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Franc Trček: Info-Technologies and New Ways of Organising of Regional Work Environment, Case of Koper, Slovenia

Great discontinuity is taking place in work organization processes with the decline of the century-old dominance of mass industrial production. The transition to the globalized networking of firms has been driven by technical advances in computer mediated communication. Actors engaged in specific processes in different places can be interlinked without having direct physical access. An adequate communication and information infrastructure in the local work and residential environments is a precondition for the spatial dispersion of work. It enables local firms to join territorially wider work environments, as well as to create local and regional networks.

The work environment of the Koper municipality is analyzed in this essay. The term work environment is used in both the narrow sense to denote the attributes of the physical work environment at the micro level and more broadly to define the complex set of micro levels that make up local and regional work environments with all their distinguishing features. The work environment is more than the physical space in which work is performed; it embraces networks of firms at various territorial levels and even beyond territorial levels.

As Cappellin (1996) observes, this new regionalism has to incorporate networking at both the regional and local levels to be successful. This means that the local work environment has to organize itself into a decentralized network. This should encompass all the developmentally relevant actors in the work environment, as well as other social systems or subsystems that interact with it, including local authorities, government administrators and the educational and scientific communities. This decentralized network will need to reach a consensus on long-term development

strategies. Cappellin (ibid) therefore speaks of "federalism" at the regional level. Public professional, educational, scientific and political institutions play an important role as active intermediaries crucial to the integration of the local and regional work environments.

Three key areas of development in the work environment are analyzed here: (1) the process of informatization; (2) time-space work organization; and (3) mechanisms for "help for self-helpers." In addition to statistical data, qualitative analysis has been made of a large number of interviews and survey findings. A sociological survey on the residential and work environment (*Anketna sociološka raziskava Koper 97/98: Bivalno in delovno okolje* (Sociological survey Koper 97/98: residential and work environment) was conducted by the Center for Spatial Sociology in 1997-1998 in conjunction with the Cati Center. Conclusions are also drawn regarding the foundations of future development strategies for the work environment on local and regional level.

Informatization: Inclusion of Larger and Exclusion of Smaller Firms

Firms can be divided into two large groups according to the degree of informatization. The first group includes large, complex organizations (Banka Koper, the Port, Istrabenz and Intereuropa), which have relatively well established internal information systems that interconnect all units, even territorially scattered ones.[1] The second group includes firms with less developed information systems, smaller workforces and less business volume. Many of these organizations do not need a ramified internal information system because they only have a few employees working at the same location. Exceptions include computer and information technology firms, which are usually linked up to global corporations and handle a multitude of minor problems with the help of electronic mail and FTP servers. They are trying to promote online servicing, but frequently have to visit customers even when unnecessary to maintain customer confidence. Online servicing by programmers working from home is actually the only advanced example of information telework currently found in the local and regional environment. However, this will be a significant form of time-space flexibility in the information sector in the future.

Two examples of successful informatization in small organizations include the DHL and Husqvarna Forest & Garden business units. Both are subsidiaries of two major global concerns, DHL and Elektrolux. Elektrolux, with its headquarters in Sweden, has more than 850 units around the world. Each unit sends detailed, up-to-date reports on its operations (financial statements, accounting reports, inventories, productivity, product quality, production fault reports) through the company's unified information system. This system allows for the up-to-date monitoring of events throughout the concern. DHL units are similarly plugged into the information system of their corporation, which enables the complete informatization of operations. Data is exchanged as parcels and along delivery paths from a local-regional address to anywhere in the world. Employees mainly communicate through electronic mail, which is considerably cheaper than international telephone calls.

Interorganizational information linkages are more problematic. Most of the large organizations with good internal systems are still not outwardly open to information exchanges. A number of discussions with these organizations indicate that the root of the problem lies in the organizational-communication culture and, although never stated as such, the fear programmers have of opening up. Many programmers realize that their systems will be more vulnerable and that their own work will be opened up to external standards of comparison. Most of the firms with intensive contact with business partners are considering installing electronic mail and the Internet. However, even where they have been installed, the telephone and telefax remain the predominant mode of interorganizational communication.[2]

An open interorganizational information network, the ATNET, has been established that is comparable to those abroad. It allows computer data exchanges and most other network services and currently covers organizations involved in the port-transportation sector. The reaction of potential users to the system is interesting from a sociological point of view. All of them supported the establishment of such a system in principle, but problems arose over how to pay for services. An earlier system run by the Port had been free of charge for a few external users. The very idea of charging fees to use the new system was unthinkable for local organizations, and the forwarding-shipping association took the matter to court.

