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Corporate refocusing: Theoretical explanations and performance consequences

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A recent major change in the industrial organisation landscape has not received much serious academic attention, although more managerial-oriented literature has given substantial consideration to it. This shift, referred to as, amongst others, corporate restructuring, refocusing, downscoping, a return to core competencies or corporate specialisation, 'stick-to-the-knitting' and organisational reorientation, has witnessed the deinstitutionalisation of the conglomerate organisational form or the 'firm-as-portfolio' model since the 1980s. Corporate structures have been extensively transformed as a result of divestitures, takeovers and leveraged buyouts, downsizing and delayering, and a resultant substitution of the 'firm-as-network' model for the conglomerate form. In this article the apparent trend towards corporate refocusing is explored, the (often competing) theoretical explanations for this phenomenon are reviewed and the performance consequences associated with corporate refocusing are evaluated. An agenda is also provided for future research in this field. The article shows that shareholder wealth maximisation, performance-related problems and new competitive demands are all possible explanations for the refocusing trend. In addition, research suggests that the results of refocusing moves by firms, when supported by an underlying strategic logic, are significant performance gains for the shareholders of the divesting firm.

Introduction

A recent major shift in the industrial organisation landscape has, to date, received relatively little serious academic attention (Markides 1995a; Singh 1993), although the more managerial-oriented journals and books have considered it in some depth. This shift, variously referred to as, amongst others, corporate restructuring (Bowman & Singh 1993), refocusing (Markides 1995b), downscoping (Hoskisson & Hitt 1994), a return to core competencies (Prahalad & Hamel 1990) or corporate specialisation (Bhagat, Shleifer & Vishny 1990), 'stick-to-the-knitting' (Peters & Waterman 1982) and organisational reorientation (Tushman & Romanelli 1985), has seen, in short, the deinstitutionalisation of the conglomerate organisational form or the 'firm-as-portfolio' model since the 1980s (Davis, Diekman & Tinsley 1994). The result has been a large-scale transformation of corporate structures through divestitures, takeovers and leveraged buyouts, downsizing and delayering, and a resultant substitution of the 'firm-as-network' model (Davis et al. 1994; Alvarez & Ferreira 1995) or the firm as a 'nexus of contracts' (Jensen & Meckling 1976) for the conglomerate form.

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The aim of this article is to explore the apparent trend towards corporate refocusing, to review the (often competing) theoretical explanations for this phenomenon, to assess the performance consequences associated with corporate refocusing, and to provide an agenda for future research in this field.

The corporate refocusing trend

Empirical evidence seems to lend support to the claim of increased corporate restructuring since the 1980s. Data presented by Singh (1993) show that while the 1960s could be characterised as a period of diversification, mainly through acquisitions, the 1980s have been marked by high levels of divestitures and leveraged buyouts in addition to acquisitions. Sikora (1995) also provides evidence of drastic increases in merger and acquisition activity during the 1980s and 1990s. Davis & Stout (1992) focus on the prevalence of hostile takeovers in the 1980s, which they regard as one of the most significant events on the organisational scene during that period, while Bhagat et al. (1990), in a study that examined 62 hostile takeovers between 1984 and 1986, conclude that the emergence of the market for corporate control has led to the deconglomeration of business in the United States.

It is, however, not only the incidence of restructuring but also its direction towards reduced firm scope that seems to be supported by empirical data. Williams, Paez & Sanders (1988)

report that during the 1980s many large diversified firms have been reducing their complexity primarily through unrelated divestitures and related acquisitions. Davis et al. (1994) found not only a one-third drop in the level of total diversification amongst *Fortune 500* firms between 1980 and 1990, but also a more than 40 per cent decline in their level of unrelated diversification. These results show that this deconglomeration was brought about by two processes: firms with high diversity were taken over at an increased rate and subsequently unbundled, while less diversified firms started to reject conglomerate growth strategies. Similarly, Markides (1993) reports that between 20 and 50 per cent of *Fortune 500* firms refocused in the period 1981 to 1987 as opposed to negligible proportions in the 1960s.

Recent prominent examples of large-scale corporate refocusing include the voluntary restructuring of General Mills during the 1980s to return to its traditional core businesses of packaged foods and food-related services, shedding in the process a whole array of unrelated lines of business (Donaldson 1990), the 1993 unbundling of the British giant ICI into two separate companies (the new ICI and Zeneca), focusing respectively on industrial chemicals and pharmaceuticals and biotechnology (Owen & Harrison 1995), and the 1995 split-up of the US conglomerate ITT Corporation into the new ITT Corporation, owning hotel and gambling operations, ITT Industries, active in the electrical and electronic equipment manufacturing industries, and ITT Hartford, with interests in insurance and financial services (Sikora 1995). In South Africa, the corporate landscape has been subjected to similar changes, in particular unbundling. This was sparked off in 1993 with the unbundling of Gencor (into five independent firms namely Gencor, the mining and metals business, Malbak, itself further unbundled in 1997, Sappi, Engen and Genbel) and Barlow Rand (into Barlow Rand, mainly infrastructural interests, CG Smith, Reunert, Rand Mines and Rand Mines Properties).

