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**BUSINESS NETWORKS FOR SMEs:
POWERFUL SYNERGY FOR GROWTH
IN THE EMERGING GLOBAL MARKET PLACE**

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**This paper presents the personal opinions of the author
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“Whether local hunter or global entrepreneur, knowledge, innovation, technology, synergy and competitiveness determine health, wealth and survival, the relative ranking of individuals, firms and nations, and the fate of laggards.”

PGR

Executive Summary

The emerging global economy has led numerous small- and medium-sized enterprises (SMEs) in leading nations to adopt more competitive business practices, most significantly forming collaborative virtual organizations known as **flexible business networks**.

These flexible business networks build critical mass of groups of SMEs, which then act informally as learning organizations, and formally as competitiveness-enhancing mechanisms that generate scale, scope and speed, to help the participating SMEs compete domestically and internationally as a larger firm.

These collaborative mechanisms are highly adaptable to a variety of purposes, such as purchasing, cost reduction, research and development, innovation, commercialization, technology transfer, joint processing and manufacturing, productivity improvement, benchmarking, marketing, exporting, problem solving, etc.

Flexible business networks are highly relevant to SMEs in the emerging global economy since they support and encourage a wide variety of flexible market place dynamics, including horizontal networks, vertical networks / supplier chains, cross sectoral networks, emerging / converging sciences and technologies networks, public / private sector networks, etc.

Flexible business networks are being used in some countries as part of business clusters and mini-cluster economic strategies in both urban and rural environments, and at local and regional levels through regional economic development commissions acting as multilateral partnership hubs with the support of appropriate hard and soft infrastructure. Such interfirm collaboration and connectedness is also an essential part of the successful dynamics of new-economy technopoles globally.

There are important policy and methodological issues related to planning and evaluation of business networks programs, such as precise articulation of both program and individual network objectives, and complemented by evaluation, measurement and reporting of tangible and intangible results achieved, in particular bottom line gains, and lessons learned, by both individual business networks and business networks programs.

It is also important to distinguish government-initiated business networks initiatives, and particularly whether these are supply-push models (grant or subsidy based) or demand-pull models ('alpha firm' driven), from market-based initiatives which may arise naturally in clusters and mini-clusters, soft and hard networks, through self-funding, SME supply chains to MNE manufacturers that lead to spontaneous network formation and later to enterprise spinoff, etc.

Lastly, there is an important role for universities and professors to play in studying business networks programs and documenting business network success stories as case studies and role models for alpha firms in leading industry sectors, and in equipping SME owner-managers and Commerce / MBA graduates with a substantive set of business networking knowledge and skills for competitive enterprise development in the emerging global economy.

Table of Contents

Executive Summary

1. Introduction
2. Perspectives On Regional Concentrations For Global Competitiveness
3. New Global Paradigm and Support System
4. Evolution of Knowledge-Based Workers, Enterprises, Economy
5. The Nature of Flexible Business Networks
6. Types of Flexible Business Networks
7. Types of Business Networks Projects
8. Example of Flexible Business Networks
9. Models For Forming Flexible Business Networks
10. Model For Self-Funding of Business Networks
11. Network Brokers and Meta Brokers, Nature, Role and Qualifications
12. Critical Success Factors and Failure Factors
13. Business Networks vs. Strategic Alliances
14. Importance, Definition and Structure of Regional Hubs
15. Planning and Evaluating Issues For Business Networks Programs and Business Networks
16. International Best Practices in Business Networks Programs
17. Relevance of Business Networks and Regional Hubs to New Economy
18. Emerging Trends
19. Important Role For Universities and Professors
20. Conclusion

End Notes, Bibliography, References

1.0 Introduction

Flexible business networks are seen as a fairly universal way to assist SMEs to participate more effectively in the global economy, to form horizontal arrangements with peers to create virtual corporations to exploit larger domestic markets and to eventually export, to participate in the supplier chains of manufacturers and larger international firms which in turn export, and to enter into other forms of business networks such as cross-sectoral networks, and emerging and converging sciences and technologies networks, which lead to cross-fertilization, innovation, commercialization, and accelerated new economy growth.

To be effective and sustainable, flexible business networks need to have the support of a regional economic hub, as a nexus of nourishment, for mentoring, education, research and development, innovation, technology transfer, commercialization, financing, marketing and export development. Such hubs can be simple bilateral collaboration with a university faculty, a scientific research institute, a technology centre, an innovation centre, a development bank, etc., or can be a more complex multilateral collaboration with multiple business and institutional members and operate out of a regional economic development commission.

These two simple structures, flexible business networks and regional economic hubs, which generally occur within regional concentrations, and are a powerful axis for competitive enterprise development in the knowledge-based global economy, and are the real and substantive basis for accelerated community-based business growth.

This paper is a cumulative, national and international, practice-based document. It comprises elements of applied economic and industrial policy; evolving SME knowledge and skills; constructs and processes for the formation of business networks¹. It also provides international examples of business networks; ancillary support structures; and their relevance to SMEs in the emerging global economy². It discusses planning and evaluation issues; issues for academic study; and role for universities and professors.

Previous reports and presentations on this subject have been presented in Canada to the Economic Developers Association of Canada, the Canadian Chamber of Commerce, the former Canadian Manufacturers Association, the Conference Board of Canada, the Royal Commonwealth Society, and Technopolis 97 conferences³, as well as to a variety of international conferences including in New Zealand and Australia⁴.

¹Roy, Philippe, Vision For A Nation, 1995.

²Roy, Philippe, Relevance of Business Networks To SMEs, Particularly Smart SMEs, In the Emerging Global Economy, 1998.

³Roy, Philippe, Powerful Synergy For Maximum Growth, 1997

⁴Roy, Philippe, Trip Report, Speaking Engagements, New Zealand, Australia, 1995.

2.0 Perspectives On Regional Concentrations For Global Competitiveness

The emergence of regional concentrations of economic sectors and related interfirm collaboration have led to a number of perspectives by Canadian and international authorities:

- **Jane Jacobs** has said that cities will become city states in the competitive global economy, engines for wealth creation, the source of innovation and energy⁵.
- **David Crane** has said that cities and towns must take the future in their own hands: knowledge investments are essential for growth⁶
- **Michael Porter** noted at the World Economic Forum in Davos, Switzerland in 1994 that there would be two economic models in the future, first, the big business model of corporate efficiency, and second, the small business model of innovation and progressiveness⁷.
- **Elizabeth Moss Kanter** has noted that companies that flourish replenish their stock in three critical areas: first, in **concepts**, ie, knowledge and innovation; second, in **competence**, ie, education and skills; and third, in **connections**, ie, collaboration and synergy⁸
- **Richard Hatch** has stated that flexible business networks allow firms to cooperate to compete, to achieve together what each cannot achieve alone⁹.
- **Kendra Hill** states that a flexible business networks is simply a system of long-term co-operation among independent companies, seeking to solve common problems or to access opportunities to common markets, which individual firms, due to limitations of size and resources could not undertake alone. Business networks have a common conceptual structure, tending to coalesce around a local hub that provides a common services to networked firms, and are catalysed by network brokers who manage the network¹⁰.

⁵Special report on the life work of Jane Jacobs, city planner and urban economist, in *The Globe and Mail* newspaper, Toronto, 1997.

⁶Crane, David, Economics Editor, Toronto Star newspaper, 1997.

⁷Cited by David Crane, Economic Editor, Toronto Star newspaper, 1994.

⁸Kanter, Elizabeth Moss, World Class, Thriving Locally For the Global Economy, 1995.

⁹Hatch, Richard, Flexible Manufacturing Networks: Co-operation For Competitiveness in a Global Economy, 1988.

¹⁰Hill, Kendra, Flexible Networks In Theory and Practice, 1992.

- **Diane Poulin, Benoit Montreuil and Sophie D'Amours** have demonstrated that SMEs in business clusters can form a wide variety of business networks and can significantly increase their collective competitiveness and ability to market and export¹¹.
- **Ifor Ffowcs-Williams** has demonstrated that clusters and mini-clusters of businesses, within urban or regional areas, form the most fertile ground for the formation of soft and hard business networks¹².
- **Stuart Rosenfeld** has observed that networks should exploit natural clusters, because networks are more effective when they are part of industrial clusters where face-to-face contacts occurs frequently. High firm concentration is not only a large-city phenomenon; clusters exist in small cities as well. Rural areas present a greater challenge for network formation due to dispersal of firms, but formal relationships can help support networks in rural areas as well¹³.
- **Trond Myrhvold** has observed that with more open national economies, and the emerging global market place, small firms face a great challenge to compete, and must seek the complementarity of other small firms, first to share basic information, second to learn from how other similar firms operate distinctively, third to combine and aggregate a set of distinctive competitive advantages in a virtual organization in order to compete more effectively as a larger firm¹⁴.
- **John Dean** has observed that firms that participate in business networks achieved a 50% higher rate of turnover (gross revenues) and a 33% greater rate of increased employment than firms that did not participate in business networks¹⁵.

¹¹Poulin, Diane; Montreuil, Benoit; D'Amours, Sophie; Professors, Directors of Network Enterprise Technology Centre, Laval University; also authors, L'Entreprise Réseau, 199 .

¹²Ffowcs-Williams, Ifor, Partner, Cluster Navigators New Zealand, and formerly General Manager, TRADENZ with overall responsibility for the New Zealand Business Networks Program, at Technolopis 97 conference, organized by The Conference Board, Ottawa, 1997.

¹³Rosenfeld, Stuart, Partner, Regional Technology Strategies, in Significant Others, Exploring the Potential of Manufacturing Networks, proceedings of the Aspen Conference, July 1993.

¹⁴Myrhvold, Trond, formerly Vice-President, SND, Oslo, Norway, also head of Norwegian Business Networks Program, and referring to The Norwegian Business Development Program, summary text distributed at public presentations Fredericton, Montreal, Ottawa, 1994.

¹⁵Dean, John, formerly Director, Small Business Office and National Business Networks Program, AusIndustry, Canberra, Australia, cited in Network News, May 1998.

- **Des Masters** has demonstrated that SMEs, from micro to small in scale, in a wide variety of economic sectors, from manufacturing to services, can benefit from massing up in interfirm collaboration, leading to rapid innovation and commercialization, then to increased domestic sales and to exporting¹⁶.
- **Kevin Cameron** has demonstrated that groups of SMEs will hire an external business consultant known as a network broker to study the potential for a market-based business case for interfirm collaboration in a new business opportunity, and pay the network broker a professional fee, either per diem or contingency, with neither government grant or subsidy, to lead the firms successfully through the new business opportunity¹⁷.
- **Steve Mostardi** has demonstrated that groups of SME business networks, massed together with strategic alliances of larger firms, and these two distinct sets of collaborative endeavours then aggregated as sectoral export consortia, could then greatly increase their critical mass, build significant competitive advantages, innovate and commercialize, and then harvest great success in export markets¹⁸.
- **Andrew Young** has established the importance of the concept of soft and hard networks within a concentration of large and small sized advanced technology firms in telecommunications, computers, and software manufacturing sectors, which formed the Ottawa-Carleton Manufacturing Managers Network (OCMMN), completely self-funding, and typically avant garde of newly evolving technopoles in urban environments¹⁹.

