

## **ECONOMIC RESTRUCTURING: SETTING THE AGENDA FOR ANALYZING THE EXTENT AND IMPACT OF DEVELOPING NEW INSTITUTIONAL ARRANGEMENTS IN THE ORGANIZATION OF CROATIAN MANUFACTURING**

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### **ABSTRACT:**

The academic community has been discussing network economies for over a decade demonstrating that positive externalities are generated by superior institutional arrangements based on long- and short-term cooperation among distinct business entities. Especially in the manufacturing sector, networked organizational arrangements are supposed to generate substantial economies of scale, and, what perhaps is even more important, networked organizational arrangements seem to favor knowledge transfers especially enhancing dynamic efficiency.

Transition economies in general have undergone and still are experiencing extensive and multisided economic restructuring. The study of restructuring processes in the Croatian manufacturing enterprises represents therefore a challenge for both practical and academic reasons. The paper will try to establish a set of network descriptors that can be used to construct indicators of network practices and network supporting circumstances. Since our knowledge of network practices in Croatian manufacturing is rather limited, the paper will also comment on data gathered through a questionnaire and will try to set an agenda for channeling future research.

### **I. PROBLEM BACKGROUND**

Studies from the eighties and nineties suggest that industries and areas that were identified as network organized showed high rate of productivity growth in the second half of the twentieth century.<sup>1</sup>

To the author's knowledge, the studies so far conducted on the subject of entrepreneurial network formation in Croatia have been scarce, too extensive (not specifically targeted) and therefore, the task of identifying their existence, extent, or consequences is still far from complete. In the attempts undertaken so far, one of the major drawbacks is to be found in the problem of obtaining pertinent information. Public macroeconomic statistics could not offer reliable direct indicators, while field studies were either too broad or too narrow.<sup>2</sup> On the

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<sup>1</sup> Best, 1990; Fruin, 1994; Meyanathan, 1994, Casson, 1995...

<sup>2</sup>The author participated in two research projects working on topics that dealt with network economies. The first study, a phenomenological analysis (a micro-level case study of the Croatian shipping industry (lead by M. Vehovec and M. Bateman – joint Croatian-British research project) pointed out to the obstacles slowing efficient restructuring mostly in this particular industry. Shipbuilding was and still is characterized by strong government involvement.

other hand, the general phenomenon of restructuring of transition economies, seems to have enjoyed substantial academic attention.

It should be noted that restructuring is in many ways connected to network formation. Networking represents only part of the vast range of restructuring phenomena.

In transition economies, restructuring is often associated with privatization processes under transition and with the changing structure of ownership. A parallel approach would look at sectoral restructuring and the changes in the output structure of a national economy. Still another approach would look at rates of new enterprise formation and the restructuring of the national economy in terms of enterprise size changes, while the broadest view, will combine all aspects in an attempt to compare the general level of dynamism in the institutional environment... On the firm level, restructuring is also seen as change of in-firm management practices, as a substitution of hierarchies by alternative practices of directing and controlling behavior, as a process of redefining the range of businesses, of adding, merging or closing departments, downsizing, etc.

All mentioned processes can be considered indications of enterprises searching into alternative organizational patterns. If networks are defined as alternative organizational patterns, it is probable that the rate of network creation corresponds with general levels of restructuring. So, in dynamic economic conditions, given there is awareness of the existence of alternative organizational patterns, it is probable that business will be inclined to initiate network arrangements.

**The problem** faced here is how to prepare a research that will map network formation in Croatia.<sup>3</sup> A closely related problem is the problem of what evidence should we rely on when deciding whether these networks are (or could be) economically superior to alternative organizational arrangements. Finally, there is the policy level question of how to identify and eliminate obstacles that may be preventing national enterprises from adopting more efficient organizational arrangements.

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In another study, conducted a few years later, a general analysis on the level of the national economy was undertaken. The aim of the project was to establish best practices that differentiate the performance of firm (B. Grbac). An extensive questionnaire was run, covering firms in all regions of Croatia. This questionnaire did offer some, what could be considered, mostly circumstantial evidence, some of which will be presented in this paper. But, what seems to have become apparent from both studies is that, during the turbulent nineties (war, shrinking markets, inflation, liquidity problems, privatization games and transition problems in general...) each industry, and almost each firm, followed a unique path in dealing with instability. Today, generalizations would perhaps be easier. Since a follow-up is planned on this second research project, this paper will contribute toward clarifying the issues and directing the research efforts efficiently.

<sup>3</sup>For comments on the problem of collecting and processing relevant information see Casson (1995, pp. 47-68, chapter 3 dedicated to modeling inter-firm networks and Djanko and Murriell. (2000, p. 3-5) Djanko and Murriell analyzed 250 studies of transitional restructuring. Apart from identifying a variety of definitions of restructuring, they also found a variety of methodological approaches to constructing measures for restructuring. They made useful observations on the reasons for using quantitative and qualitative indicators, which should be taken into consideration also when analyzing networks. While quantitative indicators (e.g. accounting data) are often more trusted, more suitable for statistical analysis, and direct attention to improved performance (as the prime objective of enterprise restructuring), they may be misleading when enterprises are undertaking "fundamental efforts at restructuring". On the other hand, qualitative indicators also reflect some unmeasured phenomena that also affects restructuring processes and effects.

The purpose of this paper is to construct a research tool that will set the agenda for further research. The general methodological approach is descriptive in order to take into consideration the broad range of factors influencing networking, as well as the possible available research data at the later stages of the research. At this moment only a limited set of indicators is available (from earlier research).<sup>4</sup> These will be presented in the final part of the paper.

The paper starts with the relevant definitions that are supposed to structure the later discussion. So, the points depicted as "Network phenomena" and "The preconditions of network economies" are intended to serve as a guide for searching for and developing indicators in the second part of the paper. The third part presents some charts on conclusions reached by using the 1998 questionnaire. Finally, the summary gives the author's opinion on the present level of network development in the Croatian manufacturing sector and comments on unresolved questions.