The significance of informatization was also lost on attempts to set up a web site for Slovenian Istria and a joint site for automobile vendors. The tourist association did not join the former project even though it could have set up an online booking service on its web page.[3] In the latter case, a vendor thought a presentation on the Internet would be pointless, particularly a joint presentation that would allow direct comparisons between vendors.

These cases reveal that information is still viewed in the local work environment as futuristic, unnecessary and, above all, expensive. One way out of this situation is to develop a public information service that encompasses both private and nonprofit organizations. This has been done successfully abroad where a number of networks are operative at the local-regional level (see Brants et al. 1996, Carter 1997, Loader (ed.) 1997, Miller 1996, Trček 1997a). The Koper municipality and the coastal region both offer advantages at the national level for developing such a cost-effective network. The network could also serve as a test case for the development of local information networks.

Advantages of the Local Environment for Informatization

In comparison with other municipalities and regions in the country (with the possible exception of Ljubljana), the Koper municipality and the entire region offer: (1) the most developed telecommunications network; (2) a wide range of consulting, service, tourist and cultural activities with products and services that could be virtualized at least in part; (3) an exceptionally concentrated settlement pattern with 95 percent of the region's population located in a narrow coastal belt.

The Koper branch of Telekom Slovenia has the highest ratio of subscribers per 100 inhabitants in the country, a ratio almost on a par with neighboring Italy and Austria and above those of Spain and Portugal. A regional optical cable connection is already largely complete. User reports indicate that it is already relatively easy to gain access to the Internet and the mobile telephone system, which covers the entire coastal region.

Virtualization on the Internet makes remote sales and services by phone possible (telebanking, teleshopping). However, only relatively banal services such as hotlines and fortune-telling predominate at present. One example of a successful automatic telephone line is the agricultural advisory service, which provides information to farmers and fruit and wine-growers about pests and ways to treat them, as well as current prices on the fruit and vegetable market.

The municipality and region already have the necessary critical mass of service, trading, consulting, tourist, health and other organizations to virtualize marketing at least by telephone. It needs to be emphasized that this will be of particular benefit to smaller actors with limited means for traditional sales and marketing operations. It will broaden their reach throughout the country at the very least and, after the anticipated rapid switch to information technology, to the international arena.

The compact settlement pattern of the area and the utilization of the cable television network as an information network will make the efficient delivery of goods ordered from virtual shops feasible. The possibility of teleshopping and carrying out other transactions through telecommunications will be especially valuable for the handicapped and other people with restricted spatial mobility.

The local government has to play an important part in fashioning an extensive, cost-effective, user friendly and carefully planned information space that is accessible to the public (see Trček 1997). When local information systems have successfully been established, the local government has acted as coordinator and assured the coexistence of private and nonprofit actors in local cyberspace.

Territorial Presence and Organizational Interlinking

Pronounced bipolarity in the spatial linkages and territory characterizes local firms and their membership in supranational/global business networks. On one side are firms involved in activities related to the transport of goods at the port (Port of Koper, Intereuropa, Banka Koper and shipping agents) and others whose business activity imposes a broad presence (Iplas, Tomos, Lama, Cimos, Banka Koper). All of these firms are present in the global space either independently or through partners and

representatives. On the other side are the majority of firms whose reach is limited to either the national or local-regional space and the nearby border area. This group includes relatively large, established trade mediating organizations (Emona-Obala, Auto-Merkur, Jestvine) and small manufacturing, service and trading businesses that have cropped up during the economic transition.

Most of the latter group take advantage of their close proximity to the border, the port as a transportation and logistical center, and their knowledge of the Italian consumer market. This geographical advantage will decline in significance with time. The long-term prospects of the small trade mediating businesses are already dimming as the consumer goods market gradually approaches saturation. The arrival of larger, international firms with multinational scope, lower prices and more attractive products may be expected to diminish the prospects of these transitional businesses even further. One way out of this trap is for such firms to join global networks to gain expertise that is lacking locally or regionally (e.g., from franchises with packaged marketing systems) or to secure a presence on the global market (e.g., through global hotel chains).

The territorial pattern shows insufficient links at the local-regional level, for instance, between seaboard hotels and tourist and recreational organizations in the hinterland. Such links are essential if the local-regional work environment is to function as a network that can muster and apply its expertise and resources, exploit its physical and supporting infrastructures in line with agreed development priorities, and launch itself on the global market as a propulsive economic force. Current links are inadequate both within the work environment—between firms, professional associations, and the national and local administrations—and between sectors such as the work and educational environments, the tourist branch and the cultural sector. Regionality is still poorly defined both developmentally and in terms of information logistics. This impairs the coastal region's recognizability on the international plane.