These experts in enterprise development have identified the opportunities for SMEs to thrive and grow, in large and small urban concentrations, and also in rural environments. From regional concentrations of firms in clusters or mini-clusters, the obvious need for flexible business networks among SMEs seeking to survive, to increase profitability and to grow, has gradually evolved into an accepted practice and is being used more broadly internationally.

¹⁶Masters, Des, currently State Manager for Southern Australia and Northern Territories, Australian Business Networks Program, referring to a recent summary report of success stories in business networks under his direction, _____, 1998.

¹⁷Cameron, Kevin, management consultant, working with two network brokers in FlexNets Alberta, 1995.

¹⁸Mostardi, Steve, formerly Vice-President, British Columbia Trade Development Corporation, referring to his presentation, Flexible Business Networks, The British Columbia Experience, 1993, at First National Round Table on Business Networks, Ottawa, 1993.

¹⁹Young, Andrew, founder, Ottawa-Carleton Manufacturing Managers Network, referring to his presentation using the title of the network, 1993; and founder of the Canadian Institute For Business Networking, 1994.

3.0 New Global Paradigm and Support System

The most successful and rapidly growing parts of the emerging global economy have concentrations of businesses and supportive infrastructure, based on knowledge and skills, technology, innovation, productivity, competitiveness, with a high connectivity and collaboration among firms and infrastructure. The concentrations of firms are frequently referred to as *clusters* or *mini-clusters*; the supporting infrastructure is generally referred to as a *regional economic hub*; and the connectedness and interfirm collaboration is commonly referred to as *flexible business networks*. In certain well-defined cases, generally where there is a focus on advanced sciences and technologies industries, on knowledge and innovation, on interfirm collaboration, and on hard and soft support infrastructure, a form of highly competitive industrial concentration may evolve called a *technopole*.

This evolution of industrial concentrations of clusters, mini-clusters, regional economic hubs, flexible business networks, and technopoles, has led governments of some countries to consider the need for development of a variety of supporting initiatives²⁰:

- **First, creation of a favourable national business climate.** This includes fiscal, monetary, industrial, science and technology, education, and trade policies, which recognize the important competitiveness-based elements of the emerging global economy: knowledge and skills, innovation, technology, synergy, productivity, exports.
- **Second, identification of key economic sectors that will grow rapidly in the new economy.** This includes artificial intelligence, intelligent manufacturing, robotics, computers, software, telecommunications, satellites, aerospace, automotive, microelectronics, instrumentation, new industrial materials, construction, alternative energy, biotechnology, health sciences, medical devices, pharmaceuticals, environmental sciences, agrifoods, aquaculture, forestry, transportation hardware and infrastructure, business professional and technical services, cultural industries, tourism (historical, cultural and ecological), and very significantly, convergence of emerging sciences and technologies.
- **Third, identification of the small business sector and developing targeting strategies to enhance growth.** This begins with developing basic economic information on the size, nature and needs of the small business segment of the national economy, and then developing appropriate strategies for targeted interventions, which can include influencing financial institution policies to provide for easier access to different forms of capital; developing entrepreneurial and managerial skills frameworks including core competencies, subsidiary critical competencies (which specify business networking), and international competencies; developing export training and financing programs.

²⁰Op. cit., Roy, Powerful Synergy.

- **Fourth, investment in institutional infrastructure.** This includes national development banks, national scientific research institutes, sector technical institutes, centres of excellence, innovation and design centres, technology transfer centres, productivity improvement centres, benchmarking institutes, competitiveness centres, universities and polytechnical institutes with high calibre programs, ISO quality management and national standards systems.
- **Fifth, investment in local physical infrastructure.** This includes highways, airports, harbours, rapid transit systems, inter-modal transport facilities, freight forwarders, hydro-electric power grids and distributions systems with complementary alternative energy sources, telecommunications networks, electronic highways, weather forecasting systems, water supply systems, waste management systems, hazardous materials disposal systems, environmental advisory services.
- **Sixth, creation of a national network of financial institutions.** This includes national and regional economic development banks, commercial banks, trust companies, credit unions, venture capitalists, investment centres, angel investors, Grameen or Calmeadow-type micro financing, all to comprehensively support the needs of the new economy, particularly SMEs, knowledge-based enterprises (KBEs), clusters, and technopoles.
- **Seventh, creation of a national trade development agency.** This type of agency is usually independent of the national foreign service / diplomacy function, to be able to focus uniquely on developing new export markets in the emerging global economy, particularly for SMEs, KBEs, clusters, technopoles, to provide substantive overseas offices with comprehensive professional services support, and essential export financing through alliances with international branches of national commercial banks, in order to help SMEs to support the relationship building that must go on to establish and sustain important new markets.
- **Eighth, local leadership by regional economic development commissions.** This includes synergy by business leaders to bring together all the key players in the local business community and infrastructure to develop a regional strategic business plan, which will support accelerated economic growth, and with these local business leaders to act as a core of synergy to foster interfirm collaboration / business networks among local clusters, SMEs and infrastructure.

Clearly no single country is undertaking initiatives in all eight areas; many are only active in a few elements of the eight areas. Countries, such as Norway and Australia, that are trying to forge ahead to create the new economy are progressively taking more of these initiatives. Countries with smaller population bases and less dense industrial concentrations known as mini-clusters, such as New Zealand, and developing countries, such as South Africa, are also using these enabling elements, with scale variations and adaptations to suit flexible business networks for SMEs is a fundamental strategy in industrial and economic development policy in many countries. Canada is active in some elements of these eight areas.

4.0 Evolution of Knowledge-Based Workers, Enterprises, Economy

The currently emerging knowledge-based economy is part of evolutionary knowledge-building and sharing processes which have transcended previous eras of economic history. During each of previous three eras, ie, the hunting era, the agricultural era, the industrial era, humans have acquired, shared and leveraged knowledge, innovating in various ways in technology and processes, leading from hunting to agriculture to industrial production to international trade. In each of these previous eras, groups of humans, hunters, farmers, businesses, have collaborated in various ways to build critical mass and to increase their success. We see an increasing concentration of knowledge, a leveraging of this knowledge for innovation, technology, productivity, building competitive advantages, the development of skills and competence, the compression of time, and the acceleration of growth.

The information processing and telecommunications technologies, and the mass of highly educated workers and entrepreneurs, which characterize the currently emerging knowledge era, have created a more intense drive for knowledge, has stimulated a need for collaborative arrangements by emerging enterprises to increase access to knowledge, leading to knowledge-based skills for workers, and to knowledge-based enterprises. Such firms translate knowledge and skills into innovation in new products, processes and services; into new technologies; into increased competitiveness and productivity; and into increased markets and exports. This virtuous cycle leads to increased profits and employment growth for the knowledge based firms.

Flexible business networks become important to SMEs in economic concentrations, clusters or mini-clusters, since these SMEs seek to acquire knowledge, skills and competence in areas where they are uninformed or unable on their own. A business network permits several SMEs to meet and share information and common interests in the most elementary terms, and based on the building of trust in these informal relationships several self-selecting SMEs can consider forming an informal or flexible collaborative arrangement, the essence of which is sharing complementarities, ie, co-operating to compete as a virtual organization. It is the intangible building blocks of knowledge, skills, competence that strengthen the individual firms as a virtual organization, and lead to the virtuous cycle of tangible results in innovation, technology, markets, increased profits and increased employment.

Similarly, regional economic hubs are important virtual organizations of the knowledge era. These hubs generally have membership composed of the key institutions in the regional business and public sectors: a regional economic development commission, a business development bank, a commercial bank, a university, a scientific research institute, a sectoral centre of excellence, local business leaders represented by a chamber of commerce or board of trade, etc. The participants bring individual knowledge, skills, resources and collaborate to support the various business networks which depend on them as a nexus of nourishment.

Flexible business networks and regional economic hubs can establish a powerful synergy to help collaborating SMEs develop and share knowledge, and undertake a variety of projects in common including seeking new business opportunities together, leading to that virtuous cycle of innovation, technology, increased profitability, increased markets and exports.

5.0 The Nature of Flexible Business Networks

The following is offered as a practice-based list of characteristics defining the nature of flexible business networks: A flexible business network is a composed of a group of already successful SMEs, which co-operate and collaborate, to resolve a business challenge and/or to seek a new business opportunity. These SMEs group together to share knowledge and act as a learning organization; to share complementarities; to build critical mass; to act as a virtual organization in order to gain the competitive advantages of scale, scope and speed, similar to a larger firm; to then undertake projects in common; all in order to become more competitive in domestic and global markets. These networked SMEs build a spirit of trust and mutuality that sustains their collaboration.

- **The first major function of a flexible business network is to act implicitly and explicitly as a learning organization for member firms.** This concept follows from the work of Peter Senge, The Fifth Discipline: The Art and Practice of the Learning Organization, which when written was meant to apply to major corporations, but which principles are equally valid for SMEs. SMEs in business networks generally have a vastly different range of experience and knowledge, and so by collaborating can share cumulative experiences, existing knowledge, can bring in experts very economically to increase knowledge in specific areas of interest, and can undertake projects in common which can add to the collective knowledge of participating firms.
- **The second major function of a flexible business network is assist the participating firms to share complementarities, and by establishing trust in this process to encourage the SMEs to build critical mass of several firms in a virtual organization.** This enables the participating SMEs to develop a set of competitive advantages that a relatively larger firm would have, and most significantly to act with greater scale, scope and speed. This great potentiality is realized when the participating firms decide to undertake a tangible project in common, such as development of a complete line of products composed of the individual products from member firms, or to undertake joint manufacturing, or to invest together in a new piece of capital equipment, or to seek a higher volume market or client together. This SME-based virtual organization is a simple corollary to the concept of virtual corporations advocated in Davidow and Malone, Virtual Corporations: Strengthening and Revitalizing the Corporation for the Twenty-First Century, 1992, ie, aggregation for SMEs vs. disaggregation for corporations.
- **Some countries make a distinction between soft and hard networks,** and use to encourage many more SMEs to join as informal participants, with the hope that by becoming informed and building trust with other SMEs these newer firms will eventually participate in a more formal project in common. Soft networks can have from ten to eighty members (approximate boundaries). Each member pays an annual fee to belong to the soft network, and this helps to pay to hire a network manager, who in turn arranges regular monthly events that these members attend, leading to further participation in interest groups and activities that increase knowledge, and which build understanding and

trust among members. Within the greater soft network, certain members who may self-select will form a tighter group called a hard business network to undertake a specific business opportunity. Such undertakings usually involve the more entrepreneurial members of the group, and are always undertaken with considerable interest and observation by the greater membership. When the results of such hard business networks are successful, they have a demonstration value and can inspire other members of the soft network to form a hard business network and begin a project in common.