## II. STARTING ASSUMPTIONS AND DEFINITIONS

### 1. Starting Assumptions:

Four starting assumptions are listed below together with the foreseen research problems.

1 - *Networks represent alternative organizational arrangements for growing and restructuring a business....* The first problem would therefore be to identify networks in the broader set of restructuring phenomena. For this purpose, a tentative list of network phenomena is given after a short overview of aspects of networks stressed in network definitions.

As for Croatia, it is noticed that alternative growth patterns seeking ownership control, rather than partnering, seem to be active in Croatia.<sup>5</sup> This rises the problem of drawing the line between the effects of enterprise restructuring achieved through changes in ownership, especially M&A, and the extent of restructuring related to networking. Presuming network arrangements are less stable and harder to officially register, research should be undertaken to quantify extent of M&A and compare it to ratios of M&A activity to some measure of restructuring in general.

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<sup>4</sup> A follow up research has already been initiated under the title: Transformation by Marketing Management (chief researcher: B. Grbac – research projects supported by the Croatian Ministry of Science and Higher Education)

This study goes back to the data collected in 1998 on a research project undertaken by the EF of Rijeka in cooperation with a group of foreign researchers. At the time, the collected data was not used to generate observations on the attempts and achieved levels of inter-firm networking. However, an exploratory study focusing on the technological competence of Croatian manufacturing firms (Mrak, 2001) suggested that firms and industries were able to differentiate during the nineties. Part of the success of those firms could probably be attributed to internal and external organizational factors.

This spring, five years later, an innovated questionnaire is being run, this time including also firms from Slovenia and Bosnia and Hercegovina.

<sup>5</sup> It seems that fast growing enterprises perceived by public opinion as most successful appear to favor M&A rather than networking (Agrokoor, TDR, Lura....) Also, World Investment Report (2002) documents that TNCs build their transnational production and distribution systems on both control through equity and non-equity relations

The possibility of isolating networks is a problem also at enterprise level. Defining the boundaries of enterprises is tricky for at least two reasons. First, networks develop in combination with internal hierarchies and as a mean of internal restructuring (both operational and strategic), and second, the operational structure is dynamic with the probability of being even more flexible and unstable in the years to come. There is often the possibility that parts of networks will merge into a single business entity, while other, presently integrated parts of a single firm may spin-off, or be sold.

2 - *If networks are seen as comparative institutional arrangements, it should be true that networks evolve if favorable circumstances exist, or, when the institutional environment enhances the favorable (positive externalities) and diminishes the unfavorable effects of networking (negative externalities)...* Here, a possible research tool could be a taxonomy of supporting institutional factors. Their presence and support power should be checked in a cross-country comparison, presuming that favorable circumstances can be detected by comparing to others on a fixed set of institution factors and types.

3 - *It is probable that specific industries are more prone to using networks...* There is always the problem of embeddedness and path-dependency of organizational arrangements, or, of implications of specific time, geography, previous organizational patterns... Research findings on technological limitations of market capabilities of Croatian manufacturing firms (Mrak, 2001), suggested differentiation of business practices and performance by type of industry. Some industries, which were better capitalized, did show higher propensity for restructuring and consequently, could be expected to show inclination towards networking. In this respect, there is need to set up a list of factors that will make firms more inclined to use networking instead in order to solve operational and strategic business problems. Perspective research should look at enterprise growth patterns in a specific industry, and in close-up case studies try to identify a list of problems industry leaders are most aware of.<sup>6</sup>

4 - *The development of networks is a historical phenomenon and efficiency is a moving target...* An organizational formation is efficient only in comparison to competitive organizational models working under similar conditions, that is between models that “work” at the same time in history. The expectations are that the data to be collected during 2003 would show rising levels of network phenomena. At the moment only preliminary conclusions can be drawn.

## 2. Defining networks

In the international economic literature, the existence of network economies<sup>7</sup> has been considered in fields related to economics (industrial organization, organization theory) and in

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<sup>6</sup> I believe organizational restructuring comes as an answer to specific problems that can be traced and mapped by managers. Networks would then come as one of the possible scenarios for solving practical business problems. At this stage, our research project is not pursuing case studies.

<sup>7</sup> Often the term used is network externalities. However, Liebowitz and Margolis (1996) warn that: “Network effects should not properly be called network externalities unless the participants in the market fail to internalize this effects.” Here, for Croatia, we still cannot make final assumptions about the existence of networks, neither of the benefits network participant and outsiders are achieving, so the term ‘economies’ will be preferred, at least in this stage of the research. Economides (1996) explains that traditionally networks were studied “under the assumption that each network was **owned by a single firm**”, while, in the seventies, research became oriented towards **issues of efficiency** of network structures involving several firms and the appropriate allocation of costs. Economides also calls attention to the micro- and macro- distinction in studying externalities. The macro

the socio-technical approach to organizations. In the beginning, these approaches, due to their fragmented nature, generated a vast number of terms and explanations for a set of phenomena nowadays most often identified as networks.

Authors described (Economides, Casson) entrepreneurial networks as multisided, horizontal relationships, spotting their contradiction to simple hierarchies. Networks were supposed to be related to decentralization, reduction in functional support staff, combination the functions of decision making with execution rather than their vertical segmentation....

Even though networks appeared to destroy the well-mapped processes of centralized planning and control, they were able to reap benefits from non-formalized, non-conventional sources of control over individual behavior, and achieve the purpose of efficiently governing the allocation and use of resources.

1990 Best uses the phrase "new institutional arrangements" to indicate what seem real life confirmations of alternative way of organizing business activities. In analyzing the Japanese JIT phenomenon and the rise of the Italian model of small business regional agglomerations, Best finds that these new models of organization demonstrate higher growth potential compared to the organization model of centrally planned organizations organized to reap competitive advantages from size economies and internal specialization. In fact, at the time of the analysis, the Italian and Japanese model could be seen as best paths for the highest growth rates and long term stability.

