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Marketing Analysis

in Project Evaluation

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ABSTRACT*

This paper presents how marketing concepts and tools may be applied in investment appraisal studies. The marketing evaluation process begins with a description of the project concept based on the market need the project aims to satisfy. This aids the definition of the project's relevant market and leads to an analysis of the market. The market consists of customers and competing suppliers. The project must try and match its potential capabilities to existing and potential customer needs. In doing this, the project gains competitive edge and maximizes potential performance.

Market performance is a measure of the project's ability to satisfy the key market need factors within its defined target market. The paper shows how a project analyst may evaluate a project's market performance. Such a measure may be used as an indicator of competitiveness by which to project market expansion and market share estimates. In economic analysis a market expansion, is an outward shift in the demand curve, and takes place when a project achieves a competitiveness rating higher than the level of other market competitors.

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I. INTRODUCTION

Marketing analysis in project evaluation refers to the methodology by which **strategic marketing principles** are applied for the purpose of assessing the capability of an investment project to survive the competitive forces in its market. It provides the rules by which the **marketing variables** in a projected cash flow such as, sales volume, price, distribution and promotion expenses are derived. Marketing analysis also examines the **integrity and consistency** of the marketing assumptions and, where possible, helps in reformulating the project thereby increasing its likelihood of viability and sustained market performance.

This paper addresses the need of the project analyst to understand and assess the effect of market forces in appraising investment projects. It attempts to show how financial projections can be made more meaningful and less risky when marketing concepts and tools are used in project appraisal.

The most crucial question that a marketing analysis has to answer in a project evaluation study is whether the project can compete successfully in the market place over its expected lifetime. Will enough revenues be generated to offset the costs; is the market large enough; to what extent can the products of the project be expected to expand the existing market or accelerate its growth; what is the threat of competition now and during the life of the project; indeed, what is the management's capability to respond to such threats or to take advantage of opportunities along the way; what marketing expenses have to be incurred to optimise long term revenue and costs.

Providing answers to these crucial questions is not an easy task. Assumptions are both inevitable and necessary as there are usually too many uncertainties involved. Nevertheless, the questions <u>have</u> to be asked before thoughtful answers can begin to be found. Many of the projections will still be based on subjective opinion and incomplete databases. There are no really right and wrong projections. There can be only thoughtful versus careless or superficial projections. The latter will, in all probability, lack more than just numeric accuracy. Except by chance, they will not be a true reflection of the market forces that shape competitive position and determine the outcome of the project.

Proper marketing analysis should make the evaluator, and in consequence the potential investors, wiser and more knowledgeable about the key success factors of the proposed project. It is very rare to find a project that cannot be improved as a result of the insights gained from a truly in-depth appraisal. Solutions to reduce risk and increase expected return are therefore closer at hand if the diligent analyst, propelled by a positive research attitude, is assisted in his task from a sound methodology by which to seek, process and interpret marketing related information.

The reader should appreciate that every project has its intricacies and therefore the way by which the answers to the marketing questions are sought may vary from project to project. The depth of analysis achieved may also depend on data availability, cost and time constraints, the difficulty of undertaking primary research and many other factors. The questions, however, will still be the same for any project; and the method and examples outlined in this paper should, with some understanding of the concepts presented and a little imagination on the part of the analyst, be easily transferable to any project.

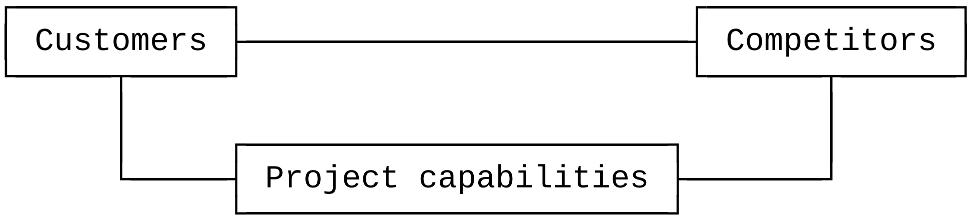
II. THE MARKETING EVALUATION PROCESS

In practice, the marketing evaluation stages of a project appraisal follow an iterative rather than a continuous path. The analysis may thus undergo various revisions before it is completed. The definition of a project's market for example may be changed several times to accommodate all the identified market segments or to facilitate pertinent market performance analysis. Often the analyst must think creatively to find the most suitable way to seek out and model the available information so that it best serves its purpose. The fundamental stages of a marketing analysis in a project appraisal are the following:

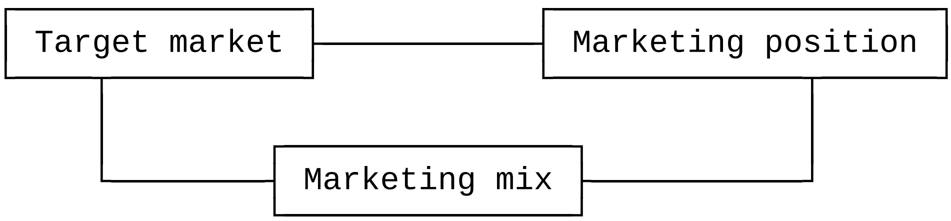
The marketing evaluation of investment projects

1. Market definition

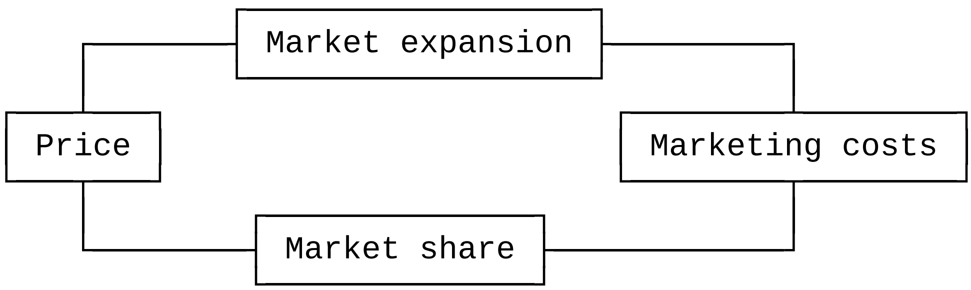
2. Marketing analysis



3. Strategic appraisal



4. Expected market performance
(Cash flow projections)



1. Market definition

The first stage of a marketing appraisal is to define the market in which the project will operate. To achieve this the analyst should:

- **describe the market need that the project idea aims to satisfy**
- **define the relevant market of the project**
- **estimate market size**

The market need

A project evaluation begins with an idea, which gets refined with every attempt to formulate and evaluate it. It is an iterative process that continues until project implementation. At the very core of this idea lies the **market need** that the products of the project will aim to satisfy. The formulation of the project and its market should stem from the definition of this underlying market need.

Needs are the building blocks from which markets are made. At a rather abstract level, we may thus think of the markets for thirst, hunger, health, shelter, sex, affection, entertainment, education, information and knowledge, professional competence, adventure and excitement, leisure, or a combination of these and a **multitude of sub-needs** that stem from these fundamental needs.

Market needs vary with people and situations. However, it should always be possible to define a market in terms of consumer needs. For example, if we consider the possibility of the existence of a market for television sets 100 years from now, the answer may be either yes or no. The uncertainty stems from the fact that it is not possible to know what other products or methods may exist 100 years from now for people to entertain themselves at home. However, if we ask the question will there be a market for home amusement and recreation 100 years from now, although still speculating, the answer will most likely be yes. The reason is because **needs are rooted in human nature (and it is about the only thing that is given in marketing) while the products that satisfy them will be changing depending on the state of technology and creativity of the suppliers in the market place.**

A description of the project concept around the core market need facilitates the identification and selection of the potential competitors and customers of the project. For example, in defining the market need of a video studio project in Cyprus as primarily the demand for the production of "**cost-effective promotional messages**", it was possible to locate both potential competitors and customers. Potential competitors were identified to be filming-studios in nearby Greece whose productions were considered to be highly effective but rather expensive and local advertising agencies producing motionless slides that were very low-cost but quite ineffective in terms of communication ability and company image. Potential customers were identified to be medium size firms in highly competitive industries such as local manufacturers of fast moving consumer goods, commercial banks, tourist agencies, and so on.