- **One of the greatest process advantages of flexible business networks is that they permit participating firms to define individual competitive advantages and to strategize how to use the multiple competitive advantages in a collaborative manner.** Thus ten SMEs with a hundred employees in total may be able to muster more competitive advantages than a single firm with a hundred employees which may have three or four competitive advantages. These relationships are flexible as to purpose and duration, and the participating firms may subsequently re-combine on other projects in common. This can produce multiple results, from increased knowledge, to increased profits, to regeneration in new projects, to cultural change that permeates a cluster or industry sector. Successful business networks within a cluster or sector become culture carriers and change agents, with the lead firms, or alpha firms as in the alpha male and female pair of a wolf pack, being referred to as the DNA of new economy.
- **Which kind of firms should consider forming a flexible business network, and under which conditions?** Experience in many countries has shown that business networks favour SMEs that are already successful, broadly competent, competitive and seeking greater opportunities. These can be SMEs of any size: single person, micro, small, medium. However, business networks are not a panacea for a mediocre or failing firm. Soft networks acting as learning organizations can permit a broader range of firms to participate in general membership to share information, to listen to invited speakers with topics of interest to the economic sector, to acquire knowledge about the competitive practice of collaboration, to meet other more competitive firms in the same economic sector and geographic region, and to consider their readiness to eventually collaborate with other firms. It is not unusual for such firms in a soft network to progress successfully to more formal collaborative arrangements or hard business networks. Firms wishing to form a hard business network should have been profitable for at least three years, should know themselves well through a SWOT analysis, should have a good range of business skills, should know their business values, should be interested in greater business opportunities, should be willing to go through a process of interfirm collaboration with multiple partners and should be able to suppress individual tender egos in order to achieve a greater common good.
- **Flexible business networks work effectively for two well-established reasons related to the nature of SMEs:** first, SMES learn most effectively from working with their peer group in local networks, a preferred mode over formal training and hiring of external consultants; and second, of the three potential strategies for growth, endogenous, exogenous, and synergistic, the latter offers the easiest and least cost method for SMEs.

6.0 Types of Flexible Business Networks

There are a number of recognized types of flexible business networks:

- **Horizontal Networks**

This is the most popular form of flexible business network, constituted by a number of similar size firms in the same industry sector, and usually in the same cluster or mini-cluster. These many similar small firms recognize each other and understand common interests, and so find it easier to work together. These firms combine to build scale and scope and speed, and then seek to undertake a project in common. The most common examples of such collaboration are problem solving, cost reduction, technology acquisition and sharing, complex engineering, joint processing or manufacturing, new product or product line development, commercialization, marketing, or even export development. Occasionally, particularly adroit SMEs, having gained successful experience in one or more horizontal business networks, can evolve an integrated value added process around an innovation and then spin off a new enterprise. This has happened in one case in Denmark where individual clothing suppliers marketed a complete line of clothing and went on to form an enterprise with this as a main line of business and successfully exported business uniforms to major corporations. It is estimated that horizontal networks account about 75% of all business networks²¹.

- **Vertical Networks**

Vertical networks involve similar firms serving larger firms in a supply chain. Major manufacturers in industry sectors such as automotive, aerospace, telecommunications, computers, medical devices, electrical and mechanical equipment, complex engineering projects, require multiple suppliers, often at different levels, and prefer to organize these suppliers in tiers of networks, now increasingly using Extranet-type computer systems to reduce administration logistics and costs, and to have supplies delivered just-in-time. Vertical networks can benefit major corporations with knowledge-rich, innovative, highly productive SMEs in component supply that is produced to ISO 9000 standard, and which make the bigger firms more competitive in international markets. For this reason, highly competitive major firms seek highly competitive SMEs in business networks to supply them. Occasionally a small group of technical component suppliers will decide it has the collective competitive advantages to form a new enterprise; this happened in Italy where robotics components suppliers formed a business to build complete industrial robots for the automotive sector. Vertical networks account for about 10% of business networks, but may be more extensive in undefined existing supplier relationships²².

²¹Nielsen, Niels Christian, Vice-President, Danish Technological Institute, Guest Speaker at First National Round Table on Business Networks, Ottawa, 1993.

²²Ibid.

- **Cross-Sectoral Networks**

Cross-sectoral business networks are generally composed of a group of SMEs from complementary, frequently traditional industry sectors, seeking to innovate with new products or services, by brainstorming to juxtapose their complementary elements. Firms seeking to form this type of flexible business network may seek partners at innovation and design centres, or technology transfer centres; finding “a suitable date” can be a challenge. In Denmark, a group of naval architects, advanced electronics manufacturers, commercial boat manufacturers, fishermen, and a development bank, collaborated to design, manufacture and market a high technology fishing trawler sold across Europe. Cross-sectoral networks are estimated to account for about 5% of cases, but such cases are difficult to identify and document, and so the actual proportion may be less precise²³.

- **Emerging and Converging Sciences and Technologies Networks**

This type of flexible business network is composed of knowledge-rich and innovation-inspired young SMEs at the leading edge of emerging sciences and technologies. Their rich repository of new areas of science and technology, their very strong desire to innovate, and the entrepreneurial nature of their relatively young owner-managers often leads such SMEs to seek partners in adventure. Such SMEs may meet at a scientific research institute, or at a university science or engineering faculty, or at a symposium on science, technology and business. These SMEs have a high awareness of emerging research and development, and are led by owner-managers who are imaginative and visionary, who therefore see opportunities abundantly, who explore these opportunities until they find high interest partners, and who only then seek to establish a business case. They are vision and opportunity driven, followed later by business analysis; they generally require a practical business professional as one of the collaborating firms, to help them to keep their feet on the ground. Two Canadian examples are CORA and AGRITEC, the first in diverse science-based ocean industries projects, and the second a high technology grain processing and storage enterprise. Occasional success stories can take off like a rocket; venture capitalists watch globally for such success stories where uniqueness can lead to high returns. While very limited, this type of business network is expected to increase more significantly over the next ten to twenty years as new, science and technology enterprises increase in numbers with new university and technical institute graduates forming businesses. This type of business network is believed to account for 5% of all cases²⁴.

²³Ibid.

²⁴Ibid.

- **Public / Private Sector Networks**

This type of flexible business network occurs when a public institution with a public policy objective collaborates with a group of SMEs to support a developmental need which will result in a new business opportunity. Examples might include a scientific research institute supporting a group of SMEs in a research and development initiative to develop a new product or process. It could involve an innovation centre assisting a group of SMEs to explore the engineering and financial feasibility of a new idea or design. It could involve a university faculty mentoring a group of SMEs in a new business venture to help ensure success. It could involve a development bank working with a group of SMEs to develop a business case for venture capital or providing professional advice to support an initial purchase offering (IPO). Such networks are usually a bilateral relationship between a public sector institution with a mission or program or informal positive orientation to assist SMEs in particular ways, and the SMEs themselves in business networks which have a genuine need and seek such assistance, whether it is free or fee-for-service or some other quid pro quo. This type of business network accounts for about 5% of all cases²⁵.

The proportion of business networks in each of the five identified categories will likely be more heavily concentrated in horizontal networks in government-funded programs, because these are the easiest type of network to form. The proportion of horizontal networks will likely be somewhat less in the general economy since some of the other varieties which do not normally show up in government programs will occur more naturally over time; this is more likely to be the case with business networks arising in clusters, or mixed economies around regional economic hubs, or around technopoles²⁶.

While these five types of flexible business networks are the most obvious ones that practitioners have observed, this may not necessarily be an exclusive definitional listing. Different industrial organization practices in other economies around the world, including major industry supply management, to major project management, to centuries old trading practices in specialized sectors, to family business practices, etc., may well produce a greater diversity of flexible business networks. These are all worth documenting and analysing as the global economy becomes increasingly open and interactive, since the relative competitive advantage arising from any such practice will ultimately impact all other global traders.

²⁵Ibid.

²⁶Ibid.

7.0 Types of Business Networks Projects

Business networks undertake a wide range of projects in common including²⁷:

- **Input-Related Projects**

- Cost Reduction
- Joint Purchasing
- Staff Training
- Technology Acquisition
- Research and Development
- Sharing, Information, Skills, Resources, Complementarities
- Market Research
- Sub-Contractor and Supplier Linkages

- **Operations-Related Projects**

- Joint Processing
- Joint Manufacturing
- Supply Chain Development
- Value Added Process Development
- Technology Transfer
- Quality Management (ISO 9000)
- Environmental Management (ISO 14000)
- Productivity Improvement
- Benchmarking
- Problem Solving

- **Output-Related Projects**

- Design
- Innovation
- Cross-sectoral fertilization
- Convergence
- Commercialization of New Products or Services
- Marketing
- Exporting

As the focus of interfirm collaboration moves increasingly towards clusters and mini-clusters, and to technopoles, further creative combinations will emerge to accommodate evolving competitive and co-operative relationships in the local market place for the global economy.

²⁷Op. cit., Roy, Powerful Synergy.

8.0 Examples of Flexible Business Networks

The following provide examples from selected other countries:

- In Italy:

A group of SMEs that manufactured components for robots formed a business network to manufacture complete robots and now supply the automotive industry.

A very large number of SMEs in the textile sector collaborate to forecast market demand for fashion items, and obtain large contracts to supply major clothing manufacturers who market to the world.

- In Denmark:

A group of landscapers formed a network and engaged a landscape architect, then designed and build golf courses, and now serve many foreign markets.

Eleven textile manufacturers, each making one or two clothing items, combined to make a complete line of clothing and uniforms, and have sold international contracts to gasoline retail companies abroad.

Seven manufacturing companies in shipbuilding, tools, equipment, ship accessories and electronics have worked with a private research centre and a bank to create a network which developed "Trawler 2000" sold the Soviet Union and other countries.

A group of twenty-five small electrical appliance dealers who served mainly the construction industry formed a network to seek new market opportunities. These 25 firms had considerable geographic reach and established customers. The networked firms decided to enter the market of telecommunications products: telephones, switches, cellular phones, faxes, LANs, etc. This led to joint investment in human resources training, joint marketing, etc. The network has successfully grown in market share in a market traditionally held by large telecom companies.

A large number of primary and secondary food producers have formed a network to achieve more value added by developing, producing and marketing high price fast food products. They have jointly subcontracted the processing facilities and a packaging producer, and have used joint marketing to sell to supermarket chains. Their joint resources include the creative skill of well-known chefs who design the innovative food products.

- In Norway:

A national fish farming technology network was formed with complementary skills in cages, nets, feeding, harvesting, marketing, and now serves world markets.

Several business networks have formed to deliver major turnkey projects in airport construction, hospital construction, institutional kitchens, and now export these services.

Three small graphic arts companies formed a network, then purchased bigger capital equipment and technology, and increased export sales by 30% in the first year.

Three mechanical engineering firms shared technologies, then undertook new capital equipment purchasing together (saved 20% of costs), then increased total sales by 10%.

