

CAN WE IMPROVE GRAVEL ROADS INDUSTRY - IS COMPETITION CONSTRUCTIVE?

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INTRODUCTION

Most of us react favorably to the concept of competition in an Industry. We believe that competition means lower prices, more choice, better quality in the product and service level, etc. But often the Industry is not operating to foster good competition.

In fact competition is at the core of the success or failure of firms. Firms that have a very competitive position in an industry are more profitable than firms that have chosen a poor competitive position. BUT, not all industries offer equal opportunities for sustainable profitability. Some are more attractive than others, because competition is determined by a number of factors totally independent of whether the firm is domestic or international or produces a product or a service and over which the firm has very little control over these factors. The rules of competition, according to Michael Porter of Harvard University, are embodied in five competitive forces:

- The entry of new competitors into the industry
- The threat of substitutes
- The bargaining power of buyers (clients)
- The bargaining power of suppliers
- The rivalry among existing competitors.

The five forces collectively determine the industry profitability because they influence the prices, cost and required investment of companies in an industry, i.e. the elements of return on investment.

Buyer power influences the prices the company can charge, for example, as does the threat of substitution. The power of buyers can also influence cost and investment, because powerful buyers demand costly service. The bargaining power of suppliers determines the cost of raw materials and other inputs. Competitors influence prices as well as the cost of competing in areas such as plant, product development and advertising. And lastly the threat of entry limits prices and in some cases tends to increase investment required to deter entrants.

We also know that satisfying buyers' needs is a prerequisite for industry profitability. Buyers must be willing to pay a price for a product that exceeds its cost of production or an industry will not service in the long run. The crucial question in determining profitability is whether firms can retain the value they create for the buyer or whether this value is competed away to others.

For example, new firms entering the industry and even current competitors might compete away the value of lowering prices or by raising the costs of competition. Similarly, substitutes tend to determine the extent to which some other product can meet the buyer's needs at a lower price.

So the bottom line is for a company to ensure that it understands how the five competitive forces work within the industry and then position itself to reap the greatest benefits. What if a firm is in an excellent competitive position, but is in such a poor industry that it is not very profitable and further efforts to enhance its position will be of little benefit? Does the company get out? Or does the company try to influence the environment in the company's favour?

In order to be able to answer the above questions one has to analyze the industry in which the company is operating.

THE GRAVEL ROAD INDUSTRY

The industry we are concerned with is the "gravel road industry". This industry is a sub-section of the much larger Roads Industry, but it is operating in such a unique way that it can be taken out and treated on its own.

Below the profile of the stakeholders in the five competitive forces is given. In other words, we discuss who the buyers and suppliers are in this industry, as well as the new entrants, substitutes and current competitors.

This industry does have other stakeholders, which must be taken into account, despite the fact that some play an indirect role. They include

- Road users
- Politicians at national, provincial and local level
- Consulting engineers
- Contractors
- Tender Boards
- Research Institutes
- Training Institutes
- Funders
- Suppliers
- Environmentalists
- Public at large, who work, live or walk on or next to the road
- Special groups, i.e. Small Business Initiative.

They all greatly influence in one way or another the decision making process for the upgrading and maintenance of gravel roads.

The Buyers

In the gravel road industry the clients or buyers are provincial and local road authorities, as well as representatives from mining, forestry, farming, tourism and private developers.

The industries' operations are not fully integrated. In other words buyers may construct and/or maintain the roads or may contract out this work to contractors. Some buyers and in some cases the contractors as well, purchase road stabilizers and dust palliatives to upgrade the gravel roads.

Some consultants are starting to specify these products.

The main activities in this industry are:

- The procurement of road material, usually obtained from a borrow pit or from an in-situ source.
- The construction of the road. The road material is brought to the road. It is distributed, watered, and then the road is shaped and compacted.
- The road may have a dust palliative applied to it and if the road materials are sub-standard a stabilizer may have to be used, if the owner of the road is aware of them.
- To maintain the roads in good riding quality the roads are bladed (dry) at regular intervals.

Gravel roads do not enjoy very high priority with road authorities, who allocate to them extremely inadequate maintenance budgets. Many of the gravel roads in South Africa carry extremely high traffic, for which they are not designed and therefore they represent a real danger for the users of these roads.

