries at all levels of development.
5. Notwithstanding individual BDS Centres' efficiency and effectiveness, sometimes questionable also in the highly reputed Italian experience of SME promotion and development, the density of their presence in most industrialised Italian regions is itself a remarkable feature. **The presence of a variety of agents and institutions, and their dynamics of entry, exit and restructuring in response to markets and enterprises' needs, is a crucial determinant of industrial (and SME) performance.** This confirms the path-dependent nature of local industrial development. Sometimes staying below a given threshold of local institutions, like in poorer countries in Latin America, inevitably hinders industrial development. However, continuous and durable commitment to promoting local development is likely to bring results in due course, provided that the strategy – and the Centres' role, mandate and operations - are constantly monitored, evaluated and revised accordingly.
6. **Localisation close to the Centre's customers is important,** but enterprises in the regions under analysis are beginning to acquire strategic services also from distant locations. However, the advantages from acting at a local level do not imply that everything may be available locally. This is the apparent paradox of globalisation: the local context continues to matter, but for different reasons (Guerrieri *et al.*, 2001). **Enterprises' local interaction with BDS Centres needs to go together with linking up and reaching out distant (foreign) service providers.** Thus, for example, virtual electronic networks, although essential – and increasingly widespread - do not eliminate the need for local interactions. Some relatively standardised services, such as for example quality certification, may be provided by remote (foreign) centres. But this does not apply to other services – more tailored to the characteristics of the client and of a more innovative nature – that require service provider-client intense interaction and that cannot be easily codified.
7. **BDS centres also have a role in stimulating demand of new services from firms. This requires anticipating tacit, unexpressed needs and convincing firms of their relevance for future competitiveness.** This is especially true in less developed regions, where firms have not developed full perception of their needs, and lag behind in adopting a “strategic” and “forward-looking” business attitude. Some of these needs may become, in a relatively short time, perceived by enterprises – under the pressure of competitive markets - such as in the case of laboratory testing and quality certification services. But in other cases, such as innovative services, R&D projects, development of new technological solutions, they may need to be subsidised for a long period given their public good content. This was the case for some Centres in Italy during the eighties, and may be the case for some Latin American countries still in an emerging phase of industrial development.
8. **An alternative,** and more “market-neutral” way to provide innovative services to firms **is to create BDS Centres acting more as “network-facilitators” than as service providers.** Nevertheless, this desirable model requires the existence of institutions, such as Universities, research centres, laboratories and training centres to set up the network. This may be not so obvious everywhere, especially in developing countries. This is often a feasible alternative in more industrially advanced Latin American countries (e.g. Argentina, Brazil, Mexico or Chile and Colombia in some specific sectors) already endowed with numerous Institutions with diverse missions and objectives, but sometimes lacking a unitary and integrated vision, or duplicating their role without enhancing their effectiveness.
9. **In poorer countries,** where industry is still incipient (e.g. Central American countries, Bolivia, Paraguay), **a Centre is often bound to operate on its own, in the absence of other agents and**

**institutions supporting local industrial development. This requires a different strategy.**

Within such a context, a Centre should first of all improve its management and technical skills, and the quality of the services provided. In turn, this would improve its reputation, and raise enterprises' demand for its services. Once established its presence in the local economy, the Centre should also aim at creating linkages with existing firms and institutions, and convince firms of the mutual advantage of close collaboration.

10. **Evaluation of a Centre's activities is a difficult but necessary task. It is worth making efforts in order to quantify benefits, costs, and impacts** although indicators should be used very carefully. Moreover, **evaluation should be repeated on a regular basis** to allow effective learning and improvements in methods and practices. Self-sustainability should not be necessarily an objective but, given that budget constraint is probably a common problem, to be able to collect some even crude measures of efficiency and value for money spent may be an important asset to play for policy makers.

## Bibliography

---

- Amin A., 1997, "Il modello Emiliano: Sfide istituzionali", mimeo, (Laboratorio di Politiche Locali).
- Anastasia B., Corò G., 1993, *Una proposta di identificazione*, Ediciclo Nuova Dimensione.
- Bartoloni E., 2001, "Distretti industriali e *outsourcing* di servizi avanzati: un'analisi empirica sulle imprese lombarde", paper presented at the *XXII Italian Regional Science Conference*, Venice: October.
- Bellini N., 2001, "Problemi di valutazione delle politiche di servizi reali alle imprese", paper presented to the IV Congress of the *Associazione Italiana di Valutazione*, Bari, April.
- \_\_\_, "Real Services: A Re-appraisal", *European Planning Studies*, vol. 8, no. 6, 711-728.
- \_\_\_, 1985, "Servizi reali ed innovazione: considerazioni di politica industriale", *Economia Pubblica*, 9/10, 415-420.
- Bellini N., Pasquini F., 1998, "The case of ERVET in Emilia-Romagna: Towards a Second-Generation Regional Development Agency, in Halkier H., Danson M., Damborg C., eds., *Regional Development Agencies in Europe*, Jessica Kingsley: London.
- Bianchi P., 1985, "Servizi reali: considerazioni analitiche e implicazioni di politica industriale, *L'Industria*, 2.
- Bianchi P, Giordani M.G., 1993, "Innovation Policy at the Local and National Levels: The Case of Emilia Romagna", *European Planning Studies*, Vol.1No.1, pp.25-42.
- Brusco S., 1992, "Small firms and the provision of real services" in Pyke F. and Sengenberger W., eds., 177-196.
- Calabrese G., Cariola M., Rolfo S., 2001, "La valutazione delle politiche per l'innovazione a livello regionale", in Paganetto L. and Pietrobelli C., 439-473.
- Caloffi A., 2000, Politiche regionali per i distretti industriali, mimeo.