However, much earlier in economic history A. Smith identified the existence of agglomeration economies, or, of economies arising from firm specializing to serve a comparatively large and stable market.<sup>8</sup> Also, forms of industry specific networks are to be found in subcontracting<sup>9</sup> (where the need for financially engaging in vertical integration is reduced), franchising, consortia (horizontal integration)... In 2003 networks are considered an "extension of the enterprise" or a model of growth, that outsources not only components, but "has located business-critical operations outside its direct control through outsourcing, alliances, licensing or other arrangements. In an extended enterprise, suppliers, manufacturers, distributors and others are not only providing products and services but are also opening up their databases, allowing partners an extraordinary level of access to previously sacrosanct information. (EIU, 2003, p.1)

If a short definition is to be given, entrepreneurial networks constitute an institutional arrangement where **various formally distinct business entities maintain a prolonged relationship that, as time goes by, tend to generate superior economic benefits for all sides** in case the mutual organization is maintained. In these organizational arrangements material and non-material resource flows appear to be less and less confined to a firm as an autarchic, closed, self-sufficient institution exposed to outer environment primarily through classic market transactions.

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approach was predominant in the eighties and is more conceptual in nature, while the micro-approach, developed under Industrial Organization and Finance looks at the **industrial structure that caused networks to evolve.**

<sup>8</sup> The term often used today is clustering. See Porter (2000) for a description of clusters.

<sup>9</sup> Subcontracting already has a decades long history. It developed for material inputs in manufacturing industries that produce high value, high complexity products on a project basis. In such industries, were a dominant firm performs final market seeking and production planning, economies arise from aligning capacity along the line of intermediary producers and from planning lead times.

Compared to the theoretical Big Business, a network is less formal on the hierarchical level,<sup>10</sup> but there is formalized control on the contractual level where entities define mutual expectation. Since the relationships are often intended to last over indefinite periods of time, it becomes impossible to draft all possible future situations so contracts are considered to be open, not entirely precise, or in economic terms “incomplete”.

On the other hand, **power relations exist** and together with contracts bind network members, at least for as long as a mutual interest is perceived. This renders the relationship more stable and **reliable inter-firm alliances** appear to be able to substitute efficiently for centrally planned specialization and resource allocation decisions. As a consequence, the whole cluster tends to operate similarly to a traditional single constituency, but with less bureaucracy, yet with the same and even higher economies of specialization that are now achieved on a higher scale.

On the levels of individual firms participating in the network, the organizational structures becomes more simplified as more and more functions (not only production) **services are outsourced**. Considering capital constrains and scarcity of other available resources, this means that firms on internal level become operationally more efficient and therefore more competitive. The logical assumption is that **more intensive competition** will drive firms to seek restructuring (or new organizational arrangements) in the first place. For the firm involved, there are also drawbacks (Chesbrough and Teece, 2002), or potential losses in efficiency. One is related to the possibility of developing a **captive position**, and losing strategic efficiency while obtaining operational.<sup>11</sup> The assumption that follows is that, considering firms can define risks and benefits, stable, predictable institutional environments would be the right setting to promote the evolution of networks.

In any case, the understanding of the functioning of network economies led to a qualitative leap in the organization of business. By Chesbrough and Teece (2002, p. 127) “There is no question that many large and cumbersome organizations have been outperformed by smaller “networked” competitors.”

Finally, in the institutionalist view, the gap separating developed from developing countries is in the quality of institutions, that is, in the predictability of behavior of business partners. Societies that grant above average reliability of partner behavior offer more incentive for partnering arrangements. So, economic efficient organizational arrangement are more likely when contracts can be drafted incomplete and, because safeguards exist (especially mutually perceived interest and institutionally regulated ways of dissolving conflicts), grant not only loyal behavior by partners, but also flexibility.

### III. CONSTRUCTING NETWORK INDICATORS

Despite the expectations of dynamic enterprise restructuring, it is often hard to identify the extent of networking in a national economy and compare it to the levels of other economies. A possible path to gaining more profound insight into real world networks leads through

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<sup>10</sup> Is a question whether the traditional pyramidal structure applies at all.

<sup>11</sup> If for no other reason, then because a diversification strategy was always looked at as a way to disperse risks and to obtain insights in alternative development paths. Here one safeguard is given away. However, the major problem is that by simplifying its organizational structure not only on reducing the final product/service diversity, but even more by outsourcing strategic activities such as data warehousing and management, the firm is downsized on services that provided inside give strategic mobility....

staged analysis. The first step should concentrate at identifying network phenomena and trying to find deployable indicators of network activity. The next step would be to produce analytical tools for researching the comparative efficiencies of alternative organizational arrangements, and the last, third step would be to shape policies and forge enterprise growth strategies.

Several **network phenomena** can be identified and used to construct indicators of the existence (propensity) of networks. Here, two list of primary identifying factors are suggested as indicators of network existence:

1. indicators of cluster formation
2. indicators of firm restructuring

#### **A. Indicators of cluster formation:**

1. **Agglomeration - clustering** of relevant number of firms either by geographic proximity or by stable and reliable inter-firm alliances. A cluster is supposed to serve a common market or target a specific product/technology group.
2. **Relative transparency** - possibility to identify power positions and interests of network participants, risk assessment techniques – free flow of information on production methods, products, prices, still not covered market niches, business practices... On the other side, the free flow of information leads to uncontrolled and undesired spillovers (spillovers of R&D, customer data....)
3. **Incomplete contracts** - complemented by stable behavioral patterns: cross-ownership, strong business ethics, inter-firm loyalty and other less formal enforcement methods, with formal institutions serving as last resort for fairly dissolving disputes. **Long-term binding relationships** are also supported by **market power**.
4. **Shared resources** – especially free flow of information due to extension of business processes beyond firm boundaries

Table 1. lists some indicators of the existence of networks.