Defining the market need of the project also directs market research for assessing the competitiveness of the project and for estimating market penetration forecasts. In the above-mentioned project, a list of companies within the identified category and advertising agencies without an in-house capability to produce low-cost commercials was compiled. This list of potential customers and competitors was then used as a sampling frame based on which a survey was executed to estimate the likely market penetration and acceptability of the proposed project.

In public sector projects, like for example a new motorway, a port or a dam, the market need may be easier to define than with a private sector project. The reason is because a public sector project is usually formulated in response of a publicly debated perceived "social need". The only problem in such projects is that the politician's statement of a social need may not be put forward in a marketing context. For example, the politicians may argue that a new motorway connecting the capital with the country's main port is built in response to the country's "need for infrastructure to foster economic development and welfare". A marketing re-definition of the same market need may probably be expressed as the need for "efficient transport of goods and faster/safer commuting between the two cities". The latter definition is more useful for a marketing evaluation in that it helps identify potential competitors and customers.

The relevant market

A market exists when potential buyers and sellers find a mutual interest in exchanging wealth (such as *money* for *products*) whereby as a result of the transaction both parties consider themselves better off[1]. It refers to the persons, places and conditions that facilitate the exchange of goods and services.

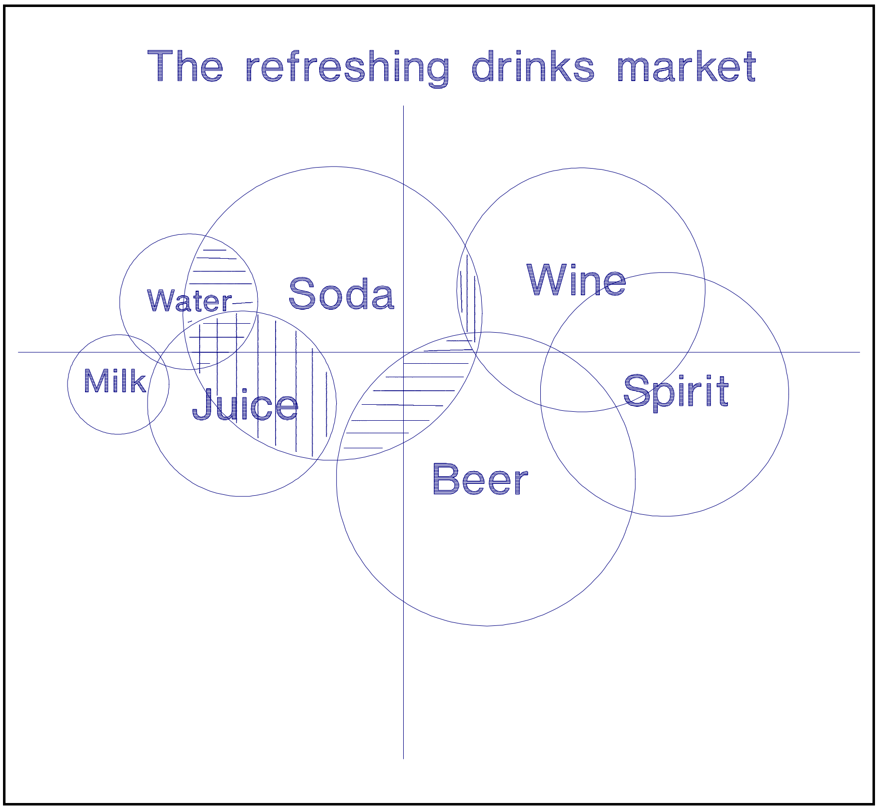
A market is made up of the actual and intended actions of suppliers and consumers. It exists when consumers are willing to forego some money to satisfy a need (effective demand) and suppliers are willing to respond by creating products that aim, within the constraints of the consumer budget, to satisfy those needs in order to realise a profit (effective supply). Hence, where there is unsatisfied demand suppliers have an opportunity for profit. Marketing is about what constitutes this potential demand and the ability of the supplier to understand it and use available resources to satisfy it. From a marketing perspective therefore, a market definition should accommodate the requirement of the supplier to discern the consumer psychology and predict market behaviour.

1 The apparent utility (or perceived value) of the item acquired through free exchange is greater than the price or cost of the item foregone otherwise at least one of the parties involved in the exchange would not be willing to enter into it. In markets characterised by perfect information and homogeneous products, free market exchanges are therefore assumed to achieve an increase in total welfare.

The boundaries of a project's market are in practice very difficult to establish. This is because, in reality, there is only one market. That is the total market for goods and services, which includes all products and services under the sun. Within this market, every product or service competes in varying degrees with all the other products for a share of our limited disposable income. Whether we spend our money on an expensive car or to buy a beach apartment is a decision similar in many respects to the decision whether to buy a Mercedes or a BMW. Indeed, in all probability the beach apartment competes with the luxury automobile market more than the latter competes with a cheap Japanese car. Yet we are unlikely to consider the beach apartment and the Mercedes as competing in the same market the same way we think of, measure and analyse the automobile market. Similarly, with respect to people who are trying to give up smoking, chewing gum and cigarettes may be thought to be closer substitutes than one brand of cigarettes with another. The definition of a market is merely a mental construct whose boundaries can be as wide as the total market for all goods and services or as narrow as, say, the market for "a special medicine for a very rare disease".

Describing the market need that the project aims to satisfy guides the definition of the project's **relevant** market. The boundaries of the market within which the project is expected to operate depend on the degree of **substitutability** between its products and other potentially competing products. In general, the project's market should be defined in a way that permits the inclusion of all major competitors and their customers but excludes those, which are only remotely related to it. For example, in considering the operational definition of the market for a cruise ship project for which the market need was defined to be that of "**comfortable, but affordable, short cruises to places of historical interest near Cyprus**" all liners and cruise ships that regularly service the home ports with similar travel destinations were included. Transit passenger ships, commercial ships and airlines were excluded because the degree of substitutability of their products and services with those of the project was not expected to be significant.

To illustrate the substitutability test in defining market boundaries consider the market catering for the general consumer need of "**refreshing drinks**" as shown in the diagram below. The size of each circle represents a measure of consumption of each **product class** during a particular period of time. The notional axes of the market space measure the perceptual position of each product in the mind of consumers. The degree of substitutability between the submarkets is depicted by the extent and magnitude of the overlapping circles. Hence, the "Soda market" primarily competes with the "Juice market" and the "Bottled water market" and to a lesser extent with the "Beer" and "Wine" markets.



The definition of the relevant market of a new project should also take into account current **trends** that may affect the importance of potentially competing products. Trends are like winds that can change both the size and position of a product. Staying with the above illustration of competing markets, the position and size of the "circles" of each competing product (or product class) in the most recent years should also be considered in order to extract the likelihood of it emerging as a substitute to the project's products. For example, bottled water, driven by a widespread trend towards healthier life, has been growing and moving into the market space of soda drinks (e.g. through the introduction of sparkling water in various flavours). Since this trend is expected to continue, bottled water suppliers may be taken to be prime competitors of a new soda drink project.

In the case of new products or services for which it is difficult to find a similar industry or group of existing products, one must look for markets or products that stand to loose business as a result of the new project. The competitors of the new project will be those suppliers whose products are likely to be displaced by the project products. For example, the introduction of a water amusement park project may be taken to compete primarily with the market for sea water sports and only remotely with "dry" fun-fair amusement parks.

A useful test to help decide whether to include a particular competing firm or market in the definition of the project's relevant market is to assess the **cross elasticity** of demand with the project's products. In the above example, it was considered that a significant change in the entrance price of fun-fair amusement parks is unlikely to affect the demand and supply conditions of the water park project.

2. Market analysis

Following the definition of the project's market the analyst should analyse the relevant market in three inter-dependent phases as follows:

- **understand and segment potential customers**
- **study the competitors**
- **assess project capabilities**

The object of studying the market is to provide the understanding needed to achieve a good match of the project's capabilities to the needs of potential customers taking into consideration the competitive profile of existing and potential suppliers. Hence, the three stages of analysing the market are strongly inter-related. The best depth is achieved by following a circular flow of analysis whereby research into one stage stimulates further research cues which when pursued enhance the understanding of the other stages. This iterative process should continue until a meaningful strategic appraisal for the project can be attempted.