- Clara M., 2000, "Real service centres in Italian industrial districts: Lessons learned from a comparative analysis", mimeo, *Private Sector Development Branch, UNIDO*: Vienna.
- Cooke, P., Uranga, M.G., Etxebarria, G. (1997), "Regional Innovation Systems: Institutional and organisational dimensions", *Research Policy*, 26, 475-491.
- Corò G. (ed.), 2001, *Il ruolo, la situazione e l'evoluzione della subfornitura nelle realtà distrettuali del Veneto*, Rapporto di ricerca per la Regione Veneto, Comitato di Consultazione sulla Subfornitura, Venezia, Gennaio.
- Corò G., Gurisatti P., Rossi A., 1998, 'Il distretto sport system di Montebelluna', in G. Corò e E. Rullani (eds.), *Percorsi locali di internazionalizzazione*, Milano, Franco Angeli.
- Crisafulli D., 1999, "Matching grants schemes for enterprises upgrading: A comparative analysis", paper presented the International Conference on Building a Modern and Effective Development Services Industry for Small Enterprises, Donor Committee on Small Enterprise Development: Rio de Janeiro.
- Cusmano L., Lissoni F., Sironi M., 2000, "Selezione avversa e trasferimento tecnologico: un'analisi dei centri di servizio alle imprese della Regione Lombardia", *Economia e Politica Industriale*, n. 105.
- Donor Committee on Small Enterprise Development, 1997, *Business Development Services for SMEs: Preliminary Guideline for Donor-Funded Interventions*, October <http://www.ilo.org/public/english/employment/ent/sed/bds/donor/guide.htm>
- Ehlen M., 2001, "The economic impact of manufacturing extension centers", *Economic Development Quarterly*, 15-1, 36-44.
- European Commission, 2001, "Evaluation in European Commission. A Guide to the Evaluation Procedures and Structures currently operational in the Commission's External Co-operation Programmes", mimeo, Europe-Aid Co-operation Office, Brussels, March, <http://europa.eu.int/comm/europeaid/evaluation/methods/index.htm>
- Farinelli M., 2000, *Aggiornamento della Ricognizione dei Centri di Servizio alle Imprese, Centri di Ricerca e Università*, May, Agitec: Rome.
- Feller I., 1997, 'Manufacturing technology centres as components of regional technology infrastructures', *Regional Science and Urban Economics* 27: 181-197.
- Feller I., Glasmeier A., and Melvin M., 1996, 'Issues and perspectives on evaluating manufacturing modernization programs', *Research Policy* 25: 309-19.
- Fontana G. (ed.), 2000, *Istituzioni formative e agenti di sviluppo nell'Italia settentrionale*, Padova, Università degli Studi, Dipartimento di Storia.
- Goldmark L., 1999, "The voucher training model: what next Paraguay?", paper presented the International Conference on Building a Modern and Effective Development Services Industry for Small Enterprises, Donor Committee on Small Enterprise Development: Rio de Janeiro.
- Guerrieri P., Iammarino S. and Pietrobelli C., 2001, *The Global Challenge to Industrial Districts: SMEs in Italy and Taiwan*, Cheltenham, UK and Lyme, US: Edward Elgar.
- Guerrieri P., Pianta M., Dalum B., 2001, 'Tecnologia, specializzazione internazionale e performance economica in Europa', in L.Paganetto e C. Pietrobelli, pp.91-120.
- Hamel, G., Prahalad, C.K., 1994, *Competing for the Future*, Boston: Harvard Business School Press
- Harper M., Finnegan G., 1998, *Value for money?*, London: Intermediate Technology Publications.
- Istat, 1996, *Rapporto annuale. La situazione economica del paese nel 1995*, Istat: Rome.
- Katrak H. 1998, "Economic analyses of Industrial Research Institutes in developing countries: The Indian experience", *Research Policy* 27, 4, pp.37-47.
- Lall S. and Pietrobelli C., 2002, *Failing to Compete: Technology Development and Technology Systems in Africa*, Cheltenham, UK and Lyme, US: Edward Elgar, forthcoming.
- Leoncini R. e Lotti F., 2001, 'Attività innovativa e politiche di sostegno. Il caso Emilia Romagna', in L. Paganetto e C. Pietrobelli (eds.).
- Lundvall B., 1988, 'Innovation as an Interactive Process : From User-producer Interaction to the National System of Innovation', in Dosi G., Freeman C., Nelson R.R., Silverberg G., Soete L., (eds.), 1988, *Technical Change and Economic Theory*, London : Pinter Publishers, New York : Columbia University Press.
- McVay M., 1999, "Performance Measurement for Business Development services to Micro and Small Enterprises: A Revised Framework and Guide to Preparation of Case Studies", mimeo, September.
- Nomisma, 1988, "I centri di servizio reale alle imprese: stato dell'arte e repertorio delle esperienze italiane", *Laboratorio di Politica Industriale*, 4.



- Onida F., 1999, 'Quali prospettive per il modello di specializzazione internazionale dell'Italia?', *Economia Italiana*, N.3, Settembre-Dicembre, pp.573-629.
- Paganetto L. and Pietrobelli C., 2001, *Scienza, tecnologia e innovazione: quali politiche?*, Il Mulino: Bologna.
- Pietrobelli C., 2002, "La competitività dell'Italia nei confronti dei paesi industrializzati. Dinamiche settoriali e di mercato" in G.P. Galli and L.Paganetto (eds.) *Rapporto sulla Competitività dell'Italia: Le Imprese*, Bologna: Il Mulino for Confindustria.
- Pyke F. and Sengenberger W., eds., *Industrial Districts and Local Economic Regeneration*, International Institute for Labour Studies: Geneva.
- Rabellotti R., 2001, "The effect of globalisation on industrial districts in Italy: The case of Brenta", IDS Discussion Paper, Institute of Development Studies, University of Sussex: Brighton.
- Rabellotti R., Viganò L., 2000, "La promozione del settore privato nei paesi in via di sviluppo: un approccio di mercato", *L'Industria*, XXI, n.2, 345-385.
- Regione Lombardia, 1995, *Le politiche industriali della Regione Lombardia: strategie, normative, attuazione*, a cura dell'Assessorato Industria e Artigianato – Servizio Industria, Regione Lombardia: Milan.
- Russo M., Allari G., Bertini S., Bonaretti P., De Leo E., Fiorani G., Rinaldini G., 2000, 'Le sfide per il prossimo decennio: note per un dibattito sulle politiche regionali per lo sviluppo locale dell'Emilia Romagna', *Sviluppo Locale*, VII, 14, pp.23-54.
- Schmitz H., 1992, "Industrial districts: Model and reality in Baden-Wurttemberg", in Pyke F. and Sengenberger W., eds., 87-121.
- Shapira P., Youtie J. and Roessner J.D., 1996, "Current Practices in the Evaluation of US Industrial Modernization Programs", *Research Policy* 25, p.185-214.
- US Congress, Office of Technology Assessment, 1990, "Making Things better: Competing in Manufacturing", OTA-ITE-443, Washington D.C.: US Government Printing Office.