#### **B. Indicators of firm restructuring:**

1. **outsourcing** – if clustering is occurring, one would expect enterprise restructuring to be happening as well. Because, if new markets exist for intermediate products, and especially for business oriented services (transport, maintenance, storage, production functions, accounting, marketing, data management, workforce management, head-hunting agencies....) it is probable that enterprises would be shedding some of their activities and so creating those markets. Instead of maintaining internal departments and units they would be opting in favor of using cost-efficient commercial service providers.
2. **changes in control mechanisms** – the expectations are that hierarchic level are being shed, there is more empowerment, but also more predefined procedures (take ISO for example), centralized and even outsourced data-basis...
3. **growth patterns** – horizontal rather than vertical

Table 2. lists some indicators of extent of enterprise restructuring.

**TABLE 1. POSSIBLE INDICATORS OF CLUSTER FORMATION**

<b>network attribute</b>	<b>suggested indicators of organizational changes</b>	<b>economic relevance - performance indicators</b>
clustering (agglomeration)	<ul style="list-style-type: none"> <li>▪ percentage of firms pertaining to same or complementary industry sector on a pre-defined geographic area</li> <li>▪ tendency of future regional specialization (e.g. by industry)</li> </ul>	<p>A network is a “structured market” offering a visible, relatively stable business environment. The effects of reduced market complexity and <b>lower transaction costs</b> (especially for factor markets: material inputs, labor, specialized business services...) should be reflected in:</p> <ul style="list-style-type: none"> <li>▪ structure of operating costs and structure of personnel</li> <li>▪ lower cost of gathering market or technology relevant information</li> <li>▪ lower relative financial engagement in procurement and market building</li> <li>▪ more precise/focused investments in technology</li> <li>▪ effectiveness of R&amp;D spending: higher ROI, lower number of abandoned projects)...</li> </ul>
transparency	<ul style="list-style-type: none"> <li>▪ precision in identifying relevant data (number of competitors, market share, technological improvements)</li> <li>▪ costs of litigation</li> </ul>	<p>Networks are supposed to enhance <b>flexibility</b> and thus lowering costs of adaptation. Possible indicators include:</p> <ul style="list-style-type: none"> <li>▪ faster changes in the range of businesses compared to invested resources</li> </ul> <p><b>Efficient contracting:</b></p> <ul style="list-style-type: none"> <li>▪ fewer partners</li> <li>▪ stable partners</li> </ul> <p><b>Dynamic efficiency:</b></p> <ul style="list-style-type: none"> <li>▪ evidence of freer flow of information facilitating inter-firm learning</li> </ul>
forms of contracting	<ul style="list-style-type: none"> <li>▪ preferred type of supplier relation*</li> <li>▪ duration of contracts with suppliers and buyers,</li> <li>▪ type of contract</li> <li>▪ JIT practices</li> <li>▪ number and value of infra-structural services done in-house (accounting services, marketing, research, data management....)</li> <li>▪ perceived degree of market power*</li> </ul>	<p>Networks are supposed to enhance <b>flexibility</b> and thus lowering costs of adaptation. Possible indicators include:</p> <ul style="list-style-type: none"> <li>▪ faster changes in the range of businesses compared to invested resources</li> </ul> <p><b>Efficient contracting:</b></p> <ul style="list-style-type: none"> <li>▪ fewer partners</li> <li>▪ stable partners</li> </ul> <p><b>Dynamic efficiency:</b></p> <ul style="list-style-type: none"> <li>▪ evidence of freer flow of information facilitating inter-firm learning</li> </ul>
shared resources	<ul style="list-style-type: none"> <li>▪ information sharing*</li> <li>▪ inter-firm consultations</li> <li>▪ joint projects and teams</li> </ul>	<p>Networks are supposed to enhance <b>flexibility</b> and thus lowering costs of adaptation. Possible indicators include:</p> <ul style="list-style-type: none"> <li>▪ faster changes in the range of businesses compared to invested resources</li> </ul> <p><b>Efficient contracting:</b></p> <ul style="list-style-type: none"> <li>▪ fewer partners</li> <li>▪ stable partners</li> </ul> <p><b>Dynamic efficiency:</b></p> <ul style="list-style-type: none"> <li>▪ evidence of freer flow of information facilitating inter-firm learning</li> </ul>

\*partial assessment possible through 1998 questionnaire

Data raised in the 1998 questionnaire covers firms from all sectors of the national economy, so it does not allow a very detailed industry specific study of the above indicators.

TABLE 2. INDICATORS OF INSIDE-FIRM RESTRUCTURING

network attributes	suggested indicators	economic relevance
outsourcing	<ul style="list-style-type: none"> <li>▪ structure complexity: number of products, phases of production in single business entity*</li> <li>▪ direct questions on existence of network related business practices (subcontracting, franchise, strategic alliances, joint projects...)</li> <li>▪ number and value of infra-structural services done in-house (accounting services, marketing, research, data management...)</li> </ul>	<b>scale economies:</b> reduction in number and extent of supporting services performed in-house
changes in control mechanisms	<ul style="list-style-type: none"> <li>▪ extent of inside-firm information dissemination*</li> <li>▪ extent of formal planning practices*</li> <li>▪ combination of decision making with execution in single person/ department</li> </ul>	<b>economics of information:</b> <ul style="list-style-type: none"> <li>▪ efficient solutions in data gathering and processing</li> <li>▪ range of access to information resources given to suppliers</li> </ul>
growth patterns	<ul style="list-style-type: none"> <li>▪ degree of horizontal specialization and horizontal growth (downsizing and structure of lay-offs)</li> <li>▪ sources of financing growth (shared vs. primarily internal)</li> <li>▪ BPR practices</li> </ul>	<b>specialization economies</b> (growth directed towards scale economies, horizontal growth prevails over vertical and conglomerate growth)

The lists are definitely not complete. For example, the expectations of participants of a fair distribution of networking benefits would be an interesting feature favoring or slowing network formation, but since it did not fit well in the selected set of network attributes, it was not included in the table. Indicators could be added or deleted also concerning the availability of raised data. Additional indicators related to internal structure of workforce, departments, operational problems (break downs, product quality, prolonged delivery times and others), as well as financial information may be treated as confirming information for efficient network formation.<sup>12</sup> But, the efficient use of such data will only give results if constrained to a specific setting of firms in a specific industry, or, when speaking of networks, in a comparative analysis of two competing networks.

