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**GROWTH OF ENTERPRISES THROUGH ALLIANCES IN
CENTRAL EUROPE***

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GROWTH OF ENTERPRISES THROUGH ALLIANCES IN CENTRAL EUROPE

Abstract

The paper explores the role of alliances in central European countries from the perspective of growth of enterprises. The analysis is based on a comparative overview of 26 cases studies of enterprises in Poland, Czech Republic and Hungary which have alliances with foreign partners. Most of the alliances are production alliances, especially subcontracting, that are combined with several other types of alliances, especially marketing agreements. The balance between generic expansion, alliances (networks), and mergers & acquisitions as modes of growth of enterprises reflects differences in firms' ability to control technology, access to market and finance. However, the final outcome does not seem to be a direct function of the ability of enterprises to control these three factors. The types and dynamics of alliances also reflect the political and legal situation of a country (privatisation, attitude towards FDI) as well as specific sectoral features in terms of technology, finance and markets. Features of alliances are in that context shaped through the interaction between firm-specific factors and capabilities, sector- and country-specific factors.

1. INTRODUCTION

After being closed for a long period, countries of central Europe are now integrated into the world economy through trade and financial markets as well as production and technological networks. Literature on this process is relatively extensive regarding trade and foreign direct investment. However, the literature has tended to neglect the fact that much of the trade reorientation is going on within alliances or co-operation agreements which are neither intra-firm trade nor arm's-length relationships.

The explanation for this neglect of the research of what is statistically mainly registered as arm's length trade is three-fold. First, the very notion of alliances remains fuzzy; definitions are very arbitrary, and vary from author to author. Second, research on alliances is primarily focused on technology alliances among large multinationals (MNCs). Production and marketing alliances have attracted little attention at the general level, and in the case of developing and transition economies hardly any. Finally, there is a serious problem of data availability. Research on alliances requires building data bases founded on proprietary sources or, alternatively, on the business press, which is very biased against production alliances, and tends to be much better at recording take-overs and R&D alliances.

This paper tries to address this lack of understanding of the role of alliances in Central European countries from the perspective of growth of enterprises, i.e. alliances as a mode of growth of enterprises. In an economic environment where domestic financial and institutional constraints are pervasive, undercapitalised enterprises with limited management capabilities have difficulties to grow through generic expansion. They either have to search for foreign

investors or try to grow through different forms of alliances. Data on foreign investment enterprises in central European countries suggest that enterprises with some or full foreign control have higher productivity, and import and export propensity than fully domestically owned enterprises (Hunya, 1997; 1998). This suggests that the modes of growth based on mergers & acquisitions by foreigners or alliances through minority shareholdings enable faster restructuring of enterprises in central Europe. However, these data are confined to foreign investment enterprises and cannot reveal anything on different types of non-equity alliances. In this paper we overcome this constraint as the analysis is based on 26 case studies of enterprises in Czech R, Poland and Hungary all of which have different forms of equity and non-equity links with foreign enterprises.

The main questions we address are: which forms of alliances are dominant in central Europe? Which factors explain the choice between full take-over by foreign companies, domestic control or alliances ? What are the main areas of knowledge transfer in alliances? The answer to these questions should provide us with interesting insights into how central European enterprises use alliances as mechanisms of growth.

In the next section we discuss the issues of growth through alliances in central Europe in conceptual terms. We discuss the notion of alliances, derive a typology of alliances and explore the main issues involved in growth of enterprises through different forms of control (generic expansion, mergers & acquisitions (M&A), networks or alliances). In the third section we explain the sample of enterprises and summarise the results of the case studies. In the fourth section we interpret the results of the case studies in the broader context of alliances and growth of enterprises in central Europe. Finally, the conclusions summarise our main findings.

2. ALLIANCES AND GROWTH OF ENTERPRISES IN CENTRAL EUROPE : A CONCEPTUAL PERSPECTIVEⁱ

Defining alliances

The essential difficulty in researching alliances in the central and eastern European countries lies in the numerous problems regarding the very notion of alliances. While the definition of foreign direct investments may be considered to be relatively clear, the definition of alliance is not. It seems that no adequate definition of strategic alliances can be given on the basis of industrial organisation theory only. We will define alliances, following EU (1995, p.23), as 'any form of company co-operation, involving equity investment or not, regardless of the duration and objectives of the partnership'. This means that we include into alliances production and marketing, not only technology alliances. In cases where R&D is not an explicit aim it is very difficult *a priori* to find out whether the alliance involves technology or only production. Particularly, in the case of central and eastern European countries, production alliances may have a strong technological content due to the need for technology upgrading. Also, we do not distinguish alliances from networks as these are, in practice, indistinguishable from each otherⁱⁱ. Narula and Sadowski (1998) rightly point out that networks and alliances represent two ends of a continuum. As a distinction between alliances and networks Narula and Hagedoorn (1997) suggest the existence of strategic intent. However, the existence of strategic intent can be found only after the case study has been undertaken. Co-operation agreements, like subcontracting, which initially may be

motivated only by cost advantages for a principal may turn out to be strategically important for both partners. In order to avoid the arbitrary nature of strict definitions here we use interchangeably terms like alliances, networks and international co-operative agreements.

Factors in alliance trends in central and eastern Europe

As we are starting from a broad definition of alliances we have to resolve the problem of types and aspects of alliances which a broad approach generates. Two elements seem to be important in this respect.

First, the issue of decision-taking pre-eminence between alliance partners cannot be reduced to the issue of shareholding. As pointed out by Ruigrok and Tulder (1995) studies on 'strategic alliances often assume that two partners are complementary, independent and of equal relative strength (size, financial power, etc.)(p. 184).ⁱⁱⁱ In the case of central and eastern Europe (CEE), there is even less reason to believe that equality of partners is the norm. Enterprises with very weak capabilities in marketing, finance and organisation are very likely to be dependent on foreign partners when entering into alliances. Issues of dependence, interdependence and independence are important elements in understanding the phenomenon of alliances in CEE.

The second important element for understanding the dynamics of alliances in CEE is the dual nature of alliances - as mechanisms for realising technological or production complementarities, and as mechanisms for capturing market share through cartels, or through complementarities in distribution and marketing activities. This aspect of alliances is, indeed, much more prominent in CEE markets because of their emerging character.

Based on these two important components of the dynamics of alliances in CEE in Radosevic (1999) we develop a framework in which the role of alliances in CEE can be conceptualised and then analysed. Table 1 tries to capture this by relating the aspect of control (row) with the main focus of alliances (column).

Table 1: Typology of alliances in Central and Eastern Europe

	Production/Technology	Marketing
Interdependence	(I) Production/technology alliances. (Alliances as a distinctive form)	(II) Marketing alliances based on complementarities in exploiting market potential
Dependence	(III) Alliances based on production/technological dependence	(IV) Alliances based on dependent access to market

I. Production and technology based alliances in this field are those that conform to the understanding of alliances as analysed in the 'Western' literature. Partners are working on technology development or production. and are complementary or interdependent. In such coalitions minority shareholdings are more an expression of commitment to co-operation between basically independent partners than an expression of the degree of control. In this case alliances are distinctively different organisational forms from FDI, or subcontracting.

