

IS THE CONSTRUCTION INDUSTRY RIPE FOR A NEW OPERATING MODEL?

The construction sector is a huge part of the UK economy, producing an output of £138bn in 2016 and employing 1.2 million personnel directly. Including those indirectly employed would add a further 1.5 to 2.0 million people to that figure.

The notoriously cyclical sector has been in modest growth mode in recent years both in the UK and globally, but the construction industry has also faced major changes to market conditions, and to the industry's operating structures. These include:

1. Reducing social budgets as austerity hit government spending
2. Pockets of growth in emerging economies vs. stagnation in some developed ones
3. Increased scrutiny of quality, health, safety and environment practices
4. Varying sub-regional economics with better margins in metropolitan areas as compared to tier 2 and tier 3 cities
5. Increased competition resulting in aggressive bidding for major developer and government contracts, leading to pricing pressures
6. Significant resistance to variation recovery on PPP projects

7. Negative working capital nature of construction forcing some players to accept lower margins in return of favourable payment terms
8. Emergence of off-site manufacturing and pre-fabrication
9. Building Information Modelling (BIM)

The result has been sustained pressure on margins across the sector.

While some businesses are responding to these challenges, the industry has, in many respects, been slow to react. We believe the time is right for a fundamental rethink of operating models in the light of new business conditions.

PERFORMANCE OF UK CONSTRUCTION

The UK construction sector has over-capacity and is fiercely competitive. Increased competition has impacted margins negatively compared to European and global counterparts.

We analysed a statistically random sample of 100 construction businesses, with 17 companies having a turnover of above £2.5 billion returning an average EBITDA margin of 2.6%.

In contrast, a sample of European businesses of similar size recorded an average EBITDA margin of 8%.

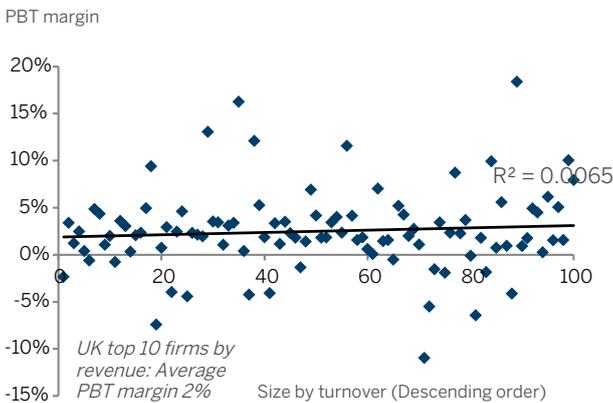
UK margins have not only been impacted by market changes and high levels of competition, but also by a lack of efficiency and effectiveness of operating models.

This paper focusses on evaluating some of the intrinsic causes of low margin UK construction players and suggests ways to improve performance.

Economic theory and evidence generally points to a positive correlation of scale and profitability. Put simply, larger businesses are on average more profitable (all other things being equal).

We reviewed PBT margins by size of the firm for top 100 UK construction firms. Surprisingly, we found no correlation between firm size and profitability.

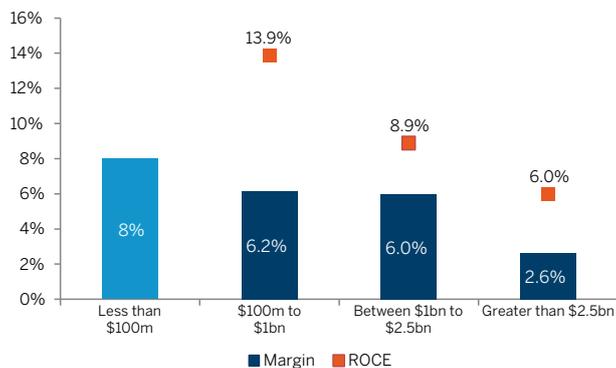
PBT Margin by turnover for top 100 construction firms



However analysis highlighted that when classified into groups by turnover **average profitability was actually higher for smaller businesses**

To confirm this, we increased the sample to 179 construction companies and time period to 3 years from 2013 to 2016.

EBITDA margin and ROCE by size groupings



As can be seen in the graph, firms with turnover over \$2.5bn had the lowest margin which increased significantly for firms with turnover between \$100m to \$1bn.

A survey by NAHB¹ indicated that this trend continued as the firm size further reduced below \$100m.

