**Alternative approaches to offshoring and global scanning in MNEs: examples from the Bulgarian software industry**

**By**

**Mariana Dodourova (University of Hertfordshire Business School)**

**and**

**Sue Martin (University of Hertfordshire Business School)**

**Contact address and email:**
**Dr Sue Martin**
**Department of Management, Leadership and Organisation**
**University of Hertfordshire Business School**
**De Havilland Campus**
**College Lane**
**HATFIELD AL10 9AB**
**S.M.1.Martin@herts.ac.uk**

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**Summary**

The paper explores the offshoring experiences of eleven Bulgarian subsidiaries and SME business partners of Western European MNEs, identifying four different models of role allocation, relationship management and organizational learning. A common feature of all four models is the distinction between the parent company's role in negotiating directly with clients, and the Bulgarian partner's role in solving problems, generating new technical and market knowledge which under some models is readily transferred to the parent company, and in others is transferred to other SMEs within the vibrant Bulgarian software cluster in and around Sofia.

Future research is proposed to test the key hypothesis emerging from this exploratory study: that MNEs operating in emerging and transition economies are slow to recognise changes in the knowledge dimensions of distance, and hence in the scope for competitive gains and losses linked to global scanning by both home and host country business partners.

*Alternative approaches to offshoring and global scanning: the Bulgarian software industry*

## Introduction

This paper explores the offshoring experiences of eleven Bulgarian subsidiaries and SME business partners of Western European MNEs. In contrast to much of the international business literature on offshoring, which focuses on factors influencing the MNE's choice of location, entry mode and/or business partner, this paper focuses on what happens after those choices have been made, and in particular on the interaction between headquarters and subsidiary/business partner. Linking to long-established debates about headquarter-subsidiary relationships, global scanning and organizational learning, as well as to more recent literature on contested mandates and charters, this paper uses an inductive, qualitative approach to identify four distinctive models of interaction. A common feature of all four models is the distinction between the parent company's role in negotiating directly with clients, and the Bulgarian partner's role in solving problems, generating new technical knowledge which under some models is readily transferred to the parent company, and in other models is more likely to be transferred to other SMEs within the vibrant Bulgarian software cluster in and around Sofia. Bulgaria is an up-and-coming location for software development and this paper indicates the potential for further research in such locations to reveal the dynamics of 'black holes' (Bartlett and Ghoshal, 1986), that is, regional subsidiaries which absorb and possibly leak organisational resources, in particular knowledge, rather than helping headquarters to identify and exploit emerging regional opportunities for growth.

## Theoretical Debates on Offshoring and Global Scanning

Global scanning – the search for new sources of ideas on how to do business, as well as for improved awareness of political and social trends originating outside the home economy, and of major significance for a given global industry – has long been known to be one of the key reasons why MNEs establish operations in fresh locations that are not yet major markets, but might become so, and/or show signs of developing vibrant local innovation cultures (Vernon, 1980; Davidson, 1991; Bartlett and Beamish, 2011). However, much of the burgeoning literature on the growth of offshoring in the late twentieth and early twenty-first centuries has focused upon other factors attracting MNEs to specific locations, for example the availability of cheap labour and favourable tax or tariff incentives (*Journal of International Business Studies* Special Issue August 2009; *Journal of Management Studies* Special Issue December 2010). A number of studies have focused on the learning opportunities offered to the vendors of offshoring services by their contact with MNEs (Park et al, 2009; Li et al, 2010); but it is only very recently that the knowledge-generating opportunities offered by offshoring to the MNE itself have gained renewed attention, for example in special issues of the *Journal of Management Studies* (March 2011) and the *Management International Review* (April 2011). Both special issues contain papers highlighting the opportunities for MNEs to benefit from knowledge flows among subsidiaries as well as between subsidiaries and headquarters (Meyer et al, 2011; Sincovics et al, 2011; Tallman and Chacar, 2011), and stressing the role of the subsidiary in generating new knowledge by virtue of its dual embeddedness in the local context as well as in the multinational organisation, underpinning an ability to bundle internal competences effectively with external resources (Hennart, 2009; Jensen and Pedersen, 2011; Figueiredo, 2011).

This paper aims to contribute to the debate by presenting rich qualitative data drawn from 'below', that is, from the Bulgarian owners, managers and employees of a small sample of Western MNEs' subsidiaries and SME business partners. This approach contrasts with the

quantitative 'view from above' which is more typical of the International Business literature, and which involves the systematic testing of theoretical propositions. Potentially, the qualitative approach can lead to the generation of fresh theoretical propositions which can then be systematically tested by subsequent researchers, and it is this aim which is being pursued in this paper (Eisenhardt and Graebner, 2007; Weick, 2007). We would like to emphasise at this point that we are still at an early stage of our theoretical work and will welcome feedback from conference participants to support its future development.

In designing the semi-structured interviews which form the empirical base for this paper, as explained in more detail in the 'Research Methods' section below, we set on one side our knowledge of existing international business theoretical models and sought to elicit practitioner views about three main features of the parent-subsidiary relationship: (a) types of new product under development; (b) structures of ownership, power and communication between the MNE's HQ and the Bulgarian subsidiary or business partner; and (c) patterns of recruitment, retention and career development for Bulgarians engaged in offshored activities. Careful coding and analysis of the resulting data enabled us to indentify four different patterns of linkage between these three features, that is, four different models of interaction between the Bulgarian businesses and their Western MNE parents or partners.

All four of these different models of interaction share one important similarity: in all cases, the MNE tightly controls the customer interface. However, there is substantial variation between models in the extent to which Bulgarian software engineers have the opportunity to apply their expertise to tasks beyond the routine; in other words, to engage in product customisation, whether this is designed to meet technical specifications linked to client requirements, or to solve problems relating to local market conditions. Models also vary in the extent to which Bulgarian software engineers are encouraged to consolidate their learning from the customisation process, for example through further training; to share their insights with colleagues within the MNE; or to move on swiftly to new employers or business clients, taking relevant knowledge with them.