II. Access to the market is the second important objective of alliances in CEE. In this case alliances are initiated by foreigners who are not interested in, or find it too costly, to take-over distribution channels. In cases when domestic companies cannot overcome marketing barriers as independent producers, they may dislocate marketing function to foreign company (see field IV).

III. This group involves business relationships characterised by dependency in relation to foreign partners. For foreign partners, merger or acquisition is unnecessary as they are in structural control of the domestic enterprise. The main structural problem for domestic enterprises located in this field is how to move from a processing position into an interdependent alliance, in the face of a clear-cut danger of technological marginalisation. As processors, domestic companies are highly exposed to their foreign partners and usually operate with low profit margins, and with growth opportunities entirely dictated by the foreign partner.

IV Marketing alliances where access to market is highly dependent on one of the partners are quite frequent in CEECs. Franchising contracts in which domestic companies are entirely dependent on accessing and maintaining the share of now liberalised domestic market are such an example. The dependence on the foreign partner is also pronounced in sale agreements on foreign markets where all issues related to price and marketing are in the hands of foreign partners or wholesalers. Even in cases when domestic partner may be strong technologically and even fully able to design a product it is the foreign partner that takes the major part of value added which is created in distribution, not in production.

We pointed to two aspects of alliances - production/technology and market/marketing aspects. Often, central European partner may be competent in terms of production but very dependent in terms of access to export markets. Equally, the central European partner may have good access to domestic clients but be behind technologically. Table 1 illuminates different types and aspects of alliances which develop as a result of differences in the focus of alliances and differences in power of partners.

The distinctive and transitory nature of alliances in central and eastern Europe

In the case of developed countries, the empirical research (see Hagedoorn and Sadowski, 1996), bolstered by theoretical inquiry (Chesnais, 1996), shows that strategic technology alliances are not a transitional form towards mergers and acquisitions, but rather a different category of their own. By contrast, our analysis suggests that the true nature of alliances in CEE countries is far more complicated. A widespread form of alliance in central Europe is that which can be considered a transitional form towards a wholly-owned company. In many consumer industries, alliances are initial steps in a strategy of taking over the domestic company and its distribution network. Most often, it is not the production capacity or technology that matter here, but the market share. In telecoms, transitory alliances are the usual way to enter the market. In car assembly, joint ventures based on existing facilities have also served as a transitional form towards majority foreign ownership (Havas, 1996). Hungary is a good example of a country where legal restrictions on the proportion of shares that foreigners were allowed to buy in the early stages of privatisation forced many foreign companies into part-ownership. But, as reported by Szalavetz (1996), 'they still exert practically full control, treat and develop the companies as their own and prepare for the next

phase of privatisation with the aim of acquiring more shares and possibly full ownership' (p. 18). As soon as the legal obstacles are removed, foreign involvement turns into outright acquisition, securing full control over business. For example, in Poland the share of joint ventures in overall foreign investment fell from 56.4% (1989) to 31,4% (1991) and then to 0.4% (1993), closely following the pace of privatisation (Kubielas, 1996).

In contrast to these situations there are sectors in CEE where foreigners may remain for a long period in the state of forced transitory alliance. For example, regional and cellular mobile telephone networks in Poland, are open to foreign competition, but only in the form of minority holdings (Kubielas, 1996).

Modes of growth of enterprises and alliances

The specificities of the transition process strongly shape the factors of growth of enterprises in CEE economies. Our perspective falls within the scope of recent works on the growth of enterprises in post-socialist economies (PSEs) which distinguish between three basic modes of growth in any enterprise: generic expansion; mergers & acquisitions; and networks (alliances) (see Peng and Heath, 1996). The proposition put forward by Peng and Heath (1996) is that enterprises in PSEs follow neither a –market –nor a hierarchy strategy for growth, founded on a network-based strategy of growth, building networks as strategic alliances to facilitate economic exchanges. Stark (1996) has provided empirical evidence of the operation of just such a process in Hungary. Hayri and McDermott (1998) also provide evidence in the case of the Czech Republic.

The institutional framework features strongly determine the modes of growth of enterprises. Undercapitalised enterprises with limited management capabilities have difficulty in growing through generic expansion. Among the top companies in CEE, there are only a few new private firms. Mergers and acquisitions are limited to foreign investors who have funds for take-overs, and to countries where privatisation allows for individual sales. Domestic mergers and acquisitions are mainly gambits in a 'recombinant property game' (cf. Stark, 1996), where growth issues are still secondary to issues of control and ownership. A third option (Peng and Heath 1996), growth through hybrid forms like business groups, conglomerates and financial-industrial groups, where enterprises are neither merged nor acquired, nor are in arm's length relationships, seems to be, for the time being, much more common. Here we want to analyse the network type of relationship vis-à-vis foreign partners, i.e. alliances as mechanisms of growth in central European enterprises. By being networked into a relationship with a foreign partner, the central European enterprise may compensate for its own weaknesses, and for the disadvantages it is facing in the transitional economic environment.

Obstacles to growth through generic expansion and foreign take-overs should make alliances a more acceptable mode of entry especially into foreign markets. For foreign partners they also provide a solution in cases where the nature of the sector does not require full control, as in the software, car parts or clothing industries, or where there are obstacles to full control due to restrictions on privatisation, or where the legal framework is still very unstable (cf. Russia, Ukraine).

While alliances bring advantages for both sides, they also involve numerous problems as mechanisms of growth for domestic firms or as mechanisms of market access. The

literature indicates high instability of alliances in developed countries (EU, 1995). This is likely to be even more pronounced in CEE countries, on account of differences in technological levels and control problems (cf. privatisation).

Based on these conceptual distinctions and insights in the next section we analyse the sample of case studies of CEE enterprises that have alliances.

3. SAMPLE AND RESULTS

Sample

The sample includes 26 enterprises in Czech R (12), Poland (13) and Hungary (1) with different forms of alliances with foreign enterprises. Fully owned foreign subsidiaries are included in the sample as we are interested also in their alliances. Sectors in which the enterprises operate are diverse: telecoms (6 enterprises), software services (6), electronics and computer equipment (4), automotive components producers (4), machine tools (3), chemicals (2) and one floor covers/toys producer (see tables 2, 3 and 4). Authors of studies are Attila Havas (Hungary), Karel Mueller (Czech R), Stanislaw Kubiela^{iv}, (see Appendix).

In terms of ownership, enterprises in the sample encompass all three forms: full foreign ownership, full domestic and joint ventures (see table 4). We classified enterprises according to whether they produce their own brand products, joint products or customise/localise technical solutions developed elsewhere. We also classified enterprises

according to whether their growth was based on generic expansion, mergers & acquisitions, different forms of alliances (networking) or some combination of these modes of growth.

