Working Paper

International Cooperative Business Models

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WP-90-63
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IIASA

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1 Towards A New Political and Economic Setting in Europe

Major developments of East-West relations are subject to global, political, economic and socio-cultural driving forces. They are part of the general scenery, fluxes and constant opportunities and constraints that shape the present world realities.

After a thaw in international affairs, cooperative economic and business activities increased in the 1970s. However, in 1979 interest rates began to rise in international markets thereby heavily loading the accumulated Eastern debts. Thereafter another Western recession took place and Western imports plummeted. Also the international lending funds and commercial credits were curtailed. East European countries had to adjust to the economic imbalance and restrict their imports.

Already in 1982, compared with 1979, the decline of foreign relations between East and West was reduced to some 80%. This tendency was continued until the end of 1980s. While political horizons were gaining brightness, economic constraints raised a kind of reluctance in mutual production and trade arrangements. The total eastern debt arrived to some US $100 billion.

The East European economy has stagnated since the late 1970s on both the domestic as well as on the international scale (see Table 1). Longtime political criticism merged with faint economic performance. Juxtaposition of West and East economies exhibited an irreversibly widening gap.

Table 1: Economic and Trade Growth (in %/year) 1980–1986

	GNP	Trade	
		Export	Import
OECD Countries	2.4	3.0	4.1
East European Six	1.4	4.1	1.0

Source: UN Economic Bulletin for Europe, ECE, Geneva, November 1987

In 1989 a swift sequence of political upheavals in East European countries accelerated the collapse of rigid political structures that overlived their postwar rationales. Declination of the role of political, military and economic rival institutions, make a much broader path for cooperative relations. Prerequisites are growing for an all-European economic advancement. A unique international setting will come into being, making it possible to extend the "active zone" of economic progress to the other side of Europe.

2 General Growth of Complexity, Complementarity and Synergy

The business and economic activities constitute an autonomous sphere in the society, however they do not develop independently from major societal changes ("megatrends"). The scientific

image of the world has undergone principal shifts in the last decades which supply some valuable arguments for the explanation of the growing importance of synergetic formations.

The structural changes of the past fifteen to twenty years were associated with avowed shifts in proportions of strategic variables of the economic growth. Among them were identified:

- the service sector's share in the volume of the economy has been extended beyond one half and exceeded the agricultural and industrial sectors put together;
- new strategic factors came into existence, in particular the human, social and political (democratic) factor, the environmental factor and lately the international factors of economic changes;
- the traditional overtake of raw materials and energy, has been interchanged by an overtake of knowledge and variable "human" capital;
- the economy of scale has been put into a competitive stance with the economy of scope;
- former limits to "economic distance" were broken by the enhancement of transport, communication and informatics.[1]

Science (natural and social) has divulged new findings in the sense that the beliefs of "one best way," which constituted an obligatory approach to microeconomics, is loosing its lead. Instead, as a result of the contemporary scientific technological revolution, political and economic upheavals, many - more or less equivalent - paths to the future may be pursued.

It was another scientific discovery that a general tendency was coming of age: a principle of complementarity and synergy. A deeper knowledge of natural laws and social trends renders it possible to develop a modular concept of production and look for effective interfaces between autonomous modules.

Theoretical studies of collaborative schemes based on structural and functional complementarity and synergetic effects constitute several goal-oriented options:

- evolutionist improvement of the input-output ratio through input sharing and/or output composition;
- attainment of a threshold mass for a start-up, or of a scale/scope advantage;
- development of new structures/functions with significant desired properties;
- protection of resources;
- environment conditioning;
- safeguarding and self defense;
- risk pooling;
- reproductive growth.[2]

All those general findings derive mostly from evolutionary biology and sociology, which also apply to capital, business, and economy. The relation of competing values can be substituted as asset-liabilities, benefit-cost and goods-money, etc.

Synergetic schemes are particularly relevant to models of collective values, shared by homogeneous partners. In such models, business/economic values figure along with human, social, and ecological values. However, their proportion and mechanism of teleological selection are still obscured.

[1] see also De Bandt, J.: Cooperative Behavior among Economic Agents within the Production System, in: Struempel, B.(ed.): Industrial Societies after the Stagnation of the 1970s, Berlin – New York, de Gruyter 1989.

[2] See generalizations in Coming, P.A.: The Synergism Hypothesis, New York, McGraw-Hill, 1983, pp. 78–86.

Mathematical models disclosed that axiomatic rules cannot be taken for granted in many non-standard options.

A general synergy rule has been suggested by H. Von Foerster in the 1960s. It is built up on the "superadditive composition":

$$f(x,y) \rightarrow f(x)f(y),$$

where x, y are the cooperating agents. Later, that formula was extended:

$$f(x,y) - c(x,y) \rightarrow f(x) - c(x) + f(y) - c(y),$$

where c substitutes the "cost" of association.[3]

The rule hardly supercedes the formula that "the whole is more than the sum ot if parts." The latter rule is to be interpreted not as an additive operation, but as an emergence of new properties capable to exist only as composites.