(In)flexibility of Time-Space Work Organization - Rigid Work Organization in Firms

In most cases, particularly with regard to the number of workers in the larger organizations, work organization is still captive to forms typical of inflexible, mass-industrial, bureaucratic and monolocational enterprises. This is true even though the local predominance of service activities would permit greater flexibility. The survey shows that 53.3 percent of employed respondents have a fixed workday schedule, while 15.3 percent have a flexible or "flexi" arrival and departure schedule. Altogether, 68.8 percent have a rigid time schedule. Only 3.7 percent can freely determine when they arrive or depart from work, and these have higher education levels and, it is presumed, senior positions. Rigidity in the spatial distribution of work was also found: 63.9 percent of employed respondents work at the seat or head office of their firm and 6.9 percent work in a dislocated unit. Fourteen percent of respondents work predominantly in the field, while another 1 percent on the premises of business partners. Only 6.9 percent of respondents do most of their work at home.

This predominantly centralized, rigid model of work organization cannot be attributed solely to the nature of the work. Interviews with work process planners show that most believe that greater time-space flexibility would result in even lower productivity. The root of the problem is therefore an organizational culture that lacks trust in employees. The majority of managers interviewed treated work at home as a "futuristic topic" that is unfeasible in their particular work environments. Meanwhile, when asked about hardships at work, 40.8 percent of respondents cited poor organization as a problem at the workplace of work while 33.4 percent said it disturbed them. This situation might be overcome by replacing an organizational model based on the Taylorian supervision of employees with one that places confidence in them. This entails greater individual freedom to make decisions at work as well as greater responsibility for its results.

Respondents also proved to be hostage to their local-regional work environment on questions related to employment mobility. Thus, 39.1 percent are not prepared to move to another area and 78.7 percent are not prepared to travel more than 60 minutes to work. Most older respondents were opposed to moving while fewer of the younger

respondents were. Differences among respondents with different educational backgrounds were not as great as may have been theoretically anticipated.

The territorial immobility found in the survey is counterproductive to long-term development and present obstacles to the strategic objective of globalizing the work environment. With today's turbulent development, it is an illusion to expect the personnel resources of the municipality and region to offer all the expertise necessary to compete in the open, global market. It is also unrealistic to assume that some transfer of business autonomy to strategic coalitions can be avoided in the process of cooperating with partners in global business networks. This pathological line of thinking underlies the currently popular "Slovenian scenarios" for rescuing troubled firms. Limited professional and educational mobility is already beginning to force young, trained manpower to seek opportunities in Ljubljana and, to a lesser degree, Italy. This trend could lead to a negative selection of personnel resources, as only those without the training to break into more demanding global work networks and environments will seek employment locally.[4]

The solution to the threat of hermetic personnel policies lies in interconnecting the work and educational environments and opening them up to international referential networks. The transition from separate work, educational and research environments to a unified environment or network that combines all three is already underway in developed countries. This transition would bring new information and knowledge essential for the development of the local-regional work environment provided that the links transcend narrow national and territorial boundaries. A precondition for this is a strong revival of cooperation between work, educational and research organizations, which has diminished following the transition to the regional level.

Obsolescence of Old Assistance Models

The large number of firms founded after 1991 to create self-employment opportunities for the jobless usually lack the expertise and resources for long-term development or even survival. This gap should be filled by existing professional associations (the trade, craft and economic chambers), consulting services

(employment and enterprise promotion services) and newly formed organizations (private consultancy firms, business clubs, etc.).

Interviews with numerous business and trade representatives in the Koper municipality revealed a disdainful opinion of these services. They are seen as predominantly self-serving. Local and municipal officials are viewed as being only interested in large firms that can offer sponsorships rather than those firms in need of assistance.[5] However, the interviews also show that many of those who complained were either not aware of all the channels of assistance open to them or failed to seek help before experiencing difficulties.

The self-employment programs run by the Koper branch of the Republican Institute of Employment demonstrate that links can be established. However, survey questions dealing with ways of finding new jobs show that unemployment problems still tend to be settled by informal means.

New forms of assistance, such as financial, legal and marketing consultation services as well as business education have to be developed along with the flow of relevant information to those in need of assistance. An entirely different philosophy of assistance—a "help to self-help" system—has to be introduced that will not accustom the beneficiary to continual support irrespective of business results. The new system should provide resources and information for development and help the recipient overcome teething problems in his or her firm more quickly. This system should function as a network that interlinks all private and public institutions and gives information at a single location or source (e.g., a telephone hotline or a website). The assistance provided should be designed to help the recipient reach the point where he or she can function more or less autonomously.