The case studies allowed us to record the most important types of alliances or international co-operative agreements and their numbers as well as to determine whether the type of linkages between partners in alliances was vertical or horizontal. By vertical we mean whether inputs from one partner were used in further development or production of products or services by other partners. In horizontal relations the product or service is the result of a joint activity of the partners.

Sources of finance, technology and market access are important determinants of modes of growth of enterprises. For each enterprise we stated the main source of finance and the main source of technology (table 3). For access to market we used two variables, market orientation (domestic, foreign or a mixture) and modes of market access or whether the distribution is in the hands of the enterprise, of foreign partner or shared with foreign partner.

In table 4 we classified the main areas of assistance or knowledge transfer from foreign to domestic partners. The last columns of table 4 simply sum up the number of areas of support (column) and the number of enterprises which have received this type of assistance^v.

TABLES 2, 3 AND 4 AT THE END

Results

Here we summarise the main results of comparison of the 26 case studies relying mainly on summary tables 2, 3 and 4.

1. Generic expansion as a single strategy is rare. In only two cases in the sample (WSMK and ZCB) were companies pursuing generic expansion as a single strategy, i.e. without much reliance on international co-operative agreements (ICAs). In these two cases alliances did not have a strategic impact. As a rule, firms grow either through foreign acquisition or networking, or through generic expansion but one which relies heavily on networking. This latter option is especially strong in the software sector. This is understandable given the pervasive need in this sector for customisation. The adaptation of generic solutions to a specific customer requires co-operation with producer of generic solutions but not necessarily equity relationships.

2. The number of companies that produce their own branded products is small. In our sample 5 out of 26 enterprises produced mainly own brands and these were mainly in the automotive components sector. However, we are of the opinion that this is not a sectoral feature but simply the result of selecting very good domestic car parts producers. If we take into account that many enterprises in our sample were producing complex end products before 1989 this is an important strategic change. Production of own brand products is the most demanding as own brands require extensive marketing investments and own technology.

It seems that the central European enterprises have not yet restructured to the level that will allow them to enter into this stage of development. Most enterprises are producing joint products or customised/localised foreign solutions. A high share of enterprises involved

in localisation/customisation reflects the situation in sectors where foreign partners have to rely on domestic enterprises in order to do this. In such cases they either take-over domestic enterprises (telecoms) or co-operate through non-equity relationships (software). In the case of producers of own or joint products the generic expansion combined with alliances (networking) is a more likely strategy (machine tools, automotive components).

3. The technology gap between the state-of-the-art levels and technological levels in central European countries plays an important role in determining modes of growth of enterprises. In sectors where the technology gap is wide, foreign acquisitions are more likely because the other growth factors, like finance, are usually not available. A typical sector in this respect is telecommunication equipment where the inherited technology gap was pretty high due to neglect of telecommunication in the socialist period. In case of TTC Tesla, finance does not seem to be a major problem which may partly explain why there has not been any foreign take-over of this telecom producer. Another factor which may explain this is the Czech mass privatisation which makes take-overs inherently difficult.

4. Sources of technology seem to be sector specific. In telecoms the main source is the parent company, in software services the main sources are different forms of co-operative agreements, in electronics it is a mixture of relations with foreign owners and alliances, in car parts the main source is enterprises' own technological capability, and in machine tools there is a mixture of own and foreign sources. The source of technology is an important factor in understanding the modes of growth of enterprises. The more sources of technology are external the more there is a need for alliances in order for enterprises to grow. The more sources of technology are in-house are less enterprises are dependent on alliance partners in this respect. However, technology is never the single factor that determines the profile of an

alliance. The final profile is shaped in interactions with the issues of access to finance and markets as well as with other external factors like privatisation policy.

In sectors where the technology gap is narrower and where domestic finance is available, the likelihood of generic expansion or domestic acquisition is greater, like in machine tools (Czech R) or software services (Poland). In these sectors, enterprises are to some extent able to ensure access to finance and have certain technological advantages (machine tools) or technological complementarities (software). In the case of the software sector, enterprises have an additional element – access to and knowledge of the domestic market - which enables them to improve their bargaining position in alliances. Machine tools producers are mainly oriented to export and in that respect they are dependent on foreign partners. This explains why they are forced to enter into subcontracting agreements and are unable to develop their own branded products.

5. Finance is an essential factor in controlling the modernisation process. When domestic sources of finance are available modernisation controlled by domestic enterprises is more likely. In telecoms the main source of finance and technology is a parent company and hence the dependence of subsidiaries on their MNC is very strong. In other sectors, especially in software and automotive components, the finance necessary for modernisation seems to be more available. Companies like Polish *Computorland*, which has managed to raise finance through passive investors, are in a much better control of their business than those that do not have access to cheaper sources of finance. The Polish PC assembler, *Optimus*, also deliberately rejected any dependence on foreign financing. In addition, in these sectors enterprises either have their own technology or are technologically complementary to foreign partners. Also, their markets are mainly domestic (software) or domestic subsidiaries of

foreign MNCs (car components). This improves their bargaining position within alliances and allows them to modernise faster. On the other hand, modernisation is taking place at a slower pace in sectors where domestic finance cannot be coupled with some technological advantages or with access to market. This is especially a problem in export oriented sectors and enterprises, like machine tools producers, where domestic capital cannot effectively substitute for high marketing barriers.

6. Those sectors that are oriented towards the domestic market are in a better position in bargaining with foreign partners due to their knowledge of local clients. The case studies suggest that this knowledge continues to be very important and is not diluted through alliances. This is especially the case in software and in telecoms (example of TTC). The knowledge of local market is an asset which can be effectively traded for technology access, assuming that the technological level of domestic enterprises is not too far below the world level. In the software sector this is exactly what is taking place. However, in the telecom sector the technology gap between domestic and foreign producers is too high to allow any trading between these two factors.

7. Types of alliances or co-operative agreements in central Europe if judged on the basis of our sample are heterogenous. Nevertheless, most alliances can be grouped into production alliances, or marketing alliances (in software sector). The most widespread type of agreement is subcontracting. This also includes OEM subcontracting^{vi}. A large variety of forms of co-operative agreements is especially present in the software sector which combines marketing and production links. In other sectors subcontracting/OEM subcontracting is the dominant form of alliance. In our sample there are only three cases of technology alliances

(R&D and joint product development). This picture seems realistic given the data on alliances in central and eastern Europe (see Narula and Sadowski, 1998).

8. Sectors in which foreign acquisitions are dominant have a smaller number of alliances. In telecoms, where foreign acquisitions are dominant foreign subsidiaries are primarily oriented towards their parent company. This reduces the number and diversity of alliances with other companies.