The customers

One of the biggest problems in the marketing analysis of project appraisal studies stems from the fact that it is often assumed that the demand for the project's products will be sufficient simply because the size and growth of a potential market seems to be substantial in relation to the capacity of the project. In retrospect, the analyst usually has difficulty in describing the customers of the project. It is imperative, however, not only to describe but also to genuinely understand the needs of potential customers in order to achieve the best possible match of the project capabilities to current market needs.

In order to focus the project's resources on the needs of a particular set of customers, which may be selected from a wider definition of the market according to a particular industry or product type, the analyst must seek ways by which to identify groups of customers with homogeneous characteristics and needs. This process is known as market segmentation and can in practice be a very sophisticated and expensive exercise.

Market segmentation is an attempt to disaggregate the demand curve. Market segments are relatively homogeneous clusters of customers behind the demand of a given product. Thus, a market segment definition may refer to **group of customers with similar needs**. Alternatively, since a product is perceived as a bundle of consumer benefits, one could define a market segment with respect to a **set of product benefits that are linked to one or more homogeneous clusters of customers**.

In general, market segments may be defined by **customer characteristics** or according to **the purchase or consumption situation**. Market segmentation criteria may be any or a combination of variables from the following list:

Segmentation based on **customer** characteristics:

Demographic	:	Geographic location, sex, age.
Socio-economic	:	Income, marital status, family size, occupation, educational background, religion.
Psychographic	:	Life-style, personality traits.

Segmentation based on **situation** characteristics:

Behavioural	:	perceived product benefits, user status and usage rate (volume segmentation), brand or store loyalty, seasonality preference (time segmentation).

The above list of criteria for segmenting markets is by no means exhaustive. Adding to the potential complexity is also the fact that some of the variables may take values which are limited only by the imagination and level of sophistication of the analyst. Market segmentation criteria are the colours on the researcher's palette. How they are applied to a large extent determines their usefulness. The objective is to arrive at definitions which enhance the overall understanding of the project's market. Furthermore, market segments should be defined in such a way that the project can be formulated to dominate one or more of them. In particular, market segments should be:

- **substantial**
- **accessible**
- **measurable**
- **predictable**
- **penetrable**
- **defensible**

Consider for example, the market for a project which will introduce frozen potato chips in the local potato market. Since, frozen foods are popular for their **convenience** and **time saving** features, a market for frozen potato chips may be found among **young housewives and working wives**. Product usage, life-styles and straight demographic characteristics may therefore produce a useful definition of the most rewarding segments for the proposed project's basic market need. Before proceeding to define various segments the analyst may find it useful to decompose the market by cross-tabulating primary purchasers to product usage in order to show how substantial a presumed market segment may be, as shown in the matrix below:

Total Market in Value (in thousands of dollars)
Year 1988

	Product usage			
Purchaser	Fried	Roasted	Boiled	Total
Households	3,750	2,250	1,500	7,500
Restaurants	960	400	240	1,600
Hotels	378	294	168	840
Total	5,088	2,944	1,908	

Primary market research need not be too sophisticated at this stage. For example, a small telephone survey among housewives may be enough to establish the rate of usage and pattern of consumption of potatoes at home in the past few years (see Appendix I). Total volume sold in the local market, the number of households, and average yearly prices should, in most countries, be available through desk research. Compiling this market information should show the usefulness of the defined market segments. For example, with respect to the proposed market segment of "young housewives and working wives" the following conclusions may be drawn:

- Household consumption of fried potatoes is found to be **substantial** and growing. Housewives under 35 years old and working wives account for about 60% of total households.
- Housewives and working wives are considered to be easily **accessible** by the new project. Through the company's other established refrigerated foodstuffs the project is secured

good refrigerated shelf space in most multi-stores. Further, the target audience can be selectively reached through timely television commercials and advertisements in women's magazines.

- The market segment is **measurable** from various demographic reports and consumer surveys and is considered highly **predictable** through the relative ease by which one can anticipate the lifestyle of the target group. The degree to which a good match is achieved between the perceived benefits of the proposed product and the needs of the target group can also be tested to arrive at a market/competitive profile through a follow up attitude survey among housewives.
- Last but not least it is possible, mainly due to the established position of the company in similar products, to **penetrate** and **defend** the market segment.

Market segmentation analysis is the first step in formulating a marketing strategy for the project. For example, if customer needs are not significantly different (eg. typically commodity markets like mining, fertilisers, agricultural products, petrol etc.) the market may be taken to be homogeneous. In such a case, costs of production and price are probably the predominant market forces. The project may thus be better off employing an undifferentiating marketing strategy. If, on the other hand, various groups of people are found to have significantly different needs and preferences (eg. typically most consumer markets like the markets for beer and soft drinks, toiletries, clothing etc.) the market is heterogeneous. In such a case, in order to best serve the needs of diverse market segments, the project may follow a differentiating marketing strategy by marketing distinctly different products in each segment.

The objective of market segmentation in project appraisal is to identify potential customers with those special market needs that can best be served by the project. Market segmentation therefore aids the selection of the project's target market. This is achieved through the careful matching of the project's capabilities to the most appropriate customer profiles.

<u>The competitors</u>

Having defined the project's relevant market the next step is to list and briefly analyse the major competitors and their products. The purpose of studying existing suppliers at this stage is to derive market profiles of the key competitors in the industry so as to identify potential capability gaps on which the project can develop a competitive advantage. These competitor profiles will enhance and guide the search for potential capability strengths that can positively differentiate the project products within the relevant market (see Project capabilities, below).

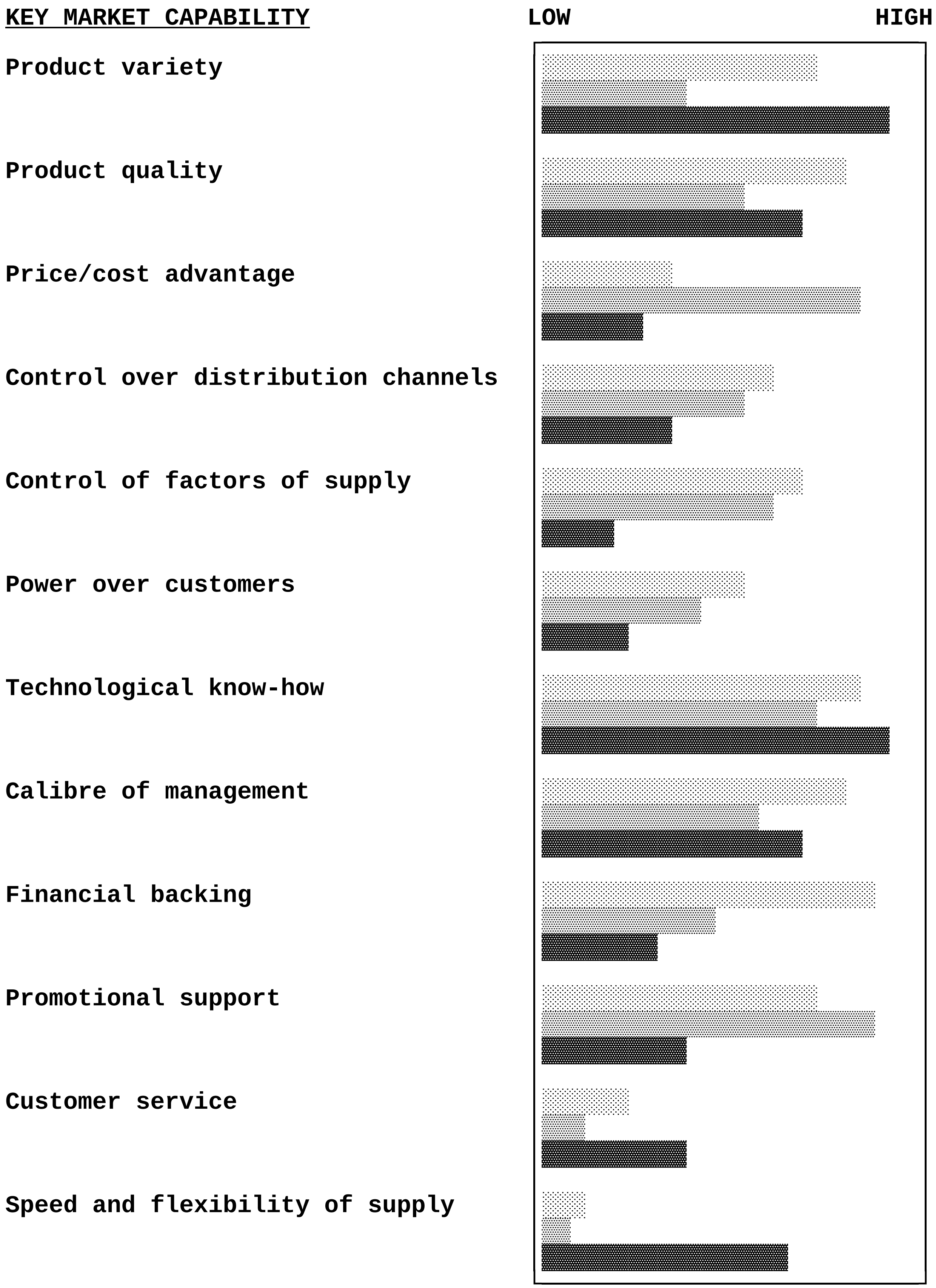
The main sources of information for studying competitors may be annual reports and published financial accounts of the companies concerned, industrial production surveys, imports and exports statistics, technical or marketing journals, etc. It is often useful to hold some interviews with distributors and customers of the products of existing suppliers. This enables the analyst to get a first feel of the key market attributes and to understand how the main competitors fare against current market expectations. In particular, the analyst should look at the **key market capabilities** of existing suppliers and the **potential emergence of new competitors** as illustrated below:

1. **Key market capabilities of the main existing competitors**:

   Competitor A = ░ Market share = 30%

   Competitor B = ▒ Market share = 20%

   Competitor C = ▓ Market share = 15%


KEY MARKET CAPABILITY
LOW
HIGH
Product variety
Product quality
Price/cost advantage
Control over distribution channels
Control of factors of supply
Power over customers
Technological know-how
Calibre of management
Financial backing
Promotional support
Customer service
Speed and flexibility of supply

2. **Potential competitors from new entrants and substitute products.**

There are many factors that can change the number and identity of competitors in a market. The analyst should seek to identify potential new competitors and likely changes in the relevant market by looking at the possibility of occurrence of any of the following factors:

- **changes in consumer tastes**
- **new uses for existing products (market extension)**
- **re-targeting of existing products to new markets (market repositioning)**
- **mergers and acquisitions**
- **government regulation or deregulation of the market**
- **changes in the importance of distribution channels**
- **relevant new technology applications**
- **changes in sources and types of raw materials**
- **national trade agreements**

<u>The project capabilities</u>

At the same time that the analyst is studying the market environment, he should also seek to identify the project's capabilities in relation to the relevant market. This may take the form of a marketing audit into what special skills and competencies the project is capable of using in order to pursue a competitive advantage within the defined market. Such capabilities may be found in the following areas:

Human resource	Labour skills, experience, motivation, knowledge areas, training quality, creativity, culture.
Organisational	Efficient organisational structure, management quality and expertise, quick decision-making, corporate synergies, access to capital, efficient internal communication channels.
Technology	Advanced production technology, flexibility of supply, processing of information.
Scale	Market leadership in related markets, purchasing economies (control of suppliers), production economies.
Products and franchises	Patents, licences, joint-ventures, successful related products.
Sales and distribution	Extensive distribution channel coverage, capacity utilisation, good relations with agents, exclusive agencies, efficient distribution channels, superior service.
Promotion	Access to promotional media, ability to produce effective promotional campaigns.

For example, a brewing company considering an investment into producing new types and brands of beer for the local market may compile the following corporate capabilities profile:

Corporate capabilities profile of a brewing company with respect to a proposed investment for extending the product line in the local market.

1. In a highly government regulated market, the company owns one of very few brewing licences which allows it to produce as many types and brands of beer as possible. By contrast the major competitor in the local market is seriously constrained in producing new beer types and brands.
2. The existing brewery has ample spare capacity.
3. The company has a very good name as a leading supplier of alcoholic beverages. This can ensure the necessary shelf space for introducing new products.
4. The company can utilise and take advantage of synergies thereon of an extensive and highly efficient distribution system in the marketing of new products.
5. The rather limited existing product line allows for the development of new products with relatively low cannibalization factor.
6. The company has good contacts with international brewing companies who are interested in penetrating the local market. It is possible therefore, in combination with the highly restricted licencing

government policy, for the company to take advantage of a joint venture from a position of monopsonistic strength.

7. The company employs key management personnel who can utilise their extensive experience in the production and marketing of alcoholic products.

It is interesting to note how a company can turn a potential disadvantage like, for example, its low capacity utilisation and the limited product line (in points 2. and 5. above), around so that they may become the spring boards of its competitive advantage with respect to a new investment project. This is possible in many other scenarios, given that the analyst has a good understanding of how competitiveness may be attained in the market. For example, small scale can be turned into flexibility of supply, high costs of skilled personnel can be channelled into the value chain through achieving excellence in better after sales service or problem solving capabilities for particular types of customers, and so on. It is therefore necessary to understand potential customers and their needs in order to fully utilize market potential capabilities.

3. Strategic appraisal

After studying the market the analyst should formulate and assess the project's strategy. To achieve this the project analyst should:

- **select the project's target market**
- **define the project's competitive advantage and measure expected market performance**
- **assess the sustainability of the project's competitive advantage**

The target market

The scope of target marketing is to enable the project to exploit its potential competitiveness through producing and delivering superior products for substantial and potentially rewarding market segments. Appropriate market segmentation analysis in combination with a good assessment of the project's potential capabilities is the key to successful selection of a target market. The project should concentrate its resources only on those segments that it can serve best, given its capabilities and available skills.

A common mistake in the definition of a target market is to include the total relevant market. However, unless it is a very homogeneous market, such an approach will almost certainly not succeed in achieving excellence and customer satisfaction; a prerequisite for sustainable market performance. Furthermore, in adding a market segment into the target market of a project, one should ensure that its presence does not hinder the efforts to deliver a superior product in the other segments. This is likely to occur if the relevant market includes many rather heterogeneous market segments. In such cases, if it is not possible to market distinctly different products for each segment, the odd market segment should be rejected in favour of those that are likely to utilise best the project's assets and potential capability strengths.

For example, the target market for a cruise ship project in Cyprus did not include Cypriot students in Greece commuting by ship and excursionists passing through Cyprus because it was considered that these segments, although large, were not compatible with the image and strategy desired for the main market segments (those of tourists in Cyprus and Cypriot families). By contrast, the Israeli market, although not entirely typical of the main market segments, was initially included in the project target market because it was possible to serve it through a special return trip from Israel to Egypt that did not clash with the rest of the ship's proposed itinerary. Furthermore, the "tourists" and "Israeli" market segments were characterised by high potential growth rates. Thus, the final target market for the proposed cruise ship was as shown in the table below:

Target Market: Mini-cruise project

Market Segments :	No. of persons	x	Repeat purch.	=	Market volume	x	Average price	=	Market value	Market Growth
Israelis visiting Egypt for vacation and shopping	10000	x	1.90	=	19000	x	£40.00	=	£760000	High
Cypriot families on vacation to nearby countries	30000	x	1.05	=	31500	x	£70.00	=	£2205000	Mode-rate
Tourists in Cyprus combining their stay with a tour to Egypt and Israel	100000	x	1.00	=	100000	x	£60.00	=	£6000000	high
	140000		1.08		150500		£59.57		£8965000	

The target market was considered to be attractive because it was substantial, and potentially remunerative. Moreover, it was the type of market which, given the project sponsors' strengths emanating from being market leaders in the tourism and hotel business, offered a good opportunity for the project to find a sustainable competitive advantage. The market could easily be penetrated, expanded and defended since the project sponsors chose to compete in market segments where competitors could find it hard to follow. It is important to emphasize the possibility of expanding the market as a direct result of the project. For example, the mini-cruise was expected to enable the project sponsor to prepare holiday packages that would attract tourists from Europe who might not, otherwise, have come to Cyprus.

