INTERNATIONAL CONSTRUCTION: FROM TRANSNATIONAL TO GLOBAL

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ABSTRACT

Globalisation has transformed the world and national economies and had a profound impact on the way we live. The construction industry has been part of this transformation, driven by a number of factors. The development of the concept of globalisation in construction is divided into three chronological periods. The first starts with the work of Strassman and Wells (1988) and includes Hawk on the formation of the new construction industry (1991) and Abdul-Aziz's (1994) comparison of Japanese and American international construction firms. These writers document the change from the transnational firm discussed by Strassman and Wells within a conventional trade theory to Hawk's and Abdul-Aziz's work on the characteristics of the global firm operating in a globalised market.

The second period runs from 1994 to about 2007 and the review identifies issues thought to be important in international construction at the time: competitiveness, technology and technology transfer, procurement and mergers and acquisitions. They draw surprisingly little from the previous discussion of globalisation, treating each issue in isolation. The third period starts about 2007 and brings together the different strands of thinking into a new, more mature, but equally footloose concept of globalisation. The review finds that there has been little progress in the appreciation of the effects of globalisation on the construction industry, which is surprising given the importance of the topic. The review concludes that there are a number of mega projects that call for firms with global outlooks, capabilities and strategies, but there is no global market in terms of how global manufacturing firms compete against each other. However, globalisation has created a new type of firms that in effect represent the development of a new industry that is changing our concept of construction.

Keywords: Construction, international contractors, globalisation, markets, strategy

Introduction

The concept of globalisation does not strictly apply to the construction industry, as construction is not a commodity that can be traded across international markets. Nor does it extend itself to internationally integrated production, as production in the construction industry takes place on site, within each country (Strassman and Wells, 1988). However, construction has changed in response to globalisation, and this paper traces the changes and their implications on the future of construction.

The development of globalisation

Ridderstråle and Nordström (2007) suggest that globalisation is an ongoing revolution and success in revolutions is about breaking old rules and making new ones. At times of radical change, nuances are usually absent. This is most obvious in the very beginning of a revolution, when there is no agreement about where the change is leading us, or if it is leading us or, indeed, if there actually is any change. To trace the developing concept of globalisation, this review will be divided into three chronological periods.

The first period starts when the old order was beginning to break down, with the works of Strassman and Wells (1988), Hippo and Tamura (1988) and Hawk on the formation of the new construction industry (1991), and finally Abdul-Aziz's (1994) comparison of Japanese and American international construction firms. Written just before and after the collapse of the Soviet Union as the process of globalisation developed, they trace the change from the transnational firm discussed by Strassman and Wells within a conventional 2x2x2 trade model to the mega-firm operating in a globalised market, and the works by Hawk and Abdul-Aziz together represent a quite definitive statement of the characteristics of the global firm.

The second period takes us from 1994 to about 2007, reviewing the issues that were identified as being important in international construction by the writers at the time. The papers draw little from the previous discussion of globalisation, treating each issue in isolation. The third period starts about 2007 and brings together the different strands of thinking into a new, more mature, but equally footloose and ignored concept of globalisation.

Early international construction

The first wave of international contracting came in the nineteenth century when a number of primarily British firms started building abroad, capitalising on new technology and following the expansion of the British Empire. Other countries soon followed, and at the beginning of the 20th century, there were free flows of world trade and investment. This was brought to a halt by the onset of World War 1, which prompted protectionism and ultimately the Great Depression in the 1930s (Gullieun, 2001) followed by World War II. The end of the Second World War could be taken as a possible beginning of modern internationalisation, with renewed interest in trade and investment leading to the development of multinational companies producing and selling in domestic markets around the world.

Soon after the end of the war, many newly independent countries launched development programs with large infrastructure, resource and industrial projects. By 1981, about 2 per cent of the world GDP was produced by 250 leading construction companies and of this slightly more than half (143 billion) was built in other countries (Strassman and Well, 1988) However, over the next five years, a number of factors combined to a more than 50 per cent fall in international construction and changes in the country of origin of both contractors and clients.

Strassman and Wells (1988) is the earliest of the works we look at and it serves as a benchmark against which we can see how far we have moved. Globalisation was a new concept, and there are few signs of it in their work.

