Cluster Best Practices: Lessons from the Field

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Listing of Acronyms

IFC – Institutions for Collaboration
SME – Small Medium Size Enterprises
GDP – Gross Domestic Product
HBS – Harvard Business School
IPO – Initial Public Offering
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What are clusters?

Clusters are “geographic concentrations of interconnected companies, specialized, service providers, and associated institutions in a particular field that are present in a nation or region” \(^1\) (See Diagram 1 and 2). Countries such as the United States, India, Italy, Chile, Hong Kong, Colombia, South Korea and Sri Lanka have been able to establish globally competitive industrial clusters in Textiles, Software and Computing, agricultural and seafood processing and financial services.

Industrial clustering is seen as a key development tool in facilitating the development and improving the overall sustainability and competitiveness of key industrial sectors. Some of these sectors may have a strong export focus.

Diagram 1

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\(^1\) Institute of Strategy and Competitiveness – Harvard Business School
The cluster theory recognizes that the cause of underperformance among firms may not be attributable solely to firm size, but rather to the isolation phenomenon that these small firms often experience. Cluster development methodology therefore seeks to harness the competitive benefits from collaborative or joint action among businesses and SME’s operating in the same business or sector. It essentially works towards the development of the cluster eco-system (See Diagram 4). The approach seeks to develop new sectors or improve the performance and competitiveness of existing sector. The approach consists of creating/rejuvenating/importing all essential players operating in the cluster, developing or deepening linkages through sustainable business systems with the principal firms of the cluster. This can be done through two tools:

- Promotion of Joint Action (Hubert Schmitz): A network of firms coming together and to implement (a) solution to a common problem or (b) reaps the benefits of a common opportunity. This is done to minimize and distribute the uncertainty risk among a group, rather than an individual unit. Later this activity becomes market driven.

- Promotion of Passive Cooperation (FMC): While joint action tries to solve things from below (demand driven) given an issue, creation of appropriate service providers or infrastructure is also an alternative. Here cooperation becomes passive, in the sense that the cluster firms utilizes an established facility, created at a price and thus indirectly cooperate to take the offered solution forward.
Cluster development strategies can be geared to increase competitiveness through the application of new technologies, pooling of information and resources, and expansion into new markets. Additionally, cluster development strategies can be utilized to solve key constraints among firms, such as production bottlenecks, availability of technical resources, limited numbers of skilled or specialized personnel, and challenges such as meeting international quality standards. The use of cluster development methodology has been successfully utilized in sectors and countries such as Salmon farmer producers and processors in Chile, Fresh Fruit Producers in Brazil, and Software clusters in Mexico to name a few.

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2 *Upgrading to compete global value chains, clusters, and SMEs in Latin America*, Pietrobelli, Carlo, Rabello, Roberta (Editors) 2006
Best Practice Case Studies

Hong Kong – Financial Services Cluster

Hong Kong is one of the wealthiest countries in the world. Its GDP per capita is the 14th in the world and 2nd in Asia. Real GDP growth is estimated at 4.5% for 2011. The services sector accounts for over 85% of GDP, while Financial Services accounts for over 11% of GDP. Unemployment is estimated at less than 3%.

Map 1
Profile of Hong Kong relative to Competitors

The growth in the Financial Services Cluster, stemmed primarily from the security market, particularly equities, money market, and foreign exchange. In 2007, Hong Kong stock exchange is one of the top 3 global IPO markets.
The Financial Services cluster is supported by a large Banking Sector which reflects the legacy of a dominant manufacturing and regional trading sector. There are over 146 licensed banks in Hong Kong, and 70 of world’s top 100 banks operate there.

The cluster is also supported by world class sub-sectors in law, IT services, communication, consulting and accounting services. The financial services cluster also benefits from strong infrastructure, and strong and relevant supporting sectors, such real estate (financing services and potential for securitization), tourism (financing and transaction services) (See Map 2and 3).

Map 2

Relative Position of the Financial Cluster in Hong Kong
Map 3
Composition of the Financial Cluster and Related Environment
UK and Scotland’s “Digital Media and Creative Industries”

Scotland’s economic history was rooted on traditional economic sectors such as importing and processing Tobacco, heavy engineering, and manufacturing of ships and railways. Eventually, financial services, printing, ship brokering and other services emerged in such locations as Edinburgh, and fishing as well as offshore oil exploration in other locations such as Dundee. However, a job by Scottish standards usually meant learning a skill or trade and one in which physical products are made.

In spite of the traditional mindset even as services based companies began to emerge Scotland also maintained a strong emphasis on education, innovation and cultural life and enterprise. In 1991 a national effort was launched to develop the Scottish economy across a broad spectrum of industries. Scottish Enterprise was created after a merger to two state enterprises, the Scottish Development Agency and the Training Agency.

In 1993 Scottish Enterprise worked with the Monitor Group to target specific sectors for the development. Initially the first clusters which were targeted were the food and beverage, oil and gas, tourism and semi-conductors. After the failure of Scotland to secure the majority of the filming for Mel Gibson’s “Braveheart” about the iconic Scottish liberator William Wallace, the Scottish Screen company was established to facilitate the development of a competitive film industry in Scotland. Soon it was realized that a cluster of services can be offered around multi-media, digital technologies, animation, on-line videos and film. Thus efforts were made to create a cluster of services consisting of film, multi-media services, and digital technology. This clustering effort resulted not only in the merger of business but also technology models (See below for the listing of sectors included in the cluster). In this new industry, creativity is seen as the “raw” material which feeds into the business process.