9. Linkages generated by alliances are of both types, vertical and horizontal. However, vertical alliances were more common in our sample. This is to be expected given the frequent presence of subcontracting links. This also suggests that the alliances in central Europe are being driven more by unexploited market opportunities and cost differentials than by the wish to displace competition. A larger number of horizontal alliances would indicate a stronger presence of market share considerations. This seems to be much more of an issue in the case of FDI. Sadowski (1997), based on 4 digit SIC data, concludes that the majority of M&A in central Europe have been horizontal acquisitions. This would suggest that in central Europe alliances are more prone to vertical relationships while FDI are more prone to horizontal links than alliances.

10. When the market orientation of an enterprise is domestic, their own distribution channels are sufficient to guarantee market access. In sectors like software, relations with foreign companies are formalised through various forms of distribution agreements. In the case of export, enterprises have to rely on foreign partners. However, the number of formalised export distribution agreements in our sample is small. Again, this in the nature of subcontracting where the distribution is by definition in control of the foreign principal. Own

brand manufacturing presupposes a developed export distribution network. In our sample only the two automotive component suppliers export, and at the same time have independent distribution. Other companies have seriously weak and underdeveloped capacities for independent marketing. This is particularly a problem for Videoton in consumer electronics and the computer industry whose sales of own brand products accounted for less than 5% of the turnover in 1996 (Szalavetz, 1997, p. 29).

11. The number of areas in which domestic enterprises receive support from foreign partners is larger in enterprises that are either part of foreign companies (telecoms) or have a larger number of co-operative agreements (software). (In table 3 we marked cases where training is being provided knowing that training is not an area but a method of knowledge transfer. However, the existence of training suggests that the depth and the effectiveness of this transfer is likely to be higher than through informal know-how transfers. Formalised training is especially characteristic of telecoms and software sectors. The technological dynamism of these sectors as well as their fast growth in central Europe make the larger number of training programmes in these sectors in our sample quite plausible.

12. Among the main areas of support to central European partners through alliances three stood out: development, technical support and design; management know-how, and procurement/marketing assistance. Quality control is also an important area of assistance. In our sample, quality control systems have been introduced in 14 enterprises but in only 9 enterprises were these systems introduced with the direct help of a foreign partner. The high number of enterprises that have introduced quality control systems suggests an intensive process of technological learning which is not necessarily directly related to the terms of alliance but probably reflects their indirect influence.

13. The comparison of cases in our sample suggests that the balance between generic expansion, alliances (networks), and M&A as modes of growth, reflects differences in firms' ability to control technology, access to market and finance. If the enterprise is able to exert control over two of these three elements, it may ensure growth through alliances by trading them for the third, missing or weak element. However, the final outcome does not seem to be a direct function of the ability of enterprises to control access to technology, market and finance. It is not possible to fully understand alliances by only addressing their internal characteristics; how these mesh with their institutional context and with sectoral structural features must also be taken into account. The types and dynamics of alliances also reflect the political and legal situation of a country (privatisation, attitude towards FDI) as well as specific sectoral features in terms of technology, finance and markets. The profile of alliances is shaped through the interaction between firm-specific factors and capabilities, and sector- and country-specific factors. In the next section we discuss some of these issues.

Factor analysis of results

In order to explore systematically data from tables 2, 3 and 4 we have undertaken factor analysis. We use data on 26 enterprises classified in terms of 11 characteristics. The objective is to identify the structure of relationships among variables by examining the correlations between the variables. Our conceptual framework has given us the potential dimensions that can be identified through the character and nature of the variables submitted to factor analysis. Key indicants or marker variables in our case are market access, technology access, finance, and sector. These key indicants follow from our conceptual model, which highlight structural determinants of alliances. In accordance with this, variables selected for analysis are: type of generic activity, mode of growth, types of sources of finance, of technology, and

market orientation, mode of market access, type of ownership, sector, type of international co-operative agreement (ICA), their number and type of links (vertical/horizontal or mixed). However, before we proceed two cautionary methodological remarks are needed. First, our data sample has insufficient cases-to-variable ratio. As a general rule, the minimum is to have at least five times as many observations as there are variables to be analyzed. In our initial sample, we have 11 variables and 26 cases or 2.4 cases for each variable. This means that there is a high danger of ‘overfitting’ the data i.e. deriving factors that are sample specific with little generalizability. However, since our aim is exploratory this application of factor analysis of limited sample can be justified. Second, ten out of 11 variables are non-metric, i.e. they had been transformed into metric variables. Transformation is based on scaling or giving numbers to different non-metric categories. The only metric variable is the number of international co-operative agreements.

Correlation matrix showed that all coefficients for ICA types, number of ICA and type of links are not significant. However, Kaiser-Meyer-Olkin (KMO) test of sampling adequacy is 0.619 i.e. higher than 0.5 which suggest that the data are suitable for factor analysis. Bartlett test of sphericity is also statistically significant which indicate that there are significant relationships among variables. Small values of anti-image correlations for three variables related to features of ICAs suggest that they should be dropped as they do not seem to fit with the structure of other variables. Although in principle, these values should be not be considered for further factor analysis we keep them as KMO and Bartlett test suggest that our data are suitable for factor analysis. By keeping these three variables we want to explore whether they represent an independent factor. We report here the results of the factor pattern matrix with ICA specific variables, which clearly show different pattern. (See table 5).

Table 5: Rotated Component Matrix(a) with ICA specific variables

	Component		
	1	2	3
MKTACCES	0.799	0.176	0.129
TECHNOLOGY	0.697	0.276	-0.16
FINANCE	0.665	0.14	-7.72E-
			03
SECTOR	0.616	0.563	-6.93E-
			02
MODGROWT	0.508	0.232	0.431
OWNERSHI	-0.21	-0.798	-0.128
GENACTIV	0.317	0.753	-0.196
MKTORIEN	0.302	0.495	-0.403
ICATYPE	-4.12E-	-0.101	0.767
	02		
ICANUMB	-0.364	0.434	0.631
LINKTYPE	0.322	-0.206	0.631

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 9 iterations.

Factor matrix shows the existence of three underlying or latent factors which explain 61% of total variation:

1. Structural dimension or factor, which is based on sectoral features as, reflected in access to market, technology and finance.
2. Strategic features of alliances as reflected in ownership, generic activity, market orientation and sector. Sector is the only variable that loads both on structural and strategic dimension.
3. Alliance specific dimension as reflected in ICA related variables (ICAType, ICANumber and linktype).

Factor analysis suggests that the forms of co-operation (subcontract, JVs, combined), number of ICAs and linktype (horizontal/vertical) are not systematically related to other variables.

These are alliance specific variables, which do not seem to be contingent in systematic way on structural and strategic variables.

As previous tests suggested that the ICA specific variables may be unrelated to other variables we explore the relationships among variables by excluding ICA specific variables. As expected KMO and Bartlett's tests have significantly improved with only 8 variables as well as measures of sampling adequacy (MSA). We report here the results of the factor pattern matrix without ICA specific variables. (See table 6).