They nevertheless are great assets to the economy of the country as they are extensively used by important sectors of the economy, i.e. agricultural, tourism and mining sectors.

Suppliers

There are two types of suppliers, namely the contractors and the suppliers of chemicals.

This industry has literally hundreds of *contractors*, all of them with different levels of skills, knowledge, resources, plant capacity, etc. The barriers of entry into it are very low and therefore it is easy to set up a business.

The main suppliers of chemicals into the gravel road industry are:

- The oil industry
- The chemical industry

Products are sourced both locally and internationally. Both industries operate strongly in the commodities market, where the drive is to push tonnes through rather than to offer high service levels. Generally prices are low and competitive as cost leaders drive them. Hence service levels are kept to a minimum to ensure that whatever value is extracted from buyers is not eroded in superfluous activities.

Both industries have very high capital investment and have to adhere to strict quality standards for their products, environmental procedures, etc.

These industries do not sell directly into the market, but rather through distributors or independent marketing companies. There are many of them.

New Entrants

This industry is plagued by new entrants, sometimes no more than a new brand name of an existing product, which is being sourced from another supplier, often of international origin. They are either independent individuals that worked in some industry with responsibility for roads, civil engineering contractors or chemical traders.

Current Competition

As stated above, there are hundreds of contractors competing fiercely for the jobs currently available in the country.

There are more than 30 products in 7 dust-palliative and gravel stabiliser categories (hygroscopic salts, lignin sulphonates, waxes, petroleum emulsions & resins, synthetic polymer emulsions, sulphonated oils & enzymes, and tars & bitumen) in South Africa, marketed by as many companies.

In this paper, the actual marketing and distribution companies will not be discussed in specific terms. Broad points will, however, be made and of course as in every situation these broad points will not always be applicable to every company.

Substitutes

Within each category there are not many direct substitutes in the market. In most cases, however, the current knowledge of the products is not sufficient for one to be able to ascertain whether they are substitutes. For example, in the seven categories mentioned above, the first three categories are dust palliatives, but they all have unique characteristics and their functionalities are very different. Hence if used correctly they are complementary rather than substitutes.

Currently most substitutes are direct competitive products.

ANALYSIS OF THE INDUSTRY

Below, an attempt is made to discuss the five competitive forces with the view of establishing whether the industry is attractive or not and if not, if it is possible to have a company more competitive than the others.

The Bargaining Power of Buyers

The provincial and specially the municipal markets are very fragmented and there is very little concentration of buying power. The tendering process has a further breakdown effect on the buyer's capability to negotiate anything.

The buyers are often not well informed, cash strapped, and not the only decision makers in the whole process, but one of the people involved in the purchase. There are sometimes consultants, contractors and in some cases donors and financiers. They all evaluate the pros and cons and measure the risks involved.

Occasionally one comes across an engineer that drives the whole sale, because he or she champions the idea and believes that this innovation is going to make a difference to the project. Unfortunately state organizations do not have any bottom line accountability and the impact some of their actions can have on it. They only have to stay within budget, which in most cases means doing nothing. To exacerbate the situation the reward system is not performance related and discourages risk taking. The result is apathy and the blocking in the usage of anything considered "new" in the organization.

The last point that has to be made is that it is very difficult to get buyers to build the right levels of expectations for the product use. For a few Rand a square metre they believe they are going to upgrade their gravel road to a highway.

The Bargaining Power of Suppliers

There are thousands of *contractors* working in this area, some barely surviving. Most contractors want to buy products direct from suppliers in order to earn extra commission and they try to get favourable payment terms. Sub-contracting to most contractors is a very risky thing to do as it is extremely difficult to get paid.

Competence is not always a strength in contractors and hence roads are built with very little understanding of how to achieve good drainage, good compaction, ensure good materials, etc.

There are exceptions to the above, and these contractors tend to be extremely reliable and very capable of producing excellent gravel roads. These few contractors do form good relationships with suppliers of chemicals as their goal is common i.e. produce a good road.

Suppliers of stabilizers and dust palliatives tend to be small firms, with a couple of employees, offering one product only.