## **Appendix**

---



Table A1  
**BDS CENTRES LOCATED IN EMILIA ROMAGNA, LOMBARDIA, VENETO <sup>a</sup>**

**A) EMILIA ROMAGNA: 27 CENTRES/11 CENTRES SELECTED**

		Location	Web site or email address
1	<b>Centro Ceramico Bologna</b>	<b>Bologna</b>	<a href="mailto:centro.ceramico@cencerbo.it">centro.ceramico@cencerbo.it</a>
2	Agenzia Polo Ceramico	Faenza	N/A
3	<b>Citer</b>	<b>Carpi (Mo)</b>	<a href="http://www.citer.it">www.citer.it</a>
4	<b>Cercal</b>	<b>S.Mauro Pascoli (Fo)</b>	<a href="mailto:cercal@tin.it">cercal@tin.it</a>
5	Cesma	Reggio Emilia	N/A
6	<b>Cermet</b>	<b>S.Lazzaro di Savena (Bo)</b>	<a href="http://www.cermet.it">www.cermet.it</a>
7	<b>Democenter</b>	<b>Modena</b>	<a href="http://www.democenter.it">www.democenter.it</a>
8	Quasco	Bologna	N/A
9	Socotech	Rimini	N/A
10	<b>Promo</b>	<b>Modena</b>	<a href="http://www.promonline.it">www.promonline.it</a>
11	<b>Centuria</b>	<b>Cesena</b>	<a href="http://www.pstcenturia.com">www.pstcenturia.com</a>
12	Polo Tecnologico di Piacenza	Piacenza	N/A
13	<b>Aster</b>	<b>Bologna</b>	<a href="http://www.aster.it">www.aster.it</a>
14	<b>Laboratorio d'impresa</b>	<b>Correggio (Re)</b>	<a href="http://www.aster.it/lab_imp/lab.htm">www.aster.it/lab_imp/lab.htm</a>
15	Centro Ricerche Produzioni Animali	N/A	N/A
16	Centro Ricerche Produzioni Vegetali	N/A	N/A
17	Cemoter	N/A	N/A
18	Centro Italiano Servizi della Terra e della Tavola	N/A	N/A
19	<b>Consobiomed</b>	<b>Mirandola (Mo)</b>	<a href="http://www.consobiomed.it">www.consobiomed.it</a>
20	Consorzio Studi e Ricerche	N/A	N/A
21	Ervet	Bologna	N/A
22	Gemini	N/A	N/A
23	<b>Legnolegno</b>	<b>Reggio Emilia</b>	<a href="http://www.legnolegno.it">www.legnolegno.it</a>
24	Notsomad	N/A	N/A
25	Assopiastrelle	Sassuolo (Mo)	<a href="http://www.assopiastrelle.it">www.assopiastrelle.it</a>
26	Celab	Reggio Emilia	N/A
27	Laboratorio Analisi Tessili	Carpi	N/A

**B) VENETO: 13 CENTRES/7 CENTRES SELECTED**

		Location	Web site or email address
1	<b>Centro Veneto Calzaturiero</b>	<b>Vigenza (Pd)</b>	<a href="http://www.zenit.com/acrib/veneto.html">www.zenit.com/acrib/veneto.html</a>
2	<b>TecnoPadova</b>	<b>Padova</b>	<a href="http://www.tecnopadova.it">www.tecnopadova.it</a>
3	<b>Treviso Tecnologia</b>	<b>Lancenigo di Villorba (Tv)</b>	<a href="http://www.tvtecnologia.it">www.tvtecnologia.it</a>
4	Cosmi	Padova	<a href="http://risc590.bologna.enea.it/lrc/partners/Cosmi.html">risc590.bologna.enea.it/lrc/partners/Cosmi.html</a>
5	Start Multimedia	Padova	<a href="http://web.tin.it/start/index.htm">web.tin.it/start/index.htm</a>
6	Consorzio Cantieristica Minore Veneziana	Venezia	<a href="http://www.ccmv.it">www.ccmv.it</a>
7	Consorzio Orafi Vicentini	Vicenza	N/A
8	<b>Fondazione "Rumor" Centro Produttività Veneto</b>	<b>Vicenza</b>	<a href="mailto:info@cpv.org">info@cpv.org</a>
9	<b>CSQA</b>	<b>Tiene (Vc)</b>	<a href="http://www.csqa.it">www.csqa.it</a>
10	<b>Tecnologia &amp; Design</b>	<b>Montebelluna (Tv)</b>	<a href="mailto:ted@tecnologiaedesign.it">ted@tecnologiaedesign.it</a>
11	<b>Certottica</b>	<b>Longarone (Bl)</b>	<a href="http://www.certottica.it">www.certottica.it</a>
12	Centro Servizi Occhialeria	Pieve di Cadore (Bl)	<a href="http://www.occhiale.it">www.occhiale.it</a>
13	Museo dello Scarpone	Montebelluna (Tv)	N/A