<sup>12</sup> One of the problems with financial data being that firms do not willingly report on their financial figures.

#### 4. Identifying network promoting circumstances

The existence of network promoting circumstances should be treated as a second set of indicators of network formation. Network supporting circumstances can be identified either on the national level, or at the level of a specific industry.

**The pre-requisites on the national level**, in a way, can be considered analogous to those that fueled the process of industrialization two centuries ago. Therefore, extensive development of networks would require **comparative**:

1. market size and market stability
2. know-how and techniques to identify risks and gains (internal and external transparency)
3. enforcement mechanisms (social institutions - social capital)

Market size and stability<sup>13</sup> are two related factors. As markets develop for intellectual and other forms of industrial services, the services become more **standardized**,<sup>14</sup> and tradeoffs between internal production and outsourcing become more precisely recognizable and quantifiable. So, the first condition leads to the second, tilting the readiness of firms in favor of using outside sources of products and services. Once exposure to network practices increased, the awareness of the existence of alternative organizational forms rises, eventually giving a push to the development of network supporting institution.<sup>15</sup> At first, a market niche will open for consultants, then academia will follow, standardized contracting and other business practices will evolve at the end leading to laws and involvement of government agencies supposed to facilitate enterprise restructuring and network formation.

As already mentioned, the concept of efficient organization (in this case efficient networks) is a moving target. Levels of efficiency could only be determined in time specific circumstances,<sup>16</sup> or in comparison to competing organizational arrangements used by competing firms (or regions). Efficient networks are more likely to arise, and especially, keep up their competitiveness in markets and social settings (in general) with established transaction safeguards: laws, expedient, predictable and fair court ruling, claim settlement tradition and standards.<sup>17</sup> In addition, companies are required to have comparable access to technology such as means of financing and human capital able to efficiently absorb and operationalize the use of technology.

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<sup>13</sup> Here, stability should be understood as a fair possibility of predicting future to the extent that allows for envisaging uncovered market demand, engage into business planning and invest in capacity and organization. In fact, it is probable that network building would be more probable under circumstances of growing markets, under strong competitive pressure, but with scarce resources in time, investment capital and knowledge.

<sup>14</sup> Standardization is important for setting expectations on tradeoffs between price and quality. This observation was not meant to imply that the future does not allow for customs-made products and services.

<sup>15</sup> Here institutions include both those formal and informal. While the informal are not precisely visible, they do influence the degree of networking. Dosi et al. (1999, p. 7) in defining social norms, stress precisely these informal institutions: "The definition of norms is extremely broad in scope and encompasses also behavioral routines, social conventions and morally constrained behaviour."

<sup>16</sup> That is why international comparisons could be considered the right tool for examining the extent and effects of network formation in Croatian manufacturing. Unfortunately, at this moment, only a limited number of indicators.

<sup>17</sup> Analysis of various aspects of restructuring processes in transition countries, on various occasions, stress the importance of the legal framework in reaping the benefits of privatization: See WEO – Focus on transition economies, Oct., 2000.

## Industry specifics

Industry specifics are considered of great importance in defining extents and effects of alternative organizational models. Here, a preliminary list of factors to be considered in an analysis of networks is developed. Appraisal of these specifics would be necessary for appropriate judgment of potential and actual network effects. Those include:

-> **general market conditions** - market size, average profits, market stability, market concentration

*Industries with large retained profits seeking new profitable investment opportunities are likely to exert firmer forms of ownership control for critical resources (knowledge or material inputs alike). Those industries with scarce capital compared to demands for investment imposed by competition would be more likely to form supplier networks and alliances. Market concentration, or market power, could also be considered an indication for network formation, since a captive position might control a supplier as well as an ownership stake.*

-> **stage of production in the value chain**

*Industries closer to final phase are supposed to have more complex products (compounds of multiple inputs) with a higher probability of having to do business in a larger number of component markets. Internal organization may be made simpler and more efficient by concentrating on a fewer number of stable and responsible suppliers.*

-> **intra-firm organization** - economic structure of dominant firms and degree to which production process can be segmented by phases or at least theoretically market independent units (*it might be possible to look as the prevailing direction of firm growth: vertical, horizontal or conglomerate*)

-> **management practices** – extent of formalization, compatibility of organizational culture, compatibility of data processing techniques...

-> **firm strategy** – resources perceived as critical for building market position are more likely to be internalized - *Firm strategies across industry are expected to be oriented towards developing and controlling those resources. While the industry leader may be financially strong enough to go for ownership control, an alternative strategy other firms could pursue would be partnering.*

-> **technological developments** – fast developing, high technology sectors are supposed to favor alliance making in order to divide costs and risks of R&D spending. Networking is also considered a path to gaining insight into technologies and related management practices not yet tried in own company.

-> **supply of complementary services** – extent of quality standardized products and services being offered. *A related issue concerns the development of standards, so that enterprises can calculate costs and risks of alternative strategies. In Croatia, one of the factors delaying networking might also be found in the relative awareness of a large new industry of web services that can replace internal departments in data management.*

-> **availability of external capital inflows**

- **credibility to investors** (*e.g. percentage of bank loans to industrial sector could be an indicator*)

- **government involvement in specific industry** (ownership, subsidies to particular industries)
- **industries attractive to foreign owners** (Banking, insurance, tourism, building materials have/or are drawing foreign investors to Croatia through the privatization process that has been highly influenced by national politics)

-> **network supporting policy and infrastructure inclination towards particular industry**  
– number of government agencies and the span of offered services, subsidies, regulations on domestic components requirements. Another important factor being the general perception on trustworthiness and dedication of governments for supporting networks.