Six firms with complementary businesses providing diverse banking, security, and software services formed their own network, and eventually were so successful that they formed a joint company which won a large volume of new business contracts in the banking sector in its first year of operations.

Three furniture manufacturers formed a network to supply the requirements of the 1994 Olympics in Lillehammer, and went on to supply other markets afterward.

Three fish products companies formed a network to jointly market a full range of products to domestic and export markets in neighbouring countries. Then one of the neighbouring countries began to produce and undercut the foreign markets at much lower prices. The Norwegian network responded by setting up production in that foreign country and competing very effectively on quality and cost.

Eight separate television and video production companies were having problems due to small scale operations, and formed a business network to improve overall organization, human resource development, quality management, create a common stock shot inventory. The network has cut costs by 30% and had increased revenues by 20% and has won several new contracts that no individual firm could have won on its own.

- In Australia:

A group of independent SME cheese manufacturers formed a network to market a complete line of cheeses to retail outlets.

A group of three Printed Circuit Board (PCB) testing contractors joined together to establish a PCB testing facility. This facility has proved most successful and now tests PCBs for many Australian and New Zealand manufacturers. This network has been able to purchase expensive testing equipment, have a stand-alone testing facility employing 12 people, and are growing at a rate of 22% p.a.

A group of eight small trim and upholstery contractors who mainly worked on vintage cars, etc., got together to tender for a \$7 million contract over three years to put leather skins on 16,000 steering wheels for the top of the line Mitsubishi and Holden motor cars manufactured in Adelaide. Previously the covered steering wheels were imported from Mexico. By transferring technical knowledge into a new factory, the group were able to establish new a new business around this contract, which was beyond the capabilities of the individuals. They now employ 40 persons, have won a contract to supply steering wheels to Toyota in Japan and are looking to tender to supply Ford with leather steering wheels which will double the size of their operations. Combined turnover pre network was less than \$1 million p.a., and is now around \$3 million p.a. and growing.

An inventor and three engineers, have commercialized a machine which spreads clay over no-wettable soils and increases soil production by 300%. Each machine costs about \$125,000. On demonstrating their prototype at a field day, they made immediate sales of 10 machines, and have increased total employment in the network by 9 persons, and have a full order book for the next year. Interest in the machine is being shown in other dryland agricultural countries such as South Africa, Israel, etc. Future business prospects look bright.

- In New Zealand:

Fifteen furniture manufacturers formed a network to export, with results at six times original objective after first year.

Five wineries formed a network to establish a regional brand mark and to jointly market their product in an up-scale manner.

Three companies operating distinct businesses related to liquor production, ie, a spirits manufacturer, a labelling company, and a bottle manufacturer, formed a network to export and land a niche product in Japan. The network was able to land the product in Japan at about 50-60% of the cost of the traditional marketing method. Main lessons learned were benefits of risk sharing and increased profit margin and sales volume. The three firms are considering expanding the network with both suppliers and customers.

Three companies in the textile business, representing carpet, furniture and curtain fabric manufacturers, formed a network to export textiles for the transport sector, ie, train boat and airport lounges, and the small hotel market.

Three metal fabrication and forming companies, covering different aspects of roofing, warehousing and office furniture have formed a network to export to our Pacific Rim countries.

Nine Maori organizations have formed a wine producing network, which has become the 5th largest wine producer in the country, under the strategy of 'first nation' wine.

- In Spain:

Four companies co-operated to develop the technology and software for the integral treatment and handling of medical digital imaging from different diagnostic sources. This will permit physicians and radiologists to integrate and analyse a variety of information. The firms in this R&D network include an electronics engineering firm that specializes in software, an electronics equipment manufacturer, a medical images diagnostics company, and a hospital centre.

Three companies in the footwear sector and one from the orthopaedic sector have formed a network to research, develop and manufacture equipment for biomechanical analysis.

Furniture manufacturers in Valencia have worked with a sector technical institute to study how to manufacture furniture without offensive chemicals.

Two musical equipment manufacturers and a jewellery manufacturer have formed a network to undertake common R& D for the use of CAD-CAM, introduction of advanced technologies, and the development of common applications for materials (gold and silver).

- In the USA:

A group of three small firms in clothing manufacturing which supplied the New York market less than 100 miles away began to lose their market share with existing clients due to more competitive Asian imports. The three firms formed a business network, bought and shared a piece of high technology equipment, a laser cutter, which helped them to become more competitive by increasing output and reducing costs. They regained their market share and increased overall sales.

Several states and a truck manufacturer got together to design, develop, manufacture and market a new highway truck snowplough for very demanding Northeastern winter conditions.

Several recreational boat manufacturers formed a network to share a new injection moulding technology to manufacture boats.

- In Canada:

A group of hotels and golf courses in the Eastern Townships of Quebec have formed a network to overcome competing in a zero sum local market, by marketing golf weeks to tourists in targeted cities: Montreal, Boston, New York, Philadelphia.

Several aboriginal-owned northern fishing co-operatives formed a network to sell smoked fish to various cities in southern Canada and the USA.

Thirty-five high technology systems development consultants formed a business networks to share resources to better serve their clients, to compete for larger contracts against larger consulting firms at lower rates.

A group of sixty advanced technology firms formed a network to develop and share rapidly emerging new knowledge that would improve their competitiveness, to do joint purchasing, to share spare parts, to share production facilities when capacity was available, and to develop special programs at local technical colleges and universities.

Forty-five Atlantic region innkeepers have formed a network to market historic inns.

A group of bed-and-breakfast operators have formed a network to created an on-line reservation system and better rate classification in high season, and to get off-season training to become better provincial ambassadors.

A group of natural foods bakers formed a network to market and export their products.

Several northern community colleges have formed a network to offer English second-language training to Japanese business persons, combined with tourism awareness activities, wilderness canoeing, whitewater rafting, and fishing offered locally.

A group of aboriginal fashion designers and manufacturers have formed a network to market their products.

A group of five independent frozen food manufacturers formed a network to produce and market an integrated line of frozen food products to supermarkets.

A group of specialty foods manufacturers formed a network to market a complete line of specialty foods to targeted American markets including cruise lines.

A large group SMES in the environmental services sector, including environmental impact assessment studies, and complex site remediation studies, have formed a network to offer complementary skills, and to market their services to export markets.

A group of wineries have formed a network to purchase materials from suppliers more economically, to develop an-upscale brand mark, and to market more effectively.

A group of home based businesses in crafts, such as knitting, quilting, clothing, etc, have formed a network to market their products.

In a cluster of greenhouse producers, a network was formed to develop a brand name for a certain line of products, and also to market more effectively.

A group of northern, aboriginal-owned and operated hunting and fishing lodges have formed a network to market their facilities to the American market.

9.0 Models For Forming Flexible Business Networks

There are four (4) conventional models for forming flexible business networks:

1. Independent SMEs self-select and self-finance to form a business network.

This type of business network formation is purely market driven, to focus on a new business opportunity. Several SMEs know one another, can work with one another, and may select one firm or CEO to act as group leader. The group will discuss a business concept, research a business case, consult an accountant or lawyer to set the proper business parameters, prepare a business plan, finance the plan, and implement the plan. **Many business networks begin in this simple, straightforward, self-financing way.**

2. Independent SMEs join a local cluster-based soft business network as a first step

Local business clusters are a fertile ground for the formation of soft business networks. Soft business networks try to gather a large number of local businesses to join and learn about interfirm collaboration. These networks are generally self-funding based on an annual membership fee. A network manager is hired, generally part-time, to catalyse the process. Initial activities usually include preparing a catalogue of all members, listing addresses, phone, e-mail; size of firm, business products, number employees, technological equipment used; current challenges or issues of business interest; possible interest in seeking new business opportunities with other similar or complementary firms; etc. Regular monthly meetings are held, often a luncheon with a guest speaker on a topic of keen interest to the group; activity or interest groups can be set up; plant tours can be arranged; public sector institutions can be invited to give presentations on a wide variety of topics including innovation, financing, advanced technologies, quality management, interprovincial trade (Canada); exporting, problem solving, benchmarking, etc. As members of the soft network get to know each other, exchange information more freely, help each other as needs arise, and build trust; this latter element is crucial to going to the next step in interfirm collaboration. At this point, the network manager will introduce the subject of flexible business networks, with examples of successful networks, to try to stimulate interest, and this often leads to formation of a hard business network.

A successful example is the **Ottawa-Carleton Manufacturing Managers Network**, with approximately eighty members, entirely self-financing, and resolutely proud to be free of government subsidy. It is a soft network and also does hard network projects.

A second example is **Le Groupe Des Chefs D'Entreprises Meilleures**, a group of approximately fifteen leading firms whose managers focus on world class quality and best practices, and which visit each others' factories to observe, share best practices.

A third example is **Le Groupement Québécois Des Chefs D'Entreprises**, which serves its 600-plus members in numerous cities as a learning organization with information, skills and competitiveness sharing and seminars to develop high performance firms.

3. Independent SMEs in a cluster catalysed by an Economic Development Commission

This type of business network formation is more common in regions and countries with business clusters or mini-clusters, and which have a rich and homogeneous business culture, with a history of tradition and trust, and may lead to very large agglomerations of SMEs who are persuaded to collaborate for a greater common good.

This is best exemplified by Italy's experience and great success over a quarter century with interfirm collaboration in the country's northern industrial region²⁸. Regional Economic Development Commissions do international research on business opportunities, and then act as catalysts to bring many small firms together within particular industry clusters, such as the textiles, robotics, furniture, automotive, ski boot sectors, to undertake projects in common from fashion house supply with fabrics, to supply chain management, to export marketing. Sectoral expertise centres, design and innovation centres, technology transfer centres, quality management centres, etc., are developed to assist the SMEs. Competitive knowledge and skills are acquired and shared, innovations are developed and implemented, latest technologies are acquired and shared, high quality is addressed, productivity is managed, and the great numbers of participating SMEs have prospered and grown. As a result, northern Italy has enjoyed tremendous growth in exports, new business growth, new employment, wealth building and stability.

4. Government Initiated Business Networks Programs: Supply Push vs. Demand Pull Models

It is important to examine the Danish and Norwegian Government-initiated models to determine the differences. Economists would describe the Danish approach as a **supply-push model**, and the Norwegian model as a **demand-pull model**. While the models appear generically similar, they are different in foundation strategy and components.

There have been numerous government initiated business network programs. The most familiar model that has influenced many countries is that of the Scandinavian countries. A general overview of this model indicates a three stage development process: feasibility study, business plan, implementation. An external consultant, called a network broker, who receives prior special training in the process acts as a catalyst. The government provides funds on a matched-grants basis for each of the three stages of business network development, for the fledgling network to pay the network broker's professional fees plus pre-determined external expenses such as market research. Under this method, business networks can be developed in virtually any economic sector, but in practice with major concentrations in manufacturing, services, tourism sectors. Also a wide range of collaboration on projects in common can take place, from horizontal networks that focus

²⁸Op. cit., Hill.

on marketing and exporting (more common), to vertical networks that assist SMEs to supply larger firms, to cross-sectoral networks that innovate and develop new products, to emerging and converging sciences and technologies (rarer).