In reflecting on the potential similarities and contrasts between these four models and existing typologies of headquarter/subsidiary relationships, the most striking connection we observed was with the 'black hole' and 'implementer' categories of the classic Bartlett and Ghoshal (1986) framework of generic roles of foreign subsidiaries, which as recently shown by Rugman, Verbeke and Yuan (2011) remains a helpful tool for identifying both enabling and constraining influences on the processes of knowledge generation and transfer, especially from the national subsidiaries (viewed in this model as potentially valuable 'sensory feelers') to the headquarters of the MNE. This is the connection which will be explored in the remaining sections of this paper, although we remain open to the possibility that further connections with alternative typologies of subsidiary role and agency (for example, Gammelgaard et al, 2009; Hagen et al, 2012; Saka-Helmhout and Geppert, 2011) will emerge and provide fruitful avenues for exploration as the research project develops in future.

Within the Bartlett and Ghoshal model there are four alternative roles that the subsidiary can play in the MNE's overall strategy development process, linked implicitly to alternative 'charters' (Balogun et al, 2011; Dörrenbächer and Gammelgaard, 2010) or more short-term 'mandates' (Becker-Ritterspach and Dörrenbächer, 2011) that is, operational roles and responsibilities including, for example, that of an R&D centre or alternatively a manufacturing operation designed and run according to a 'blueprint' developed elsewhere. In relation to knowledge generation and transfer (as distinct from business performance

including revenues and contribution to corporate group profits) this paper makes the following interpretation of these four alternative generic roles:

- Black Hole: a subsidiary of low competence, located in a regional cluster which offers rich opportunities for 'bundling' and organizational learning, but in practice generating little if any knowledge of relevance to the parent company, or possibly generating knowledge which is not effectively transferred back to headquarters; in the worst case, generating knowledge which is transferred to local business competitors.
- Strategic Leader: a subsidiary of high competence, located in a regional cluster which offers rich opportunities for 'bundling' and organizational learning, taking full advantage of these opportunities and communicating the knowledge generated effectively both to the parent company and to other subsidiaries.
- Contributor: a subsidiary of high competence, located in a region which offers few opportunities for benefiting from 'dual embeddedness', but performing efficiently in fulfilment of its allocated 'charter', and nurturing reflective practitioners capable of using their experience from this activity to generate and share fresh operational and technical knowledge within the MNE's internal communities of practice.
- Implementer: a subsidiary of low competence, located in a region which offers few opportunities for benefiting from 'dual embeddedness', performing routine tasks in fulfilment of a limited 'charter', making little if any contribution to organisational knowledge generation, but not viewed as a 'failure' since dynamic capabilities are not part of its mission.

The key proposition emerging from the Bulgarian case study detailed in this paper is that MNEs operating in emerging and transition economies face an unacknowledged risk of creating 'black holes' inadvertently, by assigning 'implementer' roles to subsidiaries in locations whose growth and/or innovation potential is greater than they think. If replicated on a larger scale and in other locations, this research would indicate the importance of continually reviewing the judgements made in the initial 'choice of location' phase of MNE decision-making, in particular about the knowledge dimensions of distance (Ghemawat, 2001 and 2011) and the resulting opportunity for knowledge gains from global scanning by both the home and host country partners.


**The Bulgarian Software Industry Context**

In the coming years, substantial growth of the software industry is expected throughout the world, especially in those countries where information technology is only now gaining ground. Software products are the strongest drivers of IT market growth. The strength of the software market comes from its essential role in a wide range of technologies and applications, from its interrelation with computer technology, telecommunications, electronic information, and process and production control.

Two of the key characteristics of the software industry are low capital intensity and high knowledge intensity (Steinmueller, 2004). Software production is almost by definition an innovation activity because its very purpose is developing new products or new ways of executing existing tasks and functions (Torrisi, 1998). To undertake software development companies need to possess innovation capabilities as well as technological capabilities. Building the latter implicates a deliberate process of acquisition of tacit and codified knowledge and skills, and ability to absorb them (Cohen and Levinthal, 1990). Innovation

capabilities involve the ability to integrate the acquired knowledge in novel ways hence accumulating new knowledge in the process. Thus the availability of well-educated skilled human capital is the key factor for the development of a software industry by any country.

The history of the Bulgarian computer industry can be divided into two periods: during the communist regime and after the start of the transition to market economy. During the communist era, Bulgaria specialised in the production of computers and supplied all former socialist countries in Central and East Europe as well as Asia. The position of a main computer supplier provided Bulgaria with a unique chance to develop relevant R&D infrastructure, manufacturing facilities and, most importantly, education system strongly oriented towards science and engineering. Bulgaria was employing more than 220 000 ICT specialists and was known for outstanding skills in fundamental research and mathematics (BSAITC, 2006).

After the start of the transition to market economy in 1989, the computer industry in Bulgaria – as well as virtually all other industries – had to be restructured and adjusted to the new market conditions. The emerging software industry was led by local companies developing accounting software. While the software market was largely underdeveloped and widely supplied with illegal copies of branded software products, the legacy of the communist regime remained in the form of well-educated and skilful labour force, and numerous scientists and engineers ready to commit for a fraction of the salaries paid in the West to similarly qualified specialists (Economist Intelligence Unit 2005).

In these early days, companies such as Oracle, Informix (now part of IBM), and SAP began activities on the Bulgarian market through establishing local offices and entering partnerships with local distribution and development companies founded and managed by former scientists, engineers, and programmers. Over the following two decades increasingly more foreign IT companies became interested in working with Bulgarian software developers and engineers. A number of multinationals and many smaller companies from US and Western Europe have established offices and R&D centers in Bulgaria, for example SAP, Tumbleweed, Microsoft, AMI Semiconducturs, Melexis, Nemetschek AG, Siemens, Nokia, Datecs, and Jonson Controls, to name a few. According to BASSCOM (Bulgarian Association of Software Companies), more than eighty percent of the revenues of its forty member companies in 2006 came from contracts with European and US partners. The projects varied from custom-made and short time-to-market pilots to large complex architectures. More than forty-two percent of all IT employees in Bulgaria were engaged in developing, distributing, and servicing software and half of all IT tax revenues came from the software-related sector (InvestBulgaria Agency, 2006).