#### **IV. PRESENT STANDING OF CROATIAN MANUFACTURING IN TERMS OF PROBABLE NETWORK FORMATION**

This section reports on some indications of factors that may be encouraging network formation in Croatia. In the first part, an overview will be given of data collected in 1998, followed by observations on the present standing of Croatian manufacturing.

Chart 1 refers to a sample of 250 manufacturing firms, examined in terms of supplier relations. In a five-item offer to choose among the type of supplier relation that fits best with their practices, Croatian firms in 1998 reported to having close relationships with their suppliers. The industries that appeared to have established the strongest bonds with suppliers (close to partnering) include the furniture industry, tobacco and packaging industries. The two sectors recognized in the literature as leading sectors in establishing partnerships with suppliers, that is, the machine industry and electronics industry, showed a percentage below average of partnering relations to suppliers.<sup>18</sup> These findings might indicate that organizational patterns similar to those evolving in the same types of industries in industrialized countries have not yet taken a stronger hold in Croatia.<sup>19</sup>

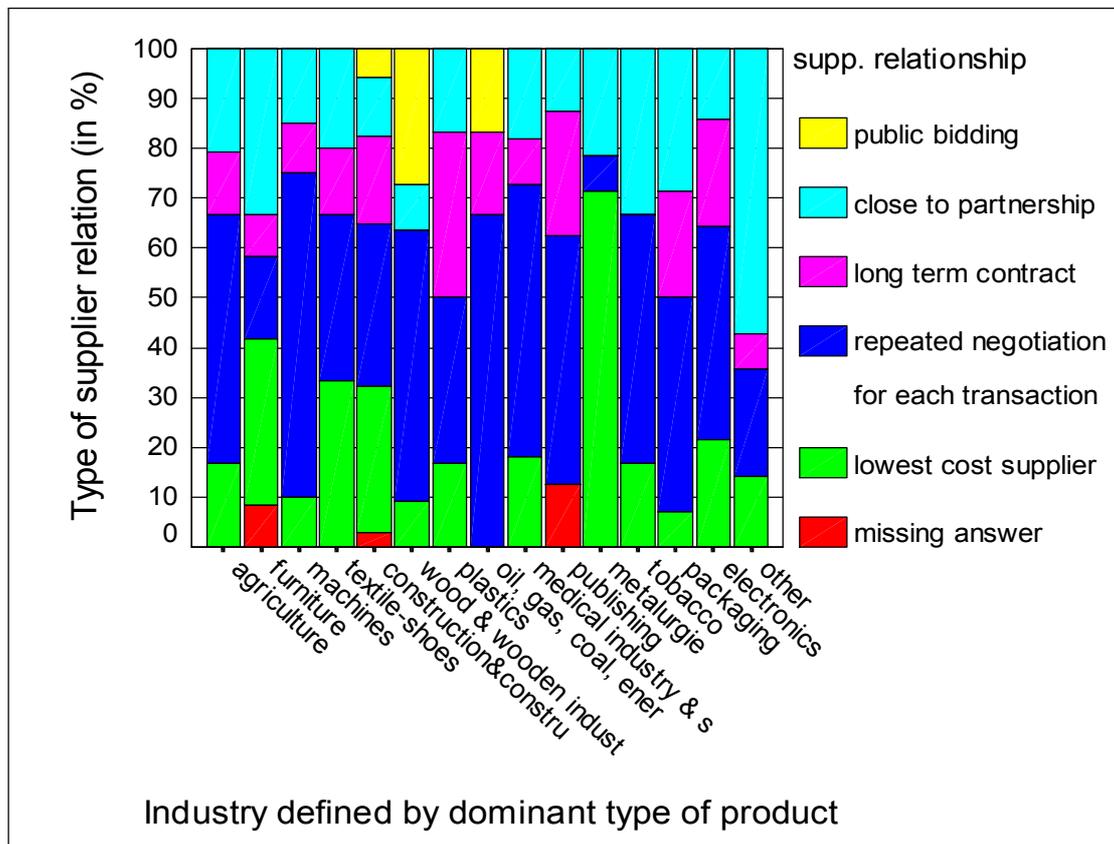
On the other hand, if all long term types of relationship are taken into account (partnering, long term contracts, recurring contracts), it is possible to conclude that most relationships are long-term and that probably partners interact with each other when developing business strategies.

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<sup>18</sup> The expectations were that industries closer to the final end of the production chain and having a complex product would have a higher inclination for using outsourcing, especially when producing in large series.