**C) LOMBARDIA: 33 CENTRES/12 CENTRES SELECTED**

		<b>Location</b>	<b>Web site or email address</b>
<b>1</b>	<b>Centrocot</b>	<b>Busto Arsizio (Va)</b>	<b>www.centrocot.it</b>
2	Centro Tessile di Como	Como	www.textilecomo.com
<b>3</b>	<b>Centro Servizi Calza</b>	<b>Castelgoffredo (Mn)</b>	<b>www.centroservizicalza.it</b>
<b>4</b>	<b>Lumetel</b>	<b>Lumezzane (Bs)</b>	<b>www.lumetel.it</b>
<b>5</b>	<b>Cestec</b>	<b>Milano</b>	<b>www.cestec.it</b>
6	Servitec	Dalmine (Bg)	N/A
<b>7</b>	<b>Secas</b>	<b>Darfo Boario Terme (Bs)</b>	<b>www.intercam.it/com/secas/secas.htm</b>
8	Cesap	Assago (Mi)	www.assocomplast.com/cesap/cesapita.htm
<b>9</b>	<b>Centro Innovazione Lecco</b>	<b>Lecco</b>	<b>www.cil.lecco.it</b>
<b>10</b>	<b>Cimac</b>	<b>Vigevano (Pv)</b>	<b>www.cimaccpv.it</b>
<b>11</b>	<b>Aqm</b>	<b>Brescia</b>	<b>www.aqm.it</b>
<b>12</b>	<b>Clac</b>	<b>Cantù (Co)</b>	<b>www.clac00.it</b>
13	Centro per il legno e il pioppo	Sustinente (Bs)	N/A
14	Agenzia Innovazione e Sviluppo	Destra Secchia Mantovano	www.assind.mn.it/strumenti_associativi/innovazione_sviluppo/default.htm
15	Assotec	Milano	www.assotec.it
16	Assomac	Vigevano (Pv)	www.assomac.com
<b>17</b>	<b>Catas</b>	<b>Lissone (Mi)</b>	<b>www.catas.com</b>
18	Circ	Milano	www.federchimica.it/italiano/circ.html
<b>19</b>	<b>ASNM</b>	<b>Sesto S. Giovanni (Mi)</b>	<b>www.asnm.com</b>
20	Centro Servizi Vigevano	Vigevano (Pv)	www.csicigevano.it
<b>21</b>	<b>PSTL</b>	<b>Busto Arsizio (Va)</b>	<b>www.pstl.net</b>
22	ISFOR 2000	Brescia	www.isfor2000.com
23	Bottega Leonardo	Cinisello Balsamo (Mi)	www.bottegageleonardo.com
24	Chemiricerche	Molinetto di Mazzano (Bs)	www.chemiricerche.it
25	CSP	Mornago (Va)	N/A
27	Omeco	Monza (Mi)	www.omecosrl.it
28	Teknova	Milano	www.teknova.it
29	Anccp	Milano	www.anccp.it
30	Arienta	Livraga (Co)	N/A
31	Cesi	Milano	www.cesi.it
32	Fast	Milano	www.fast.it
33	Co.Svim.	Brescia	www.cosvim.it

**Source:** Calabrese, Cariola, Rolfo (2001); Agitech (2000).

<sup>a</sup> in bold the centres interviewed

Table A2  
KENDALL CORRELATION COEFFICIENTS <sup>a</sup>

	Sector-specialisation	Main initiative	Equities owned by public actors (%)	Number of services supplied	Number of customers	Main location of customers	Turnover (Euro ml.)	Sale of services/ turnover (%)	Public subsidies/ turnover (%)	Number of employees	Number of external linkages
Sector-specialisation <sup>b</sup>	1.000										
Main initiative <sup>2</sup>	.670 <sup>d</sup>	1.000									
Equities owned by public actors (%)	-.451 <sup>d</sup>	-.548 <sup>d</sup>	1.000								
Number of services supplied	.004	.000		1.000							
Number of customers	-.022	.076	-.068	.172	1.000						
Main location of customers <sup>2</sup>	.894	.623	.621	.237		1.000					
Turnover (Euro ml.)	-.168	-.204	.183	.155	-.031	.250					
Sale of services/ turnover (%)	.316	.200	.199	.845	.126	.141	1.000				
Public subsidies/turnover (%)	-.350 <sup>c</sup>	-.381 <sup>d</sup>	.306 <sup>c</sup>	.148	.595 <sup>d</sup>	.221		1.000			
Number of employees	.023	.010	.019	.280	.000	.141				1.000	
Number of external linkages	.208	.321 <sup>*</sup>	-.144	-.092	.275	.252	-.005	1.000			
	.182	.030	.274	.506	.054	.097	.971		1.000		
	-.209	-.288	.051	.281	-.181	-.156	.114	-.727 <sup>d</sup>			
	.221	.078	.725	.059	.246	.348	.426	.000			
	-.162	-.143	.146	.206	.586 <sup>d</sup>	.306 <sup>c</sup>	.617 <sup>d</sup>	.087	-.101	1.000	
	.298	.334	.267	.134	.000	.043	.000	.507	.482		
	-.189	-.216	.095	.302 <sup>c</sup>	.121	-.221	.292 <sup>c</sup>	-.200	.273	.204	1.000
	.245	.163	.489	.036	.417	.163	.032	.145	.071	.136	

Source: Authors' survey.

<sup>a</sup> To analyse correlation we calculate Kendall coefficient that is the more appropriate for ordinal variables. However, alternative correlation measures, such as Spearman and Pearson coefficients, were also calculated and no differences in terms of statistically significant associations were found. <sup>b</sup> Variables: sector-specialisation: dummy variable (1=sector-specialised centre; 0=non sector-specialised centre); main initiative: ordinal variable (1=public initiative; 2=mixed initiative; 3=private initiative); main location of customers: ordinal variable (1=local; 2=regional; 3=national or international). <sup>c</sup> 0.05 level of significance. <sup>d</sup> 0.01 level of significance