In the twenty-first century the size of the Bulgarian market for software, and of the software development industry, remains small as compared to other Eastern European countries including Hungary, Romania, Poland, Slovakia and the Czech Republic (Barry and Curran, 2004; Gefen and Carmel, 2008). However, Bulgaria is regarded as an 'up-and-coming' location for the software industry (Economist Intelligence Unit, 2011). As such, it is a particularly interesting location in which to explore the topic of headquarters-subsidiary relations and knowledge flows between business partners. Who will be quickest to see and exploit fresh learning opportunities as they arise within a rapidly changing local and industry context?

The revenue of the software industry in Bulgaria more than tripled between 2001 and 2009 (National Statistical Institute, 2012), benefiting from a strong trend towards 'nearshoring'

among German software MNEs (Reinhardt, 2004; Carmel and Abbott, 2007) as well as from growing global awareness of Bulgaria's human resource strengths. For example, the Global IT IQ Report by Brainbench Inc. (2002) ranked Bulgaria eighth in the world and third in Europe based on number of certified IT professionals. When the number of certified IT professionals is considered as a percentage of the population, Bulgaria ranks third in the world. Some of the MNEs that have established offices and R&D centers in Sofia point out that the key factor for offshoring to Bulgaria is the very well-educated, skilled, creative, innovative, enthusiastic and committed workforce, looking for continuous learning and training as well as the typical combination of software and hardware skills. These qualities of the local software developers and the availability of a blend of IT professionals – system architects, software engineers with C++ or Java, Quality Assurance specialists, technical writers, support engineers, IT engineers - provide for a full development life cycle of core software and ICT products. The low cost of development in Bulgaria is seen as a temporary gain while the high quality of the developed products is considered the real advantage of this location in an industry increasingly interested in more value-added, specialized products. In addition, the zero percent export tax, short flight times from Western Europe, and relatively convenient time zone for European and American partners are listed as factors that make the country even more attractive to foreign investors (BSAITC, 2006).

In 2010-2011 the economic slowdown created challenging conditions, but Bulgaria's information technology sector maintained a stable growth trend, largely due to the location's growing attractiveness to foreign clients and investors (SeeNews, 2012; Economist Intelligence Unit, 2011). In 2011, management consultancy A.T. Kearney placed Bulgaria 17th among the most attractive countries in the world for offshoring IT services, convincingly surpassing bigger Eastern European rivals, for example the Czech Republic (35th), Romania (25th), Poland (24th) and Hungary (31st) (The A.T. Kearney Global Services Location Index, 2011). The ranking criteria used were financial attractiveness, people skills and availability, and business environment. Also in 2011, Business Monitor International forecast that Bulgaria's domestic software market is expected to grow around thirty two percent to USD 121 million by 2015, driven in part by government and EU-subsidised IT projects, the untapped potential of Bulgaria's SME segment, and sectors such as utilities, telecoms and banking. This forecast signals further opportunities for offshoring as MNEs, typically based in Western Europe, need local companies to take over the implementation of their products in servicing the local market. Despite the dynamism of this sector, however, there is a remarkable absence of research on it and specifically on the relationships between MNEs and their local subsidiaries and business partners. The current paper represents a first step towards filling this gap.

**Research Method**

Against this background, our study is concerned with the need to gain full and true understanding of the reality, rather than with the need to establish universal applicability. In seeking to understand the realities of the offshore phenomenon we argue that it is necessary to contextualize the dispersed productive sites with a distinctive set of social, institutional and market circumstances. Hence the study calls for a research strategy that has the potential to uncover the complexity of the offshoring phenomenon through the interpretations, motives and activities of involved individuals (Rueschemeyer and Stephens, 1992). A qualitative research method provides for exploring the perspective of the offshoring utilities - what they see as important and significant – and for 'listening' to the complete story, particularly with

regard to sensitive issues such as dealing with relationships between parent companies and subsidiaries, cultural issues, and employee skill levels.

*Research Instrument*

The research instrument employed for this exploratory study was a face-to-face semi-structured, open-ended, in-depth conversational interview which was chosen for its potential to generate rich and detailed accounts of the respondents' experiences. An interview guide was developed, comprising a set of directional topics and key questions, purposely designed in general terms to allow the respondents to lead the conversation into areas they considered important. The sequence of the questions in each interview was adapted depending on the responses of the interviewee (Wengraf, 2001).

*Selection of Respondents and Data Collection*

A combination of self-selection, non-probability sampling and snowball sampling was deployed for the selection of the respondents. The website of the InvestBulgaria Agency was consulted to identify offices of foreign software firms located in Sofia. The selected companies were firstly contacted by post. An introduction statement, explaining the purpose of the study and the intended use of the data, was prepared and sent to the potential respondents. The selected companies were contacted again via email, which contained the fully developed interview guide for reassurance and provided yet more information about the purpose of the study. Several attempts resulted in eight companies recruited through self-selection, non-probability sampling. Three more companies were recruited via snowball sampling. All in all, eleven interviews were conducted until we felt assured about the meaning and importance of the developed categories (Bryman and Bell, 2003).

Following the new definitions coined by the European Commission (2005), the selection of parent companies/foreign partners can be described as well-balanced, consisting of four large companies (over 250 employees), and five medium-sized companies (less than 250 employees). In terms of size of the Bulgarian subsidiary/firm, one large, two medium and eight small (less than 50 employees) companies were present in the final selection.