The unsophisticated way in which products are marketed into this industry have determined the unhealthy competition currently in existence.

The products are poorly researched and therefore there is not a good understanding how and where the products should be applied, what performance can be consistently expected, maintenance requirements after application, life cycle costs and the economic implication of their usage. Without this knowledge there is poor understanding of product differences and on how to niche market the products, or how to combine them to enhance performance, etc. A stabilizer is marketed as a dust palliative, etc.

The result is that the customers become confused, are ill informed, have very high expectations of all products and often use products for the wrong applications.

With the exception of a few product champions among the current customer base, despite the desperate need the country has to supply and maintain infrastructure without having to invest large capital sums there has been very little acceptance of stabilizers and dust palliatives.

Consultants, who in many cases have to specify a product to be used, are also not well informed and consider black tops as the only way to upgrade a gravel road.

Suppliers often recruit agents among the contractor fraternity, or even worse contractors appoint themselves agents. They also do not understand the usage of these products and simply tender without knowing what they are doing.

This is unhealthy competition, typical of fragmented industries, where everyone is out there to make a quick buck and not particularly concerned with the long-term consequences. Most firms are very unprofitable and a vicious circular behaviour sets in. The more the bottom line is negatively affected, the more products are pushed even into jobs where they will not perform.

New Entrants

The barriers of entry into this industry are perceived to be very low, because new entrants do not require much capital to enter into this market and there is no need to build economies of scale in terms of equipment, plant or operational staff. The switching costs are also generally low or non-existing.

Branding has not been done strongly as most companies involved are not really strong at marketing, and this creates the situation that in general the client or buyer is confused about products in the market.

An absolute cost advantage is important in order to defend a position in the market from “fly-by-night” concerns that source product from anywhere and are lured by the perception of an enormous market out there. They attempt to use the product with little information and experience and in most cases fail.

There are quite a few entrants into the market and they tend to survive by running very small operations and focusing in and outside the country on a few jobs. They are unable to create and maintain a consistent and reliable customer base.

This creates a very unhealthy competitive environment in the country, but it also creates the opportunity for a couple of players getting together and trying to bring some order into the scene.

Substitutes

Most clients buy on price and not on functionality or service, with a few exceptions. As switching costs are low and the buyers have very little loyalty to specific suppliers, substitutes come regularly into the market bringing quite a lot of competition and driving prices down.

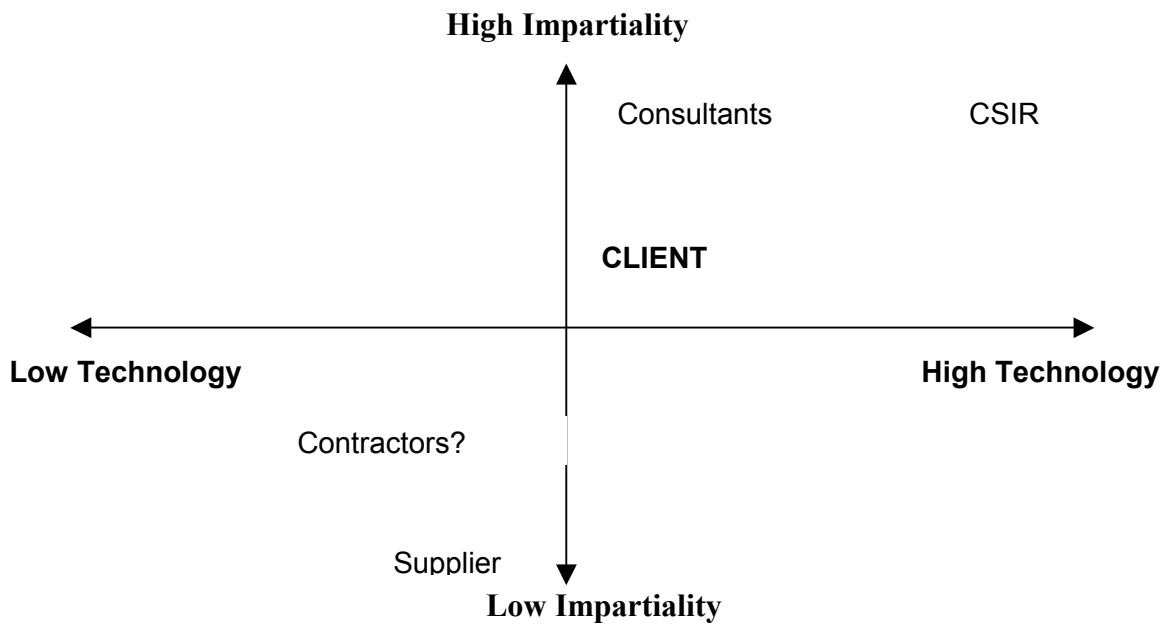
Expectations of wonder products at very low prices are raised, but unfortunately there are no such things. All products require good engineering. If they are long lasting they are expensive in themselves and in the application costs.

