



CASTLES IN THE AIR?

THE EVOLUTION OF BRITISH MAIN CONTRACTORS

Professor Hedley Smyth

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Contents

Foreword	3
1.0. Introduction	5
2.0. Rearmament and the Second World War, 1936-1945	7
3.0. Reconstruction, 1945-1955	11
4.0. Diversification, Growth and Overseas Work, 1955-1968	13
5.0. The End of the Long Boom, 1968-1980	18
6.0. Divestment, Loss of Market Share and the Absorption by Overseas Takeovers, 1980-2000	23
7.0. Respite and Long-term Decline, 2000-2015	29
8.0. Conclusions	34
References	36

Figures and Tables

Figure 1. <i>Principal Construction Programmes 1936-45</i>	9
Figure 2. <i>Trends in Construction Output in Real Terms 1955-1968</i>	13
Figure 3. <i>Trends in Construction Output in Real Terms 1968-1980</i>	18
Figure 4. <i>Trends in Construction Output in Real Terms 1980-2000</i>	24
Figure 5. <i>Trends in Construction Output in Real Terms 2000-2015</i>	29
Table 1. <i>Controlling Interests in Nuclear Design and Construction</i>	16
Table 2. <i>Controlling Interests in British Nuclear Associates, mid-1970s</i>	19
Table 3. <i>National Changes in Market Share between 1993 and 1996</i>	27
Table 4. <i>Changes in Market Share of British Contractors between 1993 and 2015</i>	32

Foreword

I am writing this in the immediate aftermath of the liquidation of Carillion. It is a moment which sadly makes this report all the more timely, not just because of the impact on the former workforce, public services, the supply chain and the wider economy, but also because of the problems deep-seated among main contractors. Too much political debate has and is taking place around public versus private sector provision, and too much focus on failures at the project level. Insufficient attention has been given to management of organisations, whether public or private. This report focuses on the management of main contractors as project-based firms.

There is much debate over what has gone wrong with Carillion. Recent contracts that have made thumping losses and the series of related profit warnings, the absence of cash reserves and the presence of mountainous debts, and the low margins it has sought to secure work, have all contributed. The origins of the current problems actually reach back more than a decade. As a new company emerging from Tarmac, Carillion sought PFI work, taking and retaining the equity stakes. It subsequently decided to sell much of the equity to focus on facilities management and other outsourced services. After this, the company made a series of 'changes', which were largely about rebadging existing activities to present the company as dynamic to the stock market. Behind the rhetoric, little of substance changed. Despite a well-respected leadership programme, capabilities were not developed in the firm to improve performance. Growth came from acquisitions and securing work at low margins. Scant change or improvement was embedded in management practices, so that when substantial change became necessary there was an inability to introduce and effectively manage any substantial and required measure. Changing the chief executive is not a solution. The problems had arisen long-term and the necessary solutions were long-term too.

In general, the business model for contractors is broken. Even in good times, contractors have had low margins in living memory. They have made most of their profits from cash flow management and investing surplus working capital. This has allowed them to earn most of their profits from the return on capital employed, or ROCE. This simply doesn't work in a climate of low interest rates.

Government carries some of the blame for ruthlessly driving down costs, and accepting tenders at unsustainable levels in the current economic climate. This general problem is a symptom of a fragmented market, but is also a problem among the management of contractors. While they publicly state that clients, especially in the public sector, should seek value for money, in downturns and during periods of austerity they individually say at the sales or 'business development' stage, "Oh, we can do that at the same price or cheaper" and then at the tender stage 'buy work' at zero or negative margins – in so doing they consistently encourage clients to take most notice of price.

Some commentators made the point about Carillion that "they are too big to fail". Reassuringly the sector and the shareholders are now bearing the consequences for mistakes rather than taxpayers directly bailing them out or nationalising them at greater cost than is already being incurred in the clean-up of the mess. Certainly the government now looks to have been over-exposed to this contractor when you see the range of contracts across multiple sectors, compounded of course by government awarding more work to the company despite recent profit warnings. Another viewpoint is that they were not big enough. If they were bigger and more robust financially, less driven by short-term stock market criteria for declaring dividends and with salaries and bonuses less aligned with short-term performance, they would have been more able to

shoulder the failed contracts and have had more market power to perhaps resist the worst excesses of unsustainable margins in a fragmented market.

What is missing from the current position among contractors is management prepared to invest in capabilities at the firm level in order to roll out consistent improvements across all its projects and to improve its role in systems integration of its supply chain. This will improve execution around the traditional criteria of time, cost and quality. More importantly, it potentially maximises the value that can be realised from the project during its useful lifetime, whether it is for a public or private sector client. This is the key management question and the answer simply does not reside at the project level.

It is time to address the firm and its management much more seriously and that is where this report comes from, by outlining how we have managed to end up in this position. This will provide a basis for management to take stock and begin to steer towards a more transformational path for the future.

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Castles in the Air?

The Evolution of British Main Contractors

1.0. Introduction

The management of the major British main contractors has not markedly changed in approach over the decades since the Second World War. Considerable attention has been given to projects over the years, not least through government initiated reports on the UK contracting industry. Yet the outcomes have fallen short of the hopes set out. Any shortfall in realising the hopes can lead to disappointment, and hence “castles in the air”. Yet the causes of any shortfall may not completely reside at the project level. Some of the reasons rest with the firms and their management. Financial management is one area of current concern. Main contractors have profited from effective trade credit and cash flow management, maximising the return on capital employed (ROCE). However, this part of the business model no longer stands up in an environment of low interest rates and more stringent requirements to pay suppliers and subcontractors in timely fashion. Profit will increasingly need to come from the more traditional source across most industries of a return on investment. Investment is needed to improve firm capabilities and operational performance. This aligns with the needs in the current market, yet management has yet to respond accordingly. There are historical reasons and associated mindsets connected to the slow response. This report addresses important background and how management are consequently building “castles in the air”.

What is happening in the market? Construction projects are said to be more complex than ever before and many private sector clients are more sophisticated. This remains an assertion, although the forms of design employed today, the construction content, especially mechanical and electrical (M&E) and increasingly information technology (IT), plus the multiple firms involved, strongly support this. Urban renewal and major infrastructure projects are especially demanding. Infrastructure includes transport, energy, and the response to climate change. It also includes social infrastructure provision, such as health facilities and schools. Can and are contracting firms able to respond? Specifically, does the British-owned main contractor have the necessary capabilities to respond and is there the strategic management intent so to do?

To answer these questions it is first necessary to put this into context. Production and service provision may be more complex, yet the technological and management capabilities are too, and if applied appropriately improve efficiency and ease the burdens elsewhere. Poor performance and productivity levels across the economy have come under scrutiny in recent years. Management and leadership capabilities are claimed to be in need of general improvement¹.

Construction is frequently seen as lagging other sectors and is claimed to be backward, hence the serial reports and initiatives emanating from government and industry bodies over many decades². To address the issues in the construction context, it is also necessary to first understand from where the contracting firm has come, because it sheds some light on where it may be going. Where it has come from is not

¹ HM Treasury (2015), Bloom et al (2016).

² See for example Murray and Langford (2003).

very well understood by many. It is time to refocus and reconsider the strategies for firm growth³. The origins and early years of the modern British-owned main contractor may be surprising to many who have entered the industry in the current era.

Although the focus is the British-owned main contracting firm and each country exhibits its own ways of shaping the modern construction firm, there could be processes and influences that are shared or resonate in other nations. The growing trends towards internationalisation of firm activity will increase resonance over time.

The *construction sector* is a diverse field and cuts across a number of industrial and service sectors. The *construction firm* is also diverse in its activities. The large main contractors provide the focus for this report. The use of the term 'British' contracting firm could signify two things:

- The main contractor that is British owned, and typically listed on the UK stock market.
 - a. The firm will operate in the UK market.
 - b. The firm may operate overseas as well as operating in the UK. Some shareholders of these companies may be resident overseas or nationals of other countries.
- The main contractor that is overseas owned, for example from mainland Europe, and is operating within the borders of the UK, whereby key overarching strategic and resource decisions will be made overseas, even though the UK branch office may be run by British management.

This report focuses primarily on the first category, the British-owned contractor, although many of the features and factors described apply more broadly, especially to overseas-owned contractors with British management that were formerly British owned and acquired during the waves of acquisition largely since 1990.

Overall, the dominant main contractor business model has been to secure survival first, then seek growth and profitability as a secondary objective. The consequence is that firms tend to be reactive to market trends rather than drive change. This has not fundamentally changed but how the management of contracting firms is able to read the need for response to market trends is an important issue. The British main contractor has undergone a dramatic transition from being family owned and controlled to a corporate organisation, frequently with ownership and management separated. How effective management is today is influenced by these changes.

Let's start from the period when the modern contracting firm emerged in the Second World War. The move into peacetime reconstruction is a subsequent period of growth, followed by rapid firm expansion in the 1960-80 period. The end of the long boom is evident by the end of the 1980s. A period of loss of market share follows, the British-owned main contractor entering into the current period of long-term decline.

³ This is a recent call from Connaughton et al. (2015) concerning consultancy firms, echoing the more general seminal contribution about firms from Edith Penrose (1959).

2.0. Rearmament and The Second World War, 1936-1945

In the period before the First World War construction materials and technology developed rapidly. These changes accelerated between the wars, which was to usher in a change in industrial organisation in terms of structure and management⁴. This was to culminate in the period during the Second World War.

The birth of the modern construction sector is located in the Second World War and is largely the product of two political and economic forces:

- Government as client.
- Direct government control.