Consistent with the logic of Huber and Power (1985), who argue for selecting knowledgeable informants, senior executives and software engineers responsible for operations management and software development in the Bulgarian subsidiaries/firms were targeted. The resulting selection of respondents was diverse and ensured data source triangulation (Stake, 1995) not only through incorporating variations in terms of company size and profitability but also through encompassing the views and experiences of two different groups of employees that were directly involved in their company's decision-making or product development: the managers and the software developers. The distribution of respondents was as follows: five executives running offshore operations of foreign companies in Bulgaria, two executives of a Bulgarian software companies subcontracted by foreign companies, and four software engineers. All the respondents had extensive experience gained while working at different levels in the offshore facilities of foreign companies. Hence, these individuals were able to reflect on their overall experience (Miles and Huberman, 1994) and provided valuable in-depth insights into the processes taking place in these companies.

The data collection was completed over a two-month period (July – Aug 2010). The interviews ranged in length from 60 to 180 minutes.

*Data Analysis*

In qualitative research, theory and concepts tend to arise from the inquiry, coming after data collection rather than before (Robson, 1993). The relationship between theory and qualitative research is described as emergent (Bouma and Atkinson, 1995). Following this logic, the study adopted an unstructured approach to the data analysis, allowing themes to emerge from a close reading of the interview transcripts rather than using predefined categories and computer-assisted key word searches. This approach is underpinned by Kolb's learning cycle model of reflective knowledge generation (Kolb, 1984). Although an unstructured approach to qualitative data analysis creates a real challenge because it is open-ended and may take months to do thorough analysis and interpretation, it is excellent for maximising the chances of developing new and unique insights from the evidence (Maylor and Blackmon, 2006).

Kolb's model consists of four stages: data collection, reflective observation, abstract conceptualisation and active experimentation. Reflective observation involves familiarisation with the data and reordering, i.e. summarising the data to reflect the patterns the researcher sees in the data. This stage is analogous to the stage of coding in grounded theory development, which has been described as the gradual building-up of categories out of the data whereby patterns of events and behaviours are established through the method of constant comparison (Glaser 1978, 1992). Elsewhere it has been described as 'simply the process of categorizing and sorting data' (Charmaz, 1983, pp.111), or searching for underlying themes in the materials being analysed (Gephart, 1993). Unlike quantitative content analysis, the process through which the themes are extracted is usually left implicit (Bryman and Bell, 2003). During this stage of the analysis, the data were broken down into categories corresponding to the interview questions (see Appendix 1). In those cases where the respondent's reply addressed more than one question, the replies were copied into both categories, and coding themes signalling patterns and reoccurring behaviours were identified. The segregated data were cross-referenced to ensure that, if necessary, it would be possible to trace it back to the original data.

The collected data was analysed on an ongoing basis. Miles and Huberman (1994) suggest 'interweaving data collection and analysis from the start', going back and forth between thinking about the existing data and generating strategies for collecting new data. This approach enables the possibility of collecting new data to fill in the gaps that may emerge in the data. Hence, the next stage in the data analysis - abstract conceptualisation - coincided with the reflective observation. It essentially boils down to extracting reoccurring concepts from the data, where a concept is a descriptor for an issue or pattern recognisable to the researcher. Four models of offshoring/outsourcing behaviour emerged from the data along the following key dimensions: (1) type of output; (2) level of autonomy of the subsidiary - organisational, financial, creative and marketing; (3) type and level of interaction between HQ and subsidiaries in product development; (4) recruitment practices; and (5) type and level of support for staff development. In Appendix 2, the respondents and their organisations are coded and described along these key dimensions.

During the active experimentation stage we checked for a fit of the identified patterns with theories, models and concepts suggested in the literature. This grounding in the existing knowledge provided us with conceptual leverage and sensitised us to the significance of the emerged models (Glaser, 1978). It was at this stage that we became aware of the resonance with the Bartlett and Ghoshal model (1986) and in exploring this resonance we have since begun to establish connections with more recent literature on headquarters/subsidiary

relations, and to explore issues of charters, agency, global scanning and distance as raised in the literature review above.

*Validity and Reliability*

To ensure reliability of the findings, all the interviews and consequent comments were tape-recorded, transcribed, and translated to English. One of the authors, who is of Bulgarian origin, checked the truthfulness of the translation. Last but not least, consistent data coding and sorting were deployed and documented.

In qualitative research, the primary checks on validity are internal checks on the validity of the data (Kirk and Miller, 1986). Following this requirement, the conceptual categories and the models that were beginning to emerge were continuously refined in parallel with the process of interviewing. As the research proceeded and new or inconsistent data were collected, the categories were being constantly compared and modified. Moreover, all the interviewees agreed to and responded to follow-up calls and emails in which unclear points were discussed where necessary. In addition, the respondents were provided with copies of their own interview transcripts as well as with drafts of the provisional analysis containing the emerging categories, and asked to comment on the truthfulness of the interpretation and the developing concepts.

Validity was further enhanced by using multiple publically available sources, e.g. the parent company websites as well as national and international reports on the development of the software industry in Bulgaria and the involvement of MNEs, to verify the interview data where possible. In addition, the study deployed replication of questions across interviews as well as recruitment of respondents from different sub-sectors of the software industry, and different types and sizes of organisations. Moreover, most of the respondents had extensive industry experience having worked for several organisations within the software sector.

It is often suggested that the scope of the findings of qualitative investigations is restricted when unstructured interviews are conducted with a small number of individuals in a certain organization or locality because it is impossible to know how the findings can be generalized to other settings. However, the respondents in qualitative research are not meant to be representative of a population in a first place. Qualitative research deploys analytical rather than statistical basis of generalisation whereby the findings generalize to theory rather than to populations. It is 'the cogency of the theoretical reasoning' that is decisive in considering the generalizability of the findings of qualitative research (Mitchell, 1983, p. 207). In other words, it is the quality of the theoretical inferences developed out of qualitative data that is crucial to the assessment of generalization. The domain to which this study's findings can be generalised is offshoring behaviour of foreign companies in developing countries enjoying inexpensive well-educated and qualified labour force.

**Findings**

In the view of respondents, the market for software products seems to have reached maturity: respondents report that clients have become more sophisticated, more knowledgeable and more demanding.