There is, however, also evidence that firms may still be increasing the scope of their activities. Wiersema (1995) for example found that her sample of *Fortune 500* firms increased their overall diversity between 1977 and 1986, indicating that they have not adopted focused strategies. These results, however, should not necessarily be seen as contradictory, as it may be that her sample consisted mostly of firms with low relative diversity. Extensive evidence reported by Markides (1995c) indicates that while it has mainly been over-diversified firms that were decreasing their diversity during the 1980s, many firms with low diversity increased their scope, although close to 60 per cent of their acquisitions were related to their core businesses. The unrelated diversification trend therefore seems to have been arrested.

Definition and modes of refocusing

While corporate restructuring can be defined as portfolio restructuring aimed at increasing or decreasing firm scope, refocusing is taken to be a special case of restructuring with the specific purpose of scope reduction, that is, a reduction in the number of distinct businesses in which a firm is simultaneously active. However, as with corporate restructuring, no generally accepted definition of downscoping or refocusing as yet exists. In addition, concepts often tend to become blurred and non-distinct as different terms are used to convey the same idea, while the aim of a corporate action is often confused with the mechanisms used to bring it about. Thus, the terms deconglomeration and demerger will not be used, while refocusing and downscoping will be used interchangeably and in essence as the inverse of diversification.

Markides (1995b: 101) defines refocusing as 'the voluntary or involuntary reduction in the diversification of ... firms – usually, but not necessarily, achieved through major divestitures'. The latter part of the definition is important. Refocusing can be brought about by means other than divestiture, such as the simple closure of a line of business and the redeployment of assets to existing lines of business. While the literature often treats corporate divestiture and refocusing as synonymous, the former is a collection of mechanisms while the latter is an aim or manifestation. According to Woo, Willard & Daellenbach (1992), divestiture is conceptualised as a collective term for asset disposal mechanisms such as sell-offs, spin-offs and leveraged buyouts. It is defined as the disposal of one or more of a corporation's strategic business units to existing shareholders, a third party, existing management or a combination of existing management and third parties, either by means of proportional share redistribution, an outright sale, or the substitution of debt for equity.

With regard to the particular asset disposal mechanisms, a sell-off is defined as the exchange of operating assets for cash, other operating assets or securities of the acquiring firm (Schipper & Smith 1983). While the assets received remain under the control of the divestor, the divested assets become part of another firm. Leveraged buyouts are transactions where high levels of debt (usually provided by third parties) and equity (closely held usually by management) are substituted for public stockholding (Singh 1993). On the other hand, a spin-off refers to the distribution by a firm, on a pro rata basis, of all the shares it owns in a controlled subsidiary to its current shareholders (Rosenfeld 1984; Schipper & Smith 1983). In all cases, a separate publicly-traded company results, although the company may have been traded separately prior to the spin-off as well. Multiple spin-offs occur when more than one subsidiary is involved. The existing asset base of the parent firm is therefore divided into three or more separate parts. Note that no money changes hands, the present ownership structure remains essentially unchanged, and the transaction is generally treated as a tax-free stock dividend.

Corporate refocusing can come about voluntarily or it can be 'forced' onto the firm (Markides 1995b). While the focus of this article is on voluntary refocusing, forced refocusing, either by means of a hostile takeover or legal/regulatory decree, is also covered in the next section which examines the driving forces or motivations behind the refocusing wave. Note that proactive refocusing in response to the threat of takeover or pressure exerted by blockholders – owners of large blocks of shares, typically exceeding five per cent (Bethel & Liebeskind 1993) – is considered to be voluntary.

Refocusing theories

Shareholder wealth maximisation

Sentiments in the 1980s turned quite dramatically against the conglomerate organisational form characterised by high levels of unrelated diversification. Porter (1987) claims that the corporate strategies of most firms dissipated rather than created shareholder value. Although this research has been subjected to harsh criticism, mainly on methodological grounds (Weston, Chung & Hoag 1990; Singh 1993), its conclusions

have been loudly echoed by the general business rhetoric of the time (Goold & Luchs 1993; Collis & Montgomery 1995). In fact, shareholder value addition became the main theme of corporate strategy during the 1980s, spearheaded amongst others by Rappaport's (1986) influential book on the subject.