(a) **Denmark** experimented bravely for several years from about 1989, and was a global pioneer in developing the much-talked about Danish Program. This was the first large scale national business networks program. The program was created as Denmark faced the prospect of entering the European Common Market, and had relatively few major corporations, and a national mass of SMEs. The specific objective was to encourage many SMEs to collaborate, to build critical mass, to seek new business opportunities, to innovate, to use more technology, above all to export, to compete successfully with other European countries' exporting firms, and to earn foreign exchange. The elements of this national business networks program included a modest project office of with two or three persons, a modest publicity program with a catchy theme of $1+1+1=4$, a network broker training program, and many millions of dollars to be used as matched grants by SMEs to hire the network brokers to catalyze business network formation and pay for defined external costs, such as market research. Sectors influenced were manufacturing, environmental services, tourism. This innovative program was very popular, and had a number of success stories. The Danish Technological Institute, and its intrepid pioneer, Niels Christian Nielsen, went on to advise numerous other countries around the world on this type of initiative²⁹.

Economist Lars Gelsing followed the Danish business networks program with keen interest and has conducted many evaluations at home and abroad. The Danish model came to be recognized as a **supply-push model**, since it involved extensive government funding to stimulate the general SME market place.

(b) **Norway** became interested in developing a business networks program for its SMEs, studied the Danish Program and made a number of refinements in program design and delivery. Most significantly, the Norwegians designed their model specifically to be a **demand-pull model**, based on a well-structured concept to motivate selected high performing firms to consider undertaking business networks in a pro-active manner for the new economy. There are sixteen (16) components to the successful Norwegian model³⁰:

(i) the host organization was SND, the Norwegian National Development Bank, with assistance from the Norwegian Technological Institute on specific issues, combining critically important assets in economics, financing, technology, innovation and training.

²⁹Op. cit., Nielsen.

³⁰Op. cit., Myrhvold.

(ii) the program was targeted at selected high-performing firms or alpha firms in fourteen selected industry sectors.

(iii) these selected alpha firms were given prior orientation training for the new economy by the Norwegian Technical Institute, and this was referred to as readiness training, and included elements of strategic business planning, financing, technology, innovation, marketing and exporting, and established a level of core and critical competencies amongst the selected SME alpha firms.

(iv) the cream of the crop of high performing business consultants from each of the fourteen industry sectors were carefully selected and screened for suitability to work in the business networks program.

(v) these carefully selected and screened business consultants were given in-depth training to become business network brokers through a specially designed network broker training program, given by the Norwegian Technological Institute, which focused on interfirm collaboration, complementary and integrated value added processes, innovation, technology, financing, commercialization, marketing, exporting, etc.

(vi) the trained alpha firms and the trained network brokers were introduced to each other at major business meetings, and began the process of exploring possibilities of future collaborative efforts.

(vii) there was a three stage process for the collaborating firms to go through: feasibility study, business plan, implementation.

(viii) there were modest matching grants to formative networks to pay network brokers for each of three stages of development, plus approved external costs, such as market research.

(ix) the program required that aspiring business networks prepare business plans of a high calibre such that each network could go to the national development bank or to a commercial financial institution and raise the necessary funds to undertake the business plan or subsequent expansion, with leveraging of 1:1 to 1:10 depending on the asset base of the business networks and the nature of the business plans.

(x) the program established a good publicity plan, with a focus on individual networks having coloured, multi-panel marketing flyers, with their specific new business products and services prominently displayed, photographs of key employees and equipment, graphics, etc., to advertise their network.

(xi) the program provided a meta broker, a professional with substantive experience in the field, to act as mentor to regular network brokers, to coach them through difficult experiences (troubleshooting), and in new areas such as technology counselling, innovation counselling, marketing counselling, export counselling.

(xii) the program provided guidance in the form of expected results that business networks could possibly achieve, based on international research, collected examples, and particularly good success stories.

(xiii) the program held annual conferences of the collaborating firms and network brokers, to continually inform all parties about overall performance to date, particular success stories, current challenges and actions to address these, latest research and innovations in the field of business networks internationally.

(xiv) the program maintained a national data base of successful business networks with case study details that interested firms could access to learn about role models.

(xv) the program provided feedback to firms in each of the fourteen targeted industry sectors that had not formed business networks on the relevance of business networks to SMEs in many dimensions, as learning organizations, for complementarity and strength, problem solving, cost reduction, increased profitability, growth, innovation, technology, exporting, productivity, competitiveness, etc.

(xvi) the program established a modest project office with four persons to manage the program.

Based on these important refinements, and successful implementation over several years, the Norwegian model is now the most refined international model, and Norway has since helped to train a number of other countries, including Canada, Australia, New Zealand³¹, in addition to various European, African and Asian countries³².

Each of these four models has something excellent to offer, and is worthy of further research and application. Bigger programs are naturally more expensive and dependant on government industrial policy makers to provide general direction and financial assistance. Smaller initiatives may lack the big splash of the larger programs, but can be very effective, and if they go on in many industrial sectors and local clusters, and if they are regionally-community based, can add up to significant results.

³¹Roy, Philippe, Four Country Memorandum of Understanding on Business Networks (Norway, Australia, New Zealand, Canada), 1994.

³²Op. cit., Myrhvold.

10. Model For Self-Funding of Business Networks

In his research on business networks of the Danish Business Networks Program, focusing on an initial evaluation of firm attitudes and behaviour of 520 Danish SMEs participating in 82 business networks, economist Lars Gelsing discovered some very interesting early outcomes³³:

- **First**, 19% of SMEs reduced costs.
- **Second**, 42% of SMEs increased sales.
- **Third**, 75% of SMEs accelerated innovation (product, process, technology, etc.).
- **Fourth**, 75% of SMEs strengthened their international position (export markets).
- **Fifth**, 82% of SMEs increased direct and indirect employment.
- **Sixth**, 94% of SMEs thought business networks were a better way to do business and would participate in a business network again.

These findings were obtained in a large government-funded business networks program, but were very significant in that they demonstrated a sequence of collaborative activities by small numbers of SME in business networks that could be replicated by larger aggregations of SMEs in business networks, in what could eventually become a self-financing model.

The self-financing model would work in a sequence of activities as follows:

- **First**, collaborating firms would seek to reduce costs by greater purchasing power (co-purchasing).
- **Second**, collaborating firms would seek to increase sales in domestic markets.

The sum of these first two activities would increase the operating margin of the networked SMEs, and would create a source of funds to finance additional projects.

- **Third**, collaborating firms would apply the self-generated funds to work together to innovate a new product, a new process, or a new technology (co-innovation).

Collaborating firms would continue activities one and two, cost-savings through co-purchasing and increased revenues through greater sales, and would use the new innovation to achieve further cost reductions and to increase sales. This would yield greater revenues.

³³Gelsing, Lars, Professor of Economics, for Danish Technological Institute, 199_.

- **Fourth**, collaborating firms would then consider export markets, selling their cost-efficient, new innovation, to other countries, or in supply chains to domestic manufacturers who would export their final product.

This would yield further revenues to the networked SMEs.

The above activities yield direct **outputs**, which in contribute to significant **outcomes**. Increased revenues and profits, representing the return to the business of increased business volumes, leads to new job creation.

- **Fifth**, collaborating firms create new jobs to help manage the increased business.
- **Sixth**, collaborating firms witness a virtuous cycle of growth resulting from a series of carefully undertaken sequential steps.

This is a simple and straightforward model, which can be applied by any business network, whether a soft network or a hard network, or progressing from the first to the second. This simple model can also be used in clusters and mini-clusters. Finally, this model can be used by regional economic development commissioners at regional hubs. Groups of successful implementers of this self-financing model can meet to share best practices, lessons learned, and can undertake a subsequent round of virtuous cycles of interfirm collaboration.

11. The Role and Qualifications of Network Brokers and Meta Brokers

Several of the above mentioned four models for forming flexible business networks use an independent professional known as a **network broker** and of the supra or **meta broker**.

A network broker is essentially a business professional, such as a management consultant, an accountant, an engineer, a small business counsellor, an economic developer, a university professor, a industry department officer, etc., who would have a substantive combination of professional education and broad business experience, would complement this with specialist training in business network formation, and would then offer services, generally on a fee basis, to groups of SMEs wishing to form business networks.

The role of the network broker is to assist the SMEs in formation of business networks by facilitating the process. Process consulting is one of the defined methods of management consulting, according to the Canadian Association of Management Consultants (CAMC). Many other professions also practice this formal process. The network broker would assist the individual firms in assessing their **readiness** for future interfirm collaboration. He / she would then assist a prospective group of interested firms sign a memorandum of intent and then to conduct a **feasibility study**, which would examine the nature of their interest in interfirm collaboration, and the real possibilities of undertaking a specific initiative. He / she would then assist the interested firms to develop a **business plan** for a specific initiative. Finally, the network broker would assist the networked SMEs to formally **implement the plan**.

The business network broker may hold a professional designation, such as CA, CMC, CMA, CGA, P.Eng., EcD., etc. His / her education may also include a business degree, eg, a B.Comm., or an MBA; it may include a science or engineering degree. A network broker should have extensive practical business experience in a wide range of business environments as preparation for those areas where he / she may be called upon to advise SMEs for the new economy. Interpersonal skills are very important, including process management skills, and conflict resolution skills. Vision to see new business opportunities is quite important. The ability to “put a deal together” and maintain the confidence of all parties is essential. An outgoing gregarious nature is helpful, as is public speaking ability, ease in chairing a meeting, and imagination to spark interest when others are stuck in a rut of “it’s impossible”. Successful brokers may inspire the phrase, “A man for all seasons”

Not all business networks work smoothly, nor do all come to fruition after these sequential steps. In order to maximize the potential for success of network brokers and business networks in Norway, SND arranged for a select group of particularly knowledgeable and experienced professionals to provide critical assistance, called **meta brokers**. Meta brokers act as the coaches to the regular network brokers, anticipating a range of issues and challenges, providing forward solutions, trouble shooting when required, and re-enforcing success. Meta Brokers have similar backgrounds to regular brokers, but with additional hands on experience, knowledge and skills to anticipate issues and to solve complex problems quickly. Meta brokers have incredible access to key contacts and to information sources as resources³⁴.

Not all business networks require network brokers. Some self-financing business networks prefer to select one of their own member firm’s CEOs or designated employee to play the role. The role can also be played by an economic development commissioner, or a university professor, or small business counsellor, professional accountant or management consultant who is familiar with the process.

12. Critical Success and Failure Factors

Small firms have inherent weaknesses that business networks can help them to overcome:

- lack of managerial depth;
- lack of ability to find and use market information;
- lack of ability to keep pace with change;
- lack of funds for R&D and market development;
- lack of experience in export markets
- lack of access to capital³⁵

³⁴Op. cit., Myrhvold.

³⁵Op. cit., Mostardi.