Collaborative actions may get out of control and convert into a kind of deviation. Sometimes the pursuit of mutual goals looses is its synergetic effect and the process continues as joint, but from the point of synergy neutral. Or synergy may turn over into dysynergy ("negative synergy"), devastating impacts.[4]

R. Thom studied cases of nonliner transformations leading into "combinatorial catastrophes". He was able to identify mathematical patterns of such developments, but not clarify the rationales of unexpected nonlinear transformation.[5]

Thus the evolutionist theory with its new findings on the role of pluralistic development, "organizing chance" (according to I. Prigogine), complementarity and synergy provides recourse for studies in cooperative business and economic options.

3 Cooperative Business Strategies

Over the last fifteen to twenty years, the production systems have undergone substantial changes. It is in this framework that cooperative business grew to an international issue and became subject to a variety of theoretical studies.

A hypothesis was developed that cooperative behavior was not marginal, but essential, not meliorating, but crucial to industrial and business performance. Unlike in the traditional economic theory, which holds that productivity and profitability are a function of the intensity of the competition, it is argued that competition and cooperation are not only mutually contradicting and opposing, but at the same time complementary and promoting.

In the beginning, cooperative business proliferated as a consequence of the stagnation with the peak in 1974-1975 in subsequent structural changes. Scores of scholars have described and explained the structural transition in terms of altered configuration of firms. Divestments, buy-outs, take-overs, acquisitions, mergers and other moves in capital organization stated in evidence that cooperative business schemes were expanding.

However, the first assumptions that this was first of all a downstream attempt to save the basic value added background were questioned by new theoretical findings. They tried to introduce cooperative business as a prospective formulation of the economic growth model.

[3] von Foerster, H.: "Bio-Logic" in: Bernard, E.—Kare, N.R.: Biological Prototypes and Synthetic Systems, New York, Plenum, 1962, quoted in: Coming, P.A.: The Synergism Hypothesis, Theory of Progressive Evolution, New York, McGraw-Hill, 1983, p. 89.

[4] When working out his hypothesis of synergism, P.A. Coming has coined the term of "egoistic cooperation" thus pointing out to a complex dialectics of both sides, which being in equilibrium may provide a synergetic effect, however separated would end in dysynergy. Ibid., p. 239.

[5] Indeed, sudden nonlinear transformation must not always carry any "catastrophe." Contrary to it, insight may be provided into fragile proportions that might be changed positively with little effort and input.

4 The Dynamism of International Cooperative Course in Business

Empirical data persuade of a gradually, but at the same time a steep growing trend of cooperative arrangements (see Figure 1). Along with the increase in number, they ramify into various mutations and display a very polymorphous pattern.[6]

The number of international business agreements increased spectacularly in the first half of the 1980s, and the surge continues, so far.

The world hub of business internationalization is the Triad, in particular the European Community. Agreements of the EC soared in the first half of the 1980s with the US almost 10 times and with Japan 8 times. Meanwhile between USA and Japan they increased 4 times (Inside the EC some estimated 20 times).

In the second half of the 1980s the corresponding figures would be 2.5 times, 2 times and 2.25 times respectively.

There are several reasons for such a geographic distribution. The American businesses are still mostly individualistic and unshared control is preferred. In Japan, the cooperative relations are mostly tied by a distinctive industrial culture.[7]

The European Community is still facing the process of unification after 1992, so that many arrangements are repeated in several member countries blowing thus the number of agreements which will be reduced to one in a foreseeable time.

Among the affluent variety of collaborative arrangements those stressing a closer cooperation, a more demanding mutuality and joint creative effort are coming to the fore. Innovative purpose more than mere extension seems to take the lead.

This is especially true of the growth of joint ventures. The number of joint business arrangements indicates a steady growth. In the past, joint capital ventures were judged to be a second-best option, when for some reason a direct investment, acquisition or merger was restrained.

Joint ventures in the West are commonplace, however their number is far from an eye-opener. According to statistical data for middle size and large US companies, the number could account for some 30,000 (compared with some 12 mil of US business units.)[8]

A new field of joint ventures opens in Eastern Europe. After investigative years with multiple limitations on the part of East European countries, after 1989, the numbers magnify considerably[9] (see Figure 2).

East-West joint ventures should be judged as an evolving phenomenon which may be subject to further changes. In many cases, the joint venture options seem to be mandated by the fact that in most Eastern countries direct foreign investment has not yet been legally clarified and guaranteed to lure Western capital. The joint venture scheme is then accepted as the second-best contingency to penetrate the promising Eastern market. Later, the development of joint ventures more vigorous than so far will be co-determined by other possibilities of direct investment.

The Eastern companies prefer joint ventures hoping to make one's way to convertible currency, technological modernization, management skill, and market pull. Because they do not see other options, they draw a conclusion of joint venture's not preceded by a build-up of mutuality, credibility and trust.