Most of the complaints by interviewees can be settled easily provided that aside from improving mutual communication, attention is also given to:

1. Encouraging innovation through fiscal policies, particularly those that that give discounts or rebates on utility and infrastructure levies to firms that introduce ecological and energy conservation measures;

2. Preparing a long-term strategy to lease shops and commercial property owned by the municipality. This strategy should include mechanisms for providing loans to rehabilitate and speed up improvements in both the appearance of the property and the products offered;

3. Establishing a consortium for the integral presentation and marketing of the municipal and regional work environments both at home and abroad. This consortium should also make contact with complementary regions and provide information about possible forms of cooperation between firms;

4. Developing an incubator for entrepreneurs in the context of the general development of tertiary education, and a new production and crafts zone, which is already nominally incorporated in existing development strategies. This should be aimed at filling local expertise and information gaps.

Conclusion: From Geographical Determination to Network Propulsion

Slovenian Istria or the "coastal region" and the Koper municipality is second in the country only to Ljubljana and the central region in propulsiveness (see Kukar 1995). However, our research has identified a number of obstacles to the development of its work environment into a post-Fordian, information-based, internationalize, and globally competitive one. Future development strategy should deal with three key areas.

A publicly accessible municipal and regional information system is essential to joining the global network. Such a system would facilitate the informatization of small firms, make it possible for a greater amount of work to be at home, help market the local work environment in cyberspace and lead to the informatization and virtualization of many services. The existing cable television network can be used to implement information technology in the urban area. At the same time, plans for building an information technology infrastructure should also extend to the rural areas to promote the dispersion of work, the humanization of residential conditions and to help fulfil demand for private homes.

In addition to improving the physical infrastructure, a "soft" infrastructure is also essential for successful local and regional development. This infrastructure should consist of an interactive local-regional information network. It presupposes a transition from a collection of self-sufficient firms that rely excessively on geographical factors to survive to a truly interconnected local work environment with clearly defined development strategies and a feeling of belonging. The recognizability of the coastal region and the Koper municipality would grow as a consequence.

At the same time, the provincial mentality that derives from a fear of foreigners has to be overcome. Opening up the work environment to foreign specialists and enabling local specialists to gain experience in foreign work environments can stem the brain drain, particularly among the young, and help bridge the professional gap between the Koper municipality and more developmentally propulsive regions.

To establish the presence of the municipality and region globally it is essential to establish a consortium entrusted with integral presentation abroad. This consortium could establish links with functionally complementary regions and provide information about the various forms of cooperation available between local and foreign actors. Furthermore, a unified information center should be created to provide information on the various types assistance available to firms and individuals at the local, national and international levels (e.g., EU programs to promote small industry and border area cooperation).

Within the region the planned university center should be developed from a pool of existing quality institutions (tertiary institutes, research centers) in association with local and foreign specialists and in consideration of the demands of the work environment and the need for regional expertise. This will require greater cooperation between work and scientific research environments, both of which have to do more to integrate themselves into the international arena to overcome personnel and information insularity. Once the local and regional work environments begin to base their competitiveness on the accumulated local-regional know-how and join global networks to gain access to gain expertise that is lacking, the prospects for long-term success will be all the greater.

Notes:

1. For example, Intereuropa has more than 1,100 interconnected terminals located in 42 business units around Slovenia. This integrated system allows for "door-to-door" operations and single-day delivery service. The other organizations have similar internal systems.
2. Since information technology is developing rapidly, upward trends in the use of CMC discernible during our three years of research. This applies particularly to the Port of Koper, which has modernized its information system, and the increasingly common use of electronic mail. One problem is that e-mail is mainly used to make personal contact with other employees and is rarely mobilized as part of a broad communications strategy. This helps confirm the thesis about the importance of a firm's communication culture.
3. The effectiveness of such web sites has been demonstrated by the Bohinj municipality (see www.bohinj.si).
4. This developmental pathology is already evident at the intranational level. Less successful graduates cannot find jobs in the capital and are forced to look for work in the provinces.
5. Specific complaints include: lengthy administrative procedures to obtain permits; the apathy of banks toward developing small-scale industry; high levies for utilities and infrastructure; the ineffectiveness of the Slovenian Chamber of Economy; and the lack of a long-term strategy for leasing and selling shops owned by the municipality.

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