**Table 6: Rotated Component Matrix(a)
without ICA specific factors**

	Component	
	1	2
OWNERSHI	-0.862	-7.17E-02
GENACTIV	0.84	0.197
SECTOR	0.643	0.538
MKTORIEN	0.452	0.349
MODGROWT	-6.70E-02	0.823
MKTACCES	0.319	0.708
TECHNOLO	0.385	0.628
FINANCE	0.272	0.567

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

Factor matrix shows the existence of two underlying or latent factors which explain 59% of total variation in data:

1. Strategic/structural dimension or factor with high loadings of ownership, generic activity, market orientation and sector.
2. Structural/strategic dimension with high loadings of modgrowth, market access, technology and finance access. Sector is the only variable that loads highly in both dimensions.

In summary, analysis with 8 variables shows that the feature of alliances can be explained by the two groups of structural/strategic factors which are both related to sectoral features.

In summary, factor analysis has backed up what case studies and data organised in tables 2, 3 and 4 suggest: structural factors bear strong influence on features of strategic alliances. In order to understand the role of ICA in growth of enterprises in Central Europe we should

look not only in ICAs specific features but even more important is to consider sector and strategy specific variables. In the next section we build conceptual model based on these insights.

4. DISCUSSION

A general conclusion which can be drawn from our sample of 26 central European enterprises with alliances is that alliances cannot be understood unidimensionally as determined solely by market, technology and finance factors. Alliances have several dimensions each of which contributes to the emerging structure of alliances in central Europe. Similar to business groups (see Granovetter, 1996) the most important dimensions which go to make up alliances are:

1. A variety of types of linkages in terms of content of alliances (production, technology, market, marketing).
2. A variety of ownership linkages: equity vs. contractual linkages and their mix.
3. A variety of linkages in terms of power of control in relationships (dependent/complementary or interdependent; transitive or distinctive).
4. Alliances as a response to weakness of domestic capital market and banking system.
5. State as a factor in shaping the number, forms and dynamics of alliances.

In this section we briefly explore these dimensions by contextualising our sample results into a more general perspective on alliances and modes of growth of enterprises in central Europe.

Our sample has shown a variety of alliances in terms of their content and ownership linkages. A majority of alliances are production alliances that often include specific

agreements on distribution and marketing. The dominance and diversity of non-equity types of linkages show how narrow and distorted the picture of business co-operation is if only equity links are taken into account.

Sectoral aspects of alliances

Sectoral differences do matter in shaping the profile of alliances and their content. Although the size of our sample does not allow us to generate much generalisation in this respect, it does provide a basis for the proposition that sectoral differences should be taken into account when analysing alliances.

Before entering into alliances domestic companies in the telecom equipment sector had in common a large technology gap, domestic operators as the main potential customers and a distinct shortage of funds for independent procurement. These common features determined a rather similar initial profile of alliances and later on full take-over by foreign MNCs. These companies, that have now become subsidiaries of foreign MNCs, are all tightly integrated into their production networks and show similar patterns of behaviour.

In the Polish PC assembly sector all companies have in common a good access to domestic market, a relatively lower technology gap in assembly and available domestic finance. This has produced rather similar patterns of alliances in this sector and growth based on a combination of generic expansion and networking.

In the software sector domestic software firms all have an interest in becoming competent customisers by adapting generic foreign solutions, they are all oriented towards the domestic market and do not need large funds for development. This has generated similar patterns of alliances which are all very much trade-based.

In the Czech machine tools industry all three companies have a relatively bigger gap in organisation than in technology, in accessing foreign markets they are dependent on

foreign partners. Therefore, they all see subcontracting as the best transitional solution until they are able to raise funding independently and on a large scale.

Indeed, sectoral features which come from inherited similar technological levels and institutional deficiencies, primarily in capital markets, play an important role in patterns of alliances. Yet, they should not be over-emphasised. In the same sectors, across different countries, or even within countries, we can find varied patterns of alliances. For example, in the telecom sector most companies are fully integrated into foreign controlled networks but companies like TTC Tesla (Czech R) (see Mueller, 1998) or domestic niche producers who do not fit into this pattern can also be found (see Kubiela, 1998 for Poland). Equally, in the software sector in the Czech R we find two companies - SWS and Pragodata (see Mueller, 1998) whose degree of dependence on foreign partners is very different and cannot be explained by sectoral features. Some examples outside our sample also invite the same conclusion. For example, in the Czech R there is the take-over of Skoda by VW alongside a domestically controlled commercial vehicle sector (Mueller, 1998). Similarly, in Poland domestic car factories that have been taken over by foreign companies co-exist with domestic car and component factories controlled by the Polish entrepreneur Sobieslav Zasada (see Kubiela, 1998). This suggests that the sectoral features produce commonalities in terms of technology, market, and financial control but also the patterns of alliances are not a direct function of these factors. The sectoral factors seem to operate only as tendencies and not as determining factors. The final pattern is determined by firm-specific factors which involve not only domestic but also foreign firms, and also by broader political and institutional factors strongly reflected in privatisation.

Power of control and alliances in central Europe

We pointed out earlier that trading of strengths in one element with weakness in another may not always lead to a balance in power control between partners. If we were to apply the proposed typology of alliances in central Europe (table 1) to our sample then we would find that interdependence in one aspect, like production/technology, is compensated for by dependence from foreign partner in terms of access to domestic market, or *vice versa*. However, the true alliances or those where as EU (1998) points out ‘the relationships *must always* be balanced’ (p.633)(my italics) are the most rare. These alliances as depicted in the mainstream literature presume interdependence and complementarity of partners. In central Europe, cases of alliances where one of the partners is structurally dependent of another partner can often be found. However, this does not mean that we do not also find cases of alliances where the relationship is complementary and balanced. If we were to plot our 26 cases on the matrix of table 1 then we would find all the possible combinations of dependence and interdependence in terms of technology/production/market access or marketing. The dual nature of alliances to which we pointed in section 2 suggests that we can rarely find alliances which can be clearly located in only one field. Nevertheless, few cases of alliances in our sample are examples of the typical alliances for each of the proposed fields in table 1. The example of interdependent production alliance is Pragodata, software producer (field I). Alliance strongly based on marketing interdependence is the case of Computorland (field II). All three Czech machine tool producers are good examples of dependency on access to export market by foreign partners (field IV). Foreign subsidiaries in telecom equipment sector have alliances with other subsidiaries of MNC network in which they are clearly dependent in terms of production and technology capability (field III). Similarly, SWS, the Czech software distributor and customiser is strongly dependent on Microsoft.

