INNOVATIVE CLUSTERS & STRATEGIC INTELLIGENCE

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Outline

Introduction: STRATINC objectives

I. Clusters: diversity and innovation mechanism

II. Strategic intelligence

III. Applying cluster intelligence
STRATINC objectives focus on improving competitiveness and innovation of industrial clusters and SMEs through information mastering by:

1. Rising awareness in industrial (already existing or potential) clusters or in individual SMEs on the importance of information mastering;

2. Identifying the strategic information needs of SMEs in different industrial sectors taking into account the regional differences of technological development, of position in the value chain or simply of cultural dimension;

3. Benchmarking existing methods and tools from the strategic intelligence framework (technology watch, business or competitive intelligence, foresight, benchmarking) and building practical templates to facilitate the choice of most adapted intelligence set ups;

4. Producing a methodological guide book on the different software applications for collection, analysis, sorting out and diffusion of information to be implemented by clusters and SMEs;
The links between **Innovation** and **District / Cluster** theory can be traced back to 1977, when Bagnasco published his study on the Third Italy, describing small cities and communities of central Italy flourishing on the basis company clusters sustaining flexibility and continuous product innovation.

Michael Porter popularized the concept of industry clusters is his book *The Competitive Advantage of Nations* (1990). Porter recognized that the majority of economic activity takes place at the regional level and his ideas are commonly applied to cities and regions.
I. Innovative clusters

Definition: Clusters are geographic concentrations of interconnected companies and institutions with systematic relationships to one another based on complementarities or similarities in particular fields that co-operate and establish close linkages and working alliances to improve their collective competitiveness.

Origins: Clusters have different origins: many (Italian districts) have grown by the volunteer decision of manufacturing SMEs, while others have been influenced by large manufacturing companies (Bayer in the Rhine region), and others are by-products of universities and research institutes, in the case of planned science and technology parks.
I. Innovative clusters
Diversity: Industrial districts in traditional sectors

Basic elements
- Specialised firms / skilled workers
- Buyers / catalysers

Structuring elements
- Flexible combinations
- Nontraded inputs
- Technological spillovers
I. Innovative clusters

Diversity: Technology districts in high-tech sectors

Global innovation clusters, core technologies and key companies

Research and knowledge generation + Venture capital + Law firms + Specialist consultants > A local value chain
**I. Innovative clusters**

**Diversity: Vertical – Horizontal clusters**

*Vertical* are the clusters with strong inter-firm linkages; the companies are specialised in different phases of the production process, and linked along the supply chain with supplier-producer relationships; characteristic case, the Italian industrial districts.

*Horizontal* are the clusters with weak inter-linkages; the organizations composing the cluster act as a whole to achieve a common objective, i.e. to open a new market, to use an infrastructure, to cover subcontracting needs of a large company, to cooperate with a strong R&D institution.

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Fig. 1. Structure of supply chain.
The complexity of networks within the district makes 'technology districts planning' extremely difficult. The nearest application of the district concept to regional planning comes through science and technology parks.

Four constituting elements:
(a) land+infrastructure, (b) R&D, (c) technology intermediaries, (d) innovative companies

Four types of technology networking:
(a) TT—SO—AT—IN

I. Innovative clusters
Diversity: Planned clusters
Medicon Valley covers the Greater Copenhagen area in Denmark and the Skåne region of Southern Sweden: one of the strongest pharmaceutical and biotechnological regions in Europe.

Montpellier: Four clusters: Agro food, Pharmaceutical, Media, Automation + Housing + Leisure
Becattini (1989) described the innovation mechanism within the cluster / district with respect to the *agglomeration of skills*:

- The concentration of many and diverse **skills** in the cluster or district covering various fields of knowledge and production. Even in cases where the whole cluster focuses on a single industrial sector, the multiplicity of skills comes from specialisation in different stages of the production process.

- **The cooperation networks** between the members of the cluster. Cooperation produce innovation, as the later stems from the combination of skills, knowledge, and qualities that are put together.

- The presence of **“catalysts”** that facilitate combinations among the many and diverse skills and units. The function of the catalyst, at Prato, for example, is ensured by the impannatori, who constantly re-organise the productive processes of the district in relation to orders. VC functions as catalyst in high tech clusters. The central administration and liaison offices in the case of technology parks.
Another explanation of the innovation mechanism of clusters came from Lawson and Lorenz (1999): ‘collective learning’ among regionally clustered firms may explain the innovative capabilities in high technology clusters.

The concept of collective learning describes the phenomenon that regional clusters of SMEs develop a capacity for self-sustaining technological learning, innovation, and new product development. For Camagni (1991) who spoke explicitly about collective learning, the concept focuses on links and networking between firms via the local labour market.

