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THE STRATEGIC ANALYSIS OF INTANGIBLE RESOURCES

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Sustainable competitive advantage results from the possession of relevant capability differentials. The feedstock of these capability differentials is intangible resources which range from patents and licenses, to reputation and know-how. A framework of intangible resources has been produced which formed the basis for a national survey of chief executives in the U.K. Some of the more significant findings of the survey were that: employee know-how and reputation are perceived as the resources which make the most important contribution to business success; and that for most companies operations is the most important area of employee know how. This article argues, by means of both theoretical reasoning and empirical evidence, that the analysis of intangible resources should play a major role in the strategic management process.

INTRODUCTION

Intangible resources range from the intellectual property rights of patents, trademarks, copyright and registered design; through contracts; trade secrets; public knowledge such as scientific works; to the people dependent, or subjective resources of know-how; networks; organizational culture, and the reputation of product and company.

The difficulty encountered by the accountancy profession when it attempts to value 'homegrown' brand-names which have not been the subject of an exchange (Barwise, *et al.*, 1989) raises the more fundamental question regarding the significance of any quantification of shareholders' funds which does not recognize the value of intangible assets. For example the valuation of the shareholders' funds of a private, as opposed to a state owned, university is only trivially related to the value of the land and buildings which it owns; the resources which are of strategic significance are reputation, research momentum, etc., as it is these factors which govern the future earning potential. An indication of the significance of intangibles can be obtained from a comparison of the balance sheet valuation of a publicly quoted company and its stock market valuation.

Handy (1990) suggests that businesses will need to become more like universities with respect to the emphasis which is placed on being information/knowledge positive as well as being cash positive. Itami and Roehl (1987) have argued that a characteristic of all successful organizations is the recognition that there is a learning process which runs in parallel to all operations, and that all activities present the potential to both enhance, or degrade, the know-how and reputation elements of the intangible resources. They also argue that at a strategic level this view leads to the selection of strategies which will enrich the 'know-how stock' of the core competencies of the business.

Companies have sustainable competitive advantage when they consistently produce product/delivery systems with attributes which correspond to the key buying criteria for the majority of the customers in their targeted market. These

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attributes, which will include price, quality, aesthetics, functionality, availability image, etc., will be offered in a package which optimizes, for this majority, the ratio of 'perceived value: delivered cost' (Gilbert and Strebel, 1989).

Coyne (1986) identifies the sources of sustainable competitive advantage as being four types of capability differential, viz: 'functional differential', 'positional differential', 'cultural differential' and 'regulatory differential'. (Coyne's article uses the terminology 'business system gap', 'position gap', 'organization quality gap' and 'regulatory/legal gap'.) This article develops Coyne's model of capability differentials by extending it to identify, and categorize, the intangible resources which act as the feedstock to the capability differentials.

Capability differentials based on competencies

Functional differential results from the knowledge, skill and experience of employees, and others in the value chain such as suppliers, distributors, stockbrokers, lawyers, advertising agents etc. When know-how can be utilized to produce products which will maintain, and preferably win, market share, then it can be said to be creating a relevant functional differential.

Cultural differential applies to the organization as a whole. It incorporates the habits, attitudes, beliefs and values, which permeate the individuals and groups which comprise the organization. When the organization's culture results in, for example: a perception of high quality standards, an ability to react to challenge, an ability to change, an ability to put the customer first etc.; then that culture is a contributor to competitive advantage.

Capability differentials based on assets

Positional differential is a consequence of past actions which, for example, have produced a certain reputation with customers, a certain advantageous location of facilities, etc. These states contribute not only to competitive advantage, but also to defendable position, because of the long time it would usually take a competitor, starting from scratch, to match them.

Regulatory differential results from the possession of legal entities such as: intellectual property rights, contracts, trade secrets, etc. These resources also make a major contribution to defendable position because of the ability afforded to the owners to defend them in law.