> *[Since 1994] The nature of the business hasn't changed. I mean we are still doing the same thing – system implementation and maintenance, but the requirements totally changed. … For example, before when we went to certain client and explained the*

> *basic features of the system they were happy and satisfied. Now, that is not enough at all. We have to do a lot more with much reduced budget, which is a very big challenge. ... Now we have to be far more efficient. (R11 – Respondent 11)*

However, the software industry is a well-known example of hypercompetition in which innovation continuously drives market renewal and offers opportunities for new enterprises to be established (Lee et al 2010). In general, the market is growing and competition is intensifying as the demand for new technologies is increasing. The Bulgarian software sector remains largely fragmented, comprising of numerous Bulgarian small and micro enterprises, and few, mainly foreign, medium and large players. Few companies have the capacity to carry out big complex projects due to lack of qualified labour. Hence it is a common practice for companies to 'lend' each other qualified staff if a big project is being developed.

The industry may be pictured as taking a funnel shape: there are many small and micro companies (identified below as Models 2 and 4). These tend to employ young people, mainly students with no experience but sufficient knowledge to start working on small projects tailored to customer specifications. The training is on the job. The most talented of these graduate employees gain experience and move to a bigger company (identified below as models 1 and 3) where the requirements are higher, projects are bigger and more complex, training is provided and career opportunities and compensation schemes are more rewarding.

Hence, competitive rivalry is very strong when technologically simpler products are concerned: the numerous small companies possess sufficient competencies to compete at such level. However, when technologically more sophisticated products and systems are involved, there are much fewer players that can compete at that level.

> *... As for the Bulgarian [vendors], when it comes to more specific, more technological products, there isn't that much of a competition. The simpler the products, from a technological point of view, the bigger the competition, and where the products are more highly specialized and there is know-how involved, there competition decreases.*
>
> *For example, if there is a demand only for delivery of computers, the competition would be big; however if a certain system is to be developed, it would drop steeply – thus, from 30-40 computer companies when a there is a tender notice that requires system development, such as the recent procurement procedure regarding the census, only 4-5 companies would participate. And if we narrow it down further, for example, if it comes to the development of bank chip cards, perhaps only ... a few ... offering ready-to-use products would remain. (Respondent 5)*

The facilities of the large foreign players often serve the entire Eastern European region, rather than Bulgaria itself. The software industry in general has significant potential for global integration as well as for local adaptation in markets that are big enough to justify the additional resources. In terms of quality and quantity of local demand, there are few large companies who can afford big ready-to-use software systems of the type offered by Western MNEs, because these tend to be very expensive. Even these relatively large Bulgarian customers prefer to not to buy from the MNEs, turning instead to Bulgarian software companies who typically develop smaller and less expensive products with similar functionality adjusted both to the clients' needs and requirements, and to the market specifics. Such tailor-made local products cost less than the 'all-rounder' products sold by big multinational companies. Moreover, the strong geographical focus of the market in and around Sofia provides for close network type relationships between software developers and clients. This may explain why some big software players have little interest in establishing

subsidiaries in Bulgaria: the size and quality of the local demand are insufficient to justify the cost. However, there may be a missed opportunity for MNEs to learn (by doing) the relational as well as technical skills required to tap into emerging markets outside as well as within Bulgaria (Prahalad and Lieberthal, 1988; Prahalad and Hammond, 2002).

MNEs offshoring their software development to Bulgaria face a common problem, in that the demand for talented qualified programmers and professional consultants has begun to outstrip supply due to intensified offshoring and rapid growth of the local market. This is an especially acute problem for organisations seeking to develop big projects. To aid recruitment, retention and motivation as well as to promote organisational learning, excellent HR practices may be argued to be essential (Camps and Luna-Arocas, 2012) but they are not found in all cases. Indeed, it will be argued below that HR practices are among the main features differentiating the 4 models of headquarters/subsidiary or MNE/SME relationship identified.

Overall, 4 models can be distinguished: Model 1 where the Bulgarian facility functions as an offshored R&D department; and three further models, in which the parent companies play the 'middleman' between Bulgarian software developers and foreign clients (see Appendix 2 for a description of respondents and organisations classified into the different models). As a general rule, models 2, 3 and 4 provide more variety and learning opportunities because staff work on a number of small projects, each of them aimed at solving a different problem and utilizing different technologies and approaches. Respondents said that engineers value these opportunities for personal development and especially the fact that they gain experience of business issues and are not exclusively focused on technical problems.

> *Most of our employees are students… when they come, they work on small projects because usually these are the ones we have. [In a large corporate operation].. a student would work on a conveyor; he works on a small part of the programme by given term specifications, without seeing or knowing the whole system. .. whereas here it's not like this – since it's a small project, we do it with such and such technology, another project – with a different technology, which they also have to learn. And they see how we make an offer to a client and later, when the project begins, they take part in the communications, in the implementation and so on. A young person once said to me, "I've never thought that programmes could do something". He has seen them before as something abstract, as something he does for fun because he likes it. (R5)*

### Model 1:

The R&D function has been offshored to Bulgaria. The Bulgarian facility works on specific projects/tasks. The output is transferred to the parent. The parent has similar facilities in other countries, working on the same project/different tasks. The output of all the offshore facilities is typically put together at the HQ and sold worldwide. There may be very limited, if any, sales to the local market. Typically, the final product is large, expensive and sold to big clients.

> *Actually, there is no product developed in one location only. […] According to the corporate policy, the product is developed at an approved location. To determine the right location, the experience and resources of each one of them is taken into account.*

> *It is important, however, not to fragment the production too much, geographically speaking. Once ready, the product is sold worldwide. (R9)*

The Bulgarian facility functions as an R&D department engaged in primary product development (of packaged software); it has no responsibilities for taking the product to market. In some cases, after-sales maintenance may be required. Short-term projects may be outsourced to local BG companies.

Programmers are carefully selected for their knowledge and experience, often straight from universities. Teamwork dominates: teams are permanent, not assigned to specific projects. Inter-team communication and knowledge exchange are important. Both formal (e.g. courses) & informal (e.g. coaching) training is provided. It could be in the form of internal experience exchange whereby employees from different locations visit the HQ. There is little, if any, staff turnover. Employees tend to identify with the parent company.