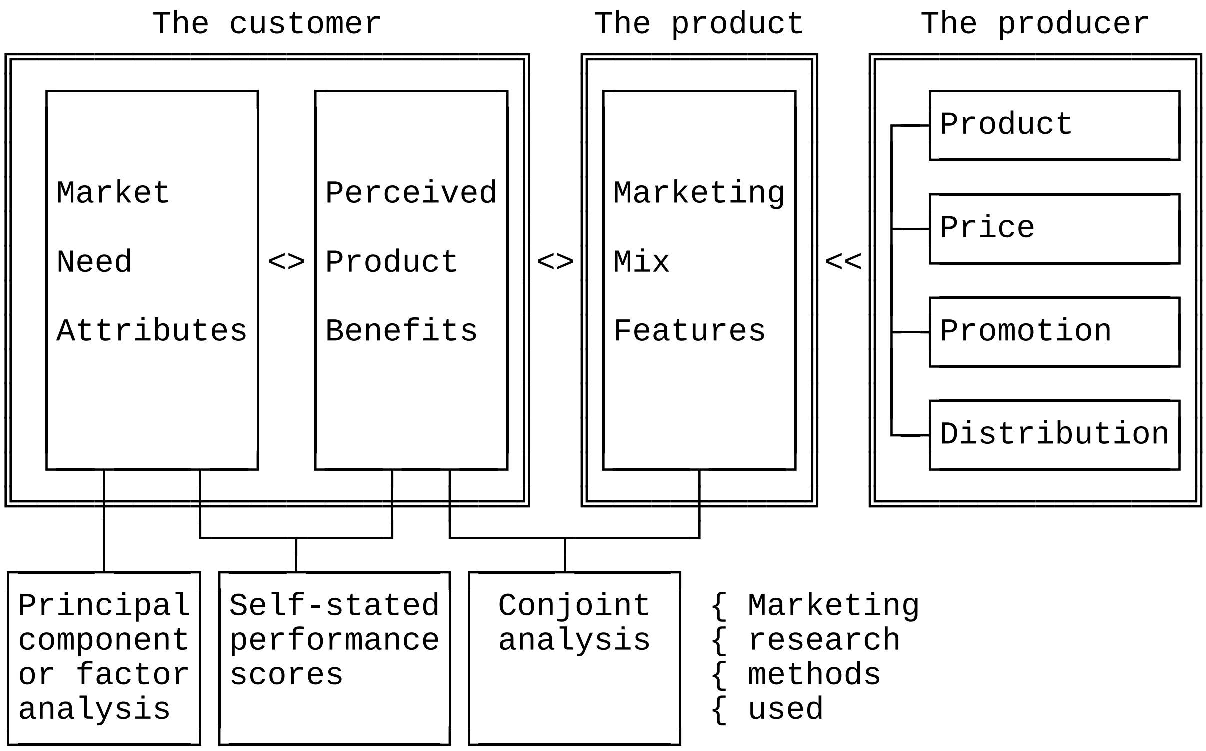
Market performance analysis

Following the definition of a target market, the analyst should describe how the project capabilities are to be employed in view of the opportunities presented by the market segmentation and competitor analyses so that the project can attain maximum potential performance.

An essential skill, at this stage, is the ability to identify and assess the actual and potential needs of the project's target market. Each product, or more appropriately the marketing mix, of a project may be perceived as **a bundle of benefits** that individually and in their totality aim to best satisfy a targeted cluster of market needs within the relevant market.

Consider the diagram below. Consumers seek to maximize their welfare through spending their limited money budget on products which are perceived to carry such benefits that could best satisfy their needs. Producers, on the other hand, try to build such features into products that may give the desired perceived image to the targeted consumers so that they could maximise sales and profits. Consumers therefore assess products on their perceived ability to fulfil market needs while producers use the marketing mix elements to try and create products and services that are likely to generate the most desirable market perceptions.

The marketing of new products



A project's market performance depends on its ability to arrive at the most effective mix of product features. After selecting a target market the project will therefore have to successfully achieve the following:

1. Determine the key market attributes (or principal components) of the basic market need within the target market.
2. Estimate weights of importance for each market attribute.
3. Measure performance scores for both the products of the project and its main competitors as perceived customer satisfaction for each of the identified market attributes.

4. Calculate market performance for the project and its competitors as a weighted average of the specific performance scores on the key market attributes.

Market performance is a measure of the capability of the project to successfully meet market expectations as these are denoted by the pattern and intensity of the market need attributes in the relevant market. In a marketing evaluation **competitiveness** is taken to be a measure of the degree to which the project's marketing mix can be expected to successfully out-perform its competitors with respect to these basic market attributes. To the degree that this is achieved the project successfully fills a **market performance gap** and gains a competitive edge in the market.

To illustrate the application of this analysis for the purpose of measuring market performance and project competitiveness consider the case of the mini-cruise project from Cyprus.

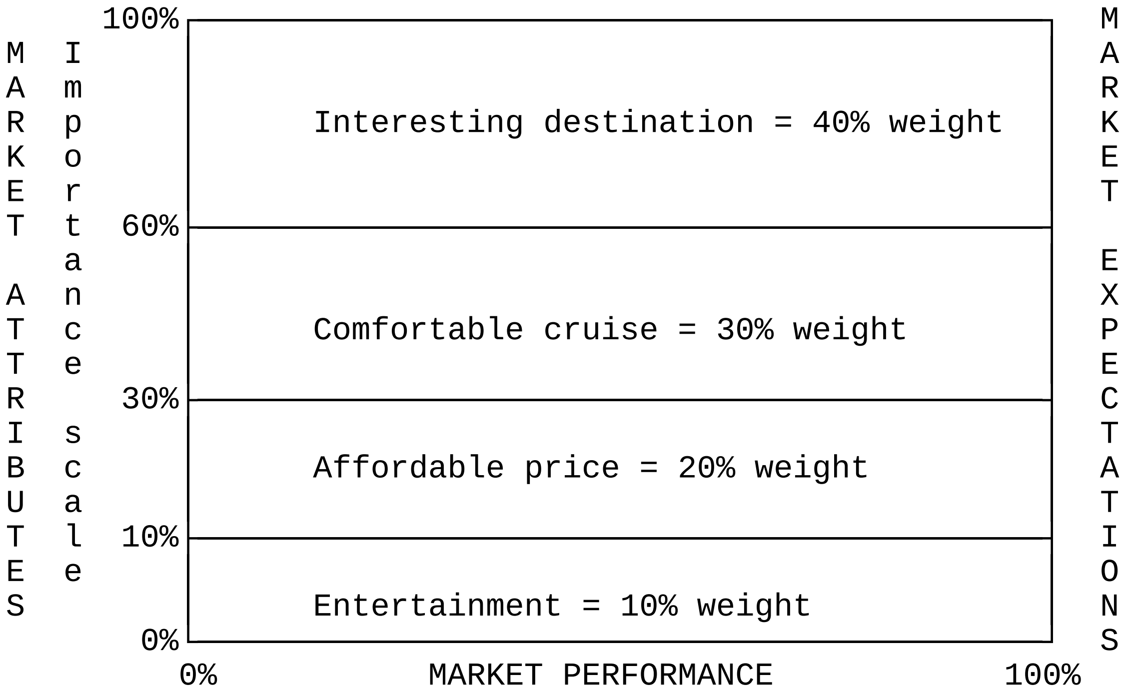
First, group discussions with people who have travelled by ship for their vacation revealed a set of beliefs regarding factors considered important in choosing a mini cruise holiday package from Cyprus. A follow-up market survey among cruise travellers indicated the relative importance of each market attribute. By studying the way the responses co-varied on certain attributes it was possible to reduce them to four underlying factors. Each new factor described a particular set of highly correlated factors tested in the survey.

The reduction of factors to their underlying dimensions can be achieved through the use of advanced multi-variate techniques like factor or principal component analysis. These techniques extract the correlation coefficients between all the variables tested and attempt to find new factors that combine the original variables so that the biggest part of the variance in the correlation matrix is explained by a small number of factors. The biggest advantage of these techniques is that the new factors are kept basically uncorrelated. This means that their weights can be used in a multiple regression type formula to predict market performance (as used in the example below).