Examples of collective learning: (1) spin-offs and start-ups by Universities and large R&D companies, (2) inter-firm cooperation and networking with suppliers, subcontractors, service providers, and (3) skilled labour mobility within the local labour market, especially of scientists, engineers, research staff and managers.
A quantitative explanation of the innovation mechanism of Italian industrial districts was given by Poti and Basile (2000). They developed a model to explain divergences in region/country propensity to innovation through a system of innovation approach. Emphasis on externalities of the district:

**The model:**

\[
\text{INNOVATION}_{ij} = \beta_0 + \text{SIZE}_{ij} + \text{ORGANISATION}_{ij} + \text{MARKET INCENTIVES}_{ij} + \text{TECHNOLOGICAL REGIME}_{ij} + \text{SPILLOVERS}_j + \text{PUBLIC R&D}_j + \text{PUBLIC SUPPORT}_{ij}
\]

*Where \( i \) indicates the firm; and \( j \) indicates the province*

The model shows that the relation between innovation and firm organisation (firm external growth strategies) differs among regional clusters. Local spillover variables have a significant impact on the firm propensity to innovate at national level, and it also discriminates among regions. Public support to innovation plays a different role in different regions.
From an innovation system point of view, the cluster is a system in which innovation springs from systemic relations:

- **Institutions** (companies, universities, technology intermediary organisations, funding organisations) are the cornerstone of the system;

- The system is created by linkages (both formal and informal) between institutions; linking is based on **flows of intellectual resources** between institutions; learning is a key process;

- Innovative firms belong to networks of public and private sector institutions whose activities and interactions initiate, import, and modify technological and **innovation capabilities**.
I. Innovative clusters
Cluster-based innovation mechanism

Innovation within clusters: Various factors are contributing

- Systemic relationships, externalities, flows of intellectual resources
- Inter-firm cooperation
- Skills, networks and catalysts
- Labour mobility
- Collective learning
- Exchange of information and knowledge
II. Strategic intelligence
II. Strategic intelligence

Business intelligence

- Is a company activity to overview its internal and external environment, with the intention of finding information that can be incorporated into management processes.

Cluster / Regional intelligence

- At the other side of business intelligence is regional, cluster or territorial intelligence. This may be defined as an informational network linking information stakeholders of a locality.
- It is a network allowing ‘an observation strategy towards the competitors, the markets, and the environment.
- These practices lead to an economic intelligence approach, which, when applied to the territory, is called territorial intelligence.’
II. Strategic intelligence for businesses

Figure 1

Increasing Decision-Support Value

SOURCE: “Business Intelligence Roadmap – The Complete Project Lifecycle for Decision-Support Applications,”
By Larissa T. Moss and Shaku Atre. Copyright 2003, Addison-Wesley
II. Strategic intelligence for businesses
II. Strategic intelligence for businesses

Cognos Customer Analytics

Overview

Actionable information on your customer relationships.

Cognos Customer Analytics, part of Cognos Performance Applications, deliver hundreds of pre-built reports, metrics, and connections to standard data sources to help you understand sales performance, product sales, and the health of your customer relationships.

Answer key questions such as:

- Who are my top-10 revenue-generating customers? My most profitable customers?
- What products are customers purchasing?
- Which customers have the highest rates of return?
- Which customers present a potential risk of bad debt?

With the information found in Cognos Customer Analytics reports and metrics, monitor and report on performance using these key areas:

- Customer profiling and valuation—define your best customers based on factors such as revenue, frequency of purchase, cost to service. Direct your activities to retain high-value customers.
- Customer satisfaction—Analyze customer buying patterns, rates of return, time to pay, and other factors to detect customer satisfaction issues before they affect your bottom line.
- Customer credit—Track the number and age of receivables to identify and deal with potential sources of bad debt.
- Product performance—Identify your high-demand products and cross-sell opportunities; align your production and sales force to take advantage of these insights.
- Sales performance—Help sales understand customer purchase patterns and trends in your various market segments, to improve sales efforts.
II. Strategic intelligence for businesses

MicroStrategy

Software Overview

MicroStrategy 7i Platform
Administrator
Architect
BI Developer Kit
Desktop
Intelligence Server
MDX Adapter
Narrowcast Server
Office
7i OLAP Services
Report Services
SDK
Transformer
Web
Web Universal

Analytic Modules
Database Optimizations
Order FREE Eval Software

MicroStrategy 7i
The Industrial-Strength Business Intelligence Platform™

MicroStrategy is an industrial-strength platform capable of anchoring applications to help you build lasting, profitable customer relationships, manage your supply chain, monitor your financials or perform any of the thousands of other possible analyses your business demands today. Better management in these areas leads to revenue growth and enhanced operational efficiency for your business.
II. Strategic intelligence for businesses
II. Strategic intelligence for businesses