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[6] Adopted from Herget, M. Morris, D.: Trends in International Collaborative Agreements, in: Contractor, F.J.Lorange, F. /ed./: Cooperative strategies in International Business, Lexington, Lexington-Books, 1988, p. 101. Estimates by IIASA.

[7] Recently, contemplating the control by large companies, and divulging a fear that the pre-war dominance might revive, an international article pointed out that "the Japanese sub-contractor isn't in love with his parent company. He is just tied to it by tradition and the threat of losing the business." Confronting the Zaibatsu Revival, the Daily Yomiuri, Tokio, June 27, 1990 p. 3.

[8] More about that in Cooperative Business Strategies in International Business Promotion, Working Paper, IIASA, 1990.

[9] Adopted from Cooperative Strategies in International Business Promotion, Working Paper, IIASA, 1990.

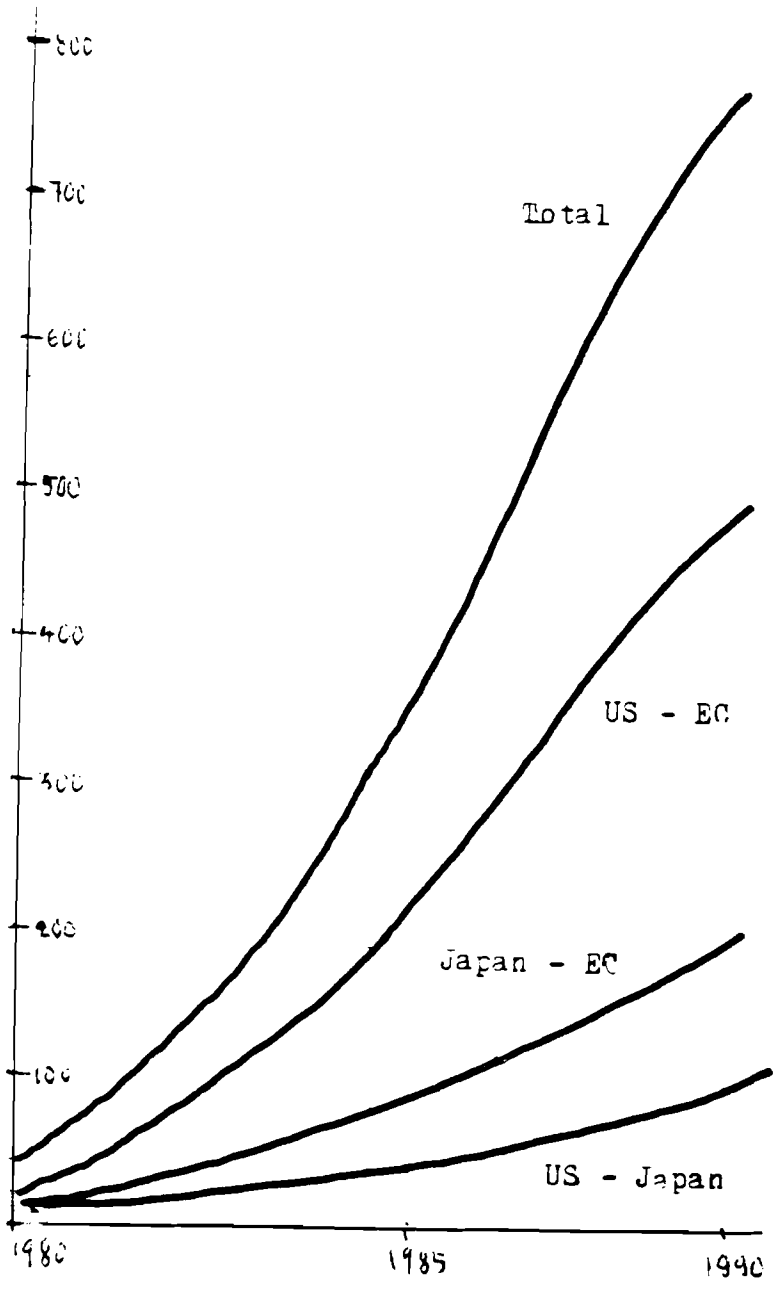

Figure 1: Growth of international cooperative business agreements in the 1980s. Source: Cooperative Strategies in Business Promotion, Working Paper, IIASA, 1990.