With respect to the cruise-ship project the team of analysts relied more on judgement rather than on statistical accuracy. A careful consideration of the survey responses and a basically subjective evaluation of the variables considered seemed sufficient to capture and summarize the market attributes into the basic dimensions on which performance was assessed. Thus, the **destination of the cruise** was the most important factor in choosing a cruise ship holiday. It was, indeed, clear from most of the respondents (mainly tourist holiday makers in Cyprus) that the main attraction was not the cruise, but the thrill and excitement of complementing their stay in Cyprus with a "super tour" to nearby countries of historical interest (like the tour to the Pyramids in Egypt and to the Holy lands in Israel). The fact that they could achieve this on a short cruise of only two to three days made it even more attractive.

The second most important factor affecting consumer choice was based on the perceived ability of a ship to perform against a list of highly correlated factors, which were grouped together under the term "**comfortable travel conditions**". Among these were cleanliness, cabin space and facilities, the quality of food and drink, service, available common areas, space per passenger etc.. Thirdly, prospective passengers were looking for **affordability** (a price that was within the average holiday maker's money budget). Finally, people were influenced in their choice by the degree to which a ship was perceived to be offering better **entertainment** than another. The weights used in the analysis corresponded roughly to the importance of each factor as indicated by the respondents during the survey, as shown in the market performance matrix below:

Market performance factors for Mini Cruises from Cyprus



Having determined the basic components of market performance and their relative importance, the next step is to measure how the products of the project and its competitors rate against these market attributes. This may be achieved through a market survey with potential customers based on a short questionnaire. The questions should test against a 7-point semantic scale (varying from "not at all" to "extremely satisfied") the perceived ability of the "typical" competitor(s) and the project (based on the key features as described by the interviewer) to satisfy market expectations for each of the key market attributes. It is also useful to gauge a rating on perceived overall performance in order to test the consistency of the responses. Performance scores are simply the average of all responses for each factor tested in the survey. The results are as shown in the table below:

Market performance score: Mini cruise project

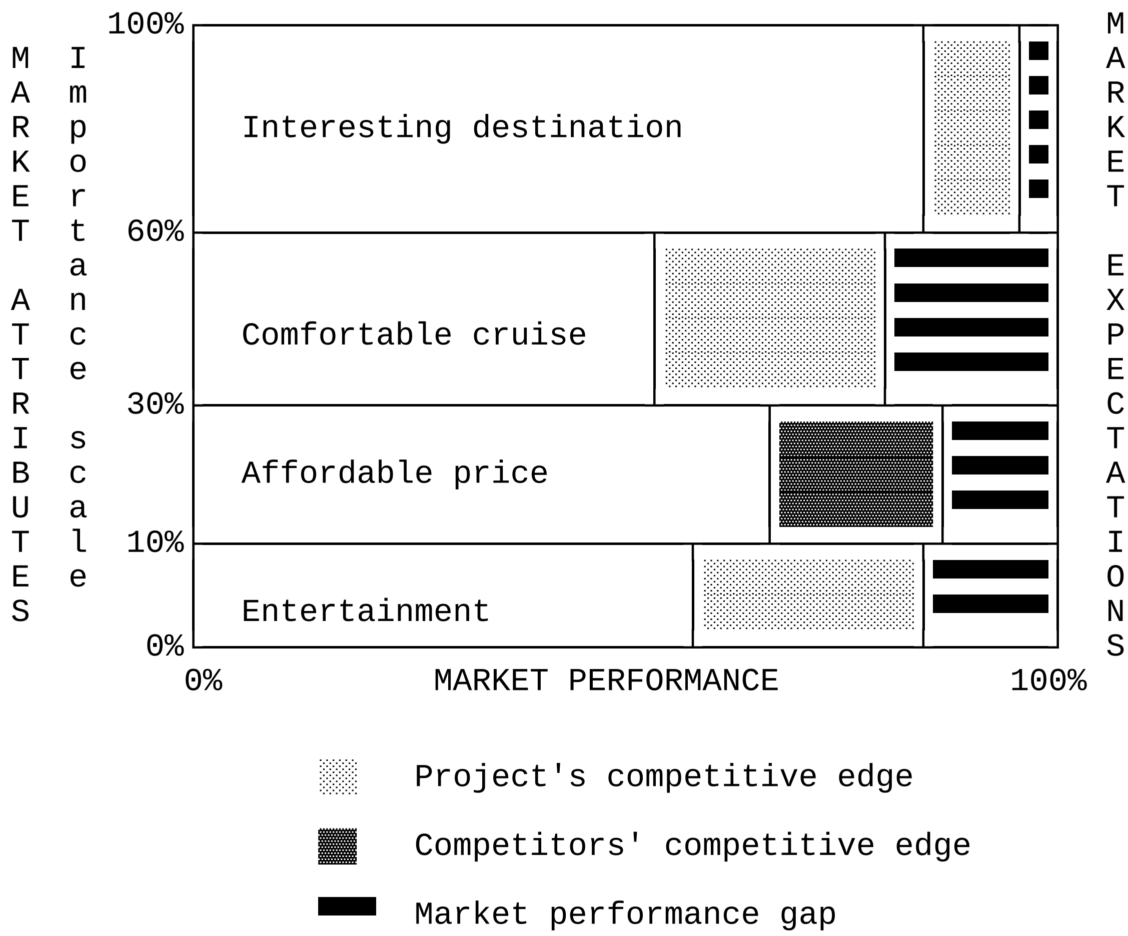
Market attribute	Performance score Project	Performance score Competitors	Importance Weights
Attractive Destination	0.90	0.80	0.4
Comfortable travel	0.80	0.50	0.3
Affordable price	0.60	0.85	0.2
Entertainment	0.80	0.55	0.1
			1.0

Market performance on a market attribute is the performance score of a producer (the project or its competitors) multiplied by the factor's respective weight of importance. Total market performance is the sum of the market performance on all individual market attributes, as shown below:

Market attribute	**Market performance** Project	**Market performance** Competitors	Project Competitive Edge
Attractive Destination	36.0%	32.0%	+4.0%
Comfortable travel	24.0%	15.0%	+9.0%
Affordable price	12.0%	17.0%	-5.0%
Entertainment	8.0%	5.5%	+2.5%
Market performance	80.0%	69.5%	+10.5%
Competitiveness	53.5%	46.5%	+7.0%

This is further illustrated in the diagram below, which plots the performance scores for the project and its competitors in the "market performance matrix" of the mini-cruise market from Cyprus:

Market performance profile for Mini Cruises from Cyprus



Although the destination of the cruise was the most important factor, the market was perceived to perform rather close to market expectations. The addition of a mini-cruise to the Pyramids and another which combined a 3-day cruise to the Holy Lands in Israel and the Pyramids in Egypt gave the project a marginal competitive edge on this factor. The biggest market performance gap existed in the second most important market attribute of comfortable travel conditions. Here the project succeeded in providing features that greatly surpassed the standards of other competitors. In sharp contrast to other competing ships, which were basically, ferry boats with a sizeable part of their capacity in deck seats, the new ship to be introduced by the project offered superior accommodation (almost all cabins with toilets and shower). The ship was also very spacious and since it was going to be owned and managed by a firm which had many years in the hotel business the food and service were expected to add even more competitive value to the customer.

Price was a market attribute on which existing competitors were likely to maintain a competitive advantage. Nevertheless, the price of a cruise on the new ship was expected to be well within the budget of most tourists in the target market of the project. Cruise entertainment, although the least important factor, due to a wide market capability gap, offered a possibility for the new ship to gain additional competitiveness.

Sustainability of competitive advantage

Market performance analysis is very useful in identifying the project's competitive advantage and in measuring its expected impact on the current market. It provides the analyst with a better understanding of market forces and helps in determining the market expansion and share of the project in the immediately foreseeable future. However, the time span of a project is usually much longer. Market performance analysis therefore does not entirely capture the dynamic aspects of project competitiveness. To achieve this the project should assess the sustainability of its competitive advantage in the market.

The sustainability of a project's competitiveness is a factor of the durability of both the importance of each market attribute and the capability to perform against those attributes relative to other market competitors.

The sustainability test may be best understood through an example. Consider the video-studio project mentioned above. The two options available were, on the one extreme, high-risk expensive film productions and, on the other, low-cost but rather poor image motionless slides. The video-studio service which combined the special human skills of the project promoter (a qualified film director with proven track record) and the latest available video technology made it possible to define a project that seemed capable of bridging the emerging market performance gap in the production of television commercials. But did the project have a sustainable competitive advantage or was it more likely that its perceived advantage was slight and vulnerable.