When several or even multiple small firms get together to overcome such challenges they turn a weakness into a strength, a failure factor at the individual level into a success factor at the group level. To be successful, small firms must identify and agree upon their weaknesses, not an easy thing to do, and to then build critical mass to focus on solutions, thereby creating the essential success factors.

A synthesis of critical success factors at the firm and business network level took place at the **European Community Conference on Interfirm Collaboration (Business Networks) in Portugal in 1993**. These include:

- Access to capital (creative new financial instruments);
- Focus on management skills;
- Use of advanced technology;
- Attention to innovation, new ideas, products and services;
- Management of quality and service, costs and productivity;
- Exploitation of competitive advantages;
- Pursuit of marketing and export development;
- Re-investment of profits in critical success factors for continued growth³⁶.

The success of individual business networks depends to a large extent on the overall competence of the business network program design and management. **The Norwegians built sixteen key components into their very successful business networks program**, and have had a high level of business networks which have started phase three, implementation, actually completing this phase with excellent operational outputs and outcomes.

Six critically important success factors amongst the above noted sixteen for Norway were:

- the assiduous selection of alpha firms in each of fourteen targeted industry sectors;
- the readiness preparation of these firms for up to two years prior to their introduction to business networking;
- the very careful selection, screening and training of highly experienced business consultants from each of the fourteen targeted industry sectors to work as network brokers;
- the availability of very modest economic development matched-grants to help the business networks to hire the network brokers, with the requirement that the business plan must be of such high quality that the business network could go directly to a financial institution to raise capital to finance the plan;
- the strong use of meta brokers as mentors on a continuing basis year in and year out for the duration of the business networks program³⁷.

³⁶Roy, Philippe, Report on European Community Conference on Interfirm Collaboration, Lisbon, Portugal, 1993.

³⁷Op. cit., Myrhvold.

Although it is often taken for granted, successful business networks usually have members that are located within a one hour drive of one another, which facilitates regular meetings, such as bi-weekly, and this increased information sharing face-to-face, and accelerates the essential trust building. This rule of thumb may be honoured in the breach.

Technology is a great helper to facilitate communications, the telephone and the Internet for example, but successful networks use technology as a support tool, not as a principal device to form the network over a greater distance. Human relations, of diverse dimensions, come first.

The most serious potential failure factor is the self-important “tender ego” of individual business owner-managers, which when manifested can make other participants want to quit a business network. It is best to work on this issue with testing and foreknowledge in the early stages of readiness preparation in order to minimize potential negative impact. Second, it is advisable to have a dispute settlement mechanism for all business networks, and to know in advance of its availability and how it can work positively.

Other failure factors can be firms that are not ready to participate in a (hard) business network, for various reasons. This can be resolved by screening mechanisms, such as three years of profitable operations, a SWOT test, several group meetings over one or two months to determine sustained interest and ability to meet regularly and to carry an equal weight in group endeavours, and most importantly personal chemistry.

A well-known Quebec business network, Le Groupement Québécois d'Entrprises, has cited four important success factors for interfirm collaboration:

- Complementarity;
- Chemistry;
- Compatibility;
- Confidence³⁸.

13. Business Networks vs. Strategic Alliances

One of the most frequently asked questions in the field of interfirm collaboration is, “What is the difference between business networks and strategic alliances?” This is usually followed by a discussion of why large firms deal horizontally with other large firms in strategic alliances, and with small firms principally in vertical business networks in supplier chains; and why small firms prefer to use flexible business networks as a simpler interfirm collaboration mechanisms in a variety of combinations.

³⁸Paré, Benoit, Executive-Vice-President, Groupement d'Entreprises, Drummondville, Québec, at a private business meeting in Montréal, in 1994.

This difference is of fundamental importance, and essentially is one of scale, complexity, resources, skills and duration. Strategic alliances have been used by larger firms and indeed by some aggressive medium sized firms for many years. Strategic alliances require time and resources to put together, and skills to manage. Time and resources are two things that are very precious to SMEs, and generally preclude SMEs from any consideration of participating in a strategic alliance as a form of interfirm collaboration. For these reasons, flexible business networks evolved as simple and effective interfirm collaboration mechanisms for SMEs. There are seven essential differences between business networks and strategic alliances³⁹:

- Negotiating time to create:
 - Networks, a few hours, days or weeks
 - Alliances, several months to one or two years
- Number of firms
 - Networks, 3 to 10 SMEs, but usually 3-5 SMEs
 - Alliances, 2 or 3 larger firms, plus occasionally a specialty SME
- Focus of activity
 - Networks, focus on building critical mass, to solve problems, or to create complementarity for diverse new business opportunities
 - Alliances, focus on complementarity for large-scale innovation, technology transfer / market gain, and mutual beneficial international market penetration
- Formality, flexibility
 - Networks, extremely flexible, leveraging multiple competitive advantages, with firms repeatedly recombining on new business opportunities
 - Alliances, more formal than flexible, due to highly structured collaboration arrangements
- Legal aspects
 - Networks, simple legal formulation, from simple oral agreement in some countries, to a simple letter of understanding among partners, to the creation of a new virtual corporation
 - Alliances, complex legal agreements, intellectual property rights, licencing agreements, protracted negotiations, etc.

³⁹Op. cit., Roy, Powerful Synergy.

- Financing aspects

Networks, simple financing of three types; first, by membership fee in self-financing networks generally in clusters or mini-clusters; second, by complementary financing on a business case basis; third, progressive self-financing steps as described in Section 10.0 of this paper

Alliances, complex financing arrangements, contributions, revenue streams, licencing, sometimes with additional venture capital issues, or spin-off of new firm with IPO
- Domestic or international focus

Networks, usually domestic, but can build to enter export markets

Alliances, domestic or international markets, but with major alliances often being intercontinental
- Duration

Networks, can last from a few months to 1 or 2 years, and then the participating firms may recombine in a new business opportunity.

Alliances, frequently last for several years, such as 5 years, and sometimes longer, to give the partners time to make major investments and to recoup the benefits over time.

It is critically important to understand this set of differentiating factors to distinguish business networks and strategic alliances in order to avoid confusion in collaboration.

Dysfunctional confusion can potentially arise if all forms of interfirm collaboration are referred to using the terms “networks”, “alliances”, “partnerships” interchangeably with the statement or allusion that they are “all the same”. It should be remembered that flexible business networks for SMEs arose internationally to respond to the characteristics and needs of SMEs, and their difficulty / impossibility of using strategic alliances for reasons of scale, complexity, resources, skills, and time. The two collaborative business forms should never be confused.

This said, it is worth noting that Steve Mostardi, Vice-President, British Columbia Trade Development Corporation, developed a solid export strategy by aggregating numerous distinctive business networks and separate strategic alliances, formed these into sectoral export consortia, and aimed these at market opportunities in foreign markets.⁴⁰

⁴⁰Op. cit., Mostardi.

14. Importance, Definition and Structure of Regional Hubs

Regional hubs are very important to local business networks to provide them with a nexus for nourishment.

Hubs can be of a simple variety, such as a university faculty, or a development bank, or a sectoral centre of excellence, or an innovation centre, or a research institute; these are referred to as specialized hubs. These hubs usually address specifically focused network building activities. These models may last for a finite term,

Regional Economic Hubs are more substantive, generally being **community-based**, and centered around a regional economic development commission, which in turn will attract a variety of business and public sector institutions, including the board of trade or chamber of commerce, commercial financial institutions, development bank, universities and technical colleges, sectoral centres of excellence, research institutes, innovation centre, quality management institution, subcontractor data bank, government agencies, etc. The regional economic development commission usually establishes a board of directors, hires a professional staff, and prepares a strategic plan which encompasses a clusters and / or business networks initiative. These models may be more durable with sustained support of multiple business and public sector interests.

In the ideal form, a regional economic hub, situated in a mature urban centre with a diverse economic base (several important economic sectors), and a substantive population (100,000 or more with associated rural areas) should be able to direct a broad range of cluster, mini cluster, business network activities, and provide an important nexus of nourishment⁴¹.

15. Planning and Evaluation Issues For Programs and Networks

It is very important to any form of business network program and to individual business networks initiatives, to establish clear and succinct business-oriented objectives. ⁴² These should not be broad motherhood statements, but rather specific, with both qualitative and quantitative dimensions, and have a full dimension of accountability in the measurement of their performance by those that undertake to organize and deliver them. The best solution is a program model, a graphic with clear causality from clear objectives to specific results, from outputs to outcomes to impacts to consequences, with clearly defined and measurable outputs at each level of the model, accompanied by a succinct narrative description. Any less clearly defined orientation is may doom a business networks program to substandard performance, and a business network to unclear functioning and potential failure. Clearly articulated planning is a sine qua non for business networks programs and individual business networks.

⁴¹Op. cit., Roy, Vision For A Nation.

⁴²Op. cit., Roy, European Community.

When the business network program has run its natural term, it is important to measure the qualitative and quantitative results, of each individual business network, and of the whole program. There are four important dimensions of this measurement:

- Well-defined, measurable **outputs**, such as increased sales, profits, return on investment, market share, innovation in terms of new product or process or technology, patents or other intellectual property.
- Well-defined measurable **outcomes**, such as increased range and depth of entrepreneurial-managerial skills, increased productivity, increased competitiveness, increased job creation, etc.
- Well-defined measurable **impacts**, such as effective technology transfer and cultural change among participating firms, as evidenced by these firms continuing on with a second or third business networks project, or the participating firms recombining with other interested firms in new business networks projects; or the formation of new and diverse virtual corporations of new spin-off businesses by participating firms.
- Well-defined longer term **consequences** in the national economy, as evidenced by flexible business network formation becoming a natural business phenomena in key economic sectors which represent knowledge and skills based smart SMEs in a province, state or country, and these firms demonstrate a harvest of sustained economic benefits⁴³.

Typical errors committed by business network program managers include failure to conduct a program evaluation at all; or to conduct a poorly informed program evaluation, such as failure to measure key results areas (KRAs) of individual business networks accurately; or to track enthusiasm for process issues rather than to measure bottom-line issues; or failure to use international criteria for comparative purposes; or failure to document substantive business cases and lessons learned which can be used as benchmarks for future and program design. A professional program evaluator should be used, who is a member of an accredited national program evaluation association, with a track record in this specialized field, with added objective criteria, best practices and success stories from international business networks programs.

Evaluation should then move up a level to examine the major components of the program, such as the sixteen components of the Norwegian model, or whatever other model is being followed and implemented. For pilot programs or demonstration programs, it is critically important to set up the parameters of the initiative as a proper experiment. Pre-design should be examined by a third party, such as a professional program evaluator, and an international official who has already operated and delivered a successful business networks program.

⁴³Op. cit., Myrhvold.

Some countries feel that it is advisable to wait six months to a year after the conclusion of a business network program, before undertaking a comprehensive program evaluation. This is to permit time for outputs, outcomes, impacts and consequences to bear fruit. The relative strengths and weaknesses of programs can be more adequately assessed in retrospect. The measurable benefits of the successful business networks should be assessed against total project costs to give an overall benefit to cost ratio.