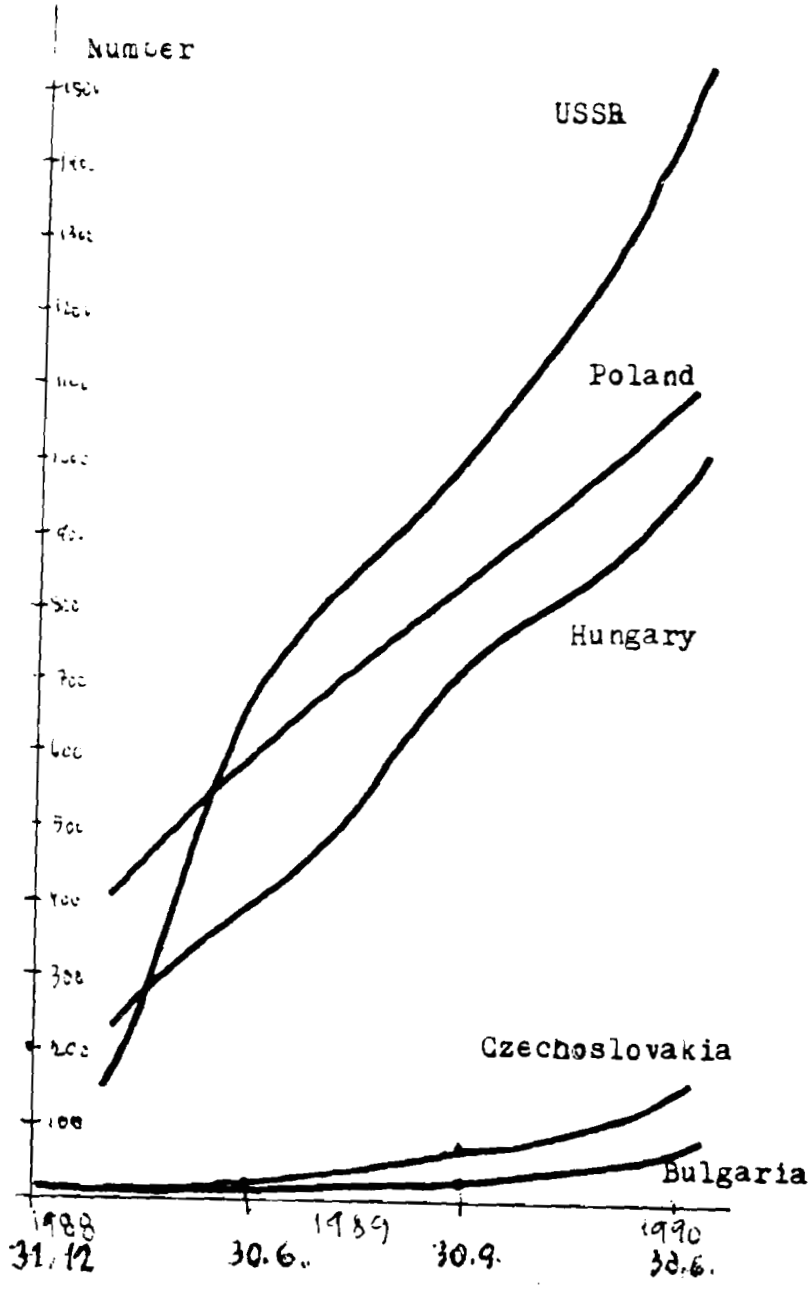

Figure 2: East-West Joint Ventures growth in 1988-1990. Source: ECE and IIASA joint ventures data base.

In both cases of West and East, the joint capital venture is frequently not primarily and initiatively the best choice of business enhancement, but the next substitute for it.

5 Structural Conclusions

Despite innumerable diversity of possibilities, some significant features may be read out of the phenomenological interpretation:

1. Cooperative orientation gained prominence in late 1970s. The theoretical generalization followed with a delay of around 10 years, as at the early stage the cooperative behavior was considered a rebounce of the 1974-1975 recession.

2. With the years, cooperative behavior gains in creativity, and some arrangements particularly in advanced industries, become intriguing, non-transparent and inconceivable. It is not easy to trace back all interdependencies, multiple purposes and effects. This is true predominantly of high tech industries with an uncomparable demand for research, development, experimentation, flexible sub-contract, venture capital, etc.

3. A conspicuous inclination increases also the cooperative models aiming at principal innovation, product/service differentiation and leading promotion. More than fostering simple economy of scale/scope and capital saving mode of production.

6 Rationales for Business Collaborations/"Critical Mass"

The cooperative approach is determined either by mere necessity, because otherwise the individual company could not accumulate the capital, physical means and indispensable creative potential, or the companies jointly compete for a comparative advantage based on a higher economy of scale/scope.

As a matter of fact, despite different purposes, dichotomy may be reduced to one rule of the "critical mass." The term was derived from theoretical physics, where it describes a state of mass, which is the inter-stage between two stages of a material substrate (indifferent and compounding, levelled and explosive, solid or disintegrated, etc.)

Companies operating in subcritical fields will expend labor and capital without accomplishing their objectives; all along they will see some prospective possibilities, however will never bring their efforts to an end, or be late and yield to more dynamic competitors.

The variety of factors and components, the complex character of their issue, makes it almost impossible to derive an exact rule (unless some axiomatic presumptions are adopted). The formal methodology could approach a variation of the break-even analysis. The task would be to find a point when an innovation could be carried through into the intentional effect in size, quality and time. Let us presume that there is an interdependence between the output and input, then a certain order of input would decide the feasibility of the innovation and its magnitude.