Coinciding with the declining competitiveness of US industry at the time (Hayes & Wheelwright 1984), increased globalisation, the relaxation of antitrust enforcement measures (Shleifer & Vishny 1994), the institutionalisation of the stock market, and the development of a highly skilled service infrastructure geared at facilitating hostile takeovers (Sikora 1995), the focus on shareholder value addition quickly led stock markets to identify gaps between market and break-up values (an indication of over-diversification) and thus possible takeover targets (Markides 1995a). Astute corporate management, however, often saw the proverbial writing on the wall and refocused voluntarily with the most often cited aim, the maximisation of shareholder wealth (Singh 1993). Thus, Grant & Cibin (1996) found that the far-reaching restructurings that took place within the world's major oil companies over the last decade were driven by the desire to maximise returns to shareholders. Other reasons given by corporate managers for initiating voluntary restructuring include the need to strengthen the balance sheet by liquidating unattractive assets (Hamilton & Chow 1993), to separate very different operations and thus to improve focus, and to uncover the 'hidden' value of a subsidiary (Gordon 1992).

Financial economists argue that divestitures, either through sell-offs or spin-offs, will increase shareholder wealth by, for example, transferring wealth from bondholders to stockholders (Galai & Masulis 1976), enabling closer monitoring by reducing the number and diversity of transactions under one management (Schipper & Smith 1983), increasing future contracting flexibility (Jensen & Meckling 1976; Hite & Owers 1983), eliminating diseconomies of scale (Hite & Owers 1983), providing more flexibility of choice to investors (Miles & Rosenfeld 1983), and shedding poorly performing business units to improve overall profitability and to generate cash for more promising acquisitions (Pashley & Philippatos 1990).

Some research evidence has been reported which suggests that refocusing could in fact add shareholder value. Lubatkin & Chatterjee (1991) for example examined the stability of the relationship between diversification and shareholder value across continuous time periods. Contrary to the prescriptions of portfolio theory, they found that related diversifiers can earn significantly higher risk-adjusted returns during periods of market decline than unrelated diversifiers (no differential was observed during stable or bull markets). This led them to conclude, in support of the resource-based theory of diversification, that 'the best way to protect shareholder value against economic downturns is to diversify in a manner such that "all of one's eggs are in similar baskets"' (Lubatkin & Chatterjee 1991: 251).

Stock markets seem to agree by generally reacting favourably to refocusing announcements. Thus, from a shareholder value maximisation perspective, refocusing appears to make sense. The difficulty, however, lies in identifying 'what knitting to stick to' (Teece, Rumelt, Dosi & Winter 1994) or what 'stick to the knitting' implies (Goold & Luchs 1993). From a refocusing perspective, the critical issue is whether a business unit is worth more inside the corporate fold than on its own (Dess, Gupta, Hennart & Hill 1995; Goold & Luchs 1993), which is virtually impossible to determine *ex ante* and just as impossible to prove *ex post*!

Performance-related explanations

Poor performance prior to refocusing or divestiture actions has for long been recognised as a prime motive for such actions (Singh 1993). The data collected by Duhaime & Grant (1984) for example show that factors playing an important role in divestiture decisions include the financial strength and interdependence of the unit to be divested relative to other units in the firm, the competitive position and future prospects of the unit in its industry, and the financial position of the parent firm vis-à-vis competitors. Poor firm performance also lies at the heart of agency theory explanations for the refocusing phenomenon. Hoskisson & Turk (1990), in a conceptual article, argue that while corporate restructuring is implemented in an attempt to overcome internal capital market limits (inadequate internal governance mechanisms), the decision to restructure is sparked by the possibility of external capital market intervention, or blockholder pressure (Bethel & Liebeskind 1993). The central proposition advanced by Hoskisson & Turk (1990) is that although the multidivisional organisational form (the so-called M-form) may be effective in limiting managerial discretion at the divisional level, established corporate governance mechanisms may not be adequate to control corporate management discretion. This, in turn, may lead to excessive diversification, subsequent performance problems, and the eventual threat of hostile takeover as a last resort to control management discretion, which would be the precipitating factor in encouraging voluntary restructuring.