- Music
- Design (including design fashion and crafts)
- Publishing
- New Media
- Computer games and packages
- Films
- Broadcasting
- Advertising
- Architecture
- Museums, art galleries and antiquities

Today the Scottish Industry Cluster comprises about £5.3 billion pounds per annum or 4% of GDP and supports around 100,000 full time equivalent jobs. Some of the initiatives which were undertaken to achieve this result included, £25 million cluster intervention programme for the Creative cluster, which was implemented over a period of 3 to 5 years, the integration of technology in the cultural industries of Scotland, the establishment of a digital media quarter in Glasgow, and Digital Media Park in Dundee, hosting of international trade missions and international trade fairs, and the strengthening of developmental and representative associations, such as the games industry association, TIGA Scotland, Scottish Screen, the Scottish Arts Council, and Creative Scotland.
Salmon Industry Cluster – Chile

The Chilean Industry has made remarkable success over the last two decades. Chile is currently the world’s second producer of salmon and first producer of trout. The industry grew at an average rate of growth of 22% over the last decade, the sector contributes 4% of total exports and over 56% of total fisheries exports\(^3\). The industry employs over 53,000 persons (directly and indirectly). The salmon industry grew from US$538 million in 1997, to US$2.2 billion in 2006 (see Table 1) more than a threefold increase in ten years.

![Total Chilean Exports and Salmon Exports](chart.png)

**Source:** SalmonChile, 2006

Application of Cluster Methodology in the Development of the Salmon Industry in Chile

While the cluster itself evolved considerably over two decades, conditions were ideal for the establishment of the globally competitive cluster.

1. Climatic and geographical conditions were ideal for salmon farming and the establishment of new salmon farms at key geographic locations in Chile.

2. There was availability of key human resources personnel in sciences, technical and vocational studies, which were necessary for the development of the sector.

3. Pioneering Spirit coupled with openness to collaborate, establish associations, and team work.

**Evolution of the Industry**

<table>
<thead>
<tr>
<th>Life cycle</th>
<th>Initial learning</th>
<th>Formation and maturation</th>
<th>Internalization</th>
<th>Consolidation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (round tonnes)</td>
<td>900</td>
<td>1 350–143 000</td>
<td>150 000–300 000</td>
<td>487 900</td>
</tr>
</tbody>
</table>

**Milestones**
- Technology adaptation and transfer
- Scale-up to a commercial level
- Asian crisis; dumping accusations; merging and vertical integration; establishment of forward linkages; salmon’s cycle control; new rules and regulations
- Integrated management system for producers and suppliers (SIGES); Industry monitoring systems; Clean production agreement (APL); Integrated Territorial Programme (PTI); Salmon Cluster

**Main challenge**
- Initial push and survival
- Associativity and specialization: Creation of a technical institution, INTESAL
- Market and product penetration and diversification; Public-private cooperation;
- Increase value-adding in the supply chain; Establishment of alliances with key suppliers;
- Technological innovation and R&D in breeding, logistics and vaccine development;

**Business competitiveness**
- Production
- Quality standardization; Backward linkages; R&D investments
- Efficiency: cost reduction
- Process and labour -competency certification specialists

**Human capital**
- Entrepreneurs and non-skilled workers
- Industrial engineers, managers and semi-skilled workers
- System engineers, skilled workers, technicians, researchers and experts;
- Local public-private cooperation. Social capital strengthening

**Social capital**
- International public-private cooperation
- Associativity among producers
- Productive system connected to the global supply and marketing chain


Some of the actions which supported the growth of the small domestic cluster to an internationally competitive export generating sector include:
The Emergence of Collective Actions – Very early on in the development of the cluster, many stakeholders came together to form collaborative associations which worked together to solve upstream and downstream challenges. The Chilean Farming Association (SalmonChile) for instance was the main group which represented of producers, and suppliers of the cluster. There were other groups which contributed to the development of the cluster such as “Instituto Technologico del Salmon” which was the technological arm of the association. Ship-owners, and Maritime Services, the Association of Diving Companies, the Association of Veterinary Laboratories were other important associations, which significantly supported the development of the industry.

Together these Associations launched initiatives to address issues and constraints faced by the sector. Initiatives such as

- The development of a pioneer quality seal to face stringent quality market requirements.
- The launching of a phytoplankton vigilance programme.
- The monitoring of a series of environment, market and regulation variables.
- The establishment of geographic and good management practices tools.
- The development of a labor-competency certification system for various subsectors of the salmon cluster by SalmonChile,
- The implementation of a “Clean Production Agreement” for the salmon industry (APL) and a Vigilance and Management Model that serves the principal producers and suppliers in the industry, both coordinated by SalmonChile and INTESAL.

Institutional Support for the Salmon Industry – The Government of Chile has played a significant role as a catalyst and facilitator in the development of the cluster. The Government of Chile through its public sector institutions, and working with respective associations actively sought to promote joint actions, and building trust among cluster participants. They sought to also enforce regulations related to coastal zones, and mitigate environmental impacts from projects.

More recently the Government sought to promote Research and Development among associations, particularly among producer-supply relations. Some of the initiatives include

The creation of an innovation and knowledge platform to coordinate public and private efforts on areas, such as fish health, genetics, animal feeding, environment, and clean production, development of new technology and production management, and certification.
References