**Table A3**  
**MAIN VOCATIONS**

Centre	Vocation	Justification
Centro Ceramico Bologna	Laboratory tests and quality certification	% N/A The centre mainly supplies laboratory tests and quality certifications, which are identified as the most profitable services provided.
Certottica	Laboratory tests and quality certification	% N/A The centre mainly supplies laboratory tests and quality certifications, which are identified as the most profitable services provided.
CSQA	Laboratory tests and quality certification	70% of human resources devoted to supply laboratory tests and quality certifications.
AQM	Laboratory tests and quality certification	% N/A The centre mainly supplies laboratory tests and quality certifications, which are identified as the most profitable services provided.
CIMAC	Laboratory tests and quality certification	80% of human resources devoted to supply laboratory tests and quality certifications.
Centro Servizi Calza	Laboratory tests and quality certification	70% of human resources devoted to supply laboratory tests and quality certifications.
CENTROCOT	Laboratory tests and quality certification	75% of human resources devoted to supply laboratory tests and quality certifications.
CATAS	Laboratory tests and quality certification	% N/A The centre mainly supplies laboratory tests and quality certifications, which are identified as the most profitable services provided.
CERMET	Laboratory tests and quality certification	70% of human resources devoted to supply laboratory tests and quality certifications.
ProMo	Territorial development	Main objective is territorial development. The centre supply services to firms specialised in various sectors and located in the Province.
Treviso Tecnologia	Territorial development	The centre supply technological and training services. It does not have a sector specialisation. Customers are located in the Province.
LUMETEL	Territorial development	The centre supply marketing, technological, training and business management services. It does not have a sector specialisation. Customers are located in the Province.
CIL	Territorial development	The centre supply technological and training services. It does not have a sector specialisation. Customers are located in the Province.
SECAS	Territorial development	The centre supply marketing, technological, training and business management services. It does not have a sector specialisation. Customers are local but it is not a district. Main objective is the development of a mountain area.
CESTEC	Territorial development	The centre supply marketing, technological, training and business management services. It does not have a sector specialisation. Customers are located in the Region.
ASNM	Territorial development	The centre supply marketing, training and business management services. It does not have a sector specialisation. Customers are local but it is not a district. Main objective is the reorganisation of a de-industrialised area.
PSTL	Territorial development	The centre supply marketing, technological, training and business management services. It does not have a sector specialisation. Customers are local but it is not a district.
ASTER	Territorial development	The centre supplies technological, training and business management services. It does not have a sector specialisation. Customers are located in the Region.
Tecnopadova	Territorial development	The centre supply design, technological, training and business management services. It does not have a sector specialisation. Customers are located in the Region.
CITER	District development	The centre supply design, technological, training and business management services. It does have a sector specialisation. It is located in a district.
Centuria	District development	The centre supplies marketing, technological and business management services. It does have a sector specialisation. It is located in a district.
Consobiomed	District development	The centre supply marketing, technological and training services. It does have a sector specialisation. It is located in a district.
Centro Veneto Calzaturiero	District development	The centre supply design, technological and training services. It does have a sector specialisation. It is located in a district.
CLAC	District development	The centre supplies design, marketing, technological, training and business management services. It does have a sector specialisation. It is located in a district.
Legnolegno	District development	The centre supply marketing, technological, training and business management services. It does have a sector specialisation. It is located in a district.
CERCAL	District development	The centre supply design, technological and training services. It does have a sector specialisation. It is located in a district.
Democenter	Innovative technological services	65% of human resources devoted to technological projects.
Tecnologia & Design	Innovative technological services	65% of human resources devoted to technological projects.
Laboratorio d'impresa	Innovative technological services	70% of human resources devoted to technological projects.
CPV - Rumor	Training	70% of human resources devoted to training

**Source:** Authors' survey.





Serie

desarrollo productivo

## Issues published

- 50 El impacto de las transnacionales en la reestructuración industrial en México. Examen de las industrias de autopartes y del televisor, Jorge Carrillo, Michael Mortimore y Jorge Alonso Estrada, Red de inversiones y estrategias empresariales, (LC/G.1994), 1998. [www](#)
- 51 Perú: un CANálisis de su competitividad internacional, José Luis Bonifaz y Michael Mortimore, Red de inversiones y estrategias empresariales, (LC/G.2028), 1998. [www](#)
- 52 National Agricultural Research Systems in Latin America and the Caribbean: Changes and Challenges, César Morales, Agricultural and Rural Development, (LC/G.2035), 1998. [www](#)
- 53 La introducción de mecanismos de mercado en la investigación agropecuaria y su financiamiento: cambios y transformaciones recientes, César Morales, Red de desarrollo agropecuario, (LC/L.1181 y Corr.1) 1999. [www](#)
- 54 Procesos de subcontratación y cambios en la calificación de los trabajadores, Anselmo García, Leonard Mertens y Roberto Wilde, Red de reestructuración y competitividad, (LC/L.1182-P) N° de venta: S.99.II.G.23 (US\$10.00), 1999. [www](#)
- 55 La subcontratación como proceso de aprendizaje: el caso de la electrónica en Jalisco (México) en la década de los noventa, Enrique Dussel, Red de reestructuración y competitividad, (LC/L.1183-P) N° de venta: S.99.II-G.16 (US\$ 10.00), 1999. [www](#)
- 56 Social dimensions of economic development and productivity: inequality and social performance, Beverley Carlson, Restructuring and Competitiveness Network, (LC/L.1184-P) Sales N°: E.99.II.G.18, (US\$10.00), 1999. [www](#)
- 57 Impactos diferenciados de las reformas sobre el agro mexicano: productos, regiones y agentes, Salomón Salcedo Red de desarrollo agropecuario, (LC/L.1193-P) N° de venta: S.99.II.G.19 (US\$10.00), 1999. [www](#)
- 58 Colombia: Un CANálisis de su competitividad internacional, José Luis Bonifaz y Michael Mortimore, Red de inversiones y estrategias empresariales, (LC/L.1229-P) N° de venta S.99.II.G.26 (US\$10.00), 1999.
- 59 Grupos financieros españoles en América Latina: Una estrategia audaz en un difícil y cambiante entorno europeo, Alvaro Calderón y Ramón Casilda, Red de inversiones y estrategias empresariales, (LC/L.1244-P) N° de venta S.99.II.G.27 (US\$10.00), 1999. [www](#)
- 60 Derechos de propiedad y pueblos indígenas en Chile, Bernardo Muñoz, Red de desarrollo agropecuario, (LC/L.1257-P) N° de venta: S.99.II.G.31 (US\$10.00), 1999. [www](#)
- 61 Los mercados de tierras rurales en Bolivia, Jorge A. Muñoz, Red de desarrollo agropecuario, (LC/L.1258-P) N° de venta S.99.II.G.32 (US\$10.00), 1999. [www](#)
- 62 México: Un CANálisis de su competitividad internacional, Michael Mortimore, Rudolph Buitelaar y José Luis Bonifaz, Red de inversiones y estrategias empresariales (LC/L.1268-P) N° de venta S.00.II.G.32 (US\$10.00), 2000. [www](#)
- 63 El mercado de tierras rurales en el Perú, Volumen I: Análisis institucional, Eduardo Zegarra Méndez, Red de desarrollo agropecuario, (LC/L.1278-P) N° de venta: S.99.II.G.51 (US\$10.00), 1999 [www](#) y Volumen II: Análisis económico Eduardo Zegarra Méndez, Red de desarrollo agropecuario, (LC/L.1278/Add.1-P) N° de venta: S.99.II.G.52 (US\$10.00), 1999. [www](#)
- 64 Achieving Educational Quality: What Schools Teach Us, Beverley A. Carlson, Restructuring and Competitiveness Network, (LC/L.1279-P) Sales N° E.99.II.G.60 (US\$10.00), 2000. [www](#)
- 65 Cambios en la estructura y comportamiento del aparato productivo latinoamericano en los años 1990: después del "Consenso de Washington", ¿Qué?, Jorge Katz, Red de reestructuración y competitividad, LC/L.1280-P) N° de venta S.99.II.G.61 (US\$10.00), 1999. [www](#)
- 66 El mercado de tierras en dos provincia de Argentina: La Rioja y Salta, Jürgen Popp y María Antonieta Gasperini, Red de desarrollo agropecuario, (LC/L.1300-P) N° de venta S.00.II.G.11 (US\$10.00), 1999. [www](#)
- 67 Las aglomeraciones productivas alrededor de la minería: el caso de la Minera Yanacocha S.A., Juana R. Kuramoto Red de reestructuración y competitividad, (LC/L.1312-P) N° de venta S.00.II.G.12 (US\$10.00), 2000. [www](#)
- 68 La política agrícola en Chile: lecciones de tres décadas, Belfor Portilla R., Red de desarrollo agropecuario (LC/L.1315-P) N° de venta S.00.II.G.6 (US\$10.00), 2000. [www](#)