Overall, there is intensive communication and interaction between the HQ and the local branch. Strong relationships are built, fostering knowledge exchange between HQ and the local branch, although this tends to be top-down in character because of the financial dependence of the subsidiary on the centre, and the distance of the subsidiary from the client and hence from independent sources of market information. The parent companies tend to be large global players, with organisational centres exhibiting a high level of centralisation apart from the R&D function.

### *Model 2:*

The parent company acts as a 'middleman'. It may own the Bulgarian facility or form a joint venture with a Bulgarian firm. Typically, the end clients are businesses overseas, for example in the US or Germany, and the work done in Bulgaria focuses on secondary products: specific systems custom built to a client's specifications. The 'orders' are passed to the BG facility where programmers work individually or in pairs on each project. The solutions may be passed back to the parent/middleman who interacts with the clients or the clients may interact directly with the employees and instruct them about product specifications. Such contact between employees and clients is usually one-way: messages are posted up for the Bulgarian software developers on internet bulletin boards to which they have read-only access. A more interactive relationship may develop if the maintenance of the final products is assigned to be a responsibility of the Bulgarian facility. Internally, the Bulgarian facility has a nearly flat structure, with teams working on specific projects. The parent company may have several such facilities in different countries and assign projects depending on the task in hand.

> *The competition on this market is very strong, there are many Indians ... However, since we were not the sellers, I do not think that we felt it that intensely. We were somewhat shielded by the foreign partners who gave us the projects. And they were the people who had to open the way, to look for clients, to advertise. In fact, these companies had other subcontractors, some of them had two or three, and we were simply one of those subcontractors. It depended on our performance whether they would send project to us or other subcontractors. (R8)*

The Bulgarian programmers involved in Model 2 projects are usually young, not particularly experienced, predominantly students recruited straight from university. Neither they nor the Bulgarian branch/company have property rights on the solutions they have developed.

Training boils down to 'learning by doing'. Project management training may be provided. Staff turnover tends to be high. Employees are motivated mainly by flexible working hours, relatively good salaries, and the opportunity to acquire experience. They do not identify with the parent company. They have few if any opportunities to learn from the parent company beyond the experience gained 'on the job'.

The biggest problems identified by interviewees from Model 2 contexts are rooted in the lack of adequate feedback, strategy for development, and adequate matching of staff to clients and projects. The parent company is clearly motivated by cost efficiency, does not provide training or make any other attempts to increase staff loyalty and motivate people. The quality of the products appears to be the main attraction to the clients.

Within this model the parent MNE appears remote and controlling to its Bulgarian employees: strong financial control is exerted, indeed the BG facility has no independent revenue and no power to bid for work directly with clients. Personal interactions with employees of the parent company occur mainly at the managerial level.

*Model 3:*

The parent develops and markets large primary software products (systems) suitable for big to medium clients. A branch is established in Bulgaria to integrate and customise these products (systems) to client specifications, extend their functionality, and sell them to the local and regional markets. Often the MNE involved is 'nearshore' from the Bulgarian perspective, headquartered in Holland, Germany or Austria for example; and may be following one or more of its clients into this part of Eastern Europe. The parent company typically has close relationships with its clients and may well go beyond the design and supply of software systems to implement them and provide after sale services and support. Occasionally, new products may be developed on the basis of the main product/system. However, the size of the Bulgarian market is small as compared to other Eastern European countries, with few clients who can afford and make use of such products. Hence the local partner of a Model 3 MNE is unlikely to get drawn into their close client relationships and is more likely to remain dependent on the parent company to provide contacts and relationships in foreign markets.

> *We are 100% owned by [a foreign MNE]. We actually cannot contribute that much to the company's international business. The company rather develops its business locally through our office. When necessary we participate in complex projects, where for example we have know-how for one type of product, the Romanians for another, the Poles for something else and so on. Many of the competences in the different offices overlap. The business simply requires that, because I cannot rely on the Romanians to come and help me with a problem that needs to be fixed [for a Bulgarian client] within four hours. But when a more complex project needs to be implemented the company uses know-how from different countries. (R2)*

Two groups of staff are typical in Bulgarian subsidiaries or joint venture operations: consultants with industry-specific knowledge; and programmers. Programmers are carefully selected for their knowledge and experience. Formal training is provided and considered a necessity. Further training takes place during project work. Training of staff does not take place at the HQ. However, communication between country offices is much more important than in Models 1 and 2. Language training is provided by the parent company, and some

exchange of staff between country offices aimed at more efficient utilisation of human resources takes place, particularly when complex projects are implemented, involving a range of different national subsidiaries in contributing complementary products and activities. Yet there are limits to the transferability of staff across national boundaries.

> *The employees here and in Russia are not substitutable. Because ... yes, they all know the products in details, but each market is very specific and also the requirements of the local legislations are quite different ... Well, they could be replaceable, provided they were given time to adapt. There must be someone to describe and explain the specifics. (R11)*

Staff tend to identify with the Bulgarian branch rather than with the parent company. Even this allegiance is somewhat fragile: especially where staff work in temporary teams assigned to specific projects. Only a few permanent teams exist, assigned to particular clients. Within Bulgaria the organisations have a near flat horizontal hierarchical structure based on products and then on teams working on specific projects.

Within Model 3 organisations the Bulgarian facility is financially independent, yet the MNE retains strong financial and administrative control. The Bulgarian branch has some autonomy in making locally-responsive market-related decisions but contributes little to the parent company's international business. The potential for horizontal knowledge flows between Bulgarian and other subsidiaries exists but is poorly exploited.

### *Model 4:*

This is the only model in which the Bulgarian business partner is an independent SME, which typically enters into a subcontracting agreement (outsourcing as well as offshoring) with a big Western company that is competing successfully with equally large rivals for government contracts and big clients. Ultimately, such major projects are subdivided and subcontracted to Bulgarian companies who deliver their part of the package for a fraction of the contracted price. The Western company receives the credit for the development.