Apart from the fact that the project promoter was actually bringing into the project his own special skills and vast experience, the sustainability of the project's initial advantage was not considered to be very endurable. The industry was characterized by very **intensive competition**. The market had rather low entry and considerably high exit **barriers**. Moreover, the **threat of new entrants** was considerably high, given the many advertising agencies and photographic studios having the basic skills needed to enter the market. The threat from **substitute products** was also great because of the fast changing video-technology and the worldwide intensive competition among producers of video recording equipment.

On the positive side, it was considered possible for the project to build up some momentum on its competitive advantage from being first in this particular market. This could arise from turning the director's capability to produce low-cost effective commercials into **customer loyalty**, as satisfied customers would have no reason to risk experimenting with new entrants.

4. Expected performance (Cash flow projections)

The final part of the marketing analyst's job is to put the results of his analysis into quantitative projections of cash flow. The analyst must estimate the following:

- **market size**
- **market expansion**
- **market share**
- **price**
- **marketing expenses**

The projected cash inflows of the financial appraisal of a project may be follows:

Cash inflows

	Growth rate*	Year 1	Year 2	Year 3	..Year10
Penetration	5.0% exponential	140000	142107	143340	...
Repeat purchase		1.08	1.08	1.08	...
Market size		150500	153685	154807	...
Market expansion	7.0% market size	10570	10794	10926	...
Total market size		161070	164479	166733	...
Market share	15.0% exponential	15.0%	19.5%	22.2%	...
Project volume		224161	32110	37015	...
Average price	3.0% linear	£59.57	£61.36	£63.20	...
Sales revenue		1439197	1970133	2339348	...

* exponential growth rates from year 0 to year 10

Market size

Market size refers to the **volume** of the products or services expected to be consumed in the first year of operation. The most common source of information used to evaluate market size is published official statistics. The most recent year's relevant quantities and values for the industry in which the project belongs to should serve as the starting point for estimating the market size for the first year of operation of the project.

Market volume ("quantity") is measured by multiplying the number of customers ("penetration") with the average volume purchased by each customer during the year (repeat purchase). **Quantity** (before the introduction of the products of the new project) is found according to the following formula:

Quantity (0) = Penetration (0) X Repeat purchase (0)

where: **Penetration (0)** = the number of customers buying the products of the industry during the year prior to the introduction of the project.

Repeat purchase (0) = the average volume purchased by each customer during the year prior to the introduction of the project.

Market value is market volume multiplied by average price:

Value (0) = **Quantity (0) X Price (0)**

where: **Price (0)** = Volume weighted average price at year 0.

In order to analyse the market and measure market size it is usually necessary to combine desk research with fieldwork. For an illustration of how market research methods may be used to arrive at an estimate of market size and a better understanding of its main components, see Appendix I.

In projects where the relevant market is significantly different from the available data for the industry, allowances should be made to adjust the published data accordingly. For example, in estimating the market size for an export-oriented mining project, the relevant market size was based on past imports and local production levels of only those few countries in the region that for various reasons were considered to be **accessible** to the project. Thus, the total relevant market size was only a small proportion of the total world market. However, it facilitated the assessment of the relative strengths and weaknesses of the few suppliers competing in this smaller market so as to project more accurate and meaningful market share estimates.

A factor of great importance to the projected revenues is the assumption regarding the expected growth rate of the relevant market and other key market variables, such as market share and price. For a brief description of the most common techniques used in projecting growth rates, see Appendix II.

Market expansion

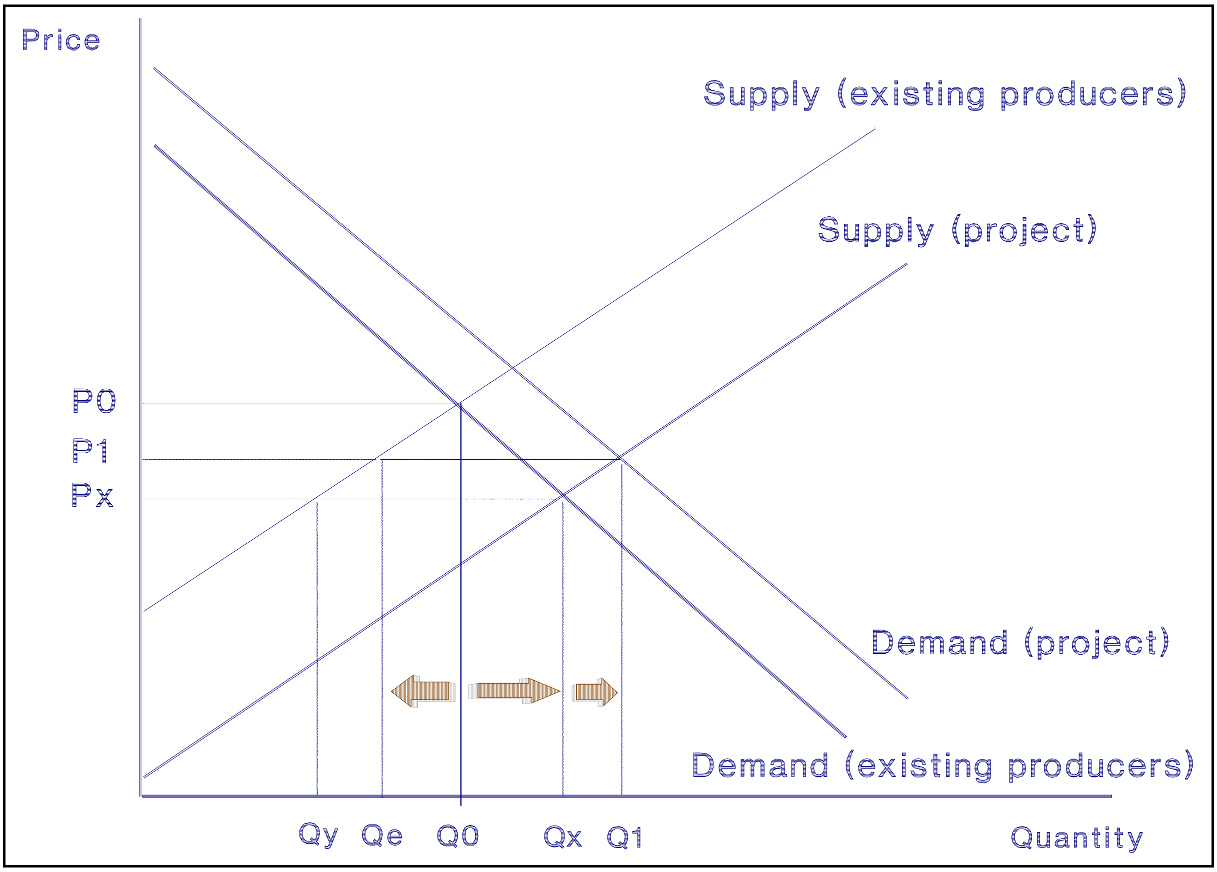
Market expansion is a measure of the extent to which the project's products can be expected to generate their own demand. Market expansion therefore causes an outward shift in the demand curve. The extent of this shift is linked to the project's added competitiveness. In practice the quantity demanded is assumed to depend on the added competitiveness introduced by the project:

Market expansion = Market expansion factor x Market size

where:	Market expansion	=	the lesser of ["Competitive edge"] or [maximum project capacity / market size].
	Market size	=	Quantity demanded during current year

The effects of such a shift combined with a corresponding shift in the supply caused by the introduction of the project are illustrated in the diagram below:

The supply and demand for mini cruises in Cyprus



If the project were to compete at the same level as the rest of the suppliers in the industry (under the assumption of totally homogeneous products) quantity and price would have changed from Qo to Qx and from Po to Px after the introduction of the project. Displaced quantity supply would have been from Qo to Qy. However, because of the product differentiation achieved by the project the demand curve shifts to the right. Hence, the market reaches equilibrium at price P1 and quantity Q1. Because of the increase in the demand displaced quantity supplied is now only QoQe.