- 69 The Current Situation of Small and Medium-Sized Industrial Enterprises in Trinidad & Tobago, Barbados and St.Lucia, Michael Harris, Restructuring and Competitiveness Network, (LC/L.1316-P) Sales N° E.00.II.G.85 (US\$10.00), 2000. [www](#)
- 70 Una estrategia de desarrollo basada en recursos naturales: Análisis *cluster* del complejo de cobre de la Southern Perú, Jorge Torres-Zorrilla, Red de reestructuración y competitividad, (LC/L.1317-P) N° de venta S.00.II.G.13 (US\$10.00), 2000. [www](#)
- 71 La competitividad de la industria petrolera venezolana, Benito Sánchez, César Baena y Paul Esqueda, Red de reestructuración y competitividad, (LC/L.1319-P) N° de venta S.00.II.G.60 (US\$10.00), 2000. [www](#)
- 72 Trayectorias tecnológicas en empresas maquiladoras asiáticas y americanas en México, Jorge Alonso, Jorge Carrillo y Oscar Contreras, Red de reestructuración y competitividad, (LC/L.1323-P) N° de venta S.00.II.G.61 (US\$10.00), 2000. [www](#)
- 73 El estudio de mercado de tierras en Guatemala, Jaime Arturo Carrera, Red de desarrollo agropecuario, (LC/1325-P) N° de venta S.00.II.G.24 (US\$10.00), 2000. [www](#)
- 74 Pavimentando el otro sendero: tierras rurales, el mercado y el Estado en América Latina, Frank Vogelgesang, Red de desarrollo agropecuario, (LC/L1341-P) N° de venta S.00.II.G.19 (US\$10.00), 2000. [www](#)
- 75 Pasado y presente del comportamiento tecnológico de América Latina, Jorge Katz, Red de reestructuración y competitividad (LC/L.1342-P) N° de venta S.00.II.G.45 (US\$10.000), 2000. [www](#)
- 76 El mercado de tierras rurales en la República Dominicana., Angela Tejada y Soraya Peralta, Red de desarrollo agropecuario (LC/L.1363-P) N° de venta S.00.II.G.53 (US\$10.00), 2000. [www](#)
- 77 El mercado de tierras agrícolas en Paraguay, José Molinas Vega, Red de desarrollo agropecuario, (LC/L.1367-P) N° de venta S.00.II.G.145 (US\$10.00), 2000. [www](#)
- 78 Pequeñas y medianas empresas industriales en Chile, Cecilia Alarcón y Giovanni Stumpo, Red de reestructuración y competitividad, (LC/L.1368-P) N° de venta S.00.II.G.72 (US\$10.00), 2000. [www](#)
- 79 El proceso hidrometalúrgico de lixiviación en pilas y el desarrollo de la minería cuprífera en Chile, Jorge Beckel, Red de reestructuración y competitividad, (LC/L.1371-P) N° de venta S.00.II.G.50 (US\$10.00), 2000. [www](#)
- 80 La inversión extranjera en México, Enrique Dussel Peters, Red de inversiones y estrategias empresariales, (LC/L.1414-P) N° de venta S.00.II.G.104 (US\$10.00), 2000. [www](#)
- 81 Two decades of adjustment and agricultural development in Latin America and the Caribbean, Max Spoor Agricultural and Rural Development, (LC/L.1380-P) Sales N° E.00.II.G.54 (US\$10.00), 2000. [www](#)
- 82 Costa Rica: Sistema Nacional de Innovación, Rudolph Buitelaar, Ramón Padilla y Ruth Urrutia-Alvarez, Red de reestructuración y competitividad, (LC/L.1404-P) N° de venta S.00.II.G.71 (US\$10.00), 2000. [www](#)
- 83 La formación de un cluster en torno al turismo de naturaleza sustentable en Bonito, MS, Brasil, Red de desarrollo agropecuario (LC/L.1633-P) N° de venta E.01.II.G. 172 (US\$10.00), 2001. [www](#)
- 84 The transformation of the American Apparel Industry: Is NAFTA a curse or blessing, Gary Gereffi, Investment and Corporate Strategies, (LC/L.1420-P) Sales N° S.00.II.G.103, (US\$10.00), 2000. [www](#)
- 85 Perspectivas y restricciones al desarrollo sustentable de la producción forestal en América Latina, Maria Beatriz de Albuquerque David, Violette Brustlein y Philippe Waniez, Red de desarrollo agropecuario, (LC/L.1406-P) N° de venta S.00.II.G.73 (US\$10.00), 2000. [www](#)
- 86 Mejores prácticas en políticas y programas de desarrollo rural: implicancias para el caso chileno, Maximiliano Cox, Red de desarrollo agropecuario, (LC/L.1509-P) N° de venta S.00.II.G.47) (US\$10.00), 2000. [www](#)
- 87 Towards a theory of the small firm: theoretical aspects and some policy implications, Marco R. Di Tommaso y Sabrina Dubbini, Restructuring and Competitiveness Network, (LC/L.1415-P) Sales N° E.00.II.G.86 (US\$10.00), 2000. [www](#)
- 88 Desempeño de las exportaciones, modernización tecnológica y estrategias en materia de inversiones extranjeras directas en las economías de reciente industrialización de Asia. Con especial referencia a Singapur Sanjaya Lall, Red de inversiones y estrategias empresariales, (LC/L.1421-P) N° de venta S.00.II.G.108 (US\$10.00), 2000. [www](#)
- 89 Mujeres en la estadística: la profesión habla, Beverly Carlson, Red de reestructuración y competitividad, (LC/L.1436-P) N° de venta S.00.II.G.116 (US\$10.00), 2000. [www](#)
- 90 Impacto de las políticas de ajuste estructural en el sector agropecuario y agroindustrial: el caso de Argentina, Red de desarrollo agropecuario, G. Ghezán, M. Materos y J. Elverdin, (LC/L.1618-P). N° de venta S.01.II.G.158 (US\$10.00), 2001. [www](#)
- 91 Comportamento do mercado de terras no Brasil, Red de desarrollo agropecuario, G. Leite da Silva, C. Afonso, C. Moitinho (LC/L.1484-P) N° de venta S.01.II.G.16 (US\$10.00), 2000. [www](#)
- 92 Estudio de caso: o mercado de terras rurais na regio da zona da mata de Pernambuco, Brasil, M. dos Santos Rodrigues y P. de Andrade Rollo, Volumen I, Red de desarrollo agropecuario, (LC/L.1447-P) N° de venta S.00.II.G.127 (US\$10.00), 2000. [www](#) y Volumen II, M. dos Santos Rodrigues y P. de Andrade Rollo, Red de desarrollo agropecuario (LC/L.1447/Add.1-P) N° de venta S.00.II.G.128 (US\$10.00), 2000. [www](#)
- 93 La participación de pequeños productores en el mercado de tierras rurales en El Salvador, H. Ever, S. Melgar, M.A. Batres y M. Soto, Red de desarrollo agropecuario, (LC/L.1448-P) N° de venta S.00.II.G.129 (US\$10.00), 2000. [www](#)