Sound planning and evaluation are the two bookends of business networks programs and individual business networks; both must be responsibly undertaken and reported for comment by invested and interested stakeholders as a proper accountability mechanism.

16. International Best Practices In Business Networks Programs

This topic generates much interest as new countries seek to implement business networks programs, and the hunt begins; access and discernment are important factors in determining which best practices are important.

The sixteen principles of the Norwegian model serve as a good benchmark for international best practices for government-initiated demand pull models.⁴⁴ This was and is a major national program, but the good news is that it is scalable to smaller applications, in states provinces, regional concentrations with an economic development commission, or particular clusters. The Norwegians have been extremely generous with their kind assistance to other countries, and the principles of their national program are becoming well-known internationally. This model has been implemented by Australia and New Zealand.

The Italian model of regional hubs led by economic development commissions working with sectoral industry crafts associations has also had great success over the past quarter century⁴⁵. A carefully crafted SME tax policy also acted as a significant stimulus to encourage SMEs to participate in this business network activity. Northern Italy owes its prosperity to this interfirm collaboration model. **The successful Italian model, based on regional economic hubs and clusters, should be more clearly documented and publicized.**

The model of the Ottawa-Carleton Manufacturing Managers Networks is one of the most successful of its type in the world, encompassing both soft and hard networks, acting as learning organization and new business opportunity exploiter, covering the new economy in the telecommunications, computers, and software sectors, and is entirely self-financing. This is a model to emulate by other Canadian clusters and mini-clusters.⁴⁶

⁴⁴Op. cit., Myrhvold.

⁴⁵Op. cit., Hatch and Hill.

⁴⁶Op. cit., Young.

There is really no intellectual property in such matters since the knowledge in this field is virtually universally dispersed, and in particular the elements of business network broker training are publicly known and easily applied. A number of countries have made their business networks training manuals generally available. It should be noted that individual success stories have the greatest value, and these are generally published following government-sponsored programs. It is worth the effort to document whatever international examples that may be available in order to gain additional insights into successful practices. Where intellectual property is insisted upon, then alternative strategies are easily used such as re-engineering and sources are quite easily available nationally and internationally from friendly parties. Generally persons and organizations with high intellectual and entrepreneurial creativity significantly add more value with frequent innovations than those who sit on aging intellectual property.

17. Relevance of Business Networks and Regional Hubs to the New Economy

This issue may be best put: "Which country cannot afford to create a business networks economic strategy for its national economy? Which economic sector cannot afford to have a competitiveness strategy based on interfirm collaboration? Which SMEs that wish to survive and to grow in the emerging knowledge and skill based global economy cannot afford to learn how to participate in a flexible business network?"

Business networks are the most essential strategy and regional hubs are the most essential infrastructure to support SME knowledge building, sharing, leveraging, leading to accelerated innovation, technology use, new markets, exports, profits, growth, employment growth, currently available to SMEs globally. The research paper, "Relevance of Business Networks..." cites fifteen critically important relevancy factors for the use of business networks:

- **First**, flexible business networks are important and easily accessible learning organizations for SMEs, and fulfil the well-known fact that SMEs learn best in groups of other SMEs dealing with current business issues and new business opportunities.
- **Second**, flexible business networks offer SMEs interfirm collaboration as a simple third option for growth, in addition to the traditional endogenous (internal growth through hard work and natural expansion over time) and exogenous (external growth through merger and acquisition) options.
- **Third**, interfirm collaboration permits concentrations of SMEs to form larger soft business networks, to catalogue local firms in the same economic sector and business type, to share information, to organize common interest efforts, to solve problems, to do training, and based on such increased knowledge of other SMEs, the resulting co-operation and trust of informal interaction, some SMEs within the larger soft business network may form flexible business networks also known as hard business networks, a common approach in many countries.

- **Fourth**, flexible business networks offer SMEs a simple and powerful opportunity to complement one another with knowledge, skills, resources, to build critical mass together, to build a larger virtual organization that is competitive with larger firms, and to extend their reach to access greater markets, domestically and internationally.
- **Fifth**, flexible business networks can help participating SMEs to self-finance their expansion in new endeavours by increasing profitability and accelerating growth through synergy in a three step sequential process:
 - by decreasing costs and increasing revenues, thus leading to increased operating margins, business volumes and profits;
 - by investing prior increased profits back into the business network, in innovation in product, process, technology and service, leading to greater competitive advantage;
 - by striving to increase current market share and to reach out to new markets domestically and internationally.
- **Sixth**, flexible business networks offer independent SMEs a considerable opportunity to collaborate in the marketing and exporting of their goods and services, by assisting these firms to build scale through co-operation and collaboration, in the process frequently assisting these firms in process standardization / quality management / cost management, and in some particularly enriching circumstances assisting some firms to build a full product or service line, or to develop strategic complementary product lines, with this form of collaboration being known as horizontal business networks.
- **Seventh**, flexible business networks assist major manufacturers, processors, assemblers, and integrators to decrease their costs and to improve their productivity in using one, two or three tiers of sub-contractors combined into integrated supply chains or vertical networks.
- **Eighth**, flexible business networks provide a format for small business to collaborate in the development of new ideas, in the design of new products and services, and this is particularly valuable in cross-sectoral business networks, where SMEs from different economic sectors are often juxtaposed in innovation and commercialization.
- **Ninth**, flexible business networks can assist SMEs to work effectively with public sector institutions, such as universities, research institutes, centres of excellence, etc., to increase knowledge and skills building, and to maximize growth potential.
- **Tenth**, in some cases flexible business networks can permit a group of specialized SMEs the opportunity to participate as a player in a larger scale and more complex strategic alliance between major firms, which collaborative arrangements are normally beyond the capacity of ordinary SMEs to participate in due to complexity and cost factors.

- **Eleventh**, flexible business networks can be particularly effective in offering SMEs in emerging and converging sciences and technologies sectors an opportunity to collaborate on innovation, to accelerate the innovation to market cycle, or shorten the horizontal axis and increase the vertical axis on the S-curve, in critical new areas of science and technology, and getting a valuable edge on international competitors.
- **Twelfth**, flexible business networks offer small groups forming one network an opportunity to export with greater ease and volume, and can offer multiple business networks the opportunity to form a sectoral export consortia to reach new international markets with greater scale and impact.
- **Thirteenth**, flexible business networks are an essential sectoral competitiveness and regional economic development strategy for the new economy, and when combined with regional hubs and clusters / mini clusters, the sum of these strategies can lead to accelerated learning, knowledge, skills, innovation, technology, productivity, competitiveness, employment growth, investment, and general prosperity, faster than other known new economy building strategy.
- **Fourteenth**, flexible business networks are a very important part of the high rate of interfirm connectivity that accelerates knowledge sharing, research and development, product development, commercialization, and marketing, which is inherent to successful technopoles and mini- technopoles around the world.
- **Fifteenth**, flexible business networks go hand in hand with connectedness by electronic highway to link multiple business interests in diverse communities, to inform them in matters of collaboration, and to accelerate all forms of co-operation and collaboration for competitiveness, thus permitting firms and communities of smaller scale to aggregate their efforts in regional, national and international market places⁴⁷.

Nothing comes close to this empowering market-based mechanism for accelerating SME development through learning, overcoming obstacles to business growth, seeking and winning new market opportunities, and creating new jobs. Australia, for example, which implemented the Norwegian model, found approximately two years later that firms that engaged in business network activity had a 50% greater increase in turnover (gross revenues), and a 33% greater increase in new job creation than firms that did not engage in business network activity. This is very substantive evidence of the relevance of flexible business networks for SMEs⁴⁸.

⁴⁷Op. cit, Roy, Relevance.

⁴⁸Op. cit., Dean.

18. Emerging Trends

There is increasing advocacy among practitioners to target business networks programs at clusters and mini clusters, and in particular to knowledge-based sectors with advanced sciences and technologies, both for the higher potential to achieve results, and the desire by governments to grow new economy sectors faster to get them to exporting stage to earn foreign exchange. Many cluster and mini-cluster models include some sort of central hub structure to provide a nexus of nourishment to the clustered firms, and this hub to cluster relationship provides a fertile environment for interfirm collaboration with local hard and soft infrastructure. This trend is likely to accelerate, with more market-based, self-funding business networks.

Government tax structures that favour SMEs in several classes, notably micros (one to ten employees), and smalls (ten to thirty employees) as was the case in the success Italian model, can have more positive and sustained stimulative effect on the demand side of the market, than do grants and subsidies on the supply side of the market. The net effect of more favourable tax structures for SMEs has shown that they will re-invest profits in growth strategies. This can be particularly beneficial when combined with a business networks strategy in local clusters and mini-clusters with support from regional network hubs.

Moreover, as the world sees increasingly the emergence of technopoles, either in top down government initiated models, or in bottom up business and market driven models, it is clear that a high level of interfirm connectivity, both formal and informal, is an essential catalyst for knowledge building, sharing and leveraging. Interfirm connectivity can become connectedness through Internet, Intranet and Extranet systems of information flow, which support increasing dynamics of human and firm relationships. Interfirm collaboration, such as flexible business networks becomes quite naturally an essential market mechanism for firms to accelerate knowledge building, innovation, commercialization, exporting, and growth. Technopoles can show more intense interfirm collaboration, in a variety of combinations, and such technopoles use the concept of virtual organization to increase the platform of community knowledge amongst member firms and local infrastructure institutions, and this platform of knowledge influences more effective and efficient development of successions of S-curves.

The now well-recognized government-initiated business network programs have been tried in many countries and are now being evaluated. Countries are taking one or more years to carefully review results achieved. There is a need to examine the individual business networks and the longer term sustainability of each particular case: has there been a sufficient and effective technology transfer and a sustainable business culture change?

Further, there appears to be increasing efforts to discern the differences between supply push models and demand pull models, to distinguish between flexible business networks and strategic alliances, to seek out and document self-funding business networks including both soft and hard networks, etc. Governments appear to have little available funds for grant and subsidy programs; self-funding based on a sound business plan appears to be coming more evident, and there are several strategies available to support this.

We need to examine the full scope of business networks programs, from informed program design to proper program evaluation of results. An international conference should take place on this subject alone, to examine in detail the results of supply-push and demand-pull government programs, and to compare these two models with other free market models, cluster and mini-cluster based models, regional hub models, and soft and hard self-funding models.

19. Important Role For Universities and Professors

There remains a genuine need for well defined national and international research into government industrial policy, business network program design, individual business network results, particular success stories, use in case studies in Commerce and MBA programs leading to separate course development, professional assistance to local clusters and business network development, collaboration of professors / students with business associations and sector councils to promulgate business networks use, formation of both national and international Internet-based networks of universities and professors to share research and to hold regular conferences to meet and share practical experience with colleagues and firms on diverse issues. Universities and professors can play a major contributing role.