In summary therefore functional and cultural differentials are based on competencies, or skills, such as advertising, or zero defect production; whilst positional and regulatory differentials are related to assets which the business owns, such as brand names, or physical locations. The first two differentials are therefore concerned with 'doing', whilst the second two are concerned with 'having'. The resources which produce the four differentials are described in this article as 'intangible resources', and the nature and characteristics of these intangible resources are examined in the following section.

THE NATURE AND CHARACTERISTICS OF INTANGIBLE RESOURCES

Intangible resources may be classified as 'assets' or 'skills'. Assets, which are obviously things which one owns, include the intellectual property rights of: patents, trademarks, copyright and registered designs; as well as contracts, trade secrets and data bases. The intangible resource of reputation may also be classified as an asset due to its characteristic of 'belongingness', and whilst it may be defendable to attack with respect to defamation and libel, it cannot be said to have the property rights of, say a trademark, which can be bought and sold. Skills, or competencies, include the know-how of employees (as well as suppliers and advisers), and the collective aptitudes which add up to organizational culture. When a company is taken over the acquirer can be confident that he has acquired the acquiree's intangible resources such as patents, but he cannot be certain that he will retain the intangible resources of know-how, culture, or networks which can ultimately 'walk away'.

Intangible resources which are assets

Intangible resources which are assets, and which enjoy legal protection, are: intellectual property rights; contracts; and trade secrets which are subject to the laws of confidentiality and contract. These categories are considered in the following sections.

Trade marks

Of the four main categories of intellectual property, the trade mark is the oldest. The earliest evidence of a maker's mark is on pottery made 7,000 years ago. Property rights for trade marks were incorporated in Roman law, where the emphasis was on protecting the customers from being cheated with fraudulent goods, rather than protecting the reputation of the manufacturer, as is the case today. Trade and service marks afford protection in the use of devices, names, signatures etc. used to describe a product or service. In an age when the brand name can represent the essence of the ideas and feelings associated with a product, the protection afforded by the trade mark can be crucial to the well being of a company so that it may avoid unfair competition and the 'borrowing' of its reputation by rivals. To have a mark registered in the U.K. the requirements are that it has to be: distinctive, not descriptive of the product, and different from other marks. Generally speaking a trade mark cannot be a surname or a geographical name. Unlike patents and copyright which have a finite duration, trade marks can be renewed indefinitely.

Patents

The formal recognition of an inventor's right of ownership to his invention, was first conceived in Venice in 1421 when the state granted a monopoly to Phillipo Brunillesci in respect of his invention of a floating architectural crane. This was followed in England in 1449 when Henry VI granted a monopoly to one John of Utyman who was installing the stained glass windows in Eton College chapel.

When a patent is granted a 'deal' is struck between the state and the inventor whereby the inventor is granted a monopoly in the exploitation of his invention for a limited period of time in the state's territory, in return for the inventor disclosing his invention and it being made available to the world at large. The very word 'patent' derives from the Latin 'literae patentes' meaning open letter. It can be seen therefore that the basis of patent protection is the concept of the ownership of a new idea (the invention); and consequent upon the demonstration of that ownership, the establishment of a 'contract' between the state and the inventor. The information contained in patents is clearly intended for the benefit of the public, and in fact patent data bases constitute one of the richest, albeit esoteric, information crops which it is possible to harvest.

Copyright

The need for copyright did not arise until the invention of the printing press in the 16th century, when the copying of documents became easy. In England a monopoly was granted to the Stationers' Company. Members of this company were the only people who could print documents, and in exchange for this monopoly they undertook to censor, on political and religious grounds, everything which was printed. This is another example of a 'deal' being struck between the state and the owner of the intellectual property. Nowadays no such 'contract' applies, as in the U.K. copyright is usually automatic, so long as date and exclusivity of authorship can be demonstrated.