> *[well-known MNEs] have still been preferred by the Bulgarian statesmen, who think that nobody could complain if they choose a prestigious company like [...]. And at the same time it is very clear why they choose them. [The well-known MNE] has no teams here to implement even half of the projects but they subcontract [to local companies] and use some schemes. They give one fifth for the project, one fifth goes for the development of the corruption schemes and the remaining part is for profit. (R7)*

> *... When a large company wins a public procurement contract, it usually turns to a Bulgarian subcontractor. ... It makes no sense to keep people here, who may or may not have work once every two years, or bring people from abroad at outrageous prices when their representative office has partners here which can do the same job. They sometimes turn to other partners for specific tasks, usually by way of local procurement procedures. (R5)*

In a second variant of Model 4, the big Western company uses local companies to adapt their products to the local demand. Their need for partnering with local companies appears to be rooted in the size and specifics of the market, and the need to develop local responsiveness. However, the size of the market is insufficient to justify the cost to the MNE of employing or importing permanent qualified staff. This lack of permanent human resource necessitates

partnering with local companies and subcontracting the delivery of the few big projects won in Bulgaria to a number of small Bulgarian companies. From the Bulgarian partner's point of view, the reputation of the Western company provides valuable branding, offering customers a credible guarantee for the quality and speed of development.

> *If they have some ready-to-use solution, they must have someone here who can implement. And with them, roughly speaking, it wouldn't be profitable to keep people for such an incidental job, for something that can be performed locally.*

> *On the other hand, they serve as a guarantee for the client because, in case the circumstances require it, they can always mobilize a certain resource to solve a problem the client may have. In other words, from this point of view, the client has a greater guarantee. (R5)*

Local software companies often partner with big Western companies that have R&D departments offshored to Bulgaria because they are not competitors, they compete in different markets. In other words, the same MNE may be engaged simultaneously in Model 1 and Model 4 relationships with Bulgarian partners. However, in neither case does the nature of the relationship offer much scope for upward flows of knowledge from the Bulgarian partner to the headquarters of the MNE.

It is interesting to look into the differences in work procedures and level of organisation in the big Western companies and the small local companies: the better organised big companies have tight control over every task through strictly followed procedures. However, small local companies tend to be faster and more flexible due to the lack of strict procedures, and this speed helps to explain why locally developed solutions tend to be many times cheaper.

> *There [in the large Western corporations] everyone is a link of chain, a little wheel that rotates, and this presupposes a longer time for the solution of problems. For example, there was a problem there with the database, and a certain patch had to be made. We found it and they said, "That is a separate procedure." and asked us to pass through one level, then through another, to prove that this is the problem and wait for a committee to meet. Finally they came and said "We suggest this patch." and everything was ok. That's it basically, everything has its advantages and disadvantages. (R5)*

Local MNEs find it hard to afford formal staff training despite believing that it is a necessity. Both formal training and 'learning-by-doing' are important. Some technical training is provided by MNE business partners but the SME partners struggle to develop their employees' knowledge of management, which is considered a serious problem. Experienced staff from Models 1, 2 and 3 organisations are potentially highly valuable recruits or founder-managers for SMEs. As Respondent 3 (currently a Model 4 entrepreneur, with previous Model 2 experience) recalls:

> *The Americans [attached to a Model 2 Bulgarian-subsidiary] worked mainly at the management level. Two Americans were included in the actual project. One of them was a programmer, and the other one – a technical writer, who was doing the documentation. We did not have anything to teach the technical writer – he was included in the project because there weren't any capable technical writers here. Beside the documentation, he also made demos. We learned from him how to make incredibly cool demos. In Bulgaria, presenting your projects is a rather rare thing,*

> *and IT companies do not develop these skills. They develop the abilities of working like crazy and being a programmer, but not those of standing in front of a client and doing a presentation. (R3)*

Opportunities for learning from their involvement with Western MNEs are clearly being taken by Bulgarian entrepreneurs, but it is less clear that the knowledge being generated by Bulgarian software engineers through their engagement in MNE projects is flowing in the opposite direction.

## Conclusion

We conclude by suggesting links between each of the four models and the classic Bartlett and Ghoshal (1986) framework of generic roles of foreign subsidiaries, which as Rugman et al (2011) have shown, remains a helpful tool for identifying constraints on knowledge generation and transfer especially from the 'sensory feelers' to the MNE centre.

Model 1 subsidiaries are likely to be seen as 'Contributors' by their MNE parents, although a fresh research project would be needed to establish the truth of this – if true, it could be argued that the parent companies have underestimated the regional importance of Bulgaria as an information systems hub for Eastern Europe.

Model 2 subsidiaries and JVs may well be viewed by their MNE parents as 'Implementers' – but if Bulgaria's potential as an information systems hub for Eastern Europe is recognised, it may be argued that these have the making of 'black holes': capturing only the specific solutions they are contracted to supply to the parent, while regularly leaking know-how, talent and training back into competing enterprises within the local community.

Model 3 subsidiaries have the potential to become 'Strategic Leaders' but currently this is being poorly exploited because of the limited exchange of know-how and personnel between Bulgarian and other subsidiaries of the relevant MNEs.

Model 4 Bulgarian SMEs are actively seeking opportunities to learn from their business partners, both directly and by recruiting experienced software engineers, for example from Model 2 MNE subsidiaries. Some of the SMEs discussed by respondents are growing fast and show the potential to become 'emerging MNEs' (Ghemawat and Hout 2008). More research is needed to establish how many enterprises are in this position and how close they are to becoming MNEs in their own right.

## Future Research

The small-scale exploratory research presented above has generated two propositions which could usefully inform future research:

(1) That headquarter-subsidiary relationships established by MNEs in knowledge-based labour-intensive industries offshoring to emerging and transition economies like Bulgaria are typically influenced by the headquarters-level assumption that such locations are unlikely to become vibrant knowledge clusters in their own right, offering 'global scanning' opportunities for parent companies to benefit from 'dual embeddedness' through 'bundling' and organizational learning. From this flows the

> view that only 'contributor' and 'implementer' roles are appropriate for such subsidiaries.