Some potential topics for research include:

- Moving towards a general theory of business networks for SMEs.
- Carefully documenting various countries' approaches to business networks program design, processes, funding, particularly analysing whether they are supply push models or demand pull models, program evaluation, and substantive results achieved.
- Establishment of a set of standards for international comparisons and benchmarking.
- Documenting particular objectives and outcomes in individual business networks projects undertaking, ie, cost reduction, increased sales, innovation, use of technology, commercialization, export development, increased employment, new enterprise spin-off, etc.
- Documentation of the best self-financing strategies in business network formation.
- Tracking of most effective stimulus in formation of business networks.
- Synthesis of a course in business networks, or analysis of best university courses for undergraduate and graduate students in business networks.
- Documenting various alternative free market forms of business networks, cluster and mini-cluster based, soft and hard self-funding, hub-based, unique forms, processes, results, etc.

- Documenting success stories in business networks, in business case formats, to compose an international compendium for reference.
- Clear distinction between flexible business networks for SMEs, and strategic alliances for larger firms, and which the great majority of SMEs have trouble accessing due to cost, complexity and time factors;
- Looking at more aggregate models where business networks can be a building block, such as cluster stimulation, and technopoles development.
- Developing a list of Canadian and international experts in business networks to form two distinct networks for information exchange.

20. Conclusion

Flexible business networks are a valuable instrument for SME growth in the new economy, rooted in a long history of human and business collaboration over many centuries.

Business networks can now support interfirm collaboration to help SMEs, in multiple economic sectors, to access and share important knowledge, to build critical mass, to share complementary competitive advantages, to overcome barriers to business operations, to seek new business opportunities, and to accelerate growth.

More research is required on the initiatives and practices of the past quarter century, and particularly the current decade, to document and analyse the interfirm collaboration initiatives of many countries, individual successes and failures, and lessons learned. It is critically important to document and analyse the different government-initiated supply-push and demand-pull models, and compare these to the free market models, cluster and mini-cluster based, regional economic hub based, soft and hard networks, and self-funding networks.

From timely research, new industrial policy can be considered to support SMEs in renewed interfirm collaboration to build and leverage knowledge, to innovate, to commercialize, to develop new technologies, to export more extensively, to grow rapidly and to create new jobs.

As countries consider their national policy for the emerging global economy, they identify a number of key components, including favourable broad policy framework for small business including tax structures, key knowledge based sectors for the new economy, small business competitiveness targeting strategies including skills, institutional infrastructure such as education and centres of excellence, physical infrastructure such as electronic highway, access to diverse financing strategies, diverse export development strategies including a special national agency, local leadership in interfirm collaboration in clusters, mini-clusters, business networks.

Clearly a number of countries believe that a national industrial or economic or competitiveness policy should have a business networks dimension to it. The great challenge is to carefully select which of several possible business networks strategies is most suitable.

End Notes

1. There is no general theory of business networks for SMEs. Rather, leading nations that have been active in this field have been willing to share their experiences and knowledge freely with quid pro quo. As a result, there is an emerging body of knowledge and international best practices through shared experiences, documents, and international conferences, which has led to some degree of commonality in approach. There has, however, been relatively little academic research in this field, generally addressed to particular national initiatives, program evaluation matters and specific issues arising.
2. Canada recognizes the important contribution of small business to the national economy: 99.% of 943,000 registered businesses are SMEs (plus a further 2.5 million self-employed businesses), contributing 43% of private sector GDP, creating 81% of net new jobs, and many aspiring to be global traders though only 89,000 SMEs or 8.5% of all SMEs currently export.

Bibliography

1. Roy, Philippe, Vision For A Nation, 1995.
2. Roy, Philippe, Relevance of Business Networks For Small- and Medium-Sized Enterprises (SMEs), Particularly For 'Smart Firms', In The Emerging, Knowledge and Skills-Based Global Economy, 1998.
3. Roy, Philippe, Powerful Synergy For Maximum Growth, 1997.
4. Roy, Philippe, Trip Report, Speaking Engagements, New Zealand, Australia, and International Best Practices in Business Networks, 1995.
5. The Globe and Mail Newspaper, special report on the life work of Jane Jacobs, city planner and urban economist, 1997.
6. Crane, David, Economics Editor, Toronto Star newspaper, 1997.
7. Crane, David, Economics Editor, Toronto Star newspaper, 1994, referring to presentation by Michael Porter to World Economic Forum, Davos, Switzerland.
8. Kanter, Elizabeth Moss, World Class, Thriving Locally For The Global Economy, 1995.
9. Hatch, Richard, Flexible Manufacturing Networks: Co-operation For Competitiveness In A Global Economy, 1988.
10. Hill, Kendra, Flexible Networks In Theory and Practice, 1992.
11. Poulin, Diane; Montreuil, Benoit; D'Amours, Sophie, Directors of Network Enterprise Technology Centre, 1995, Laval University, Quebec City. Poulin, Montreuil, Gauvin, L'Entreprise Réseau, 1994, Laval University, Quebec City.
12. Ffowcs-Williams, Ifor, Partner, Cluster Navigators New Zealand, and formerly General Manager, TRADENZ, Wellington, New Zealand, at Technopolis 97 conference, organized by The Conference Board, Ottawa, 1997.
13. Rosenfeld, Stuart, Partner, Regional Technology Strategies, in Significant Others, Exploring the Potential of Manufacturing Networks, proceedings of the Aspen Conference, July 1993.
14. Myrhvold, Trond, formerly Vice-President, SND, Oslo, Norway, also head of Norwegian Business Networks Program, referring to Norwegian Business Networks Program, summary text distributed at various public presentations throughout Atlantic Canada, Montreal, Ottawa, in 1994.

15. Dean, John, formerly Director, Small Business Office and National Business Networks Program, AusIndustry, Canberra, Australia, cited in Network News, 1998.
16. Masters, Des, currently State Manager For Australia and Northern Territories, Australian Business Networks Program, referring to a recent summary report of success stories in business networks under his direction, _____, 1998 (to be completed).
17. Cameron, Kevin, management consultant, working with two network brokers in FlexNets Alberta, seminar, Edmonton, Alberta, 1995.
18. Mostardi, Steve, formerly Vice-President, British Columbia Trade Development Corporation, referring to his presentation, Flexible Business Networks, The British Columbia Experience, 1993, at First National Round Table on Business Networks, 1993.
19. Young, Andrew, founder, Ottawa-Carleton Manufacturing Managers Network, referring to his presentation using the title of the network, 1993; and founder of the Canadian Institute For Business Networking, 1994.
20. Op. cit., Roy, Powerful Synergy.
21. Nielsen, Niels Christian, Vice-President, Danish Technological Institute, Guest Speaker at First National Round Table on Business Networks, 1993.
22. Ibid.
23. Ibid.
24. Ibid.
25. Ibid.
26. Ibid.
27. Op. cit., Roy, Powerful Synergy.
28. Op. cit., Hill.
29. Op. cit., Nielsen.
30. Op. cit., Myrhvold.
31. Roy, Philippe, Four Country Memorandum of Understanding on Business Networks, (Norway, Australia, New Zealand, Canada), 1994.
32. Op. cit., Myrhvold.

33. Gelsing, Lars, Professor of Economics, Aarhus University, program evaluation work undertaken for Danish Technological Institute, cited by Niels Christian Nielsen at First National Round Table on Business Networks, 1993.
34. Op. cit., Myrhvold.
35. Op. cit, Mostardi.
36. Roy, Philippe, Report on European Community Conference on Interfirm Collaboration, Portugal, 1993.
37. Op. cit., Myrvhold.
38. Paré, Benoit, Executive Vice-President, Groupement Québécois Des Chefs D'Entreprises, Drummondville, Quebec, at a private business meeting in Montreal, 1994.
39. Op. cit., Roy, Powerful Synergy.
40. Op. cit., Mostardi.
41. Op. cit, Roy, Vision For A Nation.
42. Op. cit., Roy, European Community.
43. Op. cit., Myrhvold.
44. Op. cit., Myrhvold.
45. Op. cit., Hatch and Hill.
46. Op. cit, Young.
47. Op. cit., Roy, Relevance.
48. Op. cit., Dean.

References

1. Jacobs, Jane, Cities and the Wealth of Nations, 1984.
2. Crane, David, The Next Canadian Century, Building A Competitive Economy, 1992,
3. Kanter, Elizabeth Moss, World Class, Thriving Locally For The Global Economy, 1995.
4. Malone, Michael and Davidov, William, Virtual Corporations: Strengthening and Revitalizing the Corporation For the Twenty-First Century, 1992.
5. Senge, Peter, The Fifth Discipline: The Art and Practice of The Learning Organization, 1990.
6. Porter, Michael, Canada At The Crossroads, 1991
7. Porter, Michael, The Competitive Advantage of Nations, 199.
8. Network Co-operation, Achieving SME Competitiveness In A World Economy, Danish Technological Institute, Denmark, 1992.
9. The Norwegian Business Networks Program, SND, Norway, 1994.
10. The Australian Business Networks Program, AusIndustry, 1995.
11. The New Zealand Business Networks Program, TRADENZ, 1995.
12. The Network Brokers Handbook, An Entrepreneurial Guide To Co-operative Strategies For Manufacturing Competitiveness, U.S. Department of Commerce, Technology Administration, National Institute of Standards and Technology, 1995.
13. Hatch, Richard, Flexible Manufacturing Networks: Co-operation For Competitiveness In The Global Economy, Centre For Re-Industrialization, New Jersey, 1988.
14. Rosenfeld, Stuart, Significant Others: Exploring The Potential Of Manufacturing Networks, proceedings of the Aspen Conference, 1993.
15. Report on the Spanish Business Networks Program, 199_.
16. Co-operation and Competitiveness, Proceedings of International Conference, Portugal, 1993.
17. Cluster Power and Business Networks, Synopsis of Conference, Norm Schaeffer, University of New Brunswick, November 1993.

18. Barnard, Bill, The Role of the Network Broker, EDS Management Consultants, 1994.
19. Flexible Business Networks, Co-operating To Compete In the Global Market Place, German Marshall Fund of the United States, 1991.
20. A New Idea From The Old World, Video, German Marshall Fund of the United States, 1991
21. British Columbia Trade Development Corporation, Business Networks Program, 1992.
22. FlexNets Alberta, A Consortium of Fifteen Partners Led By Government of Alberta, 1994.
23. Quebec Business Networks Program, Ministry of Industry, Quebec, 1994.
24. USNET Business Networks Training Program, Stuart Rosenfeld, RTS, 1995.
- 25.. Voyer, Roger, and Ryan, Patti, The New Innovators -- How Canadians Are Shaping the Knowledge-Based Economy, 1994.
26. Malknight, Jim, Beyond Theory, A Practitioner's Approach To Networking, 1992.

Please note: Much of the information exchanges on flexible business networks between practitioners over the past decade have been oral and at conferences. Most of us did not set out to create academic documents on the subject, but rather to study business networks at home and abroad and to then influence and implement various initiatives.

(To be completed)

Bionote

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