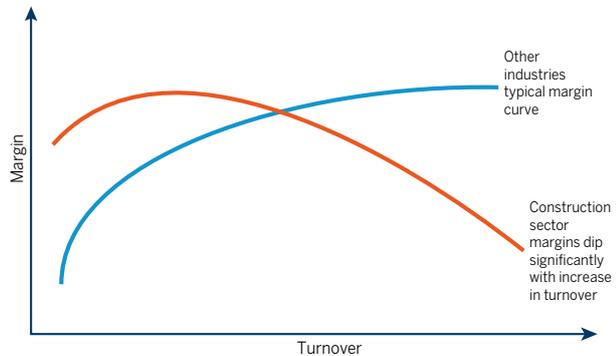
What happens in other sectors when the firm size increases. Does profitability increase, decrease or stay the same?

Over years many studies have been conducted to test Baumol's proposition which states that "increased money capital will not only increase the total profits of the firm, but because it puts the firm in a higher echelon of imperfectly competing capital groups, it may very well also increase its earnings per dollar".

While Baumol's effect² is by no means universal, the UK construction sector is particularly notable in that margins actually appear to reduce considerably as size increases which is not observed in most other industries or samples.

So what have been some of the key reasons that have led the UK construction industry into a structure where scale has a negative impact on profit?

We see a flawed approach to risk as a key part of why UK construction is failing to make 'normal' profits.



(1) <http://www.NAHB.org> - The Cost of Doing Business Study (2016)
 (2) Baumol (1962); Economic Theory and Operations Analysis.

FLAW 1: FAILURE TO ESTIMATE AND PRICE THE RISK:

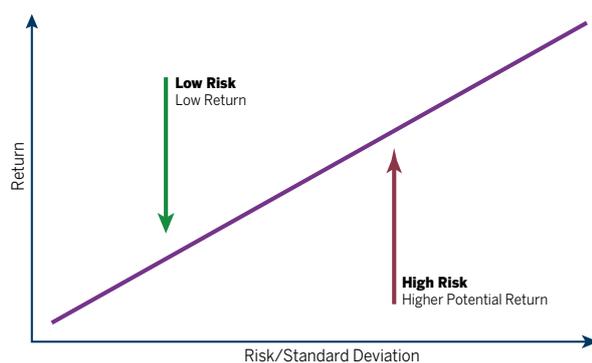
A typical construction business is an agglomeration of contracts and overall performance is the net performance of its well and poorly performing contracts.

Just a few loss making projects can, and often do, evaporate all the profit retained through numerous well-managed, better performing projects, so management of downside risk is key to overall profitability. Our experience in the sector has shown that typically 1 loss making project is enough to absorb profits of 5 to 7 profitable ones.

Surely in recognition of this systemic risk issue, it would be rationally assumed that construction companies would: firstly, assess risk rigorously before signing contracts; secondly, ensure that the bidding profit margin on good projects is sufficient to cover a normal rate of losses; thirdly, ensure that processes are effective to maintain the delivery of profit during projects and limit downside in case of disagreed variations.

However we find that the industry as a whole does none of the above consistently and effectively.

Low barriers to entry have led to a highly fragmented industry creating intense competition and these pressures are further exacerbated by a stagnant or even a declining market in certain segments.



Slowing demand has cyclically resulted in firms fighting to get any work available by slashing their prices and cutting corners as work reduces.

Further, sub-optimal front end processes have meant that projects with issues are not identified at the start and during the project and effective mitigating actions are not planned.

On the face of it, the typical pricing process (see figure 1 on next page) used throughout the industry purports to cover all the risks that may potentially affect businesses' performance and ability to deliver a project profitably, and to "price it in". In effect we find that this does not happen consistently.

To what extent is rigour applied to test whether all the risks are sufficiently covered?

Case study: A UK facilities management business

A UK based facilities management business was making losses following a period of aggressive growth and we were asked to review its SG&A costs. During the review we found that a reduction in support function costs was not sufficient to turnaround the business which resulted in a further study of its operating costs. To understand the operating costs we reviewed project structuring, resourcing and procurement practices by individual contracts.

On conducting a root cause study of the loss making contracts the three same causes emerged:

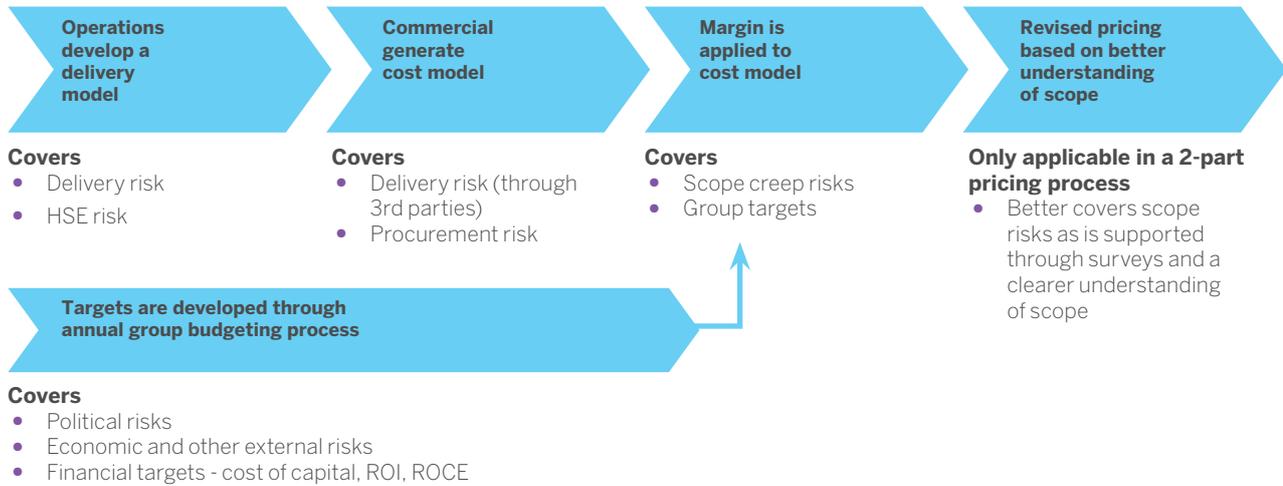
1. Risk of interface between the business' clients and their own IT systems was not identified resulting in significant backlog of incoming work orders
2. Poor change management was leading to insufficient recovery entitlement
3. Risk of contracting skilled sub-contractors was not properly addressed, resulting in delivery of low quality outputs which were identified as defects by client which then required rework

In this case risks were overlooked during the bidding and pre-construction process. The organisation's delivery model assumed an ideal scenario of all client processes and systems being synchronised with their work management system. However during deployment significant IT issues emerged which led to delays and backlogs of work. This not only resulted in operators being unutilised while IT issues persisted but also in additional investment being required to reduce backlog once systems were harmonised. The additional investment pushed the contract into RED even before the actual delivery started.

Further issues emerged in the contracts change management procedures, with the company failing to follow these correctly. Changes were not notified on time or in sufficient detail and clients were not invoiced in some cases.

Defects also arose due to poor supply chain management (i.e. selection of cheaper sub-contractors with whom they had not worked with before), pressure on maintaining margins, failure to control quality on site, poor management of quality and resources being spread too thinly as growth increased.

Figure 1: Typical pricing process



All of the above risks were neither considered nor priced in the bid process. The business later improved its bid processes to incorporate the risk of unknowns, and deployed tiger teams to support middle management and delivery teams to align with the leadership strategy of aggressive growth.

FLAW 2. POOR TARGET SETTING AND RISK COVERAGE IN THE GROUP BUDGETING PROCESS:

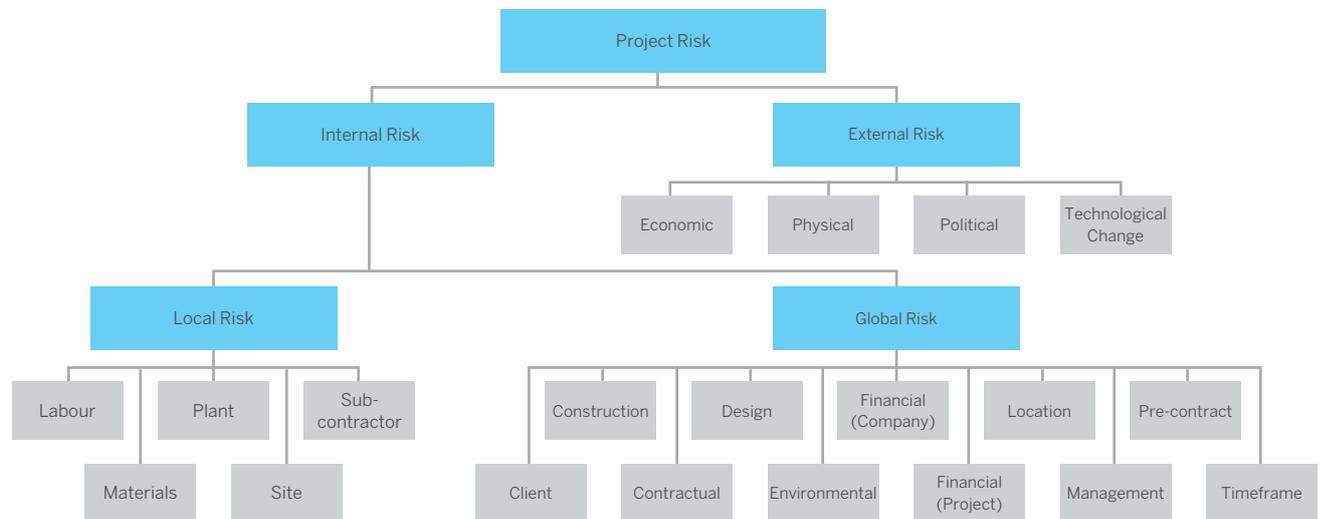
A typical group budgeting process should decide targets based on internal and external appraisal of cost of capital, ROI, ROCE and other financial targets set by stakeholder and market expectations, but in truth, businesses tend to adjust budgets incrementally based on previous years of performance.

The extent to which economic and political risks are considered and affect the strategies of construction companies varies from business to business but our experience suggests that most businesses tend to develop targets based on historical performance and adjust budgets incrementally based on previous years of performance and competitive pressures. We find that only rarely do such processes reflect the risks sufficiently.

An example of this would be the current Brexit process where the response by businesses has been highly varied.



Figure 2 - UK construction risks



Some organisations are waiting for firm changes to emerge from the negotiation process before taking action, whilst others have proactively started scenario planning and building risk mitigation plans for a variety of these scenarios.

Another issue we see frequently is group targets not being sufficiently differentiated between various business units and sub-sectors. While in theory each sector will have its own plan, corporate “groupthink” often levels the targets across the group – with promising areas getting relatively lower targets than they should, and struggling divisions still having overly ambitious targets despite performance evidence. Management theory may argue for the transfer of resources between units, but this happens remarkably rarely in practice.

Both overly aggressive targets for certain business units that are undeliverable and under-ambitious targets for others will over time lead to there being a failure to maximise the potential value of the group – and result in margins being blended down towards the unacceptable EBITDA seen in many construction businesses.

FLAW 3: INEFFECTIVE GOVERNANCE OF RISK THROUGH THE LIFECYCLE

Risks in construction projects are many and varied, any one of which has the potential to impact a project’s schedule and/or cost, and therefore has the potential to erode a company’s already tight margins.

In the confines of this article it is impossible to cover every risk. The table above provides a useful overview of risk in typical project.

In our experience, construction projects in the UK are most commonly affected by the following three risks (figure 2):

Design

Where a contract takes a traditional form with the design being undertaken by the employer, contractors should be aware that although they do not have design risk, design changes are highly likely to occur, and pricing of this risk at tender stage together with robust change management procedures is essential.



Where the contract is 'Design and Build', the increased risk again requires carefully considered pricing, and thorough processes being in place to manage the design team.

Changes

Robust change management procedures are vital so as to promptly identify, record, notify and pursue contractual entitlements. A good knowledge of the different forms of contract (i.e. NEC, JCT, etc), and an awareness at bid stage of bespoke amendments is essential to protect the financial interests of a project.

Quality

Good quality control from procurement stage through to execution is essential for the successful outcome of a project. Tight control by a contractor or employer of its supply chain, the vetting of designers, sub-contractors and suppliers, combined with good project management will reduce the risk of defects eroding margins.

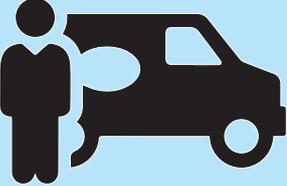
Governance of performance

As discussed above there are a number of ways that UK construction businesses are failing to manage risk, but we see that governance of performance is also a critical issue.

A recurring issue within the construction industry is the lack of stringent governance and motivation to improve performance as firms grow. How can this be? Surely the professionalisation of a business should lead the better governance of performance as it grows?

To understand this it is worth considering typical operating models deployed as firms grow:

1. 'Man in a van' business



What role is played by the owner?

- Sales & pricing
- Active oversight and management over all functions

What is at stake?

- Investment
- Career aspirations
- Lifestyle

In this model the owner of the business has an active role in managing operations. For him/her there is a huge financial stake and hence motivations are in line with the stakes involved and rewards for better performance are high.

Although risk is moderate as typical investment is not significant, the high upside provides the necessary motivation to perform better, and personal risk of failure is a huge motivator to the owner to keep costs low and take risks seriously.

'Man in a van' businesses go bust regularly, but we see that those who have been operating for some time are often both profitable and conservative in the risks they absorb.

2. Family owned regional business



What role is played by the owner?

- Sales & pricing
- Active oversight and management over all functions

What is at stake?

- Investment
- Career aspirations
- Lifestyle

In this model the owner of the business manages the managers, but is still very close to the activity/service delivered.

Typically owners start the day by actively planning the activities and then moving from site to site to supervise and push performance.

Motivation is very high as there is a possibility of growth and profitability and also the potential to find a lucrative exit. Also risk to the owner is higher than for a smaller business as the investment is more significant. Many businesses in this category may start to experience issues with management, performance and sustaining growth as the business grows and it becomes increasingly hard for the owner to maintain the "touch" they are used to having on all issues.

Nevertheless the desire for a legacy, profitable exit and the risk of insolvency keeps owners actively involved to improve performance and push profit.



3. Large construction major



What role is played by the owner?

- Owners are typically passive investors
- Institutional investors may be more active but still are arms-length to day to day operations

What is at stake?

- Investment in the business which tends to be small for individual investors as portfolios are well diversified

In this model, owners are typically investors and hence are passive and at a distance from day to day operations of the business.

The business is typically run by a professional CEO with an executive team and middle management to drive performance.

Although the model is very similar to other major businesses in other sectors such as FMCG, technology or diversified industrials, construction has lagged behind in setting effective governance and incentive structures to drive the profitability observed in other industries.

FLAW 4: INEFFECTIVE INCENTIVES FOR BU MANAGEMENT

A study conducted with a major UK construction firm present in multiple business segments indicated that even the top management of various BUs did not have incentives that were effective in motivating them. Another study with a different business showed incentives based on revenue and minimum margin did not support growth and innovation, and did not provide strong incentive for maximising margin.

There are various ways other industries incentivise their employees. Typically it includes performance at four levels:

1. Performance of the overall business
2. Performance of region/segment
3. Performance and achievement of the key metrics of the team/function; and
4. Performance of the individual

Another example would be that of business development personnel focussed on winning government contracts, who are incentivised using metrics weighted differently in a formula. The metrics include:

1. Business revenue and profit performance
2. Achievement of revenue growth targets over last period
3. Entry margin achieved
4. Gap between exit margin and entry margin (retrospectively calculated pushing the BD personnel to price in appropriately)
5. Win rate for targeted contracts

Other factors that enable better performance include better data transparency, monitoring of contracts using leading financial and physical KPIs, organisational structures enabling all personnel to associate their performance to P&L and appropriate delegations.



WHAT CAN CONSTRUCTION COMPANIES DO TO IMPROVE?

It takes time to change the culture of an organisation, yet we find that many of the above issues can be addressed rapidly, with improvements to profitability within 3 to 8 months of implementation.

What is required is a bottom up evaluation to assess issues and highlight where one or several of the “four flaws” are present and impacting value. Identifying the flaws at the ground level then leads to development of pragmatic solutions to boost profitability over time.

Some key levers that we have deployed repeatedly and that construction companies could evaluate include:

- Redesign of the bid process to assess and price risks appropriately
- Developing lean frameworks by job type. Evaluate best performance by job type (schools, offices etc.) and deploy those models to other jobs while accounting for site and other differences to minimise costs

- Spend consolidation – spend is often fragmented and a supplier consolidation could lead to significant benefits. Some construction companies have focussed on developing and supporting good suppliers to operate regionally or nationally and this has reaped benefits
- Reduce middle management layers and delegate authority at middle management layers
- Better data transparency and governance mechanism
- Targeted incentivisation to “mirror” the level of involvement of an owner in a smaller business

In summary we would advise large and medium businesses to step back and ask themselves: why are we satisfied with 2-3% profit margin? Look to address the “four flaws” in your business and develop a detailed plan to eliminate them; develop plans for the business and targets for your people that are more ambitious than “the current industry norms”. Those norms can change – with your business leading the way!



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