Transitive vs. distinctive alliances

Sadowski and Hagedoorn (1996) conclude that the transformation from strategic technology alliances to M&A hardly ever takes place. Alliances and M&A are not part of a smooth continuum but are first of all different modes of governance where one mode certainly does not lead to another. Although their sample is confined to technology alliances we find that in the case of central Europe the picture is significantly more complex and that transitive alliances are widespread. 'True' alliances as distinctive organisational forms are the most rare in central Europe as they assume interdependence and complementarity between partners. In our sample transitive alliances preceded foreign take-overs in all cases with foreign ownership. For example, Siemens subsidiary in Prague started as a joint venture which was set up in 1991 and was followed by take-over in 1994. Alcatel Polska started in 1990 also as a joint-venture and ended up in 1995 by full integration of all Alcatel holdings in Poland into world wide Alcatel network of companies. In case of telecoms in Hungary foreign firms were not allowed to submit bids at Matav's 'system selection tender'. Alliances that were initially formed with domestic telecom equipment enterprises served as 'entry tickets' (Havas, 1997) which were later on followed by either their full take-over or liquidation. This situation led Szalavetz (1997, p. 30) to conclude that '(...) in reality there is no such thing as a true joint venture in the Central and Eastern European transformation'. While this generalisation may be too strong it undoubtedly contains elements of truth.

State policies as a factor shaping the dynamics of alliances

The internationalisation of production networks in central Europe cannot be explained without reference to variables that might be considered as 'political' in the broadest sense of the term. These variables include institutions, whether economic or political, different corporate governance regimes, and socio-political coalitions. Different central European

states have followed different policies which directly or indirectly influence the formation of industrial networks and modes of integration of domestic enterprises into world production networks. It is useful to distinguish between the two ways in which the state has shaped the modes of integration of its national enterprises into a world economy.

The first is the direct impact of the state through sector-specific industrial policies. The petrochemical industry in Poland is perceived as being of strategic importance so that access to it by foreigners has been restricted. Central European states differ in their attempts to trade access to telecom services for domestic local content in the telecom equipment sector. Hungary has not been so successful in this respect and has not turned access to its telecom market into a bargaining chip in accessing telecom equipment technology (Toth, 1995). In this respect, Poland has behaved more like a developmental state; it tried actively to maximise local content in telecom equipment for market share from the national public monopolist in fixed telephony. In the car industry all central European governments that attracted foreign investments in car assembly have erected tariff walls in order to ensure market share for investors (EBRD, 1995). Such sector specific policies influence the emergence of alliances through creation of 'forced' or transitive alliances, created either to comply with incentives or to counter requirements.

The second impact of the state through privatisation policy is far more important than its direct intervention in modernisation process. Different modes of privatisation create different situations with respect to capability of management to control the restructuring process. In our sample, *Fatra* and *TOS Kurim* have been in relatively weaker bargaining positions in alliances due to serious governance problems generated through mass privatisation in the Czech Republic. By fostering the breaking-up of large socialist conglomerates into individual enterprises the state indirectly influenced the proportion between full take-overs and alliances. By preserving large enterprises and transforming them

into holding companies the state indirectly creates a very different situation in the relations between domestic and foreign partners.

Holdings and alliances

State privatisation policies coupled with underdeveloped capital markets have given rise to a holding type of enterprise organisation. A holding seems to be an appropriate form of growth in conditions of undeveloped capital markets in central Europe. The reason is that companies can more easily compensate for constraints in the external environment. This is most visible in the case of the Hungarian electronic company *Videoton* (see Szalavetz, 1997) and in the case of the Czech *ZSP* (Mueller, 1998). A holding can actively support subsidiaries in procurement and offer finance, or assist in obtaining finance. In many respects, holdings overcome market failure in financial markets and assist subsidiaries in building credibility in relation to foreign partners when sourcing opportunities arise. In our sample we find that it is not only old enterprises which have been broken into independent units but also newly formed and growing enterprises are developing into holding companies. Six out of 21 domestic companies in our sample are holding companies. Among new companies Pragodata is a holding of 3 daughter firms. *JTT* is a holding of a number of affiliated dealers which is focused on financial engineering and sales logistics. Prokom performs the role of a holding entity responsible for sales network and integration services in the organisational structure of affiliated companies. *ZPS* is a holding company which can better assist restructuring of individual enterprises than financial markets could do. Diversification of so far individual companies may lead to their reorganisation in the future into holding type of companies.

In relation to alliances holding companies seem to enjoy some advantages. Their ability to raise capital within holding structure and to restructure individual companies increases their ability to control relationships within alliances better than individual

enterprises. The same is true for their ability to get access to foreign markets. In relation to domestic markets and state their bargaining power is also higher. In its most articulate version the holding strategy which includes its approach to alliances can be found in the case of Hungarian *Videoton* (see Szalavetz, 1997).

Alliances as a mode of growth

The nature of alliances in central Europe is strongly determined by the strategic change which resulted from the opening up of previously closed economies. When suddenly exposed to open competition enterprises widely abandoned the manufacture of complex end products in favour of producing components or products jointly developed with foreign companies through subcontracting and other forms of alliances. In our sample this is the case in telecoms, machine tools, electronics and software where the generic activity is localisation/customisation/joint development or subcontracting. This step back in the value-added chain seems inevitable in a new situation where enterprises face difficulties in getting access to finance, high marketing barriers and sometimes a high technological gap.

Growth of enterprises became dependent to a great extent on networking or the ability of enterprises to enter into and develop different forms of alliances and use them as mechanisms of restructuring. In growth based on networking two strategic elements seem to be of crucial importance (see Szalavetz, 1997 for the case of Videoton in this respect):

- expanding the number of alliances (horizontal element);
- deepening alliances through increased value-added produced within alliances (vertical element).

The growth based on alliances could then be described as a parallel progression along a horizontal axis or an increase in the number of alliances, and along a vertical axis or increase in value-added produced in co-operation with foreign partners.

Progression along a horizontal axis or extension of number and types of co-operative agreements is important in order to: i) avoid unilateral dependence on one customer, and, ii) achieve synergies between different alliances. For example, know-how acquired from subcontracting for one customer can be useful in subcontracting for another customer. This is not always simple as the dependence on one partner may clash with the interests of another partner. In our sample the dependence of *SWS* on *Microsoft* hinders the broadening of alliances with other companies.

Progression along a vertical axis or deepening the value added through product development and process improvements is essential in stabilising the firm's position within alliances. The move from cost based to specialty based subcontractor, from distributor to value-added reseller or integrator, from being licensee to joint-product development indicates the deepening of value-added produced within alliances and hence the better bargaining position of domestic enterprise. In our sample most of the enterprises (14 out of 26) have introduced ISO9000 or 9002 quality systems. This is usually the first step in moving upward along the value-added ladder.

As our sample suggests alliances are important for growth of enterprises as they enable: i) access to technology, ii) access to customer's procurement and marketing channels, iii) economies of scale in component production and services.