Whereas patents are meant to protect an inventive idea, copyright is meant to protect an embodiment of that idea. For example the plots of 'The Taming of the Shrew' and 'Romeo and Juliet' are Shakespeare's original ideas, and 'Kiss Me Kate' and 'West Side Story' are embodiments, fashioned by others, of those ideas. These separate embodiments have their own protection in copyright. Copyright protects literary, dramatic, musical and artistic works, sound recordings, films and broadcasts by giving legal rights to the originators so that they may control the copying, adaptation, publishing, performing and broadcasting of the material (Hodkinson, 1987). Additionally in the U.K. it is sometimes possible to protect the design of an industrial product by means of the copyright which resides in the original drawings on which the product is based. Copyright is a collection of separate legal rights each of which is specific to the type of material in question.

Registered designs

A registered design enables the 'eye appeal' of a commercial article to be protected. Design registration is concerned only with appearance, and designs may be two dimensional, e.g. a fabric print; or three dimensional, e.g. a soft drink bottle. Designs which are purely functional, and which lack 'eye appeal', will not be registrable; however it may be possible to obtain copyright protection for some functional designs, as mentioned above. For a design to be registrable it must not have been published or offered for sale.

Contracts

Contracts, in the form of agency agreements, license agreements, property leases, etc. can constitute one of the most important resource categories of some businesses, e.g. Pan American's landing rights at Heathrow. A contract is an agreement between two or more persons (or other legal entities) intended to create a legal obligation between them and to be legally enforceable. The law of contract exists to regulate all kinds of business and economic relationships, sale, hiring, employment, construction etc. (Walker, 1980). Contracts are therefore the embodiment of an agreement, which define the terms of that agreement so that each party understands, and can protect and enforce, his rights.

Trade secrets

Trade secrets cover a wide range of confidential information from technical secrets such as formulae, know-how, and processes, to information about a firm's customers, employees, sales strategies, etc.

> The law on trade secrets in the U.K. is almost entirely judge-made, no statute governs it. . . The basic requirement for information to qualify for protection is that it must be information which is not publicly or generally known in the industry or business concerned and which is communicated to the recipient for only a limited purpose, or received by the recipient in circumstances which objectively he should know impose a restriction on the uses to which that information may be put. It is not possible to protect trade secrets from independent discovery by a third party, as is the case with patents, but the unauthorized use or disclosure of the information, if directly or indirectly obtained from the owner or licensee, can often be restrained. (Hodkinson, 1987:14).

Trade secrets therefore depend on the imposition, sometimes unilaterally, of personal obligations on others, either by means of the law of confidentiality, or the law of contract. The nature of this contract, which may be implicit or explicit, can give one party (say the employer) rights, whilst the other party (say the employee) may experience restrictions.

Reputation

Unlike the intangible resources treated above reputation has little significance in a legal context other than the redress obtainable with respect to libel and defamation. It is clearly not possible to buy or to sell reputation except insofar as it may be construed to reside in a registered brand name. Reputation, which represents the knowledge and emotions held by individuals about, say, a product range, can be a major factor in achieving competitive advantage through differentiation; it also contributes to a defendable position because of the time which can be involved in matching a reputation which is strong in both fame and esteem; fame can be bought with advertising spending in the short term, but esteem has to be earned, usually over a long period of time.

Networks

Networks are those personal relationships which transcend the requirements of organizational structure, commercial relationships, etc.; they are to do with sharing information and purpose to mutual advantage (Hastings, Mindel and Young, 1989). The networks which employees institute may be internal, or external, to the organization. Internal networking is essential in large organizations if synergy is to be achieved. External networks with customers, suppliers, government agencies, research institutes, and even competitors are essential if the changing environment is to be effectively monitored.