In practice, formal methodology might be recommended as a supportive tool. To solve such intricate problems is a prerogative of creative enterpreneurs and experts. They use, as a rule, a set of comparative analysis, like comparative advantage calculus, comparative input-output models, etc. However, if we focus on principal innovations, there would be an authoritative advantage of a scientific breakthrough, technological dominance or exclusive market position, etc. Formal methodologies associated with axiomatic assertions only partially provide support in decision making. They are not to be neglected, none the less they can serve as an auxiliary argument only.

In many cases successful breakthrough operations are associated with a decisive commitment of creative and tough company leaders.

For instance, among European car makers some notable cases may be reminded, like Gyllenhammar at Volve, Schmuecker at Volkswagen, Agnelli at FIAT, Calvet at Puegot, Besse at Renault, and others.

7 Taxonomy of Frequent Business Collaborations

The taxonomy of cooperative business schemes provides rather extensive options for joint efforts and capital ventures. Among various forms of co-operation, those in manufacturing are presumed to be of basic importance. As for the latter, some models might be chosen in order to highlight the co-operative patterns.

7.1 Cooperative Sub-contracting

Sub-contracting is a specific model of interfirm relationship in which independent firms establish contractual links of demand and supply.

Sub-contracting may pursue various objectives (see Table 2).

Table 2: Sub-contracting objectives.

On the part of the contractor	On the part of the sub-contractor
• cheap resourcing	• attainment of scale/scope benefit
• extension of the production capacity	• stability of deliveries
• involvement (of the sub-contract) into research and development	• distribution network building
• increasing resilience by parallel production of parts	• new markets penetration
• future buy-in	• joint venture

The other margin is a firm interdependence short of complete integration.

Through the sub-contract, the supply company becomes a "reduced enterprise" concentrating its activities on manufacturing of a limited scope of parts, modules, aggregates. The contracting firm may deliver its design and/or manufacturing methods or specifications, undertake assembly, packaging, transporting and storing of its sales operation. It may invite the contractor to participate in research, development or experimentation and further improvement of design, manufacturing and marketing of the final product.[10]

It was a business tradition mainly in the USA to maintain a number of sub-contractors in order to promote competition among them and select the most appropriate. The links between the contractor and sub-contractor were loose through short-term contracts. Exceptions justifying endurance in relationship regarded sophisticated products only.

It has been recognized that constants cooperation between contractors and sub-contractor may involve collaborative combination and synergetic effects in joint marketing, product formulation, research, design manufacturing, and sales.

In some industrial countries the old pattern of independence between the final producer and sub-contractor are changing. The number of sub-contractors dwindled, the cooperative nature deepened. Partners co-ordinate and combine their potential in order to increase long-term innovative and productive outputs.

The growing size of this organizational and economic change indicates that probably a complete re-thinking and re-shaping of business structures are on the way.

[10] In particular Japanese supplier—producer relations were stable and participative in product development.

It seems to be generally accepted that the competitiveness of the Japanese automotive industry is largely due to stable cooperative arrangements between final producers and sub-contractors. Other world car makers try to imitate the Japanese interfirm relations, however not without difficulties. This at the same time indicates that there is a major economical and organizational change in economic structures and organization development.

In most countries enduring contractor and sub-contractor relations are more common in the defense industry. This is a kind of industry where the pattern of the whole socioeconomic relations seems to be the closest to the Japanese socioeconomic setting. There is a sponsorship and coordinating role of the state, tough quality management, long-term employment, incentives for reliable more than high performance, etc.

For East European countries, the sub-contract may open a path to the world market. Many firms started their market success by modestly supplying specialized parts. They at the same time used some advanced firms as a hauling engine to world markets. They gradually built their distribution networks and used the to get autonomous buyers and sellers.

This could be a feasible strategy, under the imperative condition that the sub-contracting firms are able to develop high quality products. On an international competitive level (as quality, cost and supply flexibility and post-sales servicing regards).[11]

7.2 Cooperative Business in Clusters and Networks

Small and middle size companies are credited for many advancements in industry. After the recession and stagnation in the 1970s, they fared better than large ones.

In many segments of the markets, the small and medium companies are exposed to the competetive thrust of large multinational corporations (MNC). After the large oligopolies have gone through a process of adjustment, they experience an above-average performance. As a rule, they are still more capable in organizing the division of task, responsibilities and production, attaining a threshold "critical mass" of capital, research and development, manufacturing capacities, marketing, and make use of the benefits of the economy of scale/scope.

The avowed ability of small and medium firms to cope with the volatile market and the power of large oligopolistic firms are cause for another cooperative scheme. It is a collaboration between the small and large at the stage of innovative product development. Large firms may provide various lines of guidance in:

- research, development or experimentation and testing capacities,
- sophisticated equipment, tool and material,
- instruction, training or skilled personnel,
- marketing,
- financial funding,
- legal (patent or copyrights) protection,
- resourcing and logistics,
- informatics,
- administration, etc.

Several models of cooperation are apparent in present production systems. Without rounding the taxonomy out, the following ones may provide a common pattern:

[11] T. Bata, the Czech tycoon in shoe manufacturing, used to quote the American thinker R.W. Emerson: make the best mouse-traps, and the world will find the way to your door.