The worst aspect is that often substitutes are poorly researched and they do not stay long, but they add to the already existing perception in the market that these products are “risky” and not to be trusted “as they do not work”. They could have played a very worthy role in the overall network if only they had been researched and marketed properly.

Rivalry Determinants

The use of dust palliatives and road stabilizers in gravel roads is not at all a common practice in South Africa. The lack of growth in this industry is once again a symptom of poor competition. Generally the more competition there is the higher the growth rates, but this industry operates in such a manner, that the overall strong message to clients that there are good alternatives to upgrade gravel roads has not been built up.

If one has a look at two very important parameters of the industry, namely technology and impartiality in the usage of the products the placing of the various players is as follows:



The various players work against each other as far as the competitive forces are concerned, as each imposes personal needs and stances.

It is evident from the above diagram that consultants and the CSIR (and other researchers) place an inordinate amount of value in impartiality and hence are not going to get too close to any particular product. Technology is also important to these players, to the point that the practical reality can be easily missed.

On the other hand suppliers push products as discussed earlier.

As there are many contractors in the market, all of them with different level of skills, knowledge, capability, etc. it is difficult to place them in the above diagram. It is safe to say that they have shown very little interest or knowledge of the different products.

The rivalry of the different competitors is intense and the above situation is not conducive to facilitate constructive relationships. Good competitors build on common values and strengths and differentiate strongly on uniqueness. That is not happening in this industry, because they do not know how to do it and they are not able to get the influencers to join forces.

Summary of the Competitive Forces

In summary the main competitive issues in this industry are:

1. Low barriers of entry for contractors and suppliers of chemicals, because not much capital or knowledge is required in order to enter into this market.
2. There is a lack of knowledge of product performance, because many products have hardly been tested. If trials have been put down they have not been carefully and scientifically monitored in order to ensure that good knowledge has been obtained.

3. Suppliers must have clear and comprehensive specifications for the product in terms of road materials, climatic conditions, life cycle costs, application methods, maintenance specification, etc.
4. Suppliers do not always create the right expectation of what the product will do or not do.
5. Products are not strongly branded. Quality products that are well understood are marketed clearly in terms of their properties, features and functionalities. That is not happening and hence no branding is being created with very few exceptions.
6. Suppliers offer one product only and not a product range that can offer the customer the best solution to the clients' needs. This leads also to an unhealthy competition, because complementary products are actually being knocked down against each other.
7. Suppliers of services and product compete on price, because of the fragmented nature of the market, the lack of loyalty from the client and tendering process.
8. Most players in the Industry are not very profitable and run very small operations with very little spare cash to get involved in large scale research and product development.
9. Buyers are fragmented – client, advisor, consultant, donor tendering process.
10. Clients perceive products to be high risk, because many have had inconsistent experiences with different products.
11. Clients are not rewarded for taking risk neither are they encouraged to do so by their organizations and hence the use of new products is at their own personal risk
12. The ability to make a decision is poor, because clients, consultants, contractors are often ill-informed and confused, some lack technical competence to evaluate the product performance and economic benefits. Often they do not have the ability to evaluate the whole road network in order to get the bigger picture. Most do not have much capital and are not assured of sustainable funding.
13. Each player in the industry, i.e. client, supplier, consultant, contractor, technology provider is addressing own needs leading to a non-aligned competitive environment. Again particular products are backed-up as “do all” rather than understanding how to use the different products in the different categories, with their different features and build up in this way the Industry. For example, “stage construction” which is a cash flow friendly concept and where many of these products can play an important role is an option hardly ever considered in this country, despite the fact that sustainable jobs could be created.