<table>
<thead>
<tr>
<th>Company</th>
<th>System characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;T</td>
<td>Advanced internal integration</td>
</tr>
<tr>
<td></td>
<td>Focused on customers and competitors</td>
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<tr>
<td></td>
<td>Supports operations and strategic planning</td>
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<tr>
<td>Kodak</td>
<td>Advanced information management</td>
</tr>
<tr>
<td></td>
<td>Focused on market and competition</td>
</tr>
<tr>
<td></td>
<td>Supports marketing and strategic planning</td>
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<tr>
<td>Motorola</td>
<td>Company-wide integrated system</td>
</tr>
<tr>
<td></td>
<td>Focused on competitors</td>
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<tr>
<td></td>
<td>Supports CEO and senior management</td>
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II. Strategic intelligence for clusters

EPINETTE,
le premier site Internet d'appui technologique aux entreprises de la filière bois.

Ajouter aux favoris

Né d'une réflexion commune des ingénieurs du CRITT Bois d'Épinal et des besoins exprimés par les PME de la filière bois, EPINETTE est un site Internet facile d'accès et d'utilisation, qui permet aux industriels de la filière bois, d'accéder en ligne aux différentes compétences du CRITT Bois.

Entrer...

Réservée exclusivement aux professionnels par abonnement, la connexion à EPINETTE, totalement sécurisée, permet de:

Veille technologique

- Faire de la recherche rapide et efficace d'informations sur différentes bases de données (entreprise, norme, brevet, travaux de recherche en France),
- Commander des articles dans une sélection de revues techniques,
- Être informé automatiquement par e-mail sur l'évolution de technologies (séchage, finition, usinage,...) de votre choix.
II. Strategic intelligence for clusters
II. Strategic intelligence for regions

Definition of Regional Intelligence:

- A localized network of distributed informational systems / modules;
- which are developed by organizations to inform different groups of a territory, locality or region;
- that uses human and artificial intelligence in the collection, processing, and dissemination of information;
- communicates via the Internet; and
- the constituting modules are integrated so effectively that become indistinguishable for the external user.
II. Strategic intelligence for regions

Regional observatories: Yorkshire

Yorkshire Futures Home

Yorkshire Futures is the Regional Intelligence Network for Yorkshire and the Humber, providing information and intelligence about the region, for the region, to improve decision making and better prepare us for the future.

Our vision:

Yorkshire Futures will be an influential and objective network, ensuring that all regional policy decisions are based on robust, reliable and timely information and intelligence, contributing to making Yorkshire and Humber a world class region.

Our overarching aim:

To be the single point of access to a co-ordinated intelligence resource, for the region.

Our core functions:

- Quicker, fuller and more accurate data
- Forward looking research to prepare the region for future events and trends
- Policy analysis to improve decision making
- Benchmarking, evaluation and good practice

This website has been designed to improve the dissemination and use of economic, social and environmental information about the Yorkshire and Humber.

If you have any comments about this website or suggestions about how it can be...
II. Strategic intelligence for regions

Regional Informational System: Peloponnese
The adoption of Strategic Intelligence within a cluster amplifies critical processes of the innovation mechanism operating within clusters:

In particular

(1) **Search procedures** from which initiate the modification of internal company routines;

(2) **Diffusion of skills and new technologies** among the institutions belonging to the cluster;

(3) **Flows of intellectual resources** and capital among the members of the cluster.

How SI amplifies innovation?
Companies within the cluster:

- Follow organisational *routines* which are behavioural patterns inside the firm and ways of doing things in production, R&D, trade, etc;

- Innovation starts by *search activities*, which are organisational activities associated with the evaluation of current practices (routines), leading to modification and/or replacement of routines;

- The modification of routines is influenced by the *environment of the cluster* and the factors that affect the transformation of knowledge to products (skills, learning, consulting, market information engineering competences).
III. Applying cluster intelligence

1. Deployment of key information processes

- Knowledge management
- Benchmarking
- Internal Routines
- Foresight
III. Applying cluster intelligence

Key information processes

**Strategic Intelligence**

- **Knowledge management**: facilitate the continuous collection, development, sharing and application of the intellectual capital available in an organisation.

- **Benchmarking**: continuously identifying, understanding, and adapting outstanding practices and processes found inside and outside an organization.

- **Foresight**: brings together key agents of change and various sources of knowledge in order to develop strategic visions and anticipatory intelligence.
In the supply side (providers): collaborative collection of information and cooperative data-storage and retrieval

In the demand side (users): participatory appraisal and feed-back of information
III. Applying cluster intelligence

3. Integration of information from key processes

Inside the Company Data Base
III. Applying cluster intelligence

Technical (software) solutions are necessary
III. Applying cluster intelligence

Overview of technical solutions and applications

Pilot Strategic Intelligence Platform

PSIP is a new toolkit on Strategic Intelligence combining Information & Knowledge Management, Benchmarking and Foresight methods.
Thank you very much for your attention