Following on the above, but recognising only implicitly the contribution of poor firm performance, Gibbs (1993) tested empirically the explanatory power of Jensen's (1986) free cash flow hypothesis, ineffective corporate governance, and hostile takeover threats for voluntary corporate restructuring. He argues that the existence of free cash flow only creates the potential for agency costs to arise. However, in the presence of ineffective corporate governance, these costs will arise, thereby allowing management to become entrenched. Given efficient external capital market control and thus the possibility of hostile takeover threats, management will be motivated to restructure voluntarily. While his empirical results, based on a sample of 45 companies each with annual revenues in excess of $5 billion, indicate that agency problems and takeover threats provide a partial explanation for corporate restructuring, he noted that firms with strong governance in his sample also restructured. This led him to conclude that factors in addition to agency costs are driving corporate restructuring.

Poor performance caused by *inter alia* a breakdown of internal control, which activates in turn the external control mechanism, appears to be a well-supported theory of corporate restructuring. Zantout (1994) for example examined the 50 most aggressive US participants in takeover and restructuring activity in the 1980s. He found that the voluntary restructuring of these firms was indeed in response to poor performance, and that in most cases it had been a pre-emptive measure against the possibility of external market intervention. The market for corporate control thus appears to be an efficient control mechanism of last resort.

Other explanations also exist for poor firm performance precipitating refocusing. Shleifer & Vishny (1994) argue that overdiversification and resultant performance problems could be

the result of poor strategy formulation, leading to diseconomies of scale (Hite & Owers 1983), the active interference of acquired assets with other profitable operations (Linn & Rozeff 1984), and unprofitable ventures (Rosenfeld 1984). In addition, since there are costs as well as benefits associated with diversification, over-diversification increases the likelihood of inefficiencies which may cause the costs of diversification to exceed its benefits (Markides 1995a). Such inefficiencies may result from, for example, executives' information-processing limits (Hoskisson & Hitt 1988) or the information-processing costs in tall hierarchies (Williamson 1985), managers' inability to manage and integrate diverse businesses due to inappropriate existing 'dominant logics' (Prahalad & Bettis 1986), and the absence of synergistic horizontal strategies (Porter 1985, 1987).

In a recent study of 203 firms, that initiated programmes of divestiture within the context of voluntary corporate restructuring between 1985 and 1990, Hoskisson, Johnson & Moesel (1994) reconcile the agency perspective (which views over-diversification and thus poor performance as resulting from poor internal governance) and the strategy perspective (which sees over-diversification and poor performance as the result of poor strategy formulation in the first place). They found support, through structural equation modelling, for a causal order running from governance through strategy and performance to divestment intensity. However, while their results highlight relative product diversification (a strategy factor) as the primary cause of high divestment intensity levels, their argument tends to become tautological: over-diversification leads to high divestment intensity; but in order to have high levels of divestment, it is necessary to be highly diversified.

In another study, Davis & Stout (1992) investigated the factors that made firms vulnerable to takeover in the 1980s. Using a sample of 467 *Fortune 500* takeover attempts between 1980 and 1990, their results failed to support a single explanation. They found though that firms with a higher market-to-book ratio faced, as expected, a lower risk of takeover, as did firms with greater debt. They conclude that 'these results conform to the notion that takeovers discipline poorly performing management only to the extent that one has faith in the efficacy of capital markets in evaluating management and one believes that lower debt is a sign of poor management' (Davis & Stout 1992: 626). In addition, they showed that older firms were subject to hostile takeover attempts at a significantly higher rate, which seems to suggest that structural inertia may ripen a firm for takeover.

Context-related explanations

Although limited scholarly attention has been directed at examining the factors leading to corporate refocusing (Singh 1993; Markides 1995a), the research that has been done almost exclusively emphasises performance-related motivations, thereby neglecting the possibility that refocusing may also occur in response to organisational and environmental characteristics other than poor performance (Gibbs 1993; Wiersema 1995). Some researchers, however, have started to address context-related explanations as well. Focusing on executive succession as an antecedent to corporate restructuring, Wiersema (1995) studied a sample of 85 *Fortune 500* firms that underwent restructuring between 1977 and 1986. She found that firms that experienced nonroutine executive succession underwent more restructuring than those that did not, which suggests that top executive turnover may be an important mechanism to change managerial cognitive perspectives, overcome inertia, and adapt organisations to changing environments.

While quite a few scholars have alluded to the impact that a changing competitive environment, driven by forces such as deregulation, excess capacity in certain industries, merger and acquisition activity, the dismantling of trade restrictions, global competition, and technological discontinuities (Prahalad & Hamel 1994), may have on corporate refocusing, empirical work has been slow in forthcoming. Thus, there seems to be a major gap in the literature, especially in view of the fact that the strategic logic of restructuring is often described in terms of the recent external changes which have reduced the value of the diversified corporation as an institution (e.g. Markides 1995a). Some exceptions, however, include the work of Davis et al. (1994) who investigated the deinstitutionalisation of the conglomerate form, and Bethel & Liebeskind (1993) who tried to reconcile agency and environmental explanations for corporate restructuring.