Market share

The importance of using market share estimates to project the project's volume of sales is twofold. First, projected sales can directly be linked to market competitiveness as estimated from the project's strategic profile analysis. Secondly, within the limits of maximum capacity, market shares determine project quantity as a fraction of market size which is independently calculated and adjusted for the market expansion generated by the project itself. The market expansion factor serves as the floor projection of market share for the project.

Market share is usually estimated at year 1, and is assumed to grow (based on an exponential growth rate - see "Projecting growth" below) until it reaches a final market share in the last projected year of operation. The last projected year is usually assumed to be in the maturity stage of the projects' product life cycle.

The projected market share in the first year is calculated using the following formula:

Market share Year 1 = Market Expansion factor + [remaining project capacity / total market capacity]

For example, in the mini-cruise project market share for Year 1 was estimated as follows:

	Project	Competitors	Total
Total capacity (per route)	1000	7500	8500
Less market expansion	- 351		351
Net market capacity - Year 1	651	7500	8151
Market share from existing demand	8.0%		
Market expansion factor	7.0%		
Market share estimate - Year 1	15.0%	85.5%	100.0%
Market share estimate - Year 10	30.0%	70.0%	100.0%

The market share growth to the last projected year depends on the assumptions made with respect to the project's ability to endure the test of time and the expected duration of the growth stage of the product life cycle. The ceiling is of course the maximum installed capacity. If the competitive advantage of the project is sustainable, market share should grow dramatically during the first few years and gradually level off as the project enters its maturity stage. Thus, market share is usually best projected through an exponential growth curve.

Price

Price is perhaps the most important product feature. It is said that anything can be sold at a given price. Assuming that the product bears some value, selling the total quantity of products produced is therefore only a question of making the price attractive to sufficiently large number of potential customers. Price setting is however a strategic decision, which is further constrained by cost and other considerations (like for example competitors' reaction). So, in a sense, the price projected will partly depend on how the market is expected to develop and partly on the role that this marketing mix variable was presumed to play in the project's strategic profile.

The price projected for the first year of operation should be the forecasted market price, adjusted to reflect the pricing policy within the overall marketing strategy of the project. Thus, the effects of strong market penetration entry strategy may be reflected in cash flow through the projection of a price that is lower than the expected average price for the market. In the cruise-ship project for example, because the product benefits offered were substantially higher than existing market standards (product differentiation strategy), the project could afford to charge a higher price. The cost of this higher price and its adverse effect on the market share projected has already been taken into consideration in the projections through the assumed loss of competitiveness (see Market performance analysis, above).

Marketing costs

As a direct consequence of the assumptions made in the marketing strategy of the project (eg. product excellence, wide appeal image, entry strategy, volume sales etc.) the cash outflows projected should reflect the cost of a **balanced** marketing strategy. By the term "balanced" it is meant that all the marketing mix elements (product, price, promotion and distribution) have a particular role to play depending on the project objectives and market positioning strategy. For example, a volume sales objective in a project aiming to penetrate a fast- moving consumer goods market is unlikely to be achieved if it is not accompanied by a generous advertising and promotional budget.

In particular, the analyst should consider the assumed market entry strategy and ensure that realistic projections for the following marketing expenses are included in the cash outflows:

- sales and distribution costs
- price discounts and commissions
- sales promotion budgets
- advertising production costs
- advertising media budget

Industry marketing expenditure should be researched and where possible, expert advise should be sought to facilitate the projection of the most appropriate level of marketing expenses for the project.

APPENDIX I

Estimating the project's market size

The following hypothetical example illustrates the use of market research in arriving at an estimate for market size. It is based on the frozen potato chips project mentioned on page 25 above. The example shows the research subject, the method used to investigate the market and the formulae employed to calculate the derived information.

Research methods and procedure followed to arrive at the market size estimates of the Potato market

(a). **Number of customers** - 1988

Purchaser	Customers
Households	150,000
Restaurants	2,000
Hotels	200
Total	152,200

Research method : Desk research (Official statistics)

(b). **Frequency x quantity purchased** (kilos per year) - 1988

Purchaser	Kilos
Households	100
Restaurants	2,000
Hotels	10,000
Total	12,100

Research method : Market survey.

Question: How often do you buy potatoes and in what quantities?

(c). **Pattern of consumption** - 1988
Product usage

Purchaser	Fried	Roasted	Boiled	Total
Households	50.0%	30.0%	20.0%	100.0%
Restaurants	60.0%	25.0%	15.0%	100.0%
Hotels	45.0%	35.0%	20.0%	100.0%

Research method : Market survey.

Question: In what proportions do you consume potatoes?

(d). **Market Volume** - (in thousands of kilos) 1988
Product usage

Purchaser	Fried	Roasted	Boiled	Total
Households	7,500	4,500	3,000	1,5000
Restaurants	2,400	1,000	600	4000
Hotels	900	700	400	2000
Total	10,800	6,200	4,000	21,000

Research method: Calculated.

Total Value = Number of customers X Quantity purchased
(d(Total) = a X b)

Allocation by usage = Total volume X Pattern of consumption
(d(Pattern) = d (Total) X c)

(e). **Average prices**

Purchaser	Total
Households	$0.50
Restaurants	$0.40
Hotels	$0.42

Research method : Market survey (or desk research).

Question : What is the average price you pay for a kilo of potatoes?

(f). **Market Value -** (in thousands of dollars) 1988

Product usage

Purchaser	Fried	Roasted	Boiled	Total
Households	3,750	2,250	1,500	7,500
Restaurants	960	400	240	1,600
Hotels	378	294	168	840
Total	5,088	2,944	1,908	9,940

Research method: Calculated.

Market Value = Market volume X Average price
(f = d X e)

APPENDIX II

Projecting growth

The simplest and most common approach to arrive at the market growth rate is through the **simple average** of past data. The use of growth rates based on simple averages should however be used with great caution and only in situations of exceptional market stability (usually in mature markets).

An alternative forecasting technique is the linear projection through the employment of **regression analysis**. Under this method a series of the most recent market sales (typically 10 to 20 years) is correlated against time to extract the line of best fit. The slope of the extracted regression line is assumed to be the growth rate projected over the life of the project. The technique is likely to be more accurate than the simple average approach if the correlation coefficient of the relationship is significant, or more simply, if the data show some consistency against time. However, here again the analyst should use this technique with caution and after taking into consideration the following problems:

* Even if historical data seem consistent (i.e. show a high correlation coefficient) they still represent what happened in the past and not necessarily what may happen in the future. Therefore, the results of the regression should be verified and altered against other factors that may change the relationship in the future. For example, the

likelihood of increased capacity or an expected change in market deregulation (or regulation) should be taken into account in adjusting the projected growth rate.

* The arbitrary use of a range of observations in the analysis may significantly change the projected growth rate. It is not unusual to have substantially different slopes if 5, 10, or 15 years are tested. What is therefore the most correct range to use? There is no simple answer, except to study carefully what the data may mean. To what extent do they represent a long term trend or how much are they affected by abnormal events? In general it is advisable to avoid using a regression method to determine the market growth rate if the correlation results change significantly with varying ranges of data particularly when these differences cannot be explained.

Where past market data exhibit a high degree of seasonality the analyst may try to incorporate this into the projected market growth through the application of **time series analysis**. Nevertheless, the method is not as easy to use as regression analysis and may indeed lead one into far greater problems of estimation and interpretation. For example, in trying to project the trend of prices of fertiliser products it was found that the projected pattern could change significantly depending on what data range was used. Furthermore, the margin of error in projecting the beginning or end of a business cycle was so wide that it was possible that a peak period may have been forecasted as a bottom and vice-versa. The effect of such miscalculation on the projected cash flows and the calculated return of the project would have been enormous.

If historical data do not support a mathematical projection a growth rate based on **expert judgement** may be a better alternative. This may be arrived at through the gathering of opinions from industry experts. In practice, this may take the form of a telephone or personal interviews with key executives and consultants in the industry. The result of such an approach may be specific patterns of expected growth that very rarely fit a linear projection. In such cases the analyst should try and incorporate these in the appraisal through projecting a non-linear growth by employing an **exponential** mathematical relationship. Where this is not possible, instead of applying a single growth rate on the base year, one could estimate independently the market sizes for each projected year.

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