The balance sheet valuation of brand names

When the reputation of a company, or product, is encapsulated in a brand name, or mark, then it should be protected by registration as a trademark; such registration, unlike that of patents, can be everlasting if renewed as required by the British Patent Office. Insofar as registered trade marks enjoy property rights, i.e. ownership can be established, and the asset is separable from the business, then it is feasible to assign a valuation to such an asset in the balance sheet. This has been done in the U.K. in recent years by such companies as Guinness, and Ranks Hovis McDougal. In the former case the accountancy profession had little difficulty with the move as the valuation could be related to the goodwill element of the consideration involved in the Guinness takeover of Distillers, (the accountancy discipline prefers all asset valuations be traceable to an exchange). The profession therefore had more difficulty with the Ranks Hovis McDougal valuation of their homegrown brandnames which were valued by consultants at a figure which virtually trebled shareholders' funds without the test of an exchange. In spite of contrary guidance from the Accounting Standards Committee the practice of valuing brand names without the test of an exchange continues in some companies and the controversy is unresolved. Whatever the eventual outcome in terms of accounting practice it is now well recognized that intangible assets can represent the bulk of the worth of many companies.

Intangible resources which are skills

Intangible resources which are skills include: the know-how of employees, suppliers, distributors; and the culture of the organization which enables it to cope with change, put the customer first, etc.

Know-how

The know-how of employees, (and suppliers, distributors, etc.), is the intangible resource which results in distinctive competences. Distinctive competencies are those capabilities which the organization possesses which set it apart from its competitors. For example it can be argued that the competitive advantage which Jaguar Cars enjoys is the differentiation achieved by the reputation of the 'Jaguar' name; the distinctive competence which the company enjoys, however, is the ability to build a special type of quality car. This ability is founded on the skill and experience, or know-how, of the employees.

Culture

Culture constitutes the beliefs, knowledge, attitudes of mind and customs to which individuals are exposed in an organization, as a result of which they acquire a language, values, habits of behavior and thought. The culture of an organization both sets it apart from others, and also binds its members together; it may work to the organization's advantage or to its disadvantage. To a degree culture is a function of the type of activity which the organization is engaged upon, to a degree it is a function of the lifecycle stage which the organization has reached; but increasingly it is being recognized that an organization's culture is the product, consciously or unconsciously produced, of the senior managements' beliefs. Indeed some would argue that the main task of senior management in the future will be the promotion of organizational cultures which thrive on change (Kanter, 1983).

A framework of intangible resources

In addition to being categorized as assets or skills, intangible resources may be categorized as being people dependent and people independent. These two perspectives can be presented in the context of capability differentials as shown in Figure 1.

CHIEF EXECUTIVES' PERCEPTIONS OF THE ROLE OF INTANGIBLE RESOURCES

In order to determine the relative contribution which each intangible resource makes to the success of business a national survey of chief executives in the U.K. was carried out.

The only executive who can be responsible for the totality of intangible resources, from patents to company reputation, is the Chief Executive Officer (CEO). The survey was therefore addressed to CEOs in the U.K. and it set out to determine: the chief executives' perceptions of the relative importance of the contributions which each intangible resource makes to the success of the business, the replacement periods associated with these resources, and the most important areas of employee know-how.

The survey was addressed to 847 chief execu-

	CAPABILITY DIFFERENTIALS				
	FUNCTIONAL	CULTURAL	POSITIONAL	REGULATORY	
PEOPLE DEPENDENT	Know-How of: Employees, Suppliers, & Distributors.	Perception of Quality, Ability to Learn, etc.			SKILLS
PEOPLE DEPENDENT			Reputation, Networks.		ASSETS
PEOPLE INDEPENDENT			Databases.	Contracts, Licences, Trade Secrets, Intellectual Property Rights.	ASSETS

Figure 1. A framework of intangible resources & capability differentials

tives throughout the U.K., representing the following sectors: manufacturing consumer products, manufacturing industrial products, retailing, transport, distribution and services. The addressees were supplied by Dun and Bradstreet Limited who made random selections from specified Standard Industrial Classification numbers, with the sole condition that the organizations should employ more than 100 people. The composition of the 95 respondents was as follows: manufacturing 31; trading 14; transport 16; services 21; diversified 13. This represented an 11 percent response rate, which was the rate anticipated from this type of population.