The two forces came together, changing procurement methods to meet the needs of war. The result was a restructured industry. There have been subsequent reforms, yet the basic structure was established at this time of turbulence in the world order.

There were two major consequences of these two forces:

- The introduction of large construction equipment from the US.
- Firm expansion by management setting up regional structures, and hence main contractor branch offices, to enable growth.

The majority of construction firms that were to emerge as major contractors had primarily been housing developers in the interwar years, supporting the societal trend towards suburbanisation to support the growth of office work. Costain, Laing and Taylor Woodrow were prime examples. There were few growing firms in other markets. Wimpey operated in several markets. Main contractors that did survive were prepared for the long term. They focused upon prestigious and profitable work. Sir Robert McAlpine, for example, had a strategy to be selective, choosing profitable and high-profile work in civil engineering and energy markets, such as coal-fired power stations. The firms were family controlled, where management decisions could be made rapidly in response to changes in the market, frequently autocratically, and lines of management control were minimal.

The rearmament period from 1936 to the outbreak of war increased demand for a diverse range of projects. Work from the Air Ministry grew, especially airfield construction. The War Office, Office of Works and the Admiralty were major clients too, having significant contracts in preparation for a war. Construction companies had growing workloads – public contracts supplemented by private work and the completion of housing developments. Competition switched from securing work in a diminishing market in the early 1930s to securing work in a growing market dominated by the government as client.

Firms operating in the speculative housing market, such as Taylor Woodrow, diversified from housing. In 1937, Taylor Woodrow undertook its first public sector rearmament work. The firm built barracks for the army as a transition into a broad construction workload. Firms benefitted from strategic industry networks, for example Godfrey Mitchell of Wimpey, which was undertaking extensive work, especially for the Air Ministry, recommending Taylor Woodrow to the client as a potential contractor in the rearmament market⁵. The work was urgent so the public sector needed to utilise all

⁴ Meikle (2009).

⁵ Jenkins (1971).

contractor capacity. Firms that did not diversify, such as Ideal Homesteads, the largest house builder at the time, lost market share and shrank.

Airfield construction became a valuable source of work for firms such as Laing and Wimpey. Costs rose as work was decentralised over the country. This was due to the increased volume of work, the costs of running decentralised and sometimes remote construction projects, and a diminishing labour force as people were called up for military service – 10% of site labour were boys under the call-up age and 10% were women at times during the war⁶. There were skills shortages and securing skilled labour was an important management task in being able to secure further contracts. Contracts could not be delayed because of the demands of the war effort; indeed, the earliest commencement on site was necessary and was aided by the use of cost plus and target cost contracts. There was no time needed for bidding. The costs were established from an estimated cost of the breakdown of work in the cost plus contract, which included a percentage fee, and from an overall target cost inclusive of a margin with gain share on savings below the target for the target cost contract.

Once prequalified by a public client, contractors could bid for large amounts of work at the outset of war, about which the *Manchester Guardian* and *The Times*, among others, complained because it concentrated the work into too few contractors with insufficient rationale⁷. Yet, the Air Ministry in particular wished to concentrate work in the hands of a few contractors of good reputation. Many contracts were located in remote areas of Scotland, the North, Northwest and the Midlands. However, the main contractors had previously had most work in the Midlands and South. Strategies were adopted with headquarters setting up a growing number of regional branch offices. Geographical diversification became an important part of the restructuring of the construction sector⁸. The growth of regional branch offices led to changes in management practice. While each office replicated the management of the main office, the headquarters became a strategic decision-making unit to guide growth and allocate resources across the decentralised branch offices.

One example highlights the trend. Wimpey was successful in Scotland. They were so successful in receiving multiple airfield contracts in Scotland that queries were raised as to whether there were underhand dealings. This led to a public inquiry, yet the argument was that the firm had established a skilled workforce, the plant and experience of local conditions so that it was the most competitive⁹.

Workloads grew and the firms became over-stretched. Government, as the primary client, took increasing control of the market. The principal programmes of work are shown in Figure 1, including work required by government involving the private sector, such as flax and ordnance factories. Government placed quotas on work for each contractor's office. Expanding firms deliberately exceeded the quotas of work carried out by a branch office; they then set up a new office, decentralising portions of work to a new branch office so that one or both offices had capacity to continue to take on further construction projects. The large firms grew as a consequence at the expense of medium-sized and smaller enterprises¹⁰. This set the pattern for the structure of the modern construction firm. It led to more decentralised management, certainly for business development, procurement and management at an operational level.

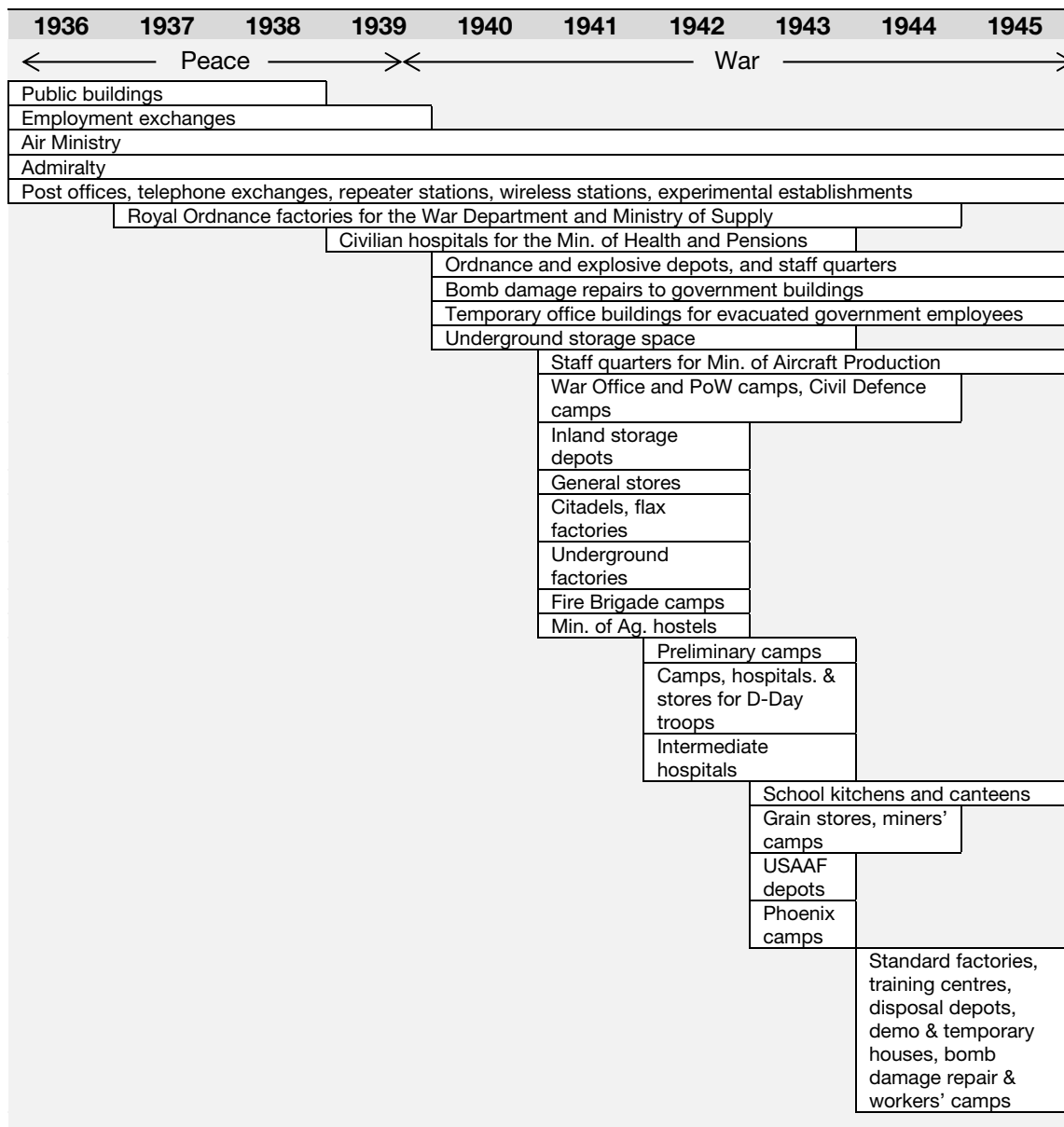
⁶ Smyth (1985).

⁷ *Manchester Guardian* (1940), *The Times* (1939).

⁸ Smyth (1985).

⁹ HMSO (1942).

¹⁰ Smyth (1985).



Source: adapted from Kohan (1952).

Figure 1. Principal Public Construction Programmes 1936-45

Decentralised regional branch offices changed the structure away from being highly centralised. This decentralised pattern still holds today where firms have multiple offices, though the scale is international. The government regularly revised the means of control, and power shifted between ministries, particularly the Air Ministry, Admiralty, War Department and Ministry of Supply. Yet the trend was relatively stable for the leading contractors. In effect, government had divided the market between large and small companies in a formal way, which had hitherto been informally conducted through competitive market mechanisms. The result was accelerated concentration of work into the hands of large contractors with national coverage, new management capabilities, and resources. This was reinforced through a range of other controls as the resource base and market became more constrained. Yet the demands of war for government facilities, the military and factories remained strong in the early years of the war.