However, being a subcontractor or value-added reseller also significantly reduces profit margins and is not without long-term problems. Szalavetz (1997) points to two most important drawbacks. First, subcontracting can become divorced from market trends through unilateral dependence on the principal. Dependence on a single customer can have devastating consequences if there is a cut in orders. Therefore, companies should continuously search for potential partners. Second, the dependence on a single partner may deter companies from making their own investments in procurement or marketing.

There is a difference between domestic and foreign owned companies when relying on growth based on networking/alliances. Foreign subsidiaries seem to be able to move faster along the vertical axis, i.e. they receive training and investments in technology which allow them to rapidly increase productivity. Data on foreign investment enterprises in central Europe also confirm this and show that in these countries the productivity of foreign investment enterprises is higher than in domestic enterprises (Hunya, 1997, 1998). However, foreign subsidiaries are usually highly dependent on the parent company and are usually more specialised than domestic enterprises. They usually cannot develop independent procurement or R&D. Their alliances are confined to other subsidiaries within the MNC network which means that their opportunities for progression along a horizontal line are rather limited. This makes them vulnerable in the long-term when the situation changes as a result of saturation of domestic demand or some other changes external to domestic subsidiary.

5. CONCLUSIONS

Based on the comparative overview of 26 case studies of enterprises that have alliances with foreign companies we explored three main issues: Which forms of alliances are dominant in central Europe? Which factors explain the choice between full take-over by foreign companies, domestic control and alliances? What are the main areas of knowledge transfer in alliances? Although our sample is relatively small it enabled us to gain new insights into the nature of alliances in central Europe which would not have been possible through large-scale data base type research on alliances. This research produced four main conclusions.

First, a large variety of types of alliances in central Europe suggests that reducing research only on technology or R&D alliances gives a distorted picture of production, technology and market integration of central Europe. Most alliances are production alliances, especially subcontracting, which are combined with several other types of alliances, especially marketing agreements.

Second, the comparison of cases in our sample suggests that the balance between generic expansion, alliances (networks), and M&A as modes of growth reflects differences in firms' ability to control technology, access to market and finance. However, the final outcome does not seem to be entirely a function of the ability of enterprises to control these three factors. The types and dynamics of alliances also reflect the political and legal situation of a country (privatisation, attitude towards FDI) as well as specific sectoral features in terms of technology, finance and markets. Features of alliances are in that context shaped through the interaction between firm-specific factors and capabilities, sector- and country-specific factors.

Third, alliances are used by central European enterprises to access market and obtain finance but also to close their capability gap in relation to a foreign partner. The main areas of support to central European partners through alliances are: development, technical support and design; management know-how, and procurement/marketing assistance. The high number of enterprises that have introduced quality control systems suggests the intensive process of technological learning that is not necessarily directly related to the terms of alliance but probably reflects their indirect influence

Fourth, growth based on alliances could be described as a parallel progression in terms of increase in number of alliances, and as a progression in terms of increase in value-added produced in co-operation with foreign partners. The growth along these two axes is dependent on how enterprises trade their strengths or weaknesses in production, access to

domestic market or finance with advantages of foreign partnerships. However, numerous institutional, financial and technological constraints in their immediate environment impose structural limits to what can be achieved by individual management strategies.

These conclusions should be seen in the light of the limitations of our analysis. The relatively small sample and restricted number of sectors and countries undoubtedly may generate specific biases. Particularly, a lack of enterprises from Hungary in our sample probably underestimates its propensity to export. However, the opportunity to analyse alliances more deeply than is possible based on large scale surveys has also generated new insights which may stimulate further research.

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Table 2: SUMMARY OF CASE STUDIES ON ALLIANCES IN CENTRAL EUROPE - 1									
	Country	Generic		Types of the most		No of		Breakdown	
		Main activity	activity	Mode of growth	important ICAs	ICAs	linkage	Vertical	Horizontal
1	Alcatel Polska	POL	Telecomm. equipment	Localisation	Foreign acquisitions	Subcontracting	4	Vertical	4
2	Telfa - Lucent	POL	Telecomm. equipment	Localisation	Foreign acquisition	Subcontracting	1	Vertical	1
3	ZWUT Siemens	POL	Telecomm. equipment Switching and transmission equip.	Localisation	Foreign acquisition	L / COP / DA	3	Horiz/Vert	3
4	TTC Tesla	CZR	Tranmission equipment	Localiser	Gen.expansion/J-V	J-Vs	3	Vertical	2
5	TTC Marconi Siemens	CZR	Tranmission equipment	Integrator	Generic expansion/J-V	J-V	-	Vertical/Horiz.	
6	Telekom.	CZR	Switching systems	Assembler	Foreign acquisition	Subcontracting	1	Vertical	1
7	ComputerLand SA	POL	HW distribution/SW services	Customisation	Gen.expans/Dom. merger/Networking J-V/Gen.	FR/AD/VAR/ASR/SP	6	Vertical	6
8	CSBI SA	POL	Software services Banking SW/ HW distribution	Customisation	expans./Networking Gener.expans/J-V/Networking	COP/AD	5	Vertical	5
9	Softbank	POL	Network and integration services	Customisation	Gener. expans./Networking	R&D/S/VAR	7	Vertical/Horiz.	2
10	Prokom	POL	Software distributor	Customisation	Networking	VAR/AD/ADP/I/OEM	25	Vertical/Horiz.	19
11	SWS	CZR	Prod/distribut of SW for enterpr.	Customisation	Networking	AD	3	Vertical	3
12	Pragodata	CZR	Electronics	Customisation	Networking/J-V	S/JPD	6	Vertical/Horiz.	3
13	Videoton	HUN	Loudspeakers and microphones	Joint products	Networking Subcontracting/Gener. expansion	Subcontracting/JPD	13	Vertical/Horiz. Vertic/Horizon	12
14	TVM	CZR	PC assembly Comp.eq.distribut/PC assembly.	Customisation	Gener. expans./Networking	OEM/JPD OEM/SA/L/VAR/CO	3	Vertical/Horiz.	1
15	Optimus	POL	Schock absorbers	Own product	Gener. expans./Networking	P	15	Vertical/Horiz.	9
16	JTT	POL	Automotive components	Own products	Gener. expans./Networking	OEM/DA	6	Vertical	6
17	FAK	POL	Seats for vehicles Brakes and other auto components	Own products	Gener.expans/Foreign acquis.	Subcontracting	6	Vertical	6
18	WSMK	POL	Machine tools	Own products	Generic expansion	Subcontracting	4	Vertical	4
19	CIEBK BASS	CZR	Machine tools	Own products	Generic expansion/PTCA Generic expansion/COP/J-Vs	PTCA/SA	1	Horizontal	1
20	ATESO	CZR	Machine tools	Own products	Domestic acquisition	COP/L/J-Vs	6	Horizontal	2
21	TOS Celakovice	CZR	Machine tools	Joint products	Domestic acquisition Generic expansion/Networking	Subcontracting	7	Vertical	7
22	ZPS ZLIN	CZR	Machine tools	Joint products	Domestic acquisition	S/PTCA/DA	3	Vertic/Horizon	2
23	TOS Kurim	CZR	Machine tools	Joint products	Domestic acquisition	Subcontracting	3	Vertical	3
24	ZCB	POL	Organic chemicals Engineering in chemical industry	Own products	Generic expansion Gen.expans/Joint Venture (J-V)	Subcontracting/R&D	3	Horiz/Vertical	1
25	Prochem	POL	Floor covers/Toys	Joint services	Foreign acquisition/ Gener.expansion	TCA/MSA/S	4	Horiz/Vertical	1
26	FATRA	CZR	Floor covers/Toys	Joint products	Foreign acquisition/ Gener.expansion	J-Vs	3	Vertical	3