Consequences of refocusing

While the proponents of corporate refocusing argue that leaner and more efficient organisations will emerge following a return to core business activities, critics often assert that the costs which necessarily accompany drastic restructuring are likely to exceed the anticipated benefits. In addition, assuming efficient capital markets, they are generally sceptic about the validity of claims of new-found efficiencies following restructuring (Singh 1993). Furthermore, there is a clear contradiction in increased market value claims for both mergers and spin-offs, in essence 'mirror images' of one another (Hite & Owers 1983). The evidence that has emerged to date on these issues is reviewed in this section. Although the emphasis is on voluntary spin-offs, reference is also made to the other divestiture mechanisms (sell-offs and leveraged buyouts) and to takeovers where appropriate.

Performance consequences for the divesting firm

Although in a frictionless capital market and in the absence of any synergy between a parent firm and a subsidiary to be divested, no valuation effects would be expected following divestiture (Hite & Owers 1983), a number of empirical event studies, mostly in the financial literature, have indeed found support for the assertion that voluntary divestitures have positive influences on the stock prices of the divesting firms and thus create value. In all these studies, the basis for the conclusion of favourable performance effects rests on observed significant and positive abnormal returns that accrue to the shareholders of the divesting firm on or around the divestiture announcement date, which in efficient markets are believed to reflect the long-term consequences of the divestment. While most divestitures seem to result in significant and positive abnormal stock price increases, the highest gains appear to be associated with leveraged buyouts, followed by spin-offs and lastly sell-offs (see Woo et al. 1992 and Markides & Berg 1992 for overall summarised statistics).

More specifically with regard to spin-offs, the findings to date document significant positive abnormal share price movements for parent firms on the announcement day ranging from 2.6 per cent to 3.4 per cent. In the first studies of their kind, Schipper & Smith (1983) observed a 2.8 per cent significant average share price increase for 93 voluntary spin-off

announcements between 1963 and 1981, while Hite & Owers (1983) found average abnormal returns of 3.3 per cent for 123 spin-offs during the same period. Miles & Rosenfeld (1983) also report positive and significant abnormal share price movements for voluntary spin-off announcements (a sample of 55 spin-offs between 1963 and 1980) and note that the size of the increase was positively related to the size of the spin-off.

Using a different sample consisting of spin-offs as well as sell-offs, Rosenfeld (1984) found that although both types of transactions had significant positive announcement effects, spin-offs had a significantly stronger influence on share price movements than sell-offs. The results from two more recent studies echo previous findings. In a study of 113 voluntary spin-offs that occurred during the period 1980 to 1991 (covering a period with different economic conditions than the sixties and seventies covered in previous studies), Johnson, Brown & Johnson (1994) confirm the existence of abnormal and positive announcement effects of 3.4 per cent related to the size of the spin-off, while Seward & Walsh's (1996) sample of 78 voluntary spin-offs between 1972 and 1987 showed a significant average favourable announcement effect of 2.6 per cent.

Although stock markets react positively to refocusing announcements, there exists little evidence as to whether the anticipated gains from refocusing actually materialise for the divesting firm. In one of a few studies which tracked the performance of firms that have refocused, Markides (1995b) reports that the *ex post* performance of his sample of 200 *Fortune 500* firms that underwent significant refocusing between 1981 and 1987, actually did improve. Similarly, Zantout's (1994) study of the 50 most aggressive US restructurers in the 1980s also suggests that these firms improved their performance following voluntary restructuring. Clearly, however, more work is needed not only to confirm these findings but also to understand how these firms managed to improve their performance. As with destructive testing of any kind, it will be impossible to prove that these performance improvements would not have been possible in the pre-refocusing configurations.

Performance consequences for the divested units

Although a considerable amount of work has been done on the performance of divesting firms (albeit mostly using event-study methodologies), little research has as yet focused on the *ex post* performance of the divested units. In one such study, Woo et al. (1992) investigated the three-year post-restructuring performance of 51 firms that were spun-off between 1975 and 1986. They found on average no performance improvement in the divested units following separation from the parent firms; in fact, their performance was just as likely to decline after being spun-off. In addition, they observed that the performance of divested units which were unrelated to their parent firms prior to divestment, actually deteriorated. They conclude: 'Life "on their own" has not been as kind to our sample of spin-offs as our theoretical arguments would have suggested' (Woo et al. 1992: 443). Clearly, much more work is needed to investigate the performance and organisational problems experienced by spun-off firms.