- cooperation between one or several large firms with one or several small firms on a short-term contractual basis;
- cooperation between one or several sponsoring firms with a network or a cluster of small firms;
- joint research, engineering, manufacturing, training or marketing projects;
- founding of small firms by larger ones.

While the first option is a standard one, it does not need any further explanation. Unlike that, other options reach beyond a simple buyer-seller relation and involve cooperative action.

Sponsoring large companies are sometimes organizing a network or a cluster of semidependent (or fully dependent) small firms, by which the large firms benefit from lower cost development, experiment or trials, low cost supply of parts, modules or aggregates, delegating risk of innovations and start-up production, providing various technical, productive administrative assistance and capital subsidies, etc.

In the last years, this kind of cooperative approach seems to be growing in acceptance and applications in Western countries among a variety of dynamic economic and organizational forms.

For instance, one of the leading French firms, Compagnie Saint Gobain established an affiliation Saint Gobain Development, in order to intermediate cooperation with more than one hundred small firms. Many large Western companies found it beneficial to forsake the old buyer-seller relation and build up some more expedient cooperative links.

There are several models of sponsoring large companies surrounded by small firms. In general, they may be attributed to one of two margins:

- Clusters of small companies based on habitual sub-contract model converted into stable cooperative arrangement between the sponsoring company and any of the small firms separately, thus being coordinated by the centripetal relation to the contracting company only;
- this "satelite organization" is expanding and might serve as a testimony of substantial changes of industrial organization. It is especially promising in association with informatics (and telecommunication) and logistics "just—in—time" in the USA, or the "kanban" (label) in Japan supply system).
- More or less explicitly organized network of small companies with complex vertical (to the sponsoring company) and horizontal (among small firms) interdependence.

As a general trend, models of organized relations (approaching a quasi-integration under the sponsoring firm's leadership) expand. That propensity to cooperate on an organized basis might mark a new industrial division of work and production system coming of age.

7.3 New Firms Founding

Cooperative approach is also dominant in arrangements that lead to establishment of new small firms by a sponsoring large company. The rationale for setting up of dependent or semidependent firms might be

- simple extension of the production capacity or mark coverage by starting autonomous manufacturing at a critical scale/scope in order to attain benefit of lower cost (first of all overhead cost);
- placing affiliations as close to the specific market as possible, in particular in distant regions or foreign countries;

- placing small firms outside of the logic, organizational structure and administrative behavior of the parent company, in order to facilitate new product/service development or a kind of high risk venture business.

The latter model might be nearby another option of intrapreneurship when autonomous units are set up inside a large firm however exempted from the rigidities of the core of the company (without dismantling its integration into the company's economic fabric).

7.4 Cooperation on Joint Projects

Another option, less usual, however also growing in popularity, is the cooperation between large and small firms on joint projects. There might be several rationale for such cooperative arrangements, for instance

- the complexity of the project naturally requires participation of prospective suppliers;
- the large firm invites one or more small firms to get involved in order to make use of their specialized research, engineering, production or marketing facilities and know-how;
- the task involves many parallel or mutually excluding experiments, trials, tests, etc.
- the small company asks for participation in order to get in timely contact with innovation which might shape its future development or participate in subsidies or other benefits associated with the project.

Cooperative efforts are dominant, not the ordinary buyer-seller relation, in such joint projects. Simultaneous involvement in joint projects might rather often lead to a more close commitment of shared goals in the future.

Launched in 1985, the Eureka R&D cooperative program, was able to put together many large and small firms of demanding tasks. Small firms, members of Eureka projects, are explicitly invited to participate on tasks that are hallmarks of professionalism.

7.5 Interfirm Research and Technology Cooperation

Among the variety of cooperative business schemes one merits specific attention. R&D (R&E) investments and operating costs are felt not to be reliably rewarding. That perception stems from the experience that future prospects of research, development or experimentation results, are often dimmed by uncertainties about the quality and cost of the results obtained, expenditures to be brought about, economies of scale/scope to be attained, timing of the market entry, competitors' behavior, etc.

Many research projects have been developed on a collaborative basis. For example the all-European Eureka program has surged to a highly collaborative network of interfirm relations. Eureka declared as a prerequisite to accept only projects with prospects for world wide competitive edge. Of over 200 projects involving some 1,200 companies since 1988, around 20% have been small and medium-sized companies, 40% large ones and the remaining 40% have been made up of universities, research institutes and other organizations. After one year, the number of projects had grown to around 400 and the participation of small and large business and non-business organizations has retained almost the same proportions.[12]

A similar albeit not an identical cooperative model, is an arrangement on technological transferring. The nature of collaborative efforts is distinctively different. Under the R&D (R&E, for experimentation) agreements, partners are not sure of the expected results. The gradually accumulated knowledge and experience might be promising, while no guarantee of the success can be taken for granted. Under interfirm arrangements on technology transfer, the partners share results which already exist.

[12] Eureka, Together to the Future, Project Progress Report, Brussels, 1989, 1990.