- 94 El impacto de las reformas estructurales en la agricultura colombiana, Santiago Perry, Red de desarrollo agropecuario (LC/L.1449-P) N° de venta S.00.II.G.130 (US\$10.00), 2000. [www](#)
- 95 Costa Rica: el nuevo marco regulatorio y el sector agrícola, Luis Fernando Fernández Alvarado y Evelio Granados Carvajal, Red de desarrollo agropecuario (LC/L.1453-P) N° de venta S.00.II.G.133 (US\$10.00), 2000. [www](#)
- 96 Cuero, calzado y afines en Chile, László Kassai, Red de reestructuración y competitividad (LC/L. 1463-P) N° de venta S.00.II.G.143 (US\$10.00) 2000. [www](#)
- 97 La pobreza rural una preocupación permanente en el pensamiento de la CEPAL, Pedro Tejo, Red de desarrollo agropecuario, (LC/L.1454-P) N° de venta S.00.II.G.134 (US\$10.00), 2000. [www](#)
- 98 Incidencia de las reformas estructurales sobre la agricultura boliviana, Fernando Crespo Valdivia, Red de desarrollo agropecuario, (LC/L.1455-P) N° de venta S.00.II.G.135 (US\$10.00), 2000. [www](#)
- 99 Mudanças estruturais na agricultura brasileira: 1980-1998 boliviana, Guilherme Leite da Silva Dias y Cicely Moitinho Amaral, Red de desarrollo agropecuario, (LC/L.1485-P) N° de venta S.01.II.G.17 (US\$10.00), 2001. [www](#)
- 100 From Industrial Economics to Digital Economics: An Introduction to the Transition, Martin R.Hilbert, Restructuring and Competitiveness Network Sales, (LC/L.1497-P) Sales N° E.01.II.G.38 (US\$ 10.00) [www](#)
- 101 Las nuevas fronteras tecnológicas: promesas, desafíos y amenazas de transgénicos, César Morales, Red de desarrollo agropecuario, (LC/L. 1590-P) N° de venta S.01.II.G.132 (US\$ 10.00) 2001.
- 102 El mercado vitivinícola mundial y el flujo de inversión extranjera a Chile, Sebastian Vergara, Red de reestructuración y competitividad, (LC/L. 1589-P) N° de venta S.01.II.G.133 (US\$ 10.00) 2001. [www](#)
- 103 Regímenes competitivos sectoriales, productividad y competitividad internacional, Red de reestructuración y competitividad Jorge Katz y Giovanni Stumpo (LC/L.1578-P) N° de venta S.01.II.G.120 (US\$10.00), 2001. [www](#)
- 104 Latin America on its Path into the Digital Age: Where Are We?, Martin R.Hilbert, Restructuring and Competitiveness Network, (LC/L 1555-P) Sales N° E.01.II.G.100 (US\$ 10.000), 2001. [www](#)
- 105 Estrategia de desarrollo de clusters basados en recursos naturales: el caso de la bauxita en el norte de Brasil, Jorge Chami Batista, Red de reestructuración y competitividad, (LC/L.1570-P) N° de venta S.01.II.G.113 (US\$ 10.00) 2001. [www](#)
- 106 Construcción de ambientes favorables para el desarrollo de competencias laborales: tres estudios sectoriales, Red de reestructuración y competitividad, Mónica Casalet, (LC/L.1573-P) N° de venta S.01.II.G.116 (US\$ 10.00), 2001. [www](#)
- 107 La competitividad internacional y el desarrollo nacional: implicancias para la política de IED en América Latina. Michael Mortimore, Sebastián Vergara, Jorge Katz, Red de reestructuración y competitividad, (LC/L.1586-P) N° de venta S.01.II.G.130 (US\$ 10.00), 2001. [www](#)
- 108 América Latina en el proceso de internacionalización de las empresas finlandesas, Kent Wilska, Ville Tourunen, Red de reestructuración y competitividad, (LC/L. 1599-P) N° de venta S.01.II.G.140 (US\$ 10.00), 2001. [www](#)
- 109 Colombia: Alcances y Lecciones de su experiencia en Reforma Agraria, Alvaro Balcazar, Nelson López, Martha Lucía Orozco y Margarita Vega, Red de desarrollo agropecuario (LC/L.1602-P), N° de venta S.01.II.G.142 (US\$ 10.00), 2001. [www](#)
- 110 El mercado de tierras en México, Roberto Escalante, Red de desarrollo agropecuario (LC/L.1604-P), N° de venta S.01.II.G.144 (US\$ 10.00), 2001. [www](#)
- 111 Fusiones y adquisiciones transfronterizas en México durante los años noventa, Celso Garrido, Red de desarrollo agropecuario (LC/L.1622-P), N° de venta S.01.II.G.161 (US\$ 10.00), 2001. [www](#)
- 112 El turismo rural en Chile. Experiencias de agroturismo en las Regiones del Maule, La Araucanía y Los Lagos, MartineDirven y Jorge Shaerer, Red de desarrollo agropecuario (LC/L 1621-P), N° de venta S.01.II G 160 (US\$ 10.00), 2001. [www](#)
- 113 Informe marco jurídico nacional e internacional sobre inversión extranjera directa en Chile, Felipe Lopeandia, Red de reestructuración y competitividad (LC/L.1623-P) N° de venta S.00.II.G.163 (US\$10.00) 2001. [www](#)
- 114 Education and the labour market in Latin America, Beverly A. Carlson, Red de reestructuración y competitividad, (LC/L. 1631-P) N° de venta E.00.II.G.169 (US\$10.00) 2000. [www](#)
- 115 Programas de apoyo a las micro, pequeñas y medianas empresas en México, 1995-2000, Gilberto García y Víctor Paredes, Red de reestructuración y competitividad, (LC/L.1639-P) N° de venta S.01.II.G.177 (US\$10.00) 2001. [www](#)
- 116 Políticas de competitividade industrial no Brasil, 1995-2000, Regis Bonelli, Red de reestructuración y competitividad, (LC/L.1641-P) N° de venta S.01.II.G.181 (US\$10.00) 2001. [www](#)
- 117 Mercado de trabajo y formación de recursos humanos en tecnología de la información en Brasil. ¿Encuentro o desencuentro?, Lidia Micaela Segre y Clevis Elena Rapkiewicz, Red de reestructuración y competitividad, (LC/L.1658-P) N° de venta S.01.II.G.192 (US\$10.00) 2001.
- 118 Los derechos de propiedad intelectual en el mundo de la OMC, Jacqueline Abarza, Jorge Katz, Red de reestructuración y competitividad (LC/L.1666-P) N° de venta S.01.II.G.200 (US\$10.00) 2000. [www](#)