The questionnaire possessed a longitudinal dimension insofar as some data was elicited both for 1987, and for 1990, (this data related to: sales, employees, and the importance of the contribution which each resource made to the success of the business). The existence of this data meant that three performance groups (measured in terms of the 'increase in sales/employee 1987–90') could be identified. These were classified as: 'Low' < 14 percent (N = 30); 'Medium' 15–29 percent (N = 26); 'High' > 30 percent (N = 26).

It is interesting to note in passing that many more service companies reported a high increase in total sales revenue (1987–90) than did the other sectors. 65 percent of service companies reported sales revenue increases greater than 60 percent; whereas only 30 percent of the companies in the other sectors reported an increase greater than 60 percent. However, the productivity performance of the service sector (as measured by the increase in sales/employee in the same period) did not differ significantly from the other sectors; *in fact in terms of the increase in sales/employee 1987–90 all commercial and industrial sectors were equally represented in the three performance groups.*

Contribution to the success of the business

The question 'What contribution did (in 1987), and does (in 1990), the reputation of your company make to the overall success of the business?' was also asked with respect to the following 12 resources: reputation of products; know-how of employees; know-how of suppliers; know-how of distributors; networks; data bases; public knowledge; trade secrets; contracts; intellectual property; specialist physical resources; and organizational culture. (Respondents were asked to rate the contribution from: insignificant 1 to crucial 10)

The importance of the contribution which each intangible resource is reported as making to the overall success of the business is shown in Table 1.

This analysis of the total sample shows company reputation, product reputation and employee know-how as the most important contributors to company success; these, together with culture and networks were ranked above specialist physical resources. When the absolute weighting scores, and the rankings derived therefrom, were analyzed for 1990 there was a surprising unanimity over the subgroups analyzed, e.g. manufacturers, traders, service companies; independents, subsidiaries; and over the 'Low', 'Medium' and 'High' performance groups. This suggests that the ranking of the contributions of the different intangible resources identified by this research is predictable for the majority of companies, irrespective of sector, status, or performance characteristics.

It is interesting to note that 'Data bases' moved from 10th position in the ranking in 1987 to 7th position in the ranking in 1990, reflecting the growing importance of information technology to business success.

Table 1. The relative importance of the contribution made by each intangible resource to the overall success of the business in 1987 and 1990; total sample ($N = 95$)

Intangible resource	Ranking (1 Most important; 13 Least Important) 1990	1987
Company reputation	1	1
Product reputation	2	2
Employee know-how	3	3
Culture	4	5
Networks	5	4
Specialist physical resources	6	6
Data bases	7	10
Supplier know-how	8	7
Distributor know-how	9	8
Public knowledge	10	9
Contracts	11	11
Intellectual property rights	12	13
Trade secrets	13	12

Replacement periods

The question 'Given a reasonably high priority how many years would it take to recreate the current reputation of your company if you had to start from scratch?' was also asked with respect to: The reputation of product range; The know-how of employees; the know-how of suppliers; the know-how of distributors; and networks.

The average replacement period estimated for each intangible resource is shown in Table 2.

The significance of this question is in the fact that the possession of resources, such as reputation, with a long replacement period can contribute significantly to the defendability of one's position.

The three intangible resources which were rated as most important (Question 1) viz 'company reputation', 'product reputation', and 'employee know-how', were also perceived as having the longest replacement periods, with reputation significantly longer than the rest; however, the CEOs of the 'High' performance group took a more sanguine view of the time it would take to replace company reputation than did the CEOs of the other two groups, although they all took the same view with respect to the replacement time associated with product reputation.

The most important function

CEOs were asked 'Which is the single most important area of employee know how?' The results are shown in Table 3.

Operations was perceived as the most important area of employee know-how by the CEOs of all sectors with the exception of retailing and manufacturing consumer products, where in both cases sales and marketing was viewed as the most important area of employee know-how. This finding suggests that the research and teaching of operations should be upgraded in importance in many business schools.