This is to explain the rapidly growing amount of technology transfer agreements in the West.[13] Not that much in the East-West relations. Some impediments are depressing the technology transport potential. Among them most concurrent are

- incertitude of Western investors about the stability of the political, legal, and economic setting;
- lack of knowledge and training on the part of both partners;[14]
- not satisfactory infrastructure in Eastern Europe (consulting, auditing, banking, available facilities, resourcing, informatics and communication, etc);
- no strict codes of conduct as intellectual property (such as patents, copyrights) is concerned;
- international restrictions assuring the protection of national security (prohibition imposed on high and other sensitive technology transfer), etc.

8 High Technology's Impact on Cooperative Behavior

In early 1980s the "high technologies" emerged. They are mostly recognized by their sophistication conveyed by the clearness as a relative share of the R&D (R&E) costs, of scientist and engineers employed. They are also earmarked by their rapid growth.

J.A. Schumpeter raised already in the 1920s the idea of "creative destruction," a continuous improvement of all factors and components of prosperity. "The competition which really counts is competition of new goods, new methods, new supply and resourcing, new types of organization... in other words, competition which commands a decisive cost or quality advantage."[15] The human ecological potential of high technologies, their appeal to knowledge, education, culture, their capacity to reduce the consumption of natural resources including their recycling are not always divulged. High technologies hardly anywhere exceed some 5% of the whole technology, however their dynamism predicts their great future.[16].

The areas of high technology become in particular interdependent and cross-fertilization creates new generations of technologies which are extensive and complex. High technologies are especially apt for cooperative business endeavor.

9 Global Dimensions for Cooperative Business

The globalization of products/services and markets induces many companies to adopt a global strategy. The reasons for a far-sighted and global approach to company prosperity became an indispensable prerequisite of survival for a number of industries.

Several arguments are being brought forth in order to demarcate the threshold of globalization:

[13] See Liebrenz, M.L.: Transfer of Technology, US Multinationals and Eastern Europe, New York, Praeger 1982. While reliable in the broad sense, the generalization reposes on fragmented data only. See also Jirasek, J.-Becker, R.: Technology Transfer, Basic Knowledge and Reflections, Laxenburg, IIASA, 1990. and Jirasek, J.: East-West Cooperative Strategies in Business Promotion, Laxenburg, IIASA, 1990.

[14] Several partial studies in the West and in the East converge in these conclusions. For instance, a review of a study undertaken by Merton Associates among British managers with a conclusion that "British companies lack the skills and foresight to succeed. Of the 200 managers who work in Eastern Europe, 66% do not know enough and 82% show insufficient initiative." Financial times, February 13, 1990, p.ll.

[15] Schumpeter, J.A.: The Theory of economic development, Cambridge (Mass.), Harvard University Press 1949, introduction.

[16] A recent book on high technology delineates "six high technology sectors": 1. pharmaceuticals 2. office and EDP equipment 3. telecommunication 4. electronics 5. Biotechnology, 6. New materials, High Technology Europe, Brussels, EC, Blackwell (Oxford), 1990, p. 10.

- industries with extreme requirements for research, development (experimentation) and other sophistication entangling some capital expenditures that may be amortized only on a world basis[17]
- consumer goods industries with large capital investments can only harvest their oligopolistic profits when they market their products instantly on the global basis (if there are any delays the company may be defeated by another competitor who was faster.)[18]

In the face of growing globalization, enterprises have to provide themselves with specific international advantages such as size, intercountry cooperation, build-up of world-scale resources, etc.[19]

M. Porter generalized his studies (1970s) of regained competitive strategy (after a temporal decline) as options of three advantages:

1. cost control by technical and organizational advance (automation, robotics, CAD/CAM, etc.),
2. fast product improvement by applying technical breakthroughs, focused on sharply differentiated models,
3. the niche strategy.[20].

10 Comments on the volatile character of collaborative relations

Business cooperative schemes may take many different patterns. They range from pre-competitive collective actions which later turn to a background for competitive behavior (like agreements on exchange of information, pre-market harmonization of goods/services, joint research, etc.) to a complete substitute for market rivalry and conflict. From tacit cooperation (collusion) over a number of forms when the partners preserve their independence to others when they renounce their sovereignty.

Within these formulas partners seek to combine their capital, physical and intellectual assets in order to enhance their market position and increase their profits. Within these formulas they prolong their competition and try to modify their course of action and gain individual advantages. Cooperative business conduct is by far not always easy.

The experience of cooperative business provides many examples that partners failed to develop a cooperative code of conduct to achieve their objectives. Quantified in figures, up to 30% did not start operations, and another 30% failed to achieve their objectives in the first 3 years. Indeed, there are many divergencies in both directions from an empirical average.[21]

11 What Does Cooperative Business Behavior Mean For Eastern Europe

There are a number of routes for East-West developments. One or two are almost excluded: an independent growth or a similar way based on East European countries mutual assistance. Both have been tried in the past to internationally integrate Eastern Europe.