Table 3: SUMMARY OF CASE STUDIES ON ALLIANCES IN CENTRAL EUROPE - 2

		Source of finance	Source of technology	Market orientation	Mode of market access
1	Alcatel Polska	Parent	Parent	Dominantly domestic	Own distribution
2	Telfa – Lucent	Parent	Parent	Dominantly domestic	Own distribution
3	ZWUT Siemens	Parent	Parent	Dominantly domestic	Own distribution
4	TTC Tesla	Domestic capital/J-Vs	Through JVs	Dominantly domestic	Own distribution
5	TTC Marconi	Partners/Retained earnings	Own/Foreign	Dominantly domestic (93%)	Own distribution
6	Siemens Telekom.	Parent	Parent	Dominantly domestic	Own distribution
7	ComputerLand SA	Passive investors/SE	Through ICAs	Dominantly domestic	Own distribution
8	CSBI SA	Foreign partner	Through ICAs	Dominantly domestic	Own distribution
9	Softbank	Dom. capital/Foreign partner	Through ICAs	Dominantly domestic	Own distribution
10	Prokom	Stock exchange	Through ICAs	Dominantly domestic	Own distribution
11	SWS	Partners as passive investors	Through ICAs	Dominantly domestic	Own sales force
12	Pragodata	Foreign partner	Through ICAs	Dominantly domestic (90%)	Own sales force
13	Videoton	Foreign partners	Foreign/Own	Mainly foreign	Foreign partners
14	TVM	Divestiture	Foreign partner	Domestic/Foreign (50%)	Foreign partn/Own
15	Optimus	Stock market	Through ICAs	Dominantly domestic	Own distribution
16	JTT	Domestic	Through ICAs	Dominantly domestic	Own distribution
17	FAK	Retained earnings	Own	Domestic/Export	Own distribution
18	WSMK	Ret.earning/Foreign passive	Own	Export/Domestic	Own distribution
19	CIEB K BASS	Retained earnings	Own	Mainly domestic (75%)	Own distrib/Co-op. with foreign partn.
20	ATESO	Divestiture/Passive investors	Own	Mainly domestic	Own distribution/Foreign partner

21	TOS Celakovice	Divestiture/Real estate/Parent	Foreign/Own	Mainly foreign	Foreign partner/Parent
22	ZPS ZLIN	Domestic capital	Own/Foreign	Mainly foreign (82%)	Own/Foreign partners
23	TOS Kurim	Foreign partners/Parent	Own/Foreign	Foreign/Domestic	Foreign partners
24	ZCB	Retained earnings	Own	Mainly domestic	Own distribution
25	Prochem	Stock market/Foreign partner	Joint developm.	Dominantly domestic (92%)	Joint sharing with partners
26	FATRA	JVs/Stock market	Foreign partners	Dominantly domestic (80%)	Own sales force

Source: author based on Kubiélas (1998), Mueller (1998), Havas (1997)

Table 4: Areas of assistance by foreign partners in the sample of central European alliances

	Main activity	Ownership	Types of the most important of ICAs	Patents	Development Techn. supprt Prod. desgn.	Quality control systems	Mngm know-how	Financial know-how	Procurement/ Marketing assistance	Training	Total
1	Alcatel Polska	100% foreign	Subcontracting		X	X	X	X	X	X	6
2	Telfa - Lucent	100% foreign	Subcontracting	X	X	X	X	X	X	X	7
3	ZWUT	95% foreign	L / COP / DA	X	X	X	X	X	X	X	7
4	Siemens TTC Marconi	joint venture	J-V				X				1
5	Siemens Telekom.	100% foreign	Subcontracting		X	X	X	X	X	X	6
6	ComputerLand SA	domestic	FR/AD/VAR/A SR/SP			X	X	X	X	X	5
7	CSBI SA	joint venture	COP/AD		X	X	X	X	X	X	4
8	Softbank	joint venture	R&D/S/VAR		X	X	X	X	X	X	5
9	Prokom	domestic	VAR/AD/ADP/ I/OEM		X		X		X	X	4
10	SWS	domestic majority	AD							X	1
11	Pragodata	domestic	S/JPD		X		X		X		3
12	Videoton	domestic	Subcontracting/ JPD		X		X		X		3
13	TVM	domestic	OEM/JPD		X						1
14	Optimus	100% domestic	OEM/SA/L/VA R/COP		X	X	X	X	X	X	4
15	JTT	94%/domestic	OEM/DA				X	X	X	X	4
16	FAK	domestic (until '97)	Subcontracting	-		-	X				1
17	WSMK	domestic	Subcontracting	-			X		X		2

^{vi} Original equipment manufacturing agreements involve the manufacturing of a product for another company that will label it with its name or logo and will also handle all of the business aspects of that product such as its marketing and services.

ANNEX: LIST OF SURVEYED CASE STUDIES

A. Kubielas, Stanislaw (1998) *International Cooperative Agreements in Poland in the mid-1990s: Evolution, Organisational Forms and Industry Characteristics, Part II; Case Studies*, Faculty of Economic Science, Warsaw University, Warsaw.

1. Alcatel Polska
2. Telfa - Lucent Technologies NS Poland
3. ZWUT Siemens
4. Optimus
5. JTT Computer
6. Prokom Software
7. ComputerLand
8. Computer Systems for Business International
9. Softbank
10. Fabryka Amortyzatorow Krosno
11. Wytwornia Spreztu Mechanicznego Krotoszyn
12. Zaklady Chemiczne Blachownia
13. Prochem Engineering Company

B. Mueller, Karel (1997) *International Cooperative Agreements in Czech Republic in the mid-90s: Evolution, Organization and Industry Characteristics, Part II: Case Studies*, Charles University, Institute of Learning Foundations, Prague

14. C.I.E.B, Brandy n. Orlici (Czech Republic)
15. PAL Prague
16. ATESO Jablanec
17. TTC Marconi
18. TTC Tesla
19. Siemens Telekomunikace
20. SWS Slusovice
21. PRAGODATA Prague

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22. FATRA, Napajedla
 23. TOS, Celakovice
 24. ZPS, Zlín
 25. TOS, Kurim

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