Research on the *ex post* performance of firms following leveraged buyouts also seems to present an initial favourable picture. Singh's (1993) review found that previous studies reported post-buyout operating performances that exceeded industry averages. However, Smith's (1990) study of the operating performances of 58 management buyouts between 1977 and 1986 shows that, while operating returns increased significantly from the year before to the year after the buyouts, this increase was not sustained in later years. Announcement day effects for takeovers indicate that, in general, stock markets react positively to such acquisitions, with takeover targets experiencing significant abnormal returns, while acquiring firms only have small, nonsignificant positive returns (see Singh (1993) for an overview of previous empirical research).

Sources of performance gains following refocusing

While there seems to be consensus on the existence of at least initial performance gains following divestiture, the sources of these gains remain elusive (Hite & Owers 1983; Johnson et al. 1994; Seward & Walsh 1996). Performance gains following mergers are usually predicted based on expectations of scope economies or synergies, whereas most of the explanations for refocusing gains centre around the proposition that such divestitures remove negative synergies and therefore lead to real improvements in efficiency (Hite & Owers 1983).

Focusing on voluntary spin-offs, Schipper & Smith (1983) argue that whilst a spin-off does not alter the composition of assets that support the original shareholders' claims, it does alter the contracts among shareholders, managers, bondholders and regulators, which may be potential sources of shareholder gains. They found little evidence to support the claims that shareholder gains result from bondholder wealth expropriation or from relaxed regulatory and/or tax constraints, although the latter source did seem to contribute towards such gains. However, their data seem to indicate that performance gains arise from productivity increases and improved management efficiency, which they speculate may be a result of a reduction in the number and diversity of transactions that fall under the control of one management team.

Similarly, Hite & Owers (1983) separated their sample of voluntary spin-offs based on expressed motivations into those motivated by a desire to specialise operations (that is, to focus), to facilitate a merger, and those driven by the need to overcome legal and/or regulatory difficulties. Their findings show that significant, positive and abnormal returns accrued only to those firms which motivated the spin-offs for strategic reasons (that is, to facilitate mergers or to separate diverse operating units), whereas negative returns were recorded for firms which responded to legal and/or regulatory problems. Consistent with the results of Schipper & Smith (1983), the authors found no evidence to suggest that excess gains came at the expense of bondholders, although they propose that the potential for increased future contracting flexibility (for example the ability for each unit to exploit its unique optimal financial structure) could be a source of refocusing gains.

The apparent link between divestiture announcement effects and the strategic nature of the motives behind the divestiture has also been noted by Montgomery, Kamath & Thomas (1984). They found that the stock market values divestiture announcements positively when these are linked to explicit statements by the divesting firm about the strategic logic behind the divestment. Similarly, Linn & Rozeff (1984) report that spin-off announcements were valued positively when they were linked to the separation of unrelated businesses or the removal of negative synergies. When firms attempted to justify spin-offs on the basis of market undervaluation (that is,

arguing that the complexity of their diversified structures obscures the 'true' value of the units to be divested and that since investors prefer 'pure-plays' to facilitate valuation and to provide more flexibility of choice, divestment is indicated), zero or negative abnormal returns were recorded on the announcement day.

Bowman & Singh (1993), referring to unpublished work conducted by them, add an organisational dimension to the findings reported above. While they observed on average no significant abnormal stock market returns to firms undergoing corporate restructuring (covering all three their restructuring dimensions: portfolio, financial and organisational), when they related stock market reactions to the restructuring announcements of firms who underwent critical organisational and strategic changes in the two-year period prior to the announcement, they found that in these cases stock market reactions were indeed significant, positive and abnormal. This suggests that 'the stock market considers a restructuring announcement as credible (in terms of its impact on future income) if the firm made significant organizational changes to prepare itself for restructuring' (Bowman & Singh 1993: 6).

The managerial implication of these findings is obvious and important. Firms contemplating refocusing need a strong and convincing strategic rationale (Campbell, Goold & Alexander 1995), since refocusing for the wrong reasons may in fact destroy shareholder value (Markides & Berg 1992). Thus, although perhaps not as distinct or unequivocal as scholars may prefer, it does seem as if the benefits of focus per se account at least partially for the observed positive performance consequences of corporate refocusing. Seward & Walsh (1996) therefore urge sensitivity to what they call the 'defining aspects' of spin-off benefits, and Hoskisson & Hitt (1994) reflect on the need to be aware of how downscoping may facilitate day-to-day strategic management. Other possible sources of performance gains following spin-offs include issues relating to the position of the firm prior to refocusing, the characteristics of the industry the refocusing firm is returning to, any other restructurings that the firm may implement following refocusing (Markides 1992), and the possibilities to improve management incentives by rewarding entrepreneurial behaviour, assuming that a reduction in bureaucracy accompanies refocusing (Weston et al. 1990: 237).

With regard to leveraged buyouts, although critics frown on the high levels of debt employed and its potential impact on firm survival, research indicates that the ownership incentives that management teams receive following such buyouts (Singh 1993) and the establishment of closer ties between compensation and performance (Markides & Berg 1992) may be partly responsible for performance gains. Finally, Bhagat et al. (1990) argue that the observed gains to the shareholders of the target company in hostile takeovers may be due to possible cost savings from joint operations (recall that they found hostile takeovers to allocate businesses to firms owning related businesses, therefore the 'return to corporate specialisation'), increased market power, or overpayment by the acquiring firm.

Other refocusing consequences

As was the case with research on the motivations for refocusing, most research has emphasised the performance consequences of refocusing. Two exceptions, however, are worth noting. Research conducted by Seward & Walsh (1996) examined the governance and control mechanisms that were put in place in newly spun-off companies. Using a sample of 74 firms, voluntary spin-off between 1972 and 1987, they found, as hypothesised, that efficient internal control mechanisms were established in these firms. Typically, the new companies were led by inside executives from the former parent firm who received market-based performance-contingent incentive contracts, accounting for the majority of their income. In addition, the boards of directors who monitored these executives were comprised of a majority of outside nonexecutive directors, and so too were the compensation committees that designed their incentive contracts.

Von Krogh & Roos (1994) focused on the possible negative effects of divestitures, in particular their effect on knowledge transfer between subsidiaries and corporate management. They argued that corporate divestiture could be seen as analogous to the amputation of a 'corporate limb', which might have two negative effects: reduced direct knowledge transfer, where direct knowledge refers to lost opportunities for both the divesting firm and the divested unit to learn from each other, and reduced indirect knowledge transfer which refers to loss in terms of corporate 'memory'. Therefore, Van Krogh & Roos argue that any divestiture attempt has to commence with an interunit rather than a corporate focus.

Corporate refocusing research needs

Although gaps in the literature have already been identified in previous sections of this article, a brief summary is given here with the emphasis specifically on corporate refocusing which still remains a relatively unresearched field (Markides 1995a; Singh 1993). In particular, no in-depth studies could be found which address the actual process of refocusing and its internal organisational and decision-making dynamics. This is also an area highlighted by Singh (1993) who regards research into the organisational consequences of corporate restructuring and research that provides rich institutional detail of restructuring processes as the top priorities on the research agenda.

The need for more research attention to refocusing processes, their decision-making dynamics and their long-term implications has also been identified by Woo et al. (1992), Seward & Walsh (1996), Bowman & Singh (1993), and Markides (1995a). Seward & Walsh (1996) call specifically for more work along the lines of Donaldson's (1990) study on the restructuring of General Mills. Other research needs identified by scholars active in the field include:

- how business units benefit from being part of a diversified firm and how value is created (Dess et al. 1995);
- how managers can determine *ex ante* that refocusing will increase value (Markides & Berg 1992);
- the motivations of executives to willingly preside over the downscoping of their firms (Seward & Walsh 1996);
- the conditions under which firms can effectively restructure their business portfolios and organisational structures (Bowman & Singh 1993);
- the factors that are driving refocusing especially in firms with strong governance (Gibbs 1993);
- the performance of divested units, their impact as free-standing competitors, and the problems experienced by managers of spun-off firms and the mechanisms used to overcome these problems (Woo et al. 1992);

- and the time it takes for the benefits of refocusing to materialise and the sustainability of these benefits over the long term (Markides 1995b).

Of particular interest is the way in which the majority of these research questions have been framed in the literature: *why* and *how* questions rather than *what* questions dominate calls for research, a clear indication of the need for case study research in the field (Yin 1989). With regard to the type of research needed, Singh (1993) identifies three methodological challenges: trading theoretical abstraction off for institutional detail; defining strategically meaningful research questions, that is, questions that relate to an important managerial decision and questions that cover the organisational and performance consequences of the decision; and the trade-off between the pursuit of partial models versus the development of a comprehensive theory of corporate restructuring. In addition, there appears to be consensus on the need for an eclectic approach, incorporating theoretical as well as methodological pluralism, in researching complex organisational phenomena such as corporate refocusing (e.g. Singh 1993; Seward & Walsh 1996).

From a corporate strategy perspective, it should be noted that the literature still is, to a large extent, managerial based. Given the centre stage that corporate strategy and refocusing in particular has assumed in recent years, there seems to be ample opportunity for value creation from an academic point of view. In particular, little or no work to date has as yet attempted to uncover underlying patterns in the evolution of corporate advantage as it pertains to specific firms. Goold, Campbell & Alexander (1994) refer to the need for incremental (achieving better fit) and radical (strategy and scope) changes in corporate strategy over time. However, their treatment remains grounded in the 'parent-child-fit' paradigm, and the ability of managers to perceive 'misfits' and to correct them reactively. A clear need exists to explore the evolution of corporate advantage over time and the processes through which such advantage is created, within the context of the current pressures for refocusing.

Conclusion

Shareholder wealth maximisation, performance-related problems (due to either inefficient internal governance mechanisms or mistakes in strategy formulation that led to over-diversification), and new competitive demands, are all possible explanations for the refocusing trend. In addition, research seems to suggest that refocusing moves by firms, when supported by an underlying strategic logic, result in significant performance gains for the shareholders of the divesting firm. The sustainability of these gains, however, has not as yet received much research attention, and likewise the consequences of refocusing for the divested firms. In particular, calls for research seem to emphasise the need for in-depth studies on refocusing processes as well as the ways in which corporate centres add value to their underlying businesses.

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Linking transformation and change leadership in South Africa: a review of principles and practices

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Current literature relating to transformation, change management and leadership in South Africa is reviewed. This article defines these terms, draws on literature to explain their meaning in the South African context, and then proposes to link the concepts of transformation and change management with leadership so they reflect South Africa's unique management realities. Two management issues considered vital for leadership in South Africa to address concern the need to appreciate the rapidly changing cultural make-up of the workforce and the need to understand and value the changing cultural diversity needs of workers and managers. Factoring these leadership issues into transformation and change management processes will help managers to become more effective.

Introduction

South Africa is experiencing extraordinary change and transformation in all sectors of life and business, and effective change and transformation are management issues that have, and will continue to become, a way of life. Madi (1995) states that the process of change in South Africa is proving to be far more fundamental than many people assumed it would be. He points out that people expected that there would be political and socioeconomic empowerment of all previously marginalised people, but that such empowerment would run parallel to, but never intrude on, the 'normal' daily lives of previously privileged people. What is now becoming clear, Madi argues, 'is that the changes in our country are so fundamental that they are transforming the landscape of just about every aspect of life. There are now constant and daily challenges to people's views, perceptions, basic assumptions and values'. He further argues that these challenges are not only on a socio-political level, but are reaching into corporate boardrooms too.

Global realities facing South African managers are also impacting changes occurring in organisational life in this country. Communication networks such as telephone conferences, interactive visual links and Internet have made it possible to transact business as quickly between Johannesburg and New York as between two organisations in Johannesburg. The workforce talent available to tap the market is also global and culturally diverse. Indeed, major challenges facing South African managers include both the influence of globalisation of markets and workforce cultural diversity issues. More women, blacks, coloured and Indian people are entering both the labour market and gaining entry into management/leadership positions. So in order for South African organisations to survive in this new era, managers will need to adapt to these changes as well as to unforseen changes that will appear on the horizon.

Defining organisational change and transformation

Transformation is the move an organisation takes to 'start everything from scratch'. It is about an enquiry into the underlying paradigm of the organisation and a systematic attack on the strategy and operations of existing organisational elements. Transformation is when the majority of individuals in an organisation change their behaviour (Nadler & Tushman 1988).

On the other hand, 'change' is about 'tweaking' the organisation's strategy and operations. It is about going back to basics or searching for new tools and techniques that will pro-

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pel the firm forward. Change, according to Jick (1993: 1) is 'in its broadest sense, a planned or unplanned response to pressures and forces'. Organisational change is defined by Bennis (in Vermaak 1996: 14) as 'a response to change, a complex educational strategy intended to change beliefs, attitudes, values and structure of organisations so that they can better adapt to new technologies, markets and challenges, and the dizzying rate of change itself'.

Transformation is thus revolutionary and frame-breaking change, and change refers to incremental or continuous change. The following section attempts to shed light on the dynamics associated with change and transformation in South Africa.

Driving forces for organisational change in South Africa

A number of forces, individually or in combination, will force organisations to change in South Africa. One broad set of forces consists of external or environmental factors and another set of forces comprises intraorganisational forces.

External forces

Firms transform and change largely as a result of external forces rather than an internal desire or need to change (Nadler 1983). In South Africa, extraorganisational factors include massive political, economic, and social changes that are now forcing firms to adjust their businesses so they are aligned with new realities. Other external forces that South African firms face include pressures from globalisation, shifting demographics, changes in the availability of the labour force (shