

IMPACT OF MARKET FORCES ON ENGINEERING CONSULTING INDUSTRY

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Abstract

Different strategic management models have been studied for the manufacturing and commodity industry, however, less attention has been given to how engineering consulting firms fit in the model of market forces. A total of seven market forces have been considered including the five market forces from Porter's five forces model and two other market forces of globalization and deregulation to analyze engineering consulting industry. The purpose of this article is to study the impact of market forces on professional services provided by engineering consulting firms. The market forces include the evaluation of the internal and external factors affecting the strategic planning and managerial implications associated with engineering consulting industry.

Keywords:

Engineering Consulting;
Porter's Five Force Model;
Market Forces;
Client.

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Introduction

This article uses Porter's five forces classic framework of industry analysis and two additional market forces to evaluate engineering consulting industry as shown in Figure 1.

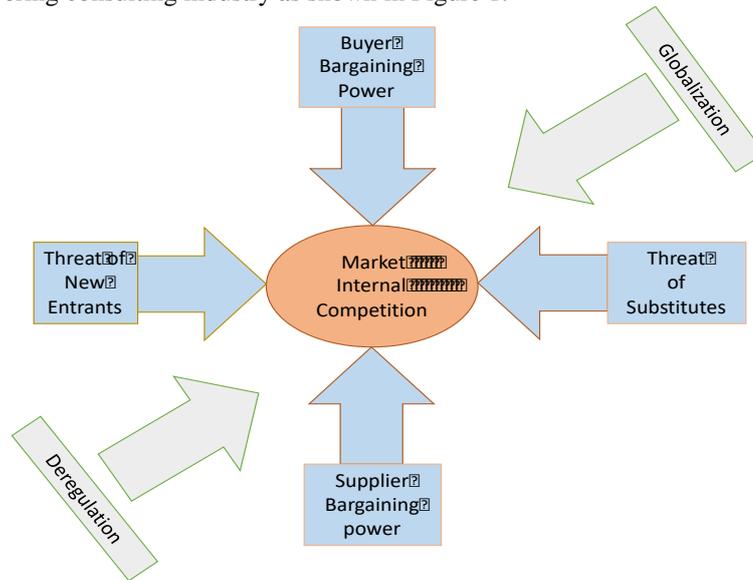


Figure 1 Market Forces (Source: adapted from M. E. Porter, *Competitive Strategy*, 1980)

Although engineering consulting is a specific industry, the analysis includes various parameters including but not limited to required technical skillset, local or international clients, financial feasibility, size of a consulting and/or client's Company, relationship with clients, competition, and market reputation as shown in Figure 2. A nuanced discussion of the impact of these market forces on engineering consulting firms is presented below.

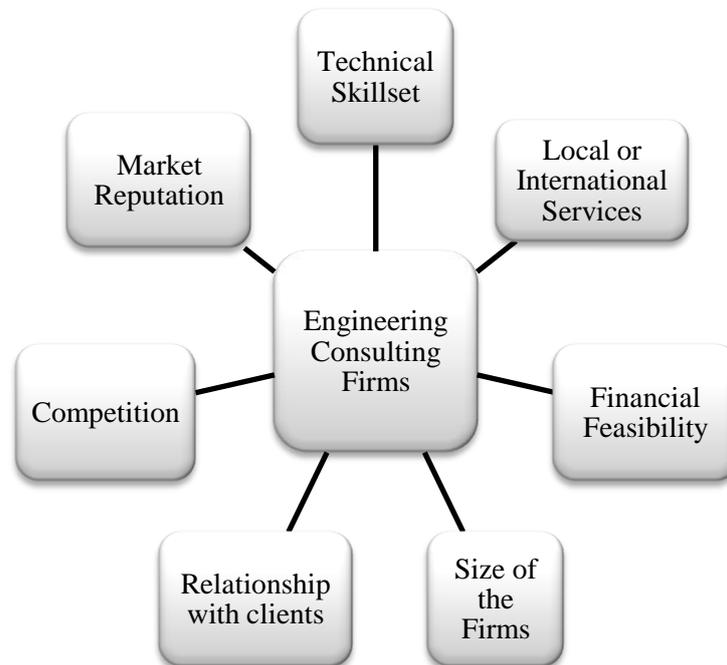


Figure 2 Parameters for analysis of engineering consulting firms

Market forces impacting engineering consulting firms:

1) Market Internal Competition

Porter's five force model talks about internal competition among existing industry segments. Competition varies by the size of the market and offered products and services. Porter says that "firms are mutually

dependent" [1] which means any competitive move by one company will be felt by other company and strategic decisions made by a company will be interlinked to what its competitors are doing or not doing.

The engineering consulting companies have been mostly able to maintain their own niche market by offering distinct products and services. However, with increased competition and globalization, companies are trying to beat their own price along with matching the competition. Selling engineering consulting service is no less than selling a commodity, where price, value, and quality are constantly assessed by hiring corporations before signing consulting firms.

2) Threat of New Entrants

Porter's five force model reflects that eagerness of new entrants to gain momentum in the market share will result in a decrease of profitability of companies in that sector. The new entrants will cause extra capacity in the target market and will eventually lead to less demand relative to the supply of commodity or service. [1]

Engineering consulting services are a low-cost capital investment compared to setting up a manufacturing plant to make a product or spending a fortune to develop a top class software, therefore, barriers to new entry are minimal. [2] This results in potential influx of multiple new entrants that may only require low capital finance system to support them including fixed cost rental property space, website, laptops, printers etc. In some instances, only a website is required for new entrants wanting to set-up a staffing company; this could be a win-win-win situation for employer, employee, and client due to low-cost set-up benefiting all and taking off various layers of redundant management and administrative cost. These new entrants could be anyone who wants to be some independent consultants, professors from engineering schools, experience consultants working with clients starting their own firms, foreign engineering consultants etc.

Some of the challenges of new entrants in the engineering consulting world are:

- Getting first big project, maintaining quality, and sustainability of the business
- Jobs requiring technically demanding skills
- Efficient execution of first few projects followed by planned expansion

3) Bargaining Power of Buyers

According to Porter's five force model, bargaining power of buyers depends on bargaining leverage and price sensitivity. Bargaining leverage relies heavily on buyer volume, buyer switching costs compared to firm switching costs, and ability to integrate backward. Price sensitivity depends on total price purchases, product differences, brand identity, impact on quality, buyer profits, and decision-makers' incentives. [1]

Engineering consulting firms are no stranger to this model and clients which are buyers of consulting services are fully aware of their bargaining power. If companies are giving big projects to these consulting firms, then they have advantage of negotiating rates assuming offered services are not unique and are available through other firms. Furthermore, if a company can develop and train in-house resources and backward integrate these services into their business, then this gives bargaining power in hands of buyers. The abundance of consulting companies in the mature market and uniqueness of consulting companies in the emergent market plays a vital role in dictating power for buyers. The exception to all this would be engineering consulting companies bidding for some government or public companies where price is the most sensitivity factor and companies are not differentiated by other factors.

4) Threat of Substitutes

Porter's five force model defines the threat of substitute as one of the core principles for profitability or loss in that business. Determinants of the threat of substitute are - relative performance of substitutes, switching costs for buyers, and buyer's inclination towards substitutes. [1]

For engineering consulting firms, some local and international contractors are a threat as they have more flexibility of offering their services at a lower cost due to lower labor and set-up cost. However, switching costs for buyers for substitutes would also depend on the quality and reputation of the substitute products and would vary based on strategic alliances and contracts setup with existing firms. Furthermore, the threat of substitutes is excessive if buyers can setup required services in-house to substitute engineering services and generate a value of money for their company. Therefore, the extent to which engineering services are affected by substitutes varies quite a bit.

5) Bargaining Power of Suppliers

According to Porter's five force model, some major elements of supplier power are - differentiation of inputs, switching costs of suppliers in the industry, presence of substitutes, relative cost to total purchase in the

industry, significance of volume to suppliers, and threat of forward integration relative to threat of backward integration by organizations in the industry. [1]

Small engineering consulting firms do not have much bargaining power while dealing with large multinational companies, and terms of the agreement are mainly dictated by these big fortune top companies. Small consulting firms want to do business mainly to get that brand name recognition to have done business with, to establish credibility in the market, and hope to get sustainable work from this exposure. However, big engineering consulting firms promise warranty of quality, stable supply of resources, and organized deadlines; thus higher bargaining power. It can be hard to have bargaining power since providing engineering services is highly customer focused, and bargaining power can be high if the backlogs of projects are high and services offered are niche and high quality. Buyers prefer paying the higher cost for reliable engineering services than poorly designed products at a cheaper initial cost. Five force model points that suppliers can integrate forward and become buyer's competitor and buyers can integrate backward to become suppliers', therefore, it's a fine bargaining power line which should be evaluated carefully. Highly skilled engineers can be powerful supplier of knowledge and technical wisdom when the market requires expertise in specific engineering category.

6) Globalization

Fast pace growing economy and volatility of the market is due to exponential rise of globalization. Customers have the privilege of shopping around the globe and comparing prices. Local small companies are in the global market without even doing any export or import and are only a few clicks away from being an international supplier or buyer. This change of global and networked market requires different strategies as opposed to only considering the Porter's five force model.

Engineering consulting firms are not immune to globalization and require strategies in place to redefine its networking and business foundation. However, services are different than buying a commodity online, and engineering services mostly require some prior connection for a firm to be hired for its services. Small engineering firms can get business overseas based on the companies it has partnered or collaborated with to execute the projects in the past. Big consulting firms have an easier route to prove its credibility, however, bigger challenge is pricing and customer service for getting international clients.

7) Deregulation

Over the past decade, government role in many industries has gone down. Countries around the world are de-regulating various sectors like insurance, aviation, telecom, energy for better competition and service to the customers. Additionally, this has resulted in outsourcing, restructuring of organizations, and open thinking for constantly evolving to be in sustainable business.

Engineering consulting firms are mostly taking advantage of these de-regulations to expand their business. However, that also means more cut-throat competition and lower prices. These deregulations can result in improved quality due to outsourcing and on the flip side can result in poorer quality due to lesser control. But again, firms are getting better in being vigilant in terms of what can be outsourced and what should be in-house.

Conclusion

The conducted theoretical analysis of engineering consulting firms shows that distinctive characteristic of engineering firms faces numerous challenges with tactical and managerial consequences. All market forces listed above are interconnected in recognizing financial and technical characteristic of engineering consulting industry. The analysis in this article briefly describes the effect of market forces in engineering consulting firms in general. Detailed analysis can be done by narrowing down the parameters such as location, sub-type of engineering firms (process safety, environmental, software support etc.), type of expertise (local regulation vs international best engineering practices expertise), and much more.

References

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- [2] Lorsch, J.W. and Tierney, T.J. (2002), *Aligning the Stars – How to succeed when professionals drive results*, Boston: Harvard Business School Press