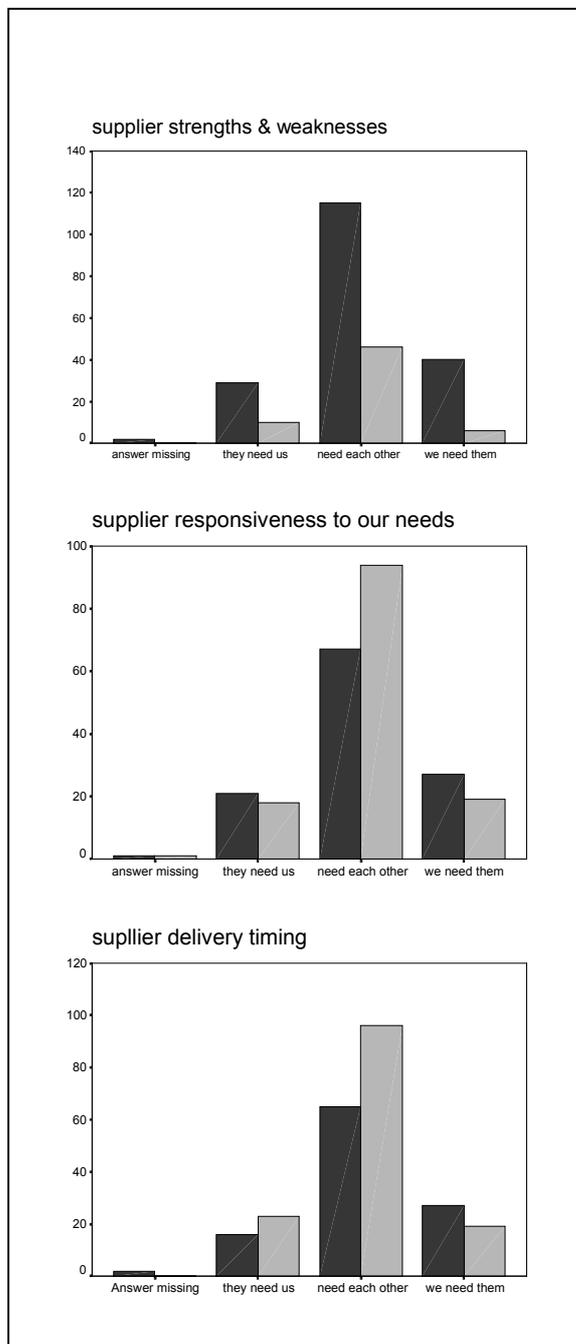
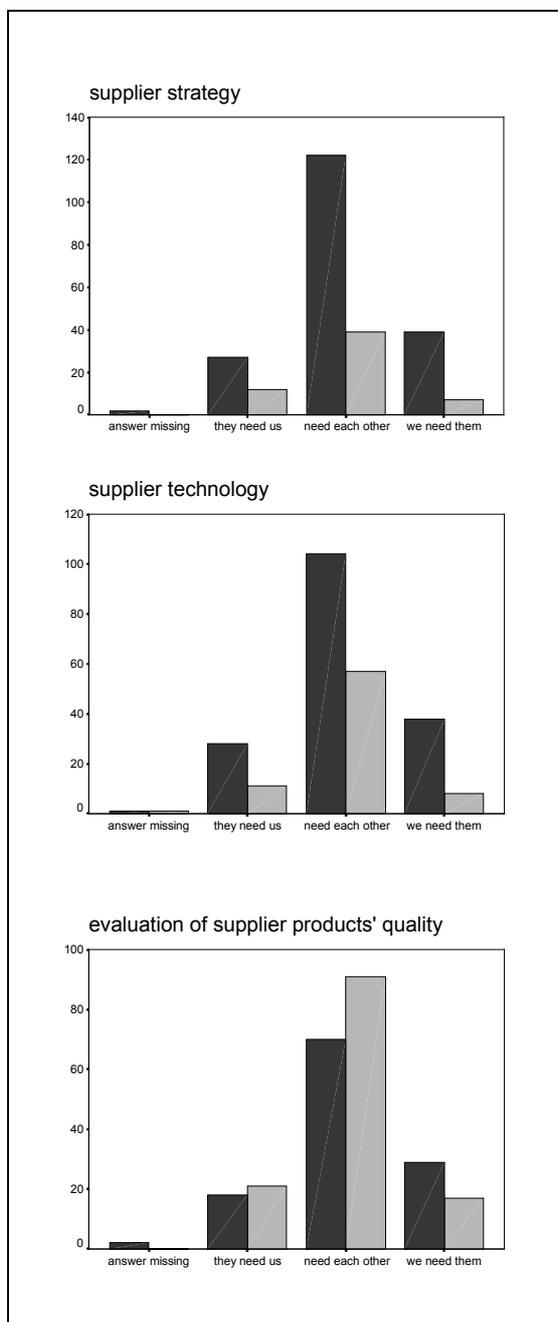
<sup>19</sup> Unfortunately, since the questionnaire did not ask of the firms to identify themselves, it was not possible to look at differences that might exist between the practices employed by foreign owned (or affiliated to) electronics firms such as Ericsson and Siemens, and firms with predominantly Croatian owners.

**Chart 1. Types of supplier relationships in Croatian manufacturing (1998)**



More than half of the surveyed firms perceived their supplier as responsive to their needs, and believed their suppliers would be willing to make changes in their products and services if those would improved the service of the questioned firms to their customers. Firms maintaining close relationships with consumers by consulting with them before major decisions are taken represent 16 % of the sample. However, 67% did not answer, or did not at least partially agree with the statement that they consult with their suppliers before major decisions are taken.

Another illustrating piece of information concerns record keeping and maintaining databases about suppliers and supplier relations. The boxes bellow demonstrate that the amount of information kept on suppliers. Firms were asked to tick a box confirming they kept records on selected items. Dark columns represent firms answering negative (not ticking the box) and the lighter columns represent firms that responded positive. The assumption being that, close, partner-like relations would reflect in freer flows of information and therefore, richer data basis on suppliers. The responses given by surveyed firms, do not allow for the conclusion of partnering in designing collective market or technology strategies. Most firms report to keep data on operational issues, while only a smaller part is concerned with longer-term strategic issues such as supplier strategy, strengths and weaknesses and technology.



The responses obtained do correlate in some way to be perceived market power.<sup>20</sup> Out of the total sample, 65% of the firms felt there were no power positions in favor of either suppliers, or themselves. Only about 19% felt they had less power than suppliers, while 16% perceived themselves as being more powerful than suppliers. Those that perceived themselves as being dependent on suppliers, were a little more inclined towards keeping records on suppliers products, services, and also their strategies.

<sup>20</sup> Market power was indicated by asking about inter-dependence.

Another observation derived from the data is that, if power relations did work well in building networked supplier-chains in the automobile industry in Japan<sup>21</sup> (and many other industries since; e.g. electronics), a lack of perceived market power, might mean an obstacle in network formation.

What our survey did not cover, are questions on specific network practices. Another Issue is the awareness of effects of networking and of technologies and providers supporting newest development in organizational restructuring by using over-the-web services. The questionnaire did however indicate that a large amount of investments was being made into information technology and data management systems. Even though the outlays may have been channeled into PCs, they still contribute towards increasing absorption capacity of managers and workforce applying e-business architecture in some recent future.