[17] To exemplify, it is usually marked the 1 billion US $ limit, which applies to such development costs like a new telecommunication exchange and satelite network, a new large passenger aircraft, aerospace deployment, high speed trains, large raw fuel and material developments, etc.

[18] Examples: Semiconductors, pharmaceuticals, motor vehicle breakthroughs, new computer and optical device generations, etc.

[19] Woote, P.de(ed.): High Technology Europe, Oxford, Blackwell 1990, p.12.

[20] Porter, M.: The Competitive Strategy, New York, Free press, 1980

[21] Sources for such a generalization: Walmsley, J.: Handbook of International Joint Ventures, London, Graham & Trotman 1982. East-West Joint Venture News, Geneva 1989-1990, IIASA Joint Venture Data Base 1989-1990.

Another option may be direct foreign investment. Large companies having sufficient strength and control of market segments often prefer it that way. This involves either founding of foreign subsidiaries, or acquisitions of existing foreign enterprises.

The direct foreign investment strategy proved sufficiently beneficial the last time. In the 1980s, the number of takeovers in the USA increased by a factor of approximately 3, in Europe around 2,5 and in Japan some 6 respectively.

Most Eastern European countries are about to privatize their company ownership, it is presumed that direct foreign investment may find remarkable opportunities there. Some bids have already been extended to Eastern partners.

Political powers in some Eastern European countries are still reluctant to open an unrestricted capital market because they question the risk of being "bought out" by strong and aggressive competitors. The host countries may soon run into difficulties arising from a subordinated position of their companies.

12 East-West Cooperative Options

The cooperative behavior of Western and Eastern companies brings together partners with different initial "assets" and diverging interests. In consideration of such a basic dichotomy, the build-up of mutuality has to overcome several obstacles.

Table 3: "Assets" and purposes of Western and Eastern companies.

Western companies	Eastern companies
Assets	
Technology and know-how	Production capacities
Convertible monetary capital	Sub-contract
Marketing skills	Intellectual labor
Purposes	
Market bridgehead	Convertible monetary capital formation
Profit extension	technical modernization
Cheap resourcing	Management skills
Low cost labor	Market pull

The casual analysis of interdependence of "assets" and purposes discloses that despite different and partly opposing interests, there are several contingencies fostering complementarity and conjunction.

The East European market is so far the largest market reserve of the global market growth, it provides access to some 400 mil inhabitants, 15% of the world's agricultural area, 11% of the coal and 20% of the crude oil world output, 30% of the world iron and steel production, 11% of the world merchant fleet, 30% of world R&D workers, etc.

The best to combine Western technology and the know how with could be Eastern production capacities. Along with this expansion of production remarkable increases could be achieved in the economy of scale/scope. Both partners can earn from the beginning and develop a standing partnership in the long run.

Many Eastern manufacturing companies can supply specialized parts or modules complying with world standards and market needs. They may disclose a market niche and challenge other competitors. In the case of business partnerships, deliveries of parts/modules, the final cost of Western products may decrease and at the same time be instrumental in providing a full loading of Eastern production capacities.

There are rather often cases where Eastern European products do not yield any sizable profits because they are lacking marketing services. Insufficient marketing skills and activities are also a rather frequent cause of a low lucrativity.

Low-cost labor in Eastern countries does not attract as much interest as would be normally expected. In up-to-date manufacturing the share of wages have been mostly reduced to around 10% of total costs. Other cost items regained importance.

Eastern labor is said to be generally well-educated, a bit less vocationally trained. However, workers lack performative effort and discipline. Neither do they observe strict rules nor work economy.

Low cost labor is nowadays widely available. The East does not offer any exclusive advantages except, thanks to a comparatively high cultural and elevated level of adaptability for more sophisticated jobs and professional flexibility.

Compared to normal workers, the engineers and other intellectuals proved to be not only less expensive, but at the same time rather advanced in their professional skills, in particular in complex engineering tasks, software developments, research and experimentations.

Compared with the labor remuneration in the West, the workers in Eastern companies get from 20% to 40% and the intellectuals from 10% to 30% of their Western counterparts.[22]

Engineers and also production managers are as a rule praised for their educational background (except that they do not have advanced skills in the work with CAD/CAM, technological electronics, computer control), but criticized for their reluctance to take responsibility and make economically argued decisions.

There are complaints from Eastern partners as well. Western partners, they say, are looking for one-sided gains, which implicate dependence and submission, shift the risk on the other side, in other words are not frankly and correctly cooperative.

In some rather rare cases, Western and Eastern researchers were joined and succeeded in developing original breakthroughs (cases are available in electronics, chemical synthesis, biotechnology, new materials).[23]

Another complaint relates to the propensity of many large Western companies to convert Eastern plants in their "extended bench", without research and development, engineering services, executing production tasks according to supplied design and methods.

[22] According to the present exchange rate; not according to the consumption basket prices.

[23] see Working Paper "Technology Transfer" Basic Knowledge and Reflections, in particular the appended case studies, IIASA, 1990.