In view of these responses it is sensible to ask the question 'Should the analysis of intangible resources be formalized in terms of research, teaching and strategic management practice?' This issue is explored in the next section.

Table 2. Replacement periods

	Replacement period (years)			
		Performance groups		
Intangible resource	Total sample	Low	Medium	High
Company reputation	10.8	13.0	14.0	8.1
Product reputation	6.0	6.8	6.4	6.3
Employee know-how	4.6	4.4	4.6	4.7
Networks	3.4	3.0	3.9	3.3
Supplier know-how	3.1	2.4	4.4	3.0
Data bases	2.1	2.0	2.8	1.6
Distributor know-how	1.6	1.2	1.9	1.8

Table 3. Percentage of CEOs quoting the function as the most important area of employee know-how

		Performance groups				
	Total sample (%)	Low (%)	Medium (%)	High (%)	Manfg. cons. prods (%)	Retailing (%)
Operations	43	47	44	45	27	8
Sales & marketing	29	28	23	33	46	46
Technology	17	19	27	11	18	31
Finance	6	3	3	4	0	15
Other	5	3	3	7	9	0
Total	100	100	100	100	100	100

THE ANALYSIS OF INTANGIBLE RESOURCES

Aaker (1989) identifies the route to sustainable competitive advantage as being a process of managing assets (intangible and tangible), and skills, which involves the following three stages: firstly the identification of the relevant assets and skills by observing successes and failures; secondly the selection of those assets and skills which will be relevant to the future needs of the market; and thirdly the implementation of programs which will develop, enhance and/or protect these assets and skills. Itami and Roehl (1987) suggest that a key element of strategy is the management of invisible assets (know-how, reputation etc.), and he suggests that every turn of the business cycle should add value to the know-how base of the organization in the areas of core competencies; this leads to the view that an organization needs to make strategic decisions regarding which know-how areas it wishes to enhance, in the same way as it decides which tangible asset areas it wishes to enhance. If the organization is going to learn by doing then there are clear indications with respect to make/buy decisions, for example, because any policy of subcontracting work which incorporates core competence may deny the organization the ongoing opportunity to learn by doing.

Prahalad and Hamel (1990) question the basis for the formation of strategic business units (SBUs) which are predicated on market considerations, and suggest that the key consideration in any business is the identification, development and leverage of the core competence(s) of the business. If the core competence of toilet preparations to a detergents corporation is surface chemistry, this core competence may be underutilized, or at worst dissipated, if it is spread across the detergent, toilet preparations, drugs etc. divisions which have been set up as autonomous product/market orientated businesses. Indeed Prahalad and Hamel (1990) suggest that the market share with which a business should be concerned is not that achieved by its finished products, but that which reflects the exploitation of its core competence; and they argue that in the case of Black and Decker this is its share of the world market in small electric motors. Prahalad and Hamel (1990) list three tests which should be applied to identify a core competence: firstly it should provide potential access to a wide variety of markets, i.e. it possesses leverage potential, secondly it should be relevant to the customers' key buying criteria, and thirdly it should be difficult for competitors to imitate. They suggest that few companies will lead in more than six core competencies.

We have seen that Coyne (1986) identified the sources of sustainable competitive advantage as being four types of capability differential: 'regulatory differential', 'positional differential', 'functional differential' and 'cultural differential'. It is possible to extend Coynes' model of capability differentials by identifying the intangible resources which act as the 'feedstock' to each differential. This extension is shown in Figure 2.

The main thrust of the theoretical argument in this article is that intangible resources are the 'feedstock' of the four capability differentials, and that an understanding of the role of the intangible resources in a business may be achieved by analyzing the competitive advantage observed in the market place, the capability differentials which produce this advantage, and the intangible resources which act as the wellsprings. The model presented in Figure 2 has proved effective in teaching and research situations in achieving these objectives because it quickly imparts an understanding of the subject matter, provides a framework for analysis, and acts as a checklist. When the essence of the business has been identified in this fashion then the key management responsibilities are concerned with exploitation, development and protection of the essential intangible resources.