- 119 La dinámica de oferta y demanda de competencias en un sector basado en el conocimiento en Argentina, Red de reestructuración y competitividad, (LC/L.1696-P) N° de venta S.02.II.G.8 (US\$10.00) 2002.
- 120 Innovación tecnológica y perfeccionamiento de las pequeñas y medianas empresas en la República Federal de Alemania: Incentivos y financiamiento, Jörg Meyer-Stamer y Frank Wältring, Red de reestructuración y competitividad (LC/L.1709-P) N° de venta S.02.II.G.16 (US\$10.00) 2002.
- 121 Microfinanzas en países pequeños de América Latina: Bolivia, Ecuador y El Salvador, Francesco Bicciato, Laura Foschi, Elisabetta Bottato y Filippo Ivardi Ganapini, Red de reestructuración y competitividad (LC/L.1710-P) N° de venta S.02.II.G.17 (US\$10.00) 2002.
- 122 Acceso a tecnología después de las reformas estructurales: la experiencia de las pequeñas y medianas empresas en Brasil, Chile y México, Marco Dini, Red de reestructuración y competitividad (LC/L.1738-P), N° de venta S.02.II.G.50 (US\$10.00) 2002. [www](#)
- 123 Pequeñas y medianas empresas industriales y política tecnológica: el caso mexicano de las tres últimas década, Mauricio de María y Campos, Red de reestructuración y competitividad (LC/L.1743-P), N° de venta S.02.II.G.55 (US\$10.00) 2002. . [www](#)
- 124 Fatores de competitividade e barreiras ao crescimento no pólo de biotecnologia de Belo Horizonte, Pablo Fajnzylber, Red de reestructuración y competitividad (LC/L.1754-P), N° de venta S.02.II.G.66 (US\$10.00) 2002. [www](#)
- 125 Adquisición de tecnología, aprendizaje y ambiente institucional en las PYME: el sector de las artes gráficas en México, Marco Dini, Juan Manuel Corona y Marco A. Jaso Sánchez, Red de reestructuración y competitividad (LC/L.1755-P), N° de venta S.02.II.G.67 (US\$10.00) 2002.
- 126 Las PYME y los sistemas de apoyo a la innovación tecnológica en Chile, Marcelo Monsalves, Red de reestructuración y competitividad (LC/L.1756-P), N° de venta S.02.II.G.68 (US\$10.00) 2002. [www](#)
- 127 As políticas de apoio à geração e difusão de tecnologias para as pequenas e médias empresas no Brasil, Marisa dos Reis Botelho y Maurício Mendonça, Red de reestructuración y competitividad (LC/L.1757-P), N° de venta S.02.II.G.69 (US\$10.00) 2002. [www](#)
- 128 El acceso de los indígenas a la tierra en los ordenamientos jurídicos de América Latina: un estudio de casos, José Aylwin, Volumen I, Red de desarrollo agropecuario (LC/L.1767-P), S.02.II.G.81 (US\$10.00), 2002 y Volumen II, José Aylwin, Red de desarrollo agropecuario (LC/L.1767/Add.1-P), N° de venta S.02.II.G.82 (US\$10.00) 2002
- 129 Structural reforms, technological gaps and economic development. A Latin American perspective, Mario Cimoli and Jorge Katz, Restructuring and competitiveness network (LC/L.1775-P), Sales N° E.02.II.G.89 (US\$ 10.00) 2002
- 130 Business development service centres in Italy. An empirical analysis of three regional experiences: Emilia Romagna, Lombardia and Veneto, Carlo Pietrobelli and Roberta Rabelotti, Restructuring and Competitiveness Network (LC/L.1781-P), Sales N° E.02.II.G.96 (US\$ 10.00) 2002 [www](#)

- Readers wishing to obtain the above publications can do so by writing to the following address: ECLAC, Division of Production, Productivity and Management, Industrial and Technological Development Unit, Casilla 179-D, Santiago de Chile. Some issues may not be available.
- Publications available for sale should be ordered from the Distribution Unit, ECLAC, Casilla 179-D, Santiago, Chile, Fax (562) 210 2069, [publications@eclac.cl](mailto:publications@eclac.cl).
- [www](#) : These publications are also available on the Internet: <http://www.eclac.cl>

Name:.....
Activity: .....
Address: .....
Postal code, city, country:.....
Tel.:..... Fax: ..... E.mail address:.....