There was international construction, but for only 10 or so firms did overseas projects predominate. Most firms used overseas activity to bolster home country earnings. The issues the authors discuss have a distinct similarity to the general writings on trade and foreign direct investment in economic development theory and apply equally well to any production overseas: comparative and absolute advantage; how to encourage investors through government financial support and on the contribution of technology transfer to the host country, which is seen as potentially the most important impact of trans-national direct investments.

The authors defined two different approaches or models to international contracting. One we may call the US model after the leading representative for a group which also includes UK, and Canada, and the second the Japanese model, which in less extreme forms also includes most of Europe and a number of developing countries like Korea and Turkey. The difference is most noticeable in the extent of government support to the international contractors. In US, there is a generic support for the removal of barriers to trade, but little direct assistance. In the second group, there is not only a high level of direct government support, but also a highly co-ordinated relationship between the construction industry and governments.

Five years after the publication of Strassman and Wells, globalisation had become a more widely accepted concept and Abdul-Aziz compares the same two models as different global strategies, rather than - as Strassman and Wells - as two different ways of creating competitive advantage in a conventional international trade model. Abdul-Aziz stated the difference between an international and a global approach: while contractors generally search for overseas opportunities when certain conditions prevail, the firm with global perspectives has additional motives which are similar to those of global manufacturers. This means a willingness to make international commitments. Instead of evaluating opportunities on a country by country basis these companies took integrative actions for the sake of long term prosperity even though the immediate costs might be high.

The competitive advantages Strassman saw for US firms were typically technological or organising skills and the contracts were predominantly for CM or design and construct. The direct investment part was normally restricted to ten or less subsidiaries: "one in Saudi Arabia and the rest divided equally between industrialised and developing countries." The government offered very limited support but Strassman (1988) notes that most countries protect their construction industries through preferences and discriminatory measures and the US government was heavily involved in negotiations to reduce these trade barriers. Any protection seems to have been mutual as US firms benefitted from preferential treatment for US installations and government foreign aid projects overseas.

The Japanese strategy was quite different. The Second World War had given the US - the only major economy with a functioning construction industry and an undamaged infrastructure - a virtual monopoly on international construction in the 1950s and 60s. Japan like Europe started from a very low base. Where American firms aimed to defend their supremacy, the Japanese corporations' medium term aim was to become major players in international construction. They used a very deliberate policy of avoiding the perception of themselves as outsiders in the new markets by entrenching locally established corporations within local business communities where they were active, and maximising the use of local resources and supporting popular causes like environmental protection

The American contractors derived their competitive advantage from expertise in construction management (CM and from technologies that allowed them to establish dominant positions in niches, e.g. one half of the world's nuclear reactors were built by Bechtel. The Japanese, on the other hand, tended to develop innovative construction methods and specialised equipment that enabled them to establish proprietary positions across sectors of the industry. During the 1980s, project finance became a competitive tool with US depending on its international banking sector while Japan draw on the government's comprehensive export credit system. The American technological lead was also under threat. Abdul-Aziz suggests that while the leading American firms spent 0.5 per cent of revenues on research, the corresponding figure for Japan was 3 per cent and if all sources of research are included, in some instances it reached 10 per cent.

While these differences were to become important, the similarities between American, Japanese and European firms were more evident. Unwilling to compete on price in the 1980s recession, firms from developed countries changed their marketing towards providing a "total" service, including not only CM, finance and design, but also services like site selection, feasibility study, design engineering, procurement of materials and equipment, commissioning, staff training and post-construction maintenance. The "complete solutions" implied more cost-effective alternatives where possible, enabling the global firm to add value before and beyond the construction.

In this context, Abdul-Aziz suggests a theoretical framework proposed by Porter, who recognises competitive advantages based on both country and firm specific advantages. National advantages are derived from factor and demand conditions as well as from related and supporting industries. While the firm can only accept country specific advantages, which it shares with all other firms from the same country, it can create firm specific advantages or disadvantages in the form of firm strategy, structure and rivalry.

There is little to separate America and Japan other than in terms of ownership structure. In Japan, ownership, by and large, is by institutions concerned with long term appreciation rather than short term share trading. This makes it possible for Japanese corporations to take a long term perspective of business development, a strategy by and large not available to the US firms with their emphasis on share price and short term performance. The patient capturing of market share and investment for research for sustained competitive lead fits in with the global mentality and makes Japan a good breeding ground for global industry.

Written prior to Abdul-Aziz, David Hawk's 1991 paper accepts as given Abdul-Aziz's major assumption, that national competitive advantages are not important, rather globalisation is based on the strategies of the firm. Hawk does not mention globalisation, but implicitly, the whole paper is about how to be a successful participant in a "new", global construction industry, where the industry is not confined to activities on the site, but covers everything from design to material to construction to finance. The themes around which the successful firms are responding as the industry is changing, span not only new technology and organisation, but most of all, changes in the products and services they deliver that expand and create new markets. More specifically, the themes include identifying and responding to changing consumer expectation such as higher quality, lower costs and improved environmental sensitivity and finding new business ideas and customers by providing, among others, environmental sustainability, one-stop shopping, intelligent buildings, PPPs and innovative linkages to other industries. The over-riding theme is to add value through integration of the total process and respond to the advantages opened up by the globalisation of the world economy. This means that the firms accept higher levels of diversity in what they do and how they do it.

In terms of construction, the themes emphasised organisation by industrial concepts and a scientific-technical base for continual improvements and a system based on decentralised decision making. Finally, there was the one theme that made all this possible: adopting an attitude of learning to learn. In Hawk's vision, international construction was entering a new stage that was more mature than the conventional multinational firm. The global construction firm is closer to global business as developed in other industries than it is to the traditional, small scale, low technology service industry which it has left behind. This fairly small group of global firms is what Hawk, provocatively but justifiably, refers to as the new construction industry.

The middle period

Globalisation has defined the economic and political debate over the last two decades, but as suggested in the introduction, there is no general agreement even on the most basic issues. Guillen (2001). While the different definitions have common elements, which include global compression, interdependence, and integration, there are also differences with implications for the discussion. Even more prolific and diverse has been the debate regarding the significance of globalisation. Castells (1996) argued that we are living through a dramatic transformation into a global economy distinct from the "world" economy. Others argue that the current process of globalisation is less dramatic than in the late 19th and early 20th centuries (Hirst and Thompson 1996). For some theorists, globalisation has altered the economic chances of significant populations (Rodrik 1997), while others have argued that its effect has been exaggerated (Berger 1996; Krugman 1994). Friedman (1999) argued that globalisation is a "golden straightjacket" that restricts countries to macroeconomic polices acceptable to the international financial markets, and that this impost on national sovereignty is a trade-off for faster growth from access to global capital and markets.

Writings in construction and construction management have not, with the notable exceptions of (Lewis 2007, and to some extent Raftery et. al. 1998) participated in these debates, nor have they built on the foundations discussed above. Rather, the debate has been limited to individual papers on individual aspects of the industry, scattered without any pattern across a number of issues. While the term "globalisation" is used, there appears to be no implicit or explicit difference between globalisation and internationali-sation or between global and multinational firms. Several papers have dealt with "competitiveness" but without a definition of the nature of competition in economic theory and the consequences of winning or losing in sequential bidding, these papers contribute little and will not be discussed here.

Halpin and Hoang (1995) summarised interviews with representatives of international corporations into a set of recurrent themes. While the terminology is different there are many similarities between this set of themes and those developed by Hawke: integrated perspective, environmental sensitivity, flexibility, improvements in management with less emphasis on hierarchies and the sentiment that the future will be driven by a focus on the customer. The international construction firm needs to consider the client, and, most of all, add value to the development. Their conclusion, however, follows strictly the American model: provide a service, concentrate on niche markets, focus on core competencies and ensure flexibility through loosely defined alliances with small and flexible specialty firms, i.e. the model that has been accompanied by a continuous loss of market share virtually since the end of the Second World War.

Raftery et. al. (1998) touch on the impact of globalisation on income distribution in Asia, and in a Heckser-Ohlin framework see mutual benefits for exporter and importer, but without any empirical analysis. However reality does not satisfy many of the very restrictive assumptions in the standard 2x2x2 Heckser-Ohlin trade model. In particular capital is becoming more and more mobile and is often supplied by the importer or third party rather than the exporter. Without entering the debate on who benefits most from globalisation, the buyer or the seller, there are strong reasons to believe that there are more complex relationships than assumed in conventional trade models, and early empirical evidence seems to suggest that the income distribution could be very skewed (Chossudovsky 1997).

In the rest of their paper Raftery et. al. (1998) examine Japan, and suggest that the major reason for its success is advanced technology, supported by a large domestic market that provides experience, access to finance and a supportive government. The importance of the strategy of the firm aiming to participate in the global market, stressed by Hawk and Abdul-Aziz, is somehow subsumed under generalised national competitive advantages, bringing us back to the analysis of Strassman and Wells a decade earlier.

Globalisation has demonstrated the importance of means other than international trade for winning markets, notably mergers, acquisitions and takeovers, leading toward a small, global, “super league” of contractors who are seeking to widen their expertise, enter new markets and get closer to their international clients. There is an extensive literature on the performance of firms that have merged or taken over another firm, but very little in the construction context. One exception is Choi and Russell (1994). Under the premise that growth is vital for business survival, a firm can grow either internally through new investments or externally by acquiring other firms. The latter has a number of advantages, not only in that it also gains market share but also that it gets management and a labour force. There is however, as the authors suggest (Choi and Russell 1994), little agreement about the extent to which these advantages translate into economic gains.

Mergers and acquisitions seem to be habit forming. Choi and Russell (1994) found that the acquiring firm typically had four previous experiences and some had more than ten. Most of the transactions were cooperative and in about half the cases the target firms were classified as construction. As in other studies, shareholders of the merging firms did not realise significant gains and geographical expansion had a negative effect while the relative size of the target and the resulting increase in the market share were positive, but neither was significant. The long term impact could not be assessed but one would assume, given the popularity of mergers, that there are significant long term benefits. The explanatory variables tested for their contribution to the performance produced OLS R^2 of between 0.10 and 0.16.

Whatever the profitability Runeson and de Valence (2009) traced the growth of some of the top ten Australian construction firms as they went through stage after stage of M&A until most of them ended as part of a top European firm together with literally hundreds of other firms from a range of countries.

Among the most active writers on internationalisation of construction firms has been Ofori, starting from 1992 and covering a range of issues over the following decade. Betts and Ofori (1992) deal with the importance of strategic planning in creating competitive advantage. While the paper itself doesn't deal specifically with globalisation, many examples draw on studies of globalised industries or companies which have embraced globalisation. There are discussions of the major aspects of strategies such as backward and forward integration towards the one-stop-shop and investments in technology which have become central to the debate but no corresponding conclusions. Ofori (1994) also discussed the broad issue of technology transfer with international construction in a paper in the tradition of the discussion of multinational corporations in the 60s and 70s and applied to construction without much recognition of the differences between traditional manufacturing and construction.

In a 2003 paper, Ofori recognises an "international construction system". where firms chose markets where they have a competitive advantage, based on firm and national competitive advantages. The firm advantages include the firm's name and size, while national advantages seem to be related to distance to the market and historical, social and economic relationships. The successful firm has a track record, corporate knowledge, and resources. On the future of the industry, new technology, in particular information technology will have a significant influence. For the international firm, vision, social adaptability cost effectiveness, innovation, technology and speed of delivery together with forward integration will do the same. In reconsidering Porter's model, Ofori rejects national factors as irrelevant as the international operation of the global firm offers alternative sources for these supports. This leaves strategy, rivalry and chance as sources of competitive advantage. The conclusion is a model based on multiple linked systems (Porter's diamonds), which may be a framework for discussion but has few other characteristics of a useful theoretical model.

Cuervo and Low (2005) demonstrate the problem of using a model developed for manufacturing for analysing construction. They rank the importance of the various factors of the model for internationalisation of construction without considering the very strong a priori reasons to believe that the considerations of a contractor doing occasional work overseas for a local client would be vastly different to these of contractors making a deliberate decision to establish themselves in an overseas market. This difference does not exist in manufacturing where production overseas always means a deliberate decision to be active in the market, requiring FDI.

The differences between firms that have made a decision to aim for a presence in the global market and firms that engage in international contracting on an opportunistic basis is illustrated in a study of British construction firms by Whitula et. al (2006). Using Yip's (1989, 1992) framework of global drivers which affect the profitability of five levers: participation, products and services, location of activities and competitive moves. The strength of the global drivers varies by industry, and firms are expected to globalise activities and operations such that strategy levers align with relevant industry levers. In a sample of eight, where six firms are involved in international contracting on a substantial but opportunistic basis and two are by most definitions global firms, there is virtually no overlap between the two groups in terms of use of the levers. Across the board, the global drivers were relatively weak, which suggested that the use of global levers would also be low. While this was true in aggregate, the two global firms made significantly more use of each lever than the remaining six, suggesting that globalisation is an attitude rather than a classification based extensively on degree of internationalisation.

Current period

Hartey et. al. (2007) when aggregating 13 reports on the future of construction, found that three issues dominate the discussion: Sustainability, ICT and Globalisation. and the authors present the conclusions in the form of two extreme scenarios. In scenario 1, increased legislation and regulation of both construction and building performance at national, international and global levels as well as common standards has allowed expansion of the national sector into an international market. The work has shifted from short term construction to long term service provision with forward and backward integration, as new materials allow a shift from site to factory. Scenario 2 is different mostly in that the more regulated and standardised market has allowed only a few large firms to survive in a global market. As in scenario 1, the surviving firms deliver a holistic, lifecycle based service but as in manufacturing, the products are standardised.

Brockman (2009) differentiates between international, multinational and global markets and firms. International firms compete outside the domestic market. If the activities in foreign countries contribute more to a company's revenues then the domestic market, then the company can be called multinational. Global companies, on the other hand, operate a network spanning the globe and production is set up where labour costs are low. The orientation of the company is not tied to any one national culture. The headquarters coordinate affiliated and owned companies around the world. In contrast to other industries, international, multinational and global firms compete in the same physical markets. For multinational companies, local subsidiaries produce much of the firm's foreign revenue. Projects are won, managed and constructed locally with little foreign input. In 2000 the top 225 international contractors had revenue from overseas operations equivalent to 3.4 per cent of total construction spending. Hence, about 95 per cent of global construction is allocated in local markets to local contractors (Tulacz 2000). Construction is not a global market and there are no global players in construction holding a recognizable market share (

These findings are consistent with Hawk's (1992), Male and Mitrovic's (1999) and Halpin and Hoang's (1995), and also with Runeson and de Valence (2009), who looked at how social, political and technological developments have encouraged the growth of very large firms with global potential. In a number of ways, these papers and that by Abdul-Aziz, have arrived at basically identical conclusions. Comparative advantages based on country of origin are not important. Conventional trade models offer little in the form of explanation of why or how global construction. Rather, we have a small number of firms, maybe 20 or so worldwide, that have developed strategies and responded to changing social, economic and technological developments by acquiring the potential to handle global construction, competing primarily on technology and adding value where conventional companies compete on price alone. They make up what Hawke called the New Construction Industry totally different from the traditional industry.

While on the supply side, we may not have a well developed global market where global firms compete against each other on an ongoing basis, there is a global demand for construction potential to deal with all aspects of large complex projects, for adding value through expertise and high technology solutions. However, there are clear indications that, except for the markets in Europe and the US, the direct competition among the big multinational companies is rather limited geographically and for types of construction except building. In each market the global firms compete only against a small subset of similar firms.

Conclusion

This paper has divided the development of the concept of globalisation in construction into three periods. The first started with Strassman and Wells (1988) and included Hawk (1991) and Abdul-Aziz (1994), and outlined the change from multinational to global construction and set the parameters for this discussion. In the second period from 1994 to about 2007 issues thought to be important were competitiveness and technology transfer. The third period from 2008 has more mature concepts of globalisation. The review finds that there has been little progress in the appreciation of the effects of globalisation on the construction industry. However, we can say that a global contractor is one that knows how to deal with megaprojects and complexity. He can be neither ethnocentric nor polycentric; but must be transcentric. He has the ability to organize and manage an international network. He provides cutting-edge technology and adds value to the project. He does not standardize his output - he standardizes his input in order to deliver projects around the world.

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