Where the organization is a collection of SBUs the model may be particularly useful in determining for each SBU which are its key intangible resources. Thereafter the analysis can be used to identify the degree to which the current organization and management practices are productive or counterproductive with respect to the exploitation, development and safeguarding of the key resources.

CONCLUSIONS

The following conclusions may be drawn from the foregoing:

The perceptions of chief executives

All CEOs rated company reputation, product reputation, and employee know-how as the most important contributors to overall success, and there is no significant difference in the rankings awarded by the different sectors, or performance groups.

Company reputation, product reputation and employee know-how were also identified as the resources which would take the longest to replace if they had to be replaced from scratch; suggesting that they have considerable significance with respect to the sustainability of advantage.

The most important area of employee know-how was viewed as being Operations, except by CEOs in retailing and manufacturing consumer products who viewed sales and marketing as the most important area. This suggests that operations should be afforded greater importance in many business schools.

The emphasis placed on employee know-how by the respondents to the survey is in tune with the writing of Prahalad and Hamel (1990) on core competencies. They suggest that strategic thinking has been over concerned with taking a market perspective, and too little concerned with taking a core competence perspective.

Reputation, which is usually the product of years of demonstrated superior competence, is a fragile resource; it takes time to create, it cannot be bought, and it can be damaged easily. The emphasis placed on this resource by CEOs suggests that a key task of management is to make sure that every employee is disposed to be both a promoter and a custodian of the reputation of the organization which employs him.

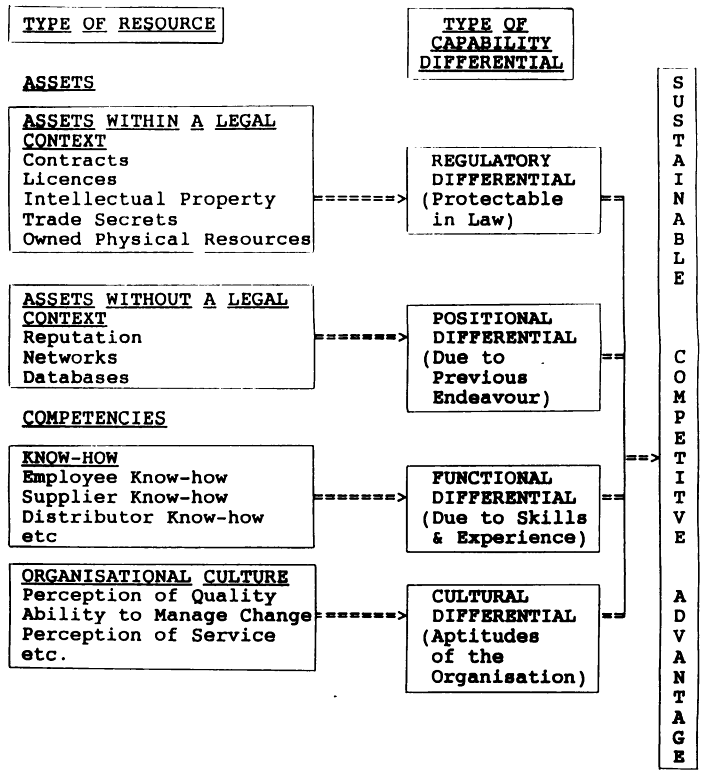

Figure 2. Intangible resources, capability differentials and sustainable competitive advantage

The management of intangible resources

It is too soon to say whether the views expressed in this paper, and by other authors, will result in changes in management practice, for example in terms of organizational responsibility for intangibles. There are grounds for believing that the analysis technique, represented by the model presented in Figure 2, which traces the linkage between competitive advantage, capability differentials and intangible resources is an effective means of achieving a deeper understanding of the key intangible resources of a business, and in consequence what needs to be done with respect to their exploitation, protection and development.

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