Stretched firms needed to be able to undertake large projects efficiently and effectively with a challenging resource base. One solution was for government to control the provision of materials and regulate the labour supply by a prioritisation system for its contracts, while private sector work required a licence. One significant solution was the importation of large plant from the US to construct airfields, especially earthmoving equipment. Target cost contracts superceded the cost plus contract to stabilise costs, because contractors became incentivised to increase costs to earn higher percentage fees – the “plus” element. New capabilities were needed to operate and manage the large plant and so new capacity was built in the leading firms – part of a general trend to take on more diverse tasks and manage these effectively, from fog dispersal projects on airfields (FIDO), to the pipelines under the ocean (PLUTO), and the construction of large concrete caissons in the Thames Estuary as part of the Mulberry Harbours project¹¹. The learning and capacity that was built helped the firms involved to reshape their structure and processes. All the interventions by government, however, were aimed at controlling the market, not replacing it¹².

The primary outcomes among the major contractors for the period were:

- Concentration of major projects into a group of modernised leading contracting firms.
- Leading firms with national coverage.
- Leading firms with diverse technical capabilities and diverse workloads.
- New management structures and management capabilities.

The management of the firms had changed from family owned and controlled, operating with simple structures and processes, to more decentralised firms with management control delegated to branches and subsidiaries. It signalled the beginning of more complex lines of management with strategic and operational decision-making separated. Strategy remained in the hands of autocratic leaders, family members or small groups of trusted senior colleagues, who allocated resources and built up both management and technical capabilities to meet the demands of clients, which were mainly government ministries. The profitable firms were now characterised by strategic management and investment in management and technological capabilities.

¹¹ Kohan (1952).

¹² The market for construction was not a polarised conception of public versus private that is rhetorically seen in debates today. It involved multiple public and private sector organisational actors. A market was and still is socially constructed by complex interactions, transactions and exchanges between multi-organisational actors. The term ‘market’ can obscure as much as it reveals, because it is used by many from the global macro level to the micro level within a transaction without always clarifying the meaning.

3.0. Reconstruction, 1945-1955

Immediately after the war, reconstruction commenced. The reconstruction period saw two main features:

- Retention of direct government controls.
- Conditions being laid down for a subsequent growth period.

The US launched the Marshall Plan to aid reconstruction across Europe in the image of the market system to counteract the feared influence and expansion of Russia. It was launched in April 1948. Yet, reconstruction was financially constrained, which led to limited public and private sector work. The new post-war Labour government, 1945-51, continued to control the construction sector. It prioritised certain activities, such as the reconstruction of the industrial base, export and oil-related construction. The public sector continued to dominate demand and retain controls over much of the market, especially through the contract licensing system; however, this is often exaggerated as more licences were granted than private finance and contractor capacities could accommodate through to 1948¹³. Government intervention was manifested as the allocation of finance, licences and contracts, and thus, intervention generally proved to be an impetus to shaping and refining the market¹⁴. The market was constrained overall, even after the “bonfire of controls” in 1948, yet the leading contractors continued to be able to shape the market in ways that helped them to emerge as the major players in the post-war era.

The consequence was that the leading contractors:

- Consolidated their market position.
- Continued to diversify their work type and to some extent geographical spread, hence their capabilities in the market.

The leading contractors that had emerged during the war kept their wartime structures and capabilities intact. Laing is an example of the diverse growth pattern covering building, engineering, heavy civil engineering from pipelines, hydro-electric and nuclear power contracts as well as house building. Although public house building was an important welfare policy post-war, few of the new generation of leading contractors returned to house building in a big way. Laing and Wimpey were two exceptions with their non-traditional concrete technical solutions, namely “Easiform” and “no fines” for public sector housing. They also re-entered speculative housing development as the market recovered.

The leading contractors focused primarily on large-scale new build projects. Although some of the smaller and medium-sized contractors re-emerged and grew, their work was largely confined to maintenance work and medium-sized new build contracts. They did not possess the resources and capabilities to compete with the large players at this time.

As the sector recovered, a significant growth phase gathered momentum and took off from 1954 onwards¹⁵. The leading contractors expanded and were poised to extend their commercial work in the property boom, which some companies, such as Wimpey and Sir Robert McAlpine, helped stimulate by taking equity stakes in schemes to

¹³ Dow (1964).

¹⁴ Rosenberg (1960).

¹⁵ Meikle (2009).

essentially finance construction for developers out of their growing working capital at a time when financial markets were still constrained¹⁶.

The large main British-owned contractor to a great extent was still family owned and controlled, with few international rivals outside North America. They had emerged as main contractors above the medium-sized firms and began increasingly subcontracting trades and other work. They were poised to enter international markets. Costain was the first during the early 1950s¹⁷.

The primary outcomes among the major contractors for the period were:

- Consolidation through organic growth of the market position of the leading main contractor firms.
- A few major contractors were emerging from the larger group of leading firms with increasingly diverse workloads and strong national coverage.

The management of the firms refined and matured without fundamentally changing in the period. The structures became more complex as the types of work diversified and grew in peacetime. Lines of management slowly became more complex. Technical capabilities diversified with more wide-ranging and changing workload. However, this was not very demanding because the diverse and complex civil engineering for the war effort was being complemented by traditional building work.

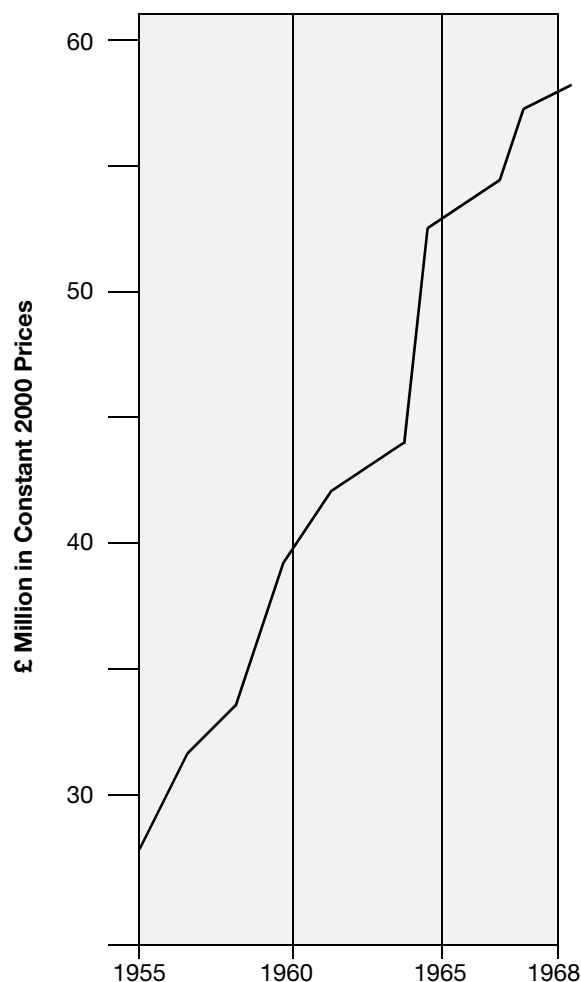
¹⁶ Smyth (1985).

¹⁷ Ibid..

4.0. Diversification, Growth and Overseas Work, 1955-1968

This was the first period of post-war sustained growth, punctuated by fluctuations, called at the time the “stop-go cycle”¹⁸. Private sector clients increasingly led demand for industrial property, owner-occupied offices and a new growing property development sector, yet public sector work remained very significant. Private sector clients, therefore, sat alongside public sector clients, which were investing in social as well as physical infrastructure. The period was characterised by several features:

- Contractor growth through diversification of types of building and engineering projects, plus geographical spread in the UK with some new branch offices.
- Entry into overseas markets, particularly the Middle East in the latter half of the period.
- Re-entry into speculative housing development as part of diversification.
- Reduction in training and direct employment of labour by the large main contractors.



Source: adapted from Meikle (2009).

Figure 2. Trends in Construction Output in Real Terms 1955-1968

Construction grew rapidly from 1954 from a low base (see Figure 2). At the end of the 1950s, construction activity still constituted 17% of all gross domestic capital formation

¹⁸ Blank (1973), Lereuz (1975).

measured as a proportion of gross national product¹⁹. Industrial work grew at the start of the period and government capital expenditure increased substantially. The speculative property development market was booming, some contractors having helped pump-prime the expansion of commercial projects. A good example is Wimpey and Sir Robert McAlpine for the redevelopment of London Wall, where they took a 10% stake and funded the working capital until completion. Thus, management in many large contractors was now beginning to consider commercial property development, many having funded their own housing development companies from surplus working capital in order to some extent smooth turnover and across different markets.

Investment by government in general was slowing by the end of the period. The property development market peaked in 1964 and council house building programmes for local authorities were being reduced too, which was later symbolised and justified politically by the collapse of Ronan Point in 1968. However, the property market was scaling up for a second post-war boom and work overseas was becoming a significant market for the large contractors²⁰.

Most of the large main contractors had set up separate speculative house building divisions. They joined contractors, such as Wimpey, and a growing number of specialist speculative housing developers in this market²¹. The growth for the leading firms was consistent throughout the period – they did not suffer from the “stop-go cycle” characteristic elsewhere, despite some contrary claims²² – see also Figure 2. The leading main contractors were experiencing low productivity and, to varying degrees, lower margins on mainstream domestic construction. However, interest rates were reasonably high as inflation grew, allowing main contractors to invest working capital between the time they were paid and the time they had to pay the increasing number of subcontractors being employed. Effective cash flow management and ROCE became an increasingly important part of the business model.

Productivity was under threat because construction costs rose over the period, driven by rising raw material and labour costs. Fixed priced contracts posed a particular problem. Profit margins were squeezed but ROCE compensated. Yet low productivity and squeezed margins induced caution and management defensiveness, especially regarding investment. Firm efforts to increase productivity to offset the cost and risk pressures gained little traction. There was some success through the introduction of new technology and methods, and price competition improved input-output ratios. So, by these means, productivity was reported to have increased 28% between 1963 and the end of the decade, but costs rose 50% to counteract the gains²³.

Diversification permitted growth and provided further compensation for the low productivity and squeezed margins. Increased growth in the market increased turnover, but not profit margins. Increase in turnover through diversification permitted an increase of total profit, even though margins were under threat. Diversification also required further working capital. Main contractors started to increasingly use any working capital not employed – the period between payment by client and payment to the subcontractors – to increase ROCE. The increase in working capital also helped foster expansion into international, housing and to some extent property development markets. Thus, the growth in one market offset another and diversification proved

¹⁹ Smyth (1985).

²⁰ Ibid..

²¹ Wellings (2006).

²² Lewis and Singh (1966).

²³ Savory Milln (1970).

successful among the market leaders²⁴, sustaining reasonable profitability for most large contractors.

The work of the large main contractors overseas meant that the British contractors had emerged as second only to the American firms. Overseas construction earnings contributed a small sum to the British economy in 1955, rising to become the fastest growing export industry and reaching over three times its size by 1968²⁵.

The consequence was that the leading contractors:

- Grew, benefitting from increased trade credit and ROCE, and using surplus working capital to diversify.
- Grew and diversified, inducing a perceived concern for market and project risk, hence a decreased use of direct labour, an increased use of subcontracting to reduce risks, and paving the way for the growing use of labour-only subcontracting.
- Faced a growing domestic cost base and a challenge to domestic profitability from building and civil engineering work.
- Became reliant on internationalisation for their profitability as a counterbalance to UK trends.

The senior management of the main contractors tended to lean towards reacting to market trends rather than anticipating or trying to influence them. Even though diversification by sector and geographical spread had proved successful, the reactive management approach and pressures on mainstream contracting led to perceived concern about future growth overall and the stop-go cycles in the short term, especially in relation to the government as client²⁶. The management tried to reduce exposure to risk, hence a slow but increasing trend towards subcontracting to spread risk and employment of specialist solution providers²⁷.

The growth and diversification was therefore not strategically planned; it was a reactive approach as market followers rather than leaders. Growth came by default rather than strategic design²⁸. Demand, however, was frequently discontinuous, of which the construction of new nuclear power stations was an example. Following the restructuring of the industry by the Industrial Reorganisation Corporation in 1966, two groupings were apparent, which were dominated among the main construction contractors by Taylor Woodrow and Sir Robert McAlpine. Taylor Woodrow was in the Nuclear Design and Construction group – see Table 1.

²⁴ Smyth (1985).

²⁵ Investors Chronicle (1960), Savory Milln (1970).

²⁶ Lewis and Singh (1966).

²⁷ cf. Davies et al. (2007).

²⁸ Smyth (1985).

Organisation	Stake
Taylor Woodrow	4%
Atomic Energy Authority	20%
Industrial Reorganisation Corporation	26%
GEC-EE	25%
Babcock and Wilcox	25%

Source: Smyth (1985).

Table 1. *Controlling Interests in Nuclear Design and Construction*

Organic growth and diversification by takeovers were exceptions that required strategic intent. However, a market emerged for acquisition of firms to secure new business opportunities by type of construction project and to an extent gain access to geographical areas. There was a wave of contractor takeovers from 1967 as part of diversifying types of work, for example Bovis Holdings acquiring A. E. Farr to gain access to road contracts in 1968²⁹. The thinking in terms of diversification was therefore less on developing new capabilities to enter markets and market segments; it was focused on applying the same capabilities to different work types led by existing engineering and building expertise or acquiring new capabilities through acquisition. Board level and senior management increasingly focused on financial management. Management was for coordinating operations to support construction and the project became the prime unit of management analysis. Thus, there was scant investment into developing new capabilities at the firm level to support construction and project management. There had been a government-driven imperative to develop capabilities during wartime. It was a matter of strategic management choice during the late 1950s and 1960s, and the implicit consensus was to survive with an eye on short-term profitability and keep investment and overheads to minimum levels to cope with the vagaries of the economic cycle.

This signalled a departure from the more outward-looking approach demanded during wartime. An inward focus was to become embedded at this time, setting up rigidities that would lead to vulnerability of the large British contractors three decades later³⁰. The strategic management of the firm began to receive even less attention. This was reflected in, and perhaps reinforced by, successive government reports, which tended to focus upon the industry as a sector and the construction project, rather than construction as a group of firms³¹.

There was often an underlying assumption that the industry was comparatively backward. This was, and is today, an unreasonable comparison where it informs thinking. The industry was, and is, producing the preconditions that allowed other sectors to industrialise under controlled conditions, following the latest techniques from flow line to digital production technologies. Yet, there was a lack of investment in long-term strategic development to innovate and to generate replicable and coordinated management practices to provide continuity on a more consistent basis on and across projects. There was an increasing reliance on ROCE rather than operational capability to generate profit.

²⁹ Savory Milln (1970).

³⁰ cf. Leonard-Barton (1992).

³¹ Murray and Langford (2003).

The primary outcomes among the British-owned major contractors were:

- A period of sustained growth, largely through diversification, supported by both strong forecasts of demand and actual client demand in the market.
- Management continued to be reactive and increasingly became defensive, focusing upon two prime units of management thinking:
 - a. building and engineering types,
 - b. projects.

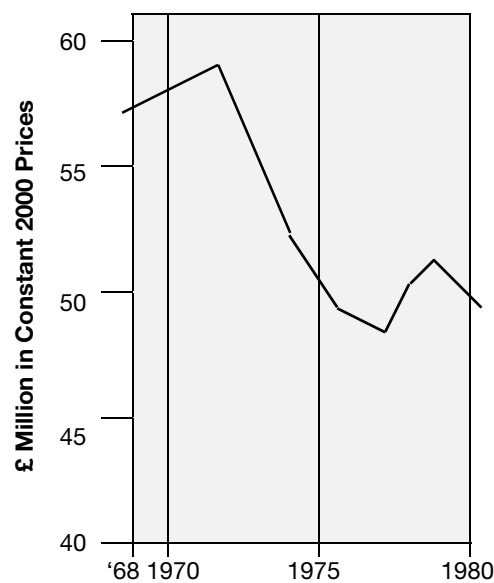
This was a period of incremental transition of the management of large construction firms in the upper echelons of the family hierarchy. Family control was gradually ceded to leadership and management by other senior management because of succession issues within families, acquisition, and the demands of growth. The firms had responded to growth as main contractors. Structures changed and they were becoming more corporate. The span of control of board level and senior management was insufficient and line management deepened. Some firms, notably Taylor Woodrow, tried to keep a shallow management structure where possible by setting up a large number of subsidiary companies, yet this incurred other management challenges of having diverse separate businesses, nearly 150 at one time.

Ownership and management continued to become separated and gradually family control was eroded, even where families or their trusts retained substantial share holdings. Many of the large firms had floated on the stock market. To the extent there was strategic management, this was increasingly driven by short-term financial criteria of the stock market, namely cash generation to maximise ROCE at the expense of investment in mainstream contracting – akin to treating contractors as cash cows rather than star performers in the economy³².

³² The term “star” used here refers back to the Boston Consulting Group’s growth matrix. It would be hard to argue that construction, however defined, was a star performer in the UK, although it has been a significant contributor to the economy and one that politicians have kept a weather eye on as one barometer of the state of the economy, although over the boom period, the car industry acted as the main barometer.

5.0. The End of the Long Boom, 1968-1980

Analysts claimed that output per employee increased by 20% between 1968 and 1971 largely because of the substitution of new materials and offsite construction on commercial non-housing projects, however, the industry remained fragmented³³. The long boom period was drawing to a close – see Figure 3. Profitability was falling across industry. Labour unrest was on the rise over the period. Inflation had become a concern, although this had also fuelled short-term investment in property development. In 1968 construction activity constituted over 20% of all gross domestic fixed capital formation as a proportion of gross national product; it was to fall to 15.6% by 1979 (the lowest since 1952)³⁵. This was felt most in the private sector short term, then in the public sector as formal government cutbacks in capital expenditure took hold from 1974-77, which hit civil engineering first. The overall picture was volatile, as reflected in Figure 3 for the period.



Source: adapted from Meikle (2009).

Figure 3. Trends in Construction Output in Real Terms 1968-1980

In 1973 trends were punctuated by the OPEC-induced oil crisis: “The near-continuous boom enjoyed by the construction industry from the 1950s came to an abrupt end with the first oil crisis of 1973”³⁶. It was also stated: “The political demand for roads, hospitals and welfare construction was satiated by the mid-1970s even if the economic and social needs had not been satisfied”³⁷. Cuts became expedient, and were subsequently made necessary by the worsening government financial situation and then the oil crisis.

³³ Savory Milln (1973).

³⁵ Smyth (1985).

³⁶ Hillebrandt and Cannon (1990, p.4).

³⁷ Smyth (1985, p.192).

The period was characterised by several features:

- Continued contractor diversification of types of building and engineering projects, plus geographical spread overseas, yet largely without long-term commitment to particular regional and national markets.
- An increasing reliance on private sector commercial work in the domestic market, which was more susceptible to the economic cycles and hence fluctuations in demand.
- High demand put increasing pressures on raw material prices and labour costs, hence profitability was constrained despite the demand, although working capital was at record levels and provided flexibility and good levels of ROCE, supported by prudent cash flow management.

Private sector work was buoyant, initially fuelled by the 1968-73 property development boom. The 1973 property crisis curtailed work, especially for major contractors that had diversified into property development, for example Taylor Woodrow, perhaps most well-known for the first redevelopment project of London Docks at its St. Katherine Dock commercial, housing and marina development. New opportunities were being created:

The late 1970s and early 1980s also saw new forms of development, new developers and new ways of working. These were particularly important because of the increasing importance of private sector development and the relative decline in public sector construction investment.³⁸

The slowdown in public and private sectors during the mid-to-late 1970s stimulated main contractors to intensify diversification. There was R&D investment, particularly in the energy sector, with mixed success. Taylor Woodrow and Sir Robert McAlpine had experienced this in the new nuclear market (see Table 1), which had been restructured under the National Nuclear Corporation, whose ownership is set out in Table 2.

Organisation	Stake
GEC	30%
UK Atomic Energy Authority	35%
British Nuclear Associates	35%
Comprising	
Taylor Woodrow	14.3%
Clarke Chapman	28.6%
Babcock and Wilcox	34.3%
Sir Robert McAlpine	7.1%
Head Wrightson	8.6%
Whessoe	5.7%
Strachan and Henshaw	1.4%

Source: Smyth (1985).

Table 2. Controlling Interests in British Nuclear Associates, mid-1970s

³⁸ Meikle (2009, p. 60).

The discontinuity in the nuclear markets encouraged a reactive search into the renewables markets, for example wind energy and the Severn Barrage proposal, and also into oil and gas markets³⁹. The energy market for contractors reached a peak by the end of the 1970s.

Main contractors were generally led by engineers and construction personnel, who were more comfortable with technology and technical expertise than developing management effectiveness. Finance directors encouraged management to largely confine their attention to minimising overheads and expenditure to reduce market risk and improve transactional efficiency respectively. Profit margins as a percentage of total output had steadily declined to 4.3% by 1978, compared to 15.6% in 1949, according to the Central Statistical Office⁴⁰.

Overseas expansion followed the energy market to intensify construction work, funded by Middle East oil revenues generated by the hike in oil prices. The Middle East construction market grew from an estimated \$3bn in 1972 to \$17bn in 1975⁴¹. A characteristic of this time was that contractors followed the workload around rather than using work to establish long-term bases and hence commitment to local and regional growth. This pattern was in contrast to regional expansion during the Second World War.

It had been found that the most successful international companies across multiple sectors had a “hands on” approach in adjacent regional markets and a less interventionist approach in distant markets⁴². Like other companies, British contractors were always operating in an exploratory fashion, with the exception of the North American market, which they started to enter and opened long-term branch offices. For example, in Nigeria, the experience was not conducive to developing a pattern for long-term commitment. Elsewhere, British contractors were not committed to being long-term players in Western Europe and most other non-domestic markets, regardless of local economic and political stability⁴³.

The period can now be looked back on as the start of global markets. The EU constituted a domestic region and hence the Middle East became an adjacent market, where the more ‘hands off’ management strategy proved ineffective long term. British management appeared to be more ‘comfortable’ with the ‘hands off’ approach, which was not being replicated by other countries, for example many large mainland European contractors. Few British contractors established a presence in mainland Europe. Amec and, to an extent Mowlem, were two exceptions. In parallel, some of the regional offices in the UK were closed and consolidated as management travel to site and back in a day could be achieved from fewer bases. On the other hand, mainland European-owned contractors were beginning to address strategic expansion across European and international markets.

³⁹ Taylor Woodrow (1981).

⁴⁰ Central Statistical Office, *Annual Abstracts of Statistics*.

⁴¹ Savory Milln (1977).

⁴² Madsen (1989).

⁴³ Permutter (1968), Savory Milln, 1977, Smyth (1998).

The consequences for the leading British-owned main contractors were as follows:

- Domestic growth slowed, although overseas profitability was strong.
- The ability to keep diversifying was running out of steam for the first time and some investment, particularly overseas⁴⁴, did not yield returns of sustainable growth.
- Management was focused on sectors and projects, supported by transactional financial drivers whereby investment and expenditure were kept to minimal levels.

Management appeared to be active and engaging with market trends in overseas and domestic markets, especially through diversification. Contractors thought they were flexible, although they tended to be tactical in their reaction. Yet, acting out of strategic intent was a necessary requirement as and when the opportunities became fewer⁴⁵. It was a period during which the extensive reluctance to build long-term capabilities and capacity was to have serious consequences. Long-standing practices to manage cash flow, focus upon ROCE while keeping investment and expenditure at minimal levels, which today might be described as transactional, were embedded to the extent that they had become rigidities. These rigidities were increasing and setting the dependent trajectory for the long term, reinforced with the growing concern for risk with subcontracting continuing to increase. The focus was on risk management rather than a complementary focus upon effective systems integration. It was not transformational for investing in and developing capabilities to serve markets and clients.

Financial departments grew in influence within the firms. Financial departments followed a general trend away from serving the range of internal functions to increasingly driving decisions. The discipline encouraged the transactional approach, especially from the perspective of construction as a cash generating business that had its emphasis upon cash flow management and ROCE. Cost-cutting and closure of unprofitable activities set a new pattern of management practice. A mindset and pattern of divestment, which was necessary upon a selective basis, became established and would be applied uncritically in the future.

The primary outcomes for the period among the main major contractors were:

- A period of growth, tempered by concern for long-term profitability.
- Major contractors took on smaller projects with the pressure on overhead resources and the need to maintain turnover, yet had commenced rationalising regional offices.
- Cutting capacity and costs was undertaken by layering each management level and by seeing all activity that was not directly generating revenue as an overhead.

The separation of ownership and management was now complete with few company exceptions. Corporate control was dominant. Finance dominated board level decision-making, increasingly informed by short-term transactional thinking and driven by stock market pressures. Maximising ROCE constrained investment in mainstream contracting.

⁴⁴ The exploratory mode of operation across many overseas markets is arguably part of a broader and long-term picture of the senior management of large main contractors thinking largely in terms of projects rather than the firm.

⁴⁵ Smyth (1985).

Senior and middle management had not developed the intent to change company functions to help grow the businesses and integrate supply chains at the operational level, although many of those in senior positions had been promoted up the hierarchy or recruited from within the industry, frequently from engineering and construction backgrounds. Investment in technology to yield a profitable return or the development of management capabilities to support the systems integrator role was largely lacking.

Many main contractors were also beginning to recruit senior management and board members from other sectors. There was exposure to other influences. However, the prevailing wisdom about firms was that main contractors were essentially cash generators, and therefore cash flow management by using trade credit, securing client payments and investing the cash prior to paying the supply chain were the drivers of profitability rather than the work itself, as long as the risks had been adequately foreseen and managed. The stock market drivers were influential and were going to prove to be decisive in setting the trajectory for these British-owned construction firms. Share investors wanted short-term returns and were less concerned for the long-term growth of the firms.

The traditional norms therefore prevailed and this was undoubtedly reinforced by the construction project as the dominant unit of management focus rather than the company in a complementary way. In summary, the management of the firm continued to be conducted in reaction to market forces rather than trying to proactively manage the position of the firm within the market.

6.0. Divestment, Loss of Market Share and the Absorption by Overseas Takeovers, 1980-2000

The early 1980s saw restructuring in the British economy. Both private and public sector markets were constrained. Some of the restructuring stimulated new demands for construction. From the construction viewpoint, there was a healthy workload through the 1980s. At the beginning of the period, construction workload was at a low level, yet subsequently grew steadily in real terms until the downturn entering the 1990s – see Figure 4.

The period was characterised by several features:

- Contractor growth through international geographical spread in distant markets continued, yet without long-term commitment to these markets.
- A reform and accommodation of procurement and contracts in response to private sector client drivers.
- Emergent professionalisation of construction at the operational level.
- A lack of reform of management and investment practices.

Public sector work was constrained. The public sector sought mechanisms to fund work. Progress was slow and these mechanisms would not emerge in a viable form until the end of the period with the Private Finance Initiative (PFI) and the subsequent form of Public Private Partnership (PPP) in the next period, post-2000. These funding mechanisms were required to apparently support social and economic needs, and were a way of keeping borrowing off the national balance sheet. Yet they were not fundamentally helping to manage public accounts long-term as capital debt was essentially being shifted to current expenditure.

Private sector work had been the main cause of falling workload levels entering into the new decade, against a backdrop of constrained public sector work. The private sector reacted with new procurement routes⁴⁶. These were initiated on the client side rather than coming from contractor innovation. There were three reforms. First, the design and build procurement route grew to become a dominant force in the growing property development boom of the late 1980s and early 1990s. It wrested the project management task held by architects and engineers, placing it in the hands of main contractors. The design team became a subcontractor, typically client nominated or 'novated' post-concept design through the main contractor to the design team.

The second form of contract was construction management and its variants. This placed the main contractor in an even more central role as systems integrator.

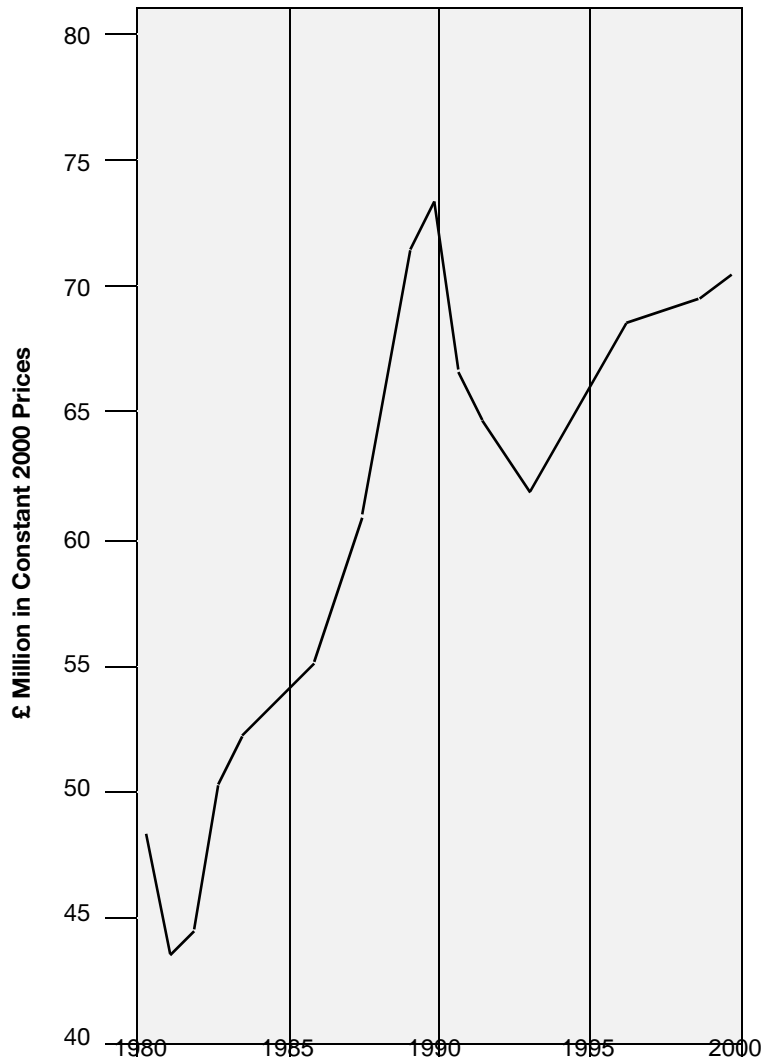
Following the demise of many large family-controlled firms, operating with simple structures and processes, more complex lines of management emerged. Strategy remained in the hands of autocratic leaders or small groups of trusted senior colleagues, who were responsible for allocating resources and building up both management and technical capabilities to meet client demands. Yet, operational decision-making flowed from functional management silos in the firm to construction projects and team decision-making. Levels of integration between silos and with the teams took second place behind low overheads and cost controls in many firms.

The development of new capabilities was an emergent process that was favoured by certain companies, such as Bovis and Mowlem. It was adopted by a number of main

⁴⁶ Meikle (2009).

contractors and had broader influence regarding systems integration and professionalisation. It was commented that by the middle of this period:

The principal resource of construction companies is management. ...They do believe it but they rarely spell it out in their strategy⁴⁸.



Source: adapted from Meikle (2009).

Figure 4. Trends in Construction Output in Real Terms 1980-2000

The third form was the turnkey contract, which was especially favoured in developing markets overseas. The attraction was for a facility to be completed and then equipped as fully operational beyond the point of practical completion. It was a popular form on large complex hospital projects in the Middle East, such as the Royal Hospital, Muscat, Oman, built by Laing.

Main contractors continued with an increasing use of subcontractors and new developments in procurement overseas, especially during the 1980s. Main contractors during the 1990s focused upon project management practices and the

⁴⁸ Hillebrandt and Cannon (1990, p.22).

‘professionalisation’ of construction work in the UK. This distinctively separates construction as a site activity from its management. It should be in evidence through the maturing of the role as systems integrator, that is to say, extending beyond project and construction management into a systematic approach led by the firm. Yet this reform almost exclusively related to the operational level. A systematic approach was not being led within the construction firm to develop capabilities at corporate, portfolio or programme management levels to integrate functions and activities.

Programme management had become a growing feature of many clients across multiple sectors who repeatedly procured projects⁴⁹. This overarching capability created scope in the firm to embed other capabilities to support the range of projects under each programme. This move was not mirrored among main contractors, identifying their own programmes and developing capabilities for integration and improvement.

The growth in private sector work, especially from commercial property developers, led to overheating in the market during the 1980s, followed by a downturn. The optimists in the property development market largely failed to disaggregate development growth caused by restructuring of industry and commerce from new wealth creation, or what financiers termed fundamental growth, which fuels the economy. In other words, the optimists believed, or wanted to believe, there was more sustained demand than actually turned out to be the case. Figure 4 shows the downturn in the 1990s. There was a subsequent upturn in construction output as the private sector came back and the public sector apparently found new funding and procurement mechanisms through PFI and PPP concession contracts.

‘Strategic planning’ was emerging across industry and commerce during this period. However, this was not particularly embraced in British-owned construction firms. Management remained reactive to manage market risk and secure a good return on capital employed, ROCE, through cash flow management. British-owned contractors, including main contractors, were in the perceived position of being market takers rather than market makers, and thus, sought to keep investment and overheads to a minimum to remain competitive at the project level of the bid⁵⁰. This is not the same as having a competitive market position. Indeed, the project focus can restrict growth management for the firm because any intent to go beyond mere survival becomes increasingly constrained for the long run⁵¹.

Activities were project and sector focused without resource backing and without any “*overt attempt to put strategic decisions in a conceptual framework*”⁵². Diversification, particularly vertical diversification, was the main element of firm strategic focus. Management was insufficiently focused upon improving current practices and developing capabilities. Many major firms had developed or acquired companies up or down the supply chain. The acquisition of minerals companies, and/or companies with development capabilities, was common, although acquisition of subcontractors was not commonplace, with the exception of large M&E and process engineering organisations, for example William Press into what would become Amec. This represented a type of corporate risk-spreading to complement project risk management, whereby it was thought profits could be smoothed and investors would receive a reasonable and, it was hoped, steady rate of return. Conglomerates were emerging and were liked by investors, such as BICC, which included Balfour Beatty.

⁴⁹ Morris (2013).

⁵⁰ Hillebrandt and Cannon (1990).

⁵¹ Skitmore and Smyth (2006).

⁵² Hillebrandt and Cannon (1990).

The company that epitomised this type of growth was Tarmac in the early part of the period. There was strategy around this type of activity but not around management of the firm.

One counter-trend of the withdrawal of investment, sometimes called divestment, was in housing development. Entering into the 1980s, the major contractors had housing development divisions. The housing market was becoming more specialist with new niches developing as demographics changed⁵³. Housing also absorbed working capital and incurred interest charges in the effort to replenish land stocks. This was now seen as outweighing the benefits of risk-spreading and smoothing profits from other sources for main contractors. The recession, commencing 1988/89, accelerated the trend. Almost all the major contractors divested from the market.

The divestment from housing was spurred on by the onset of software for portfolio management among shareholders who now had a preference for organisations focusing on “core business” rather than diversification to aid investor risk-spreading. The conglomerate had done the investor risk-spreading on investors’ behalf to achieve balanced investment portfolios. New software programmes now allowed them to do it easily for themselves. This meant firms exiting from other sectors during the 1990s onwards, such as from minerals, or demergers to facilitate specialisation, as in the case of Tarmac. Out of Tarmac came the main contractor, Carillion. It also meant there was a need to strengthen management to strategically manage the core business better, and to improve the interface with operations. Clients across project sectors, such as oil and gas, had already started to develop programme management⁵⁴, which was influencing construction clients, one notable example being British Airports Authority. Others included a more systematic approach to procurement, for example among leading developers. Main contractors did not adopt programme management for their own activities.

British main construction firms continued to be influenced by the state of the economy and reacted to their market environment⁵⁵. The large contractor as a family-owned firm had long since disappeared and most were quoted on stock exchanges, yet strategic planning was minimal and lacked investment in support⁵⁶. British main contractors failed to selectively invest during times of recession, indeed divested from mainland Europe during the 1990s, for example Mowlem. In contrast, the consultants invested in the downturns of the 1980s and 1990s in order to increase the geographical sources of their income and grow via geographical diversification⁵⁷. There was also a different picture among main contractors in mainland Europe, as became evident in the recession of the early 1990s.

British-owned main contractors divested over the period, all withdrawing investment and activities from mainland Europe with the exception of the largest contractor at the time, Amec. They all uncritically delayered, allocating cost savings to be made from each business unit and level of the organisation without seemingly asking which capabilities would be most needed in the upturn. Mainland European-owned contractors cut costs too, yet also selectively invested, and for many large firms that meant increasing their presence through geographical takeovers. This was a decisive period when the management of the British main contractor was shown wanting compared to competitors, particularly in terms of management. The entry of, for

⁵³ Wellings (2006).

⁵⁴ cf. Morris (2013).

⁵⁵ Hillebrandt et al. (1995).

⁵⁶ Stockerl (1997), Siehler (1998).

⁵⁷ Connaughton et al. (2015).

example, Hochtief and Skanska via acquisition dates from this time, while Bouygues entered by setting up an office to understand the market and then grow organically in the early years of entry. Hochtief had positioned itself as a “systems leader”⁵⁸, Bouygues had adopted the strap line “from building to communication”, stating: *In all our business areas we adhere to the same corporate philosophy: a modern approach and a will to lead*⁵⁹.

In the depths of recession, between 1993-96, British-owned contractors lost over 18% market share to European counterparts⁶⁰ – see Table 3. Consequently, ownership structures changed. It was anticipated at the time that this decline and loss of market share would be a process of gradual attrition:

*This analysis would infer that further market decline of British contractors can be expected in Europe. In the long term, the majority of that decline will be experienced in the domestic market because other European contractors will be larger than those in Britain and thus will secure the large-scale contracts.*⁶¹

	Percentage Change in Market Share, 1993-96				
	Top 10	Top 50	Top 100	Top 200	Top 300
Britain	-18.7	-19.8	-5.2	-3.5	-3.1
Germany	3.6	0.9	0.7	1.2	1.4
France	1.1	-0.5	-0.7	-0.4	-0.3
Sweden	9.5	2.3	1.8	1.2	1.1
Norway	11.0	5.1	4.1	3.5	3.1
Spain	0.0	1.7	1.6	0.2	0.2
Italy	-6.3	-2.0	-1.9	-2.6	-2.6

Source: adapted from Smyth (1998) and derived from data in *Building* (1994, 1997).

Table 3. National Changes in Market Share between 1993 and 1996

By the end of the 1990s, almost every major area of modern British construction had been reformed since the Second World War – size and spread, technologies, procurement, operational management and professionalism – except for firm management, apart from one significant area, that of financial management where the transactional accountancy discipline now dominated. Management had evolved, separating it from ownership, but many of the norms and traditions prevailed. Clients appeared to want more from main contractors during the 1990s, which was palpable through the Latham and Egan Reports⁶². These reports, especially the Egan Report had significant implications for the firm level of management, not just project management, and which was somewhat overlooked in the report and certainly by management. The “continuous improvement agenda”, emphasising project collaboration and competencies, did not replace the emphasis on competition and price, but encouraged managed competition and less short-term emphasis on price to improve value for money and potentially price long term. Maintaining improvement continuously could not be conducted merely at the level of the project. Improvements and associated knowledge had to be captured at firm level for transfer across all relevant projects in the future⁶³. Programme management had not been embraced for support and capability development to act as a bridge or platform between the project and firm. There had been some improvements, but not a transformation⁶⁴. The main contractor

⁵⁸ Davies et al. (2007) had emphasised the main contractor role as systems integrator.

⁵⁹ Quoted by Siehler (1998, p.28).

⁶⁰ Smyth (1998).

⁶¹ Smyth (1998, p.21).

⁶² Latham (1994), Egan (1998).

⁶³ See for example Brady and Davies (2004).

⁶⁴ Smyth (2010a).

tended to maintain the focus on the project as the unit of consideration rather than managing improvement from the firm level.

Whereas British contractors had been among the leaders on the world stage in the 1960s, by 1996 only one large contractor, Amec, was among the top 10 on a European scale, ranked tenth by turnover⁶⁵. The large British-owned and managed contractor was in decline.

The overall consequences among the major main contractors for the period were:

- A misalignment between market drivers and strategic management intent and capabilities.
- A loss of market share among British-owned contractors.

The primary outcomes for the industry were:

- Main contractors were largely managers rather than constructors, and a degree of professionalisation had developed at operational level.
- Geographical and sector diversification continued in the early part of the period, yet was in reverse towards the end of the period.
- Management focused on sectors and projects, overlooking the need to become more strategic, reform and undertake investment for the long term.

The form of management had changed in terms of who now constituted the management and the corporate structure being managed, but British management mindsets and norms had not changed. This was dramatic compared to the construction professional service firms who chose to increasingly internationalise, an opportunity open to British contractors with the City of London as a finance centre for projects worldwide. Management continued to be inward looking and focused at the micro-level of operations. They were becoming more professional as a result. Yet, this was not being complemented with the support necessary to meet the emergent demands of clients and to grow the firm, even though large complex and sophisticated projects were successfully completed during the period, such as nuclear power stations, the Channel Tunnel, the British Library and the Millennium Dome.

⁶⁵ Building (1997).

7.0. Respite against Long-term Decline, 2000-2015

The new millennium saw an upturn in major projects, thus continuing the long-term growth from the 1990s until the financial crash, the longest since the 1950s and 1960s. PFI and PPP forms of procurement were maturing, with public sector clients seeking social infrastructure renewal, for example in the health sector and the schools building programme. Serial megaprojects began (megaproject being defined as >US\$1bn). There was also a property boom under way led by funding availability from the financial sector. Workload was growing at the outset of the century (see Figure 4). Growth continued until the financial crisis in 2008 (Figure 5).

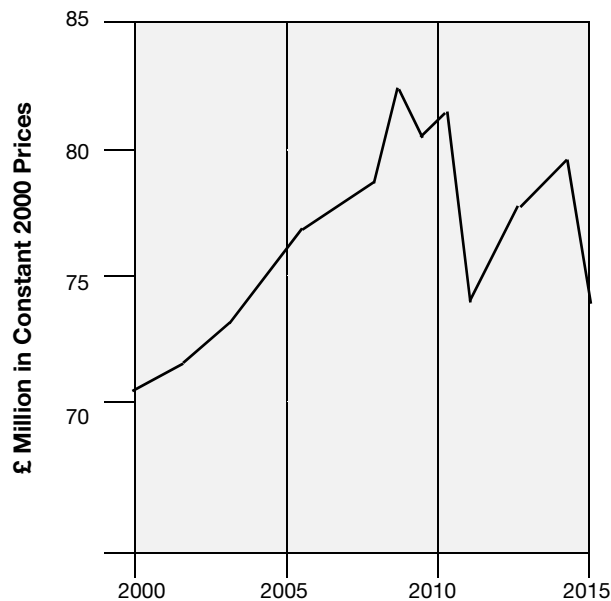


Figure 5. Trends in Construction Output in Real Terms 2000-2015

The British-owned main contractors still did not copy the construction professional service firms. These consultants were growing and London had become a world cluster for the professions. They had restructured around high-value specialised service provision. Consultants owed their growth and profitability “from addressing customer concerns”; hence, a focus on customer needs was a priority for these firms⁶⁶. They could potentially feed contractors’ workload in their growing international markets and British contractors were located on the doorstep of the City of London for project finance as a major provider worldwide. This had not been and was not capitalised upon during this period.

Despite the promotion of collaborative working through the Latham and Egan Reports⁶⁷, which had political and rhetorical effect towards the new millennium, firms failed to develop capabilities and embed lessons in support. Clients had developed programme management to support all their projects and were developing strategic approaches at the front-end of each project. British-owned main contractors did not mirror this and follow suit, including many overseas-owned subsidiaries run by British management. As such, contractors continued to react to conditions, rather than

⁶⁶ Connaughton et al. (2015, p.156).

⁶⁷ Latham (1994), Egan (1998).

strategically manage their prime markets⁶⁸. The period is characterised by two main features:

- Growing misalignment between the service offered and the combination of client demands and project complexity.
- The continued loss of market share among British-owned main contractors over the period, despite initial market growth and exacerbated by a severe downturn as a result of the financial crisis in 2008.

Amec, the largest firm in the previous decade, decided to exit construction and concentrate on the more profitable oil and gas project markets. Balfour Beatty emerged as the largest British-owned contractor. It diversified through the acquisition of the consultant Parsons Brinkerhoff. The management approach, however, was highly transactional; it failed to invest in integration or capitalise on the acquisition. It has struggled in the market since and has more recently shed the Parsons Brinkerhoff part of the business. More recently another leading main contractor, Carillion, ran into serious difficulties and went into liquidation in 2018, continuing the decline of the British-owned contractor.

Acquisition continued to be a major means of growth in the period. The motives for acquisition are limited in fragmented markets as the potential to increase market share for any one firm is small, but the potential to grow remains strong. Even though taking over a direct rival is also taking a competitor out of the market for other rivals, it allows the firm to expand into new markets and acquire new capabilities. It is valuable if the assets remain, that is, the people and their management expertise, although these are mobile, and if new clients acquired are well-managed in order to secure repeat business.

Penetrating markets remained important through the acquisition market, especially for overseas contractors consolidating and increasing their presence in the UK. Vinci, for example, had acquired Norwest Holst and a few minor players, and then made a large acquisition in the form of Taylor Woodrow Construction in 2008 as Taylor Wimpey completed its exit from mainstream construction to focus entirely upon housing development.

A fragmented market in terms of the number of firms able to compete for a project, despite acquisitions and some concentration at the top end of the market, keeps company costs high⁶⁹. Firms do not find competition is reduced at the bid stage on many international projects⁷⁰. Shortlist criteria, risk and, on occasions, practices of collusion⁷¹ can all add to the high cost of bidding, especially for large projects⁷², where bid costs had increased considerably in turnkey and PPP markets.

Market and project risk remained dominant concerns. Market risk was in part managed through trends of horizontal diversification, for example by Balfour Beatty, in contrast to the emphasis upon vertical integration in the previous era. Horizontal diversification and integration did not prove entirely successful for most firms, as the cases of Tarmac and Balfour Beatty diversifying into consultancy show. PFI and PPP contracts and concessions yielded some diversification into facilities management, which secured regular income streams and reduced the effects of economic cycles for some main

⁶⁸ Smyth (2015).

⁶⁹ Ball et al. (2000), McCloughan (2004), Lowe (2011).

⁷⁰ Yea et al. (2009).

⁷¹ Lowe (2011).

⁷² Hughes et al. (2006).

contractors for a time, such as Carillion, although the company sold equity stakes, became an outsourcer, faced losses recently and liquidated.

Main contractor cash flow management was more to the fore than ever to ensure profitability based upon ROCE. Project profit margins were less important than the annual return on the rapidly recycling working capital and the short-term investment of the surplus. Profit margins were in low single figures whereas ROCE could or should exceed 20%⁷³. It was a key component of the prevailing business model for main contractors until the financial crash. Any investment in generating capabilities for long-term growth meant ROCE suffered. Investment affects dividend payments and share prices among quoted main companies. It also affects payment from incentive packages and bonus schemes for senior management. This only served to reinforce and drive resistance to strategic management and investment during a period when projects were becoming increasingly complex, especially in the growing megaproject market, and clients becoming more sophisticated, including in the public sector for some megaprojects. A misalignment was becoming more apparent between the transformational demands in the market and transactional management among British-owned contractors, and, some overseas-owned UK subsidiaries.

One opportunity to build management capabilities had arisen as clients were seeking performance improvement and had pressed government to drive change. The opportunity arose in the wake of the Latham and Egan Reports on the industry. Collaboration was to be fostered through relational contracts around partnering and supply chain management⁷⁴, and influenced by lean production methods. It was the case by this time that transformation would need more than project responses to be sustainable, yet management failed to spread project improvements and lessons, and embed them in the firm⁷⁵. The consequence is that impact has fallen well below policy and client expectations.

A similar phenomenon has occurred on megaprojects and client programmes, for example Heathrow Terminal 5, Olympics 2012 and Crossrail. A labour market has emerged for senior and key personnel in the megaproject markets and learning has been transferred across many of these megaprojects through this labour market⁷⁶. Yet the firms involved have largely failed to spread and embed the learning in their organisations to induce new capabilities⁷⁷. They have emphasised reducing costs through the use of micro-subcontracting including self-employed labour and zero hour contracts at the end of the supply chain.

Certain large contractors have bucked the trend. They have had clear strategies supported by selective investment. Laing O'Rourke had endeavoured to establish a branded approach through a degree of vertical integration, coupled with investment. Recent events have undermined progress at Laing O'Rourke; if anything, reinforcing caution over making investments and emphasising the associated risks. Mace, which straddles the consultant-contractor market position, has steadily expanded by activity and geographical spread⁷⁸. It has been innovative and entrepreneurial. It embodies many features of the professionalisation of construction. Interestingly, it remains privately owned and thus has not had in the past shareholders to serve via stock market listing. Sir Robert McAlpine has focused upon high-profile projects and high

⁷³ Gruneberg and Ive (2000).

⁷⁴ Latham (1994), Egan (1998).

⁷⁵ Smyth (2010a).

⁷⁶ Brady and Davies (2004, 2010, 2013).

⁷⁷ Smyth (2015).

⁷⁸ Connaughton et al. (2015).

margin work since the 1930s. It has had risky forays into property development, yet the key successful elements of the business model have remained constant and robust. It is owned through a trust and is largely family controlled.

This evidence might suggest that the lack of strategies for long-term survival and growth among British-owned construction firms is influenced by ownership and that stock market listing is ineffective for the British construction firm. Short-term financial pressures certainly reinforce transaction cost management at the expense of the long term, yet there is a broader set of internal conflicts around language used by management disciplines and associated mindsets as well as functional silos⁷⁹. It is strategic management intent and management choice whether to address the needs of customers and the firm long term or mainly serve short-term demands. The general outcome is that the management of the large British-owned main contractors has shown little sign of learning lessons from the past. This was evident after the 2008 global recession. The 2010 Grant Thornton Report on construction stated:

*Over 90% of industry executives in the survey – a higher share than in any other sector – believe that their models had proved ‘resilient’ in the downturn. An identical number believe their business models are robust enough to allow them to ‘succeed over the next 18 months’.*⁸⁰

Yet the market share of large British main contractors at European level has continued to decline – see Table 4. The decline was precipitous between 1993-96 (see Table 3), which is also evident in Table 4. The market share of British-owned main contractors continued to fall among the top 10 contractors until after the 2008 financial crisis. The 2015 improvement was due to Balfour Beatty’s prior acquisition of Parsons Brinkerhoff, which it subsequently shed. The French contractors, the leading group, had 47.2% market share among the top 10 and 33.7% among the top 50 in 2015, and the Spanish contractors had 26.7% and 24.9% respectively. Yet, the medium-sized British firms seemed to have performed better.

Market Share of British Owned Contractors among European Owned Contractors	1993	1996	2008	2010	2015
Market share of British Contractors among the top 10 by turnover	23.9%	5.2%	0.0%	0.0%	6.0%
Market Share of British Contractors among the top 50 by turnover	na	na	13.4%	9.1%	11.8%

Source: adapted from and derived Smyth (1998, 2010) and *Building* (2016).

Table 4. Changes in Market Share of British Contractors between 1993 and 2015

⁷⁹ Smyth and Lecoevre (2015).

⁸⁰ Hartnell et al (2010, p.6).

British management again delayed, ignoring the shape of demand post-recession. They continued to react, as the Grant Thornton Report stated:

But it is probably also true that constructors are only just starting to think about where they go from here after two years of focusing on survival.⁸¹

Management can be the agents of change or reactive recipients of the forces external to the firm. Management has continued to choose the latter up to the time of writing, including the Carillion case. There is also anecdotal evidence of a similar trend in management emerging in the overseas-owned contractors in Britain, resulting in greater intervention from the main boards in overseas headquarters. The situation has been summed up elsewhere as follows:

The emergent strategies during the “credit crunch” suggest repetition of trends of the recession of the early 1990s. Mainland European contractors seem to take a more strategic view and allocated resources accordingly. UK contractors tend to be more reactive, employing short-term tactical measures. It would appear that few lessons are being learnt from the previous recession amongst UK main contractors.⁸²

The consequences among the major contractors for the period were:

- The growing misalignment between market drivers and strategic management capabilities among British main contractors with a similar trend in evidence among the British management of overseas-owned contractors.
- A continuing loss of market share among British-owned contractors, compared to mainland European-owned contractors investing in geographical diversification and competitiveness.

The primary outcomes for the industry were:

- Main contractors failed to reform management practice in the firm to support the previous reforms in operational performance.
- There is no longer a significant presence of British-owned contractors operating internationally.
- British-owned contractors are minor players among European players and of reduced importance in the top tier by size in the UK market.

The management of the large contractor, especially the British-owned main firms, appears misaligned with the demand in the market. The size of projects and the complexity of many mean that organisational capabilities need to support construction project capabilities. The organisational capabilities include an outward focus for growth in being able to develop and retain the experience to undertake the largest projects in both domestic and overseas markets. While share markets and financial management have some responsibility, it is the task of senior management to address and balance the full range of management responsibilities. This is given further impetus in the post-2008 economic climate of low interest rates, whereby ROCE can no longer be relied upon as a key component of the main contractor’s business model.

⁸¹ Ibid.. (p.9).

⁸² Smyth (2010b, p.10).

8.0. Conclusions

The involvement of the state in shaping the market has been demonstrated from intervention and control during the Second World War and during the reconstruction period. The management of the British-owned main contractor has not fundamentally changed since the Second World War. It has successfully reformed most areas of its business except for its management practices; it has failed to invest in developing capabilities to serve emergent and current market needs. The result has been the loss of market share against European-owned rivals over recent decades. The current business model that has been so dependent upon the return on capital employed (ROCE) is broken in the prevailing environment of low interest rates.

Ownership has been separated from management, but this is insufficient explanation alone for the current approach to management in construction firms. The origin of ownership has not been a concern in other sectors such as car manufacture. It need not be a concern in construction, except where government tries to influence the industry when decisions are increasingly determined overseas, and when government declares a state of emergency, which occurs in wartime. The concern is that it is a reflection of management awareness and style – it is a matter of choice and intent. The current position is exacerbated by short-term economic factors, resultant intensification of transactional financial policies and senior management financial incentives.

It might appear surprising in the current era of political thinking and neo-liberal economics that state intervention had been so powerful in inducing the restructuring of the construction sector into its modern form. This report has not argued for any change of ownership or necessarily for future state intervention. It is arguing that the sector are followers and reactive to trends. They are not the leaders nor setters of trends. Clients and government have been the direct and indirect innovators, especially through procurement and demands. Therefore, if management will not reform itself to support effective delivery of the projects needed, then external intervention may be required on a large scale to drive change to meet the wider economic and social needs.

In summary, it is now insufficient to seek survival and then growth. ROCE is an insufficient source of profits. Investment to survive and growth are now inextricably linked under current patterns of demand and financial conditions. Embracing this reality is in the hands of management to implement change, whether it is driven internally or externally. Clients and society need change and this is only likely to accelerate with large-scale and highly complex renewal projects and making provision for climate change. The McKinsey Report⁸³ should only be used as an indicative guide, but they estimate \$57trn of infrastructure investment is necessary worldwide between now and 2030 simply to maintain projected global GDP growth. This excludes any accommodation or provision for climate change, such as flood defences. Robust and vibrant modern construction firms with renewed management approaches are required to meet societal need.

The reason management has not been reformed is deep-seated, as this report has tried to indicate. The current structures and forces at work may mitigate or act against this, even if there is will for change. Any hopes can lead to disappointment, and hence castles in the air. Yet, putting down a marker is a reasonable thing to do. Therefore, a number of recommendations for management are listed:

⁸³ McKinsey (2013)

- Reform the current business model to meet social, economic and environmental needs through investment and capability development in the firm and to support project operations.
- Adopt strategic planning with short, medium and long-term objectives to:
 - a. Support growth strategies for the firm on the national and international stage,
 - b. Support strategic improvement in meeting project demands, managed through contractor firm programme management.
- Support the strategy with investment, human resource coordination and management and long-term business development and marketing plans to provide integrated services and effectively lever and manage the supply chain to meet both market and individual client needs and foster firm growth.
- Develop structure and sets of routines for programme management.
- Develop and support other management and technical capabilities, including integration between firm functions and integration of suppliers and subcontractors at the point of delivery – a mature systems integration.

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