> (2) That many (but not all) emerging and transition economies actually offer rapidly growing opportunities for MNEs in knowledge-based labour-intensive industries to benefit (and risks for them to lose) from knowledge flows associated with global scanning (by local SMEs as well as by the MNEs).

If proven, these propositions would imply that MNEs operating in emerging and transition economies face an unacknowledged risk of creating 'black holes' inadvertently, by assigning 'implementer' roles to subsidiaries in locations whose growth and/or innovation potential is greater than they think. The most talented employees in 'implementer' subsidiaries are then likely to leave in search of better opportunities for promotion and professional growth, taking their knowledge with them. Although not all such leakages of knowledge lead to the loss of distinctive capabilities (because of causal ambiguity: Ambrosini and Bowman, 2010), nevertheless the risk of such loss, and with it the loss of competitive advantage, is clearly present.

This would imply in turn that MNEs should routinely and frequently review the judgements made in each 'choice of location' decision, in particular judgements about the knowledge dimensions of distance (Ghemawat, 2001 and 2011) and the resulting opportunity for knowledge gains from global scanning by both the home and host country partners. The concept of 'distance' in itself supports the analysis of variations over space in the environmental conditions facing enterprises; the main implication of this paper is that IB scholars should also be expecting, and designing analytical tools that encourage practitioners to focus on, variations over time.

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**APPENDIX 1:** *Guiding Interview Questions*

1. What type of work does the company do? What is the key expertise? How do you contribute to the parent company's business?

2. What are the (local) firm's key strengths?

3. Do you develop any new products/solutions?

4. How was the (local) firm established?

5. What were the main problems during the company development?

6. Has the nature of your operations changed since the company began operating?

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7. How many people are employed in the (local) firm?

8. How are the employees recruited?

9. What is the nature of the contracts? E.g. permanent/temporary/project-related 'Bodyshopping or investing in teams'?

10. What is the staff turnover?

11. What is the skill level of the work?

12. Are the employees given any training? Is there transfer of staff to the parent company for training purposes?

13. Does the parent company (do you) support the professional development of the staff? How?

14. Do the Bulgarian employees identify themselves with the parent company?

15. What is their main motivation for working for the company?

16. How is management control exercised over the Bulgarian operations?

17. Are cross-cultural /language issues a complication? How are they resolved?
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18. Who are your main clients? E.g. Bulgarian/US/other enterprises, small/large, private/state, software/others

19. How do you find clients?

20. Has the client base changed since the company began operations?

21. How vulnerable do you feel to competition a) in the Bulgaria b) from other countries (which ones)?

22. Why do your clients choose your services over the competitors'?

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23.  Do you have working relationships with other organizations? In what areas?

24. How permanent are your relationships? Do your relationships evolve?

25. How important are these relationships to your development? Why?

26. Do you learn from your relationships? In what aspects?

27. Do you feel that you make full use of your relationships, including with the parent company? What are the problems?

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28. How important is continuous learning for your development? Why?

29. Do you feel that you, the employees and the company as a whole are learning from the parent company? In what aspects?

30. Do you feel that the parent company is learning from you? In what aspects?

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31. What would you regard as the biggest successes/problems of the operation?

32. What are the main advantages of being a subsidiary of a foreign company?

**APPENDIX 2** *Sample characteristics and model distribution*

| Model/ Resp N | Respondent's Position | BG Organization | Parent Company | Details |
|---|---|---|---|---|
| 1/4 | Manager | Subsidiary, 70 employees | User interface development tools | US-based global company with global clients, 70 employees in US |
| 1/9 | Program Director | Subsidiary | Enterprise Resource Planning (ERP) systems | Global company, 50000 employees worldwide, large corporate clients |
| 2/1 | Software engineer | Subsidiary, 170 employees | Software development | Global US-based company, over 9,000 employees worldwide, corporate clients & end consumers |
| 2, then 4 /3 | Software engineer, worked for several software firms as well as in US (NVIDIA – mobile processors and applications); currently manages his own micro-firm | US-BG JV, 40 employees | | Customised systems for US clients, e.g. automobile applications, mobile applications, etc. |
| 2/6 | Manager/software engineer | Subsidiary, 30 employees | A bioinformatics company, enabling the life science industry through providing customised flexible solutions and tools for algorithmic analysis and text mining, as well as database integration, querying and automatic update. The software's core adaptive nature allows the clients to customize it easily for specific requirements. | Europe-based, subsidiaries in 4 (Western & Central) European countries + Bulgaria |
| 2/8 | Software engineer | US-BG JV, 25 employees | Web design | US, Canadian and European clients |

**APPENDIX 2** *(continued)*

| Model/ Resp N | Respondent's Position | BG Organization | Parent Company | Details |
|---|---|---|---|---|
| 2/10 | Software engineer, worked in the sector since 1980 | German-BG JV, 30 employees;<br><br>US-BG JV | customised systems e.g. for postal services, hospital management Web design | |
| 3/2 | Manager | Subsidiary, 45 employees | Integrated consulting, outsourcing, systems integration and IT services | Europe-based MNE, 1400 employees, subsidiaries in 19 countries mainly in Central and Eastern Europe, corporate clients |
| 3/11 | Country Manager | Subsidiary – 40 employees, covers Eastern Europe and has offices in Ukraine, Poland and Russia following its clients | Enterprise Resource Planning (ERP) systems | Netherlands-based, corporate clients, most of them Bulgarian |
| 4/5 | Founder, partner and Manager | Independent Bulgarian firm, 26 employees, on the market for 20 years | n/a | Local corporate clients and work subcontracted by large MNEs |
| 4/7 | Founder, owner and General Manager | Independent Bulgarian firm, 200 employees | n/a | Local and foreign corporate clients, incl. large software MNEs |