Another very valuable piece of information, which we also did not cover, would involve extent of M&A activities, affiliations to leading world corporations, but those will probably demand in depth case studies.

## **2. Network promoting circumstances**

**The role of manufacturing in the Croatian economy** is still significant, although its share in GDP and employment has been diminishing in the last decade.<sup>22</sup> By the end of 2002, 9,8% of the total number of registered legal entities were in manufacturing. In the structure of active legal entities, manufacturing accounted for 12.7% of the total. (DZS, 2002, tab. 4-1. 4-4) In 2000, manufacturing employed approximately one fourth of total employment and produced 21% of gross value added.

However, 2002 has seen GDP growth positive for the last three years. The number of legal entities in all sectors, including manufacturing has been continuously rising for the last six years, investment activity has been growing; which might all be interpreted as a sign of dynamism and enterprise growing and restructuring.

**General advance in transition and restructuring** should correspond positively with network formation. World Economic Outlook (2000) considers Croatia to be somewhere in the middle in terms of advancement in structural reforms in comparison to other transition economies. Among the 10+2 areas where major reforms are still needed, Croatia is considered to have "back-logs" in three.<sup>23</sup> However, The Czech Republic, Hungary, Poland and Slovenia have none. The aggregate transition indicator of 3.0 places Croatia only ahead of Bulgaria, Romania and other SEE countries (WEO, 2000, p. 134). Comparing Indexes of Institutional quality (table 3.11, p.136), Croatia, Bosnia and Albania are the only CEE and SEE countries considered to have a negative index of voice and accountability. On the other hand, a decade ago Croatia was considered to be among the leading transition countries. Now, by general levels of transition by end of 2000, Croatia could be considered to be falling behind most EU candidate countries.

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<sup>21</sup> There market power replaced for ownership control and allow to stability and conformance to world-range competitive strategies drafted by strongest

<sup>22</sup> By the year 2001, it is still bellow 1990 levels in production volume. (DZS, 2002, tab. 18-2)

<sup>23</sup> Those are: Competition Policy, Securities & Nonbank Financial Institutions, and Budget Deficit. (table 3.7 Areas of Remaining Major Reforms Backlog, pp. 124-125)

Since the WB methodology covered a broad range of indicators relevant also to network formation practices, it could be assumed that general restructuring records also indicate good grounds for trying to adopt networking.

Perhaps the most promising indicator that Croatia might be going through a new way of restructuring at the present, or in the very near future, might be found in the relatively high levels of FDI. WEO (Sept 2002, p. 42) asserts that, among transition Economies, FDI is positively related to progress in enterprise restructuring “providing the major source of external financing and helping sustain domestic demand.” (p. 43) Figure 1.13. “Foreign Direct Investment and Enterprise Restructuring in Transition Economies” places Croatia on 4<sup>th</sup> place by FDI/c after CZE, HUN, EST and above the regression line (p. 43). Also, WIR (2002, p.72) Fig. III. 31. “Central and Eastern Europe: FDI outflows, top ten economies”, puts Croatia on 4<sup>th</sup> place with 119 million dollars of FDI in 1991 while in FDI inflows, Croatia takes 5<sup>th</sup> place (p. 70) with FDI making up for about 28% of gross fixed capital formation.

Another positive sign is that GDP growth rates in the past few years have kept up and so did new business formation, allowing for expectations that economic dynamism will continue opening more space for enterprise growth and restructuring. Also, if the share of manufacturing employment total employment and the share of manufacturing output in total Croatian output are considered, Croatian manufacturing firms should still be highly visible to policy creators. This would mean new efforts into building support institution that will eventually allow Croatian enterprises to organize on contemporary organizational principles.

Considering both sets of figures, Croatia may not be desperately behind CEE countries. But, what should concern us more is that Croatia is still outside relevant economic associations (EURO-zone). If the attempt to join candidate countries by 2007 fails, this would be reflected also in opportunities for new market (business) creation and will slow down enterprise restructuring, further downgrading the competitiveness of Croatian manufacturing.

## **CONCLUSIONS:**

The paper has set out a list of possible indicators of the existence, or the probability of network occurrence in Croatian manufacturing. A preliminary review of accessible data suggests that the Croatian manufacturing sector should be undergoing some restructuring, and very likely part of it is taking place through network formation. Such conclusions are based mostly on results obtained by skipping over the available data conforming to tables of indicators designed in part II.

Data collected through a questionnaire five years ago did give some evidence of network practices, or better of mutual dependence of manufacturing firms with their suppliers. The apparent favouring of long-term relationships with supplier might also be a relict of the past (when the economy was more static) or might be an indication that Croatian manufactures lack the tools needed to search for new business partners and get information on new services offered. Unfortunately, our data did not offer insights into specific network practices of outsourcing, franchising, joint-research... However, if the data from the second questionnaire, being run this spring, is to show a higher percentage of firms oriented towards long-term relationships and strategic issues of joint importance, it could be taken as evidence that network arrangements are gaining strength. The real extent of networking will probably be better accessed through case studies, which I hope will follow. A repeated questionnaire

would also be helpful in better clarifying whether networking practices in Croatia correspond with those in Slovenia and Bosnia.

One of the problems to keep in mind in future research is that efficiency should be redefined at each research attempt. Practices once considered leading edge are not more so five years later, and by running questionnaires that are comparative, we might be skipping indicators particular to newest organizational models.

Given the vast range of factors facilitating the formation and later supporting the up-building of network effectiveness (compared to competitors), some form of SWOT analysis could be undertaken to identify the relative standing of the national manufacturing sector in respect to the use and effectiveness of network practices. Such analysis will also be helpful in identifying what national institutional weakness need to be attenuated by accentuating national strengths or by investing in the development of institutions that can help overcome a particular weakness.

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