KEY SUCCESS FACTORS

The question that we have to ask now is:

“With competitive forces as described above is there room for success for anyone?. ” To answer the above question we have to define the Key Success Factors, i.e. what has to happen in order to change the current situation, as defined by the industry analysis and the competitive forces.

From the competitive forces it is evident that the following issues have to change in order for the industry to become more healthy competitive. They are:

Barriers of Entry Must Be Increased

- Barriers of entry have to be increased in order to contain the number of contractors and suppliers into the industry and this can be done by ensuring that only products which have specifications for material, climatic conditions, maintenance methods, traffic density, application techniques and life cycle specifications can be marketed.

Information Must Be Disseminated Throughout the Industry

- Information about the different products has to be disseminated throughout the industry to ensure that consultants, clients and contractors understand each product. Features of the product and its functionality will have to be well documented. Developments in this Industry should be introduced to students in Tertiary Institutions.

Competitors Must Co-operate in Order to Grow the Industry

- Competitors have to realize that they have to contribute to the industry growth in order to grow themselves and start to create a good professional image for this particular Industry. For example an area of mutual interest is that all products only work if good engineering practices are followed and this should be emphasized to the client. There is no product in the market that can substitute good engineering.

Clients have to be Focused in their Long-term Goals

- Long-term objectives for the country have to start to be taken into account during the decision making process to ensure that they start to be implemented now. For example the whole road network has to be looked at rather than a few roads in isolation to ensure that the upgrading is really cost effective.
- Gravel roads should be allocated adequate and sustainable budgets, because neglected roads cost in the short and long term a lot of money to the country, not only to the road authorities that have to rehabilitate these roads but also to the road users.

Clients have to Specify their Short-term Objectives Clearly

- Clients have to be more focused in their needs and specify very clearly their short-term objectives (and in this way their expectations), i.e. acceptable dust levels, frequency of grading, frequency of regravelling, riding quality of the road, etc.
- Whatever is specified must be measurable in order to establish if the specifications can be adhered to and later on whether they are being met.

Excellence Must be Encouraged in the Industry

- Healthy competition encourages competitors to become unique in certain areas, either through the service they offer or product development or product portfolio. They can compete furiously in those areas. The client should encourage this aspect of competition. For example the tendering process should take into account the technical competence and service levels that each company offers to stimulate healthy competition.

CONCLUSION

Our discussion illustrates that the gravel road industry is currently not conducive to offer any of the companies operating in it great opportunities and sustainable profitable levels. Competition among the different firms is not healthy, because it is not encouraging the industry to grow.

The identified competitive forces show that a company may position itself in such a way as to gain a reasonably good competitive position opposite other firms, but there are many external factors that need to be addressed in order to make the Industry profitable enough to and the current business environment has to change quite dramatically before the opportunities start to emerge. The industry as a whole has to operate more efficiently, upgrade its skills and start to deliver quality roads in order for the client to be convinced of allocating more adequate and sustainable budgets to it.

Let us not forget that win-win positions are an integral part of healthy competition as they foster growth for all, cost effective solutions and a professional behaviour that can only profit the people and the country.

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Curriculum vitae

Isabel Maria Braz de Figueiredo studied Science at the University of Natal in Pietermaritzburg receiving a BSc (Physics & Chemistry) in 1973. She continued studying Physics at the University and graduated with a PhD (Physics).

She joined then AECI, in their Planning Department in operational research. In 1985 she moved to strategic planning becoming a manager in this area. The main responsibility was to facilitate management into their long term planning., which eventually led to the formation of a joint venture between Sasol Chemicals and AECI Chlor-Alkali and Plastics Ltd., namely Polifin Ltd.

In 1990 she also held the job of Product Manager- Detergent Business in the Chemicals Division, as well as Product Development Manager in the same Division. In a very part time basis Roadtreat business was started, where one of the companie's products, calcium chloride, was researched and marketed as a dust palliative and surface stabilizer. In 1994 she became full time Roadtreat Business Manager until last year when she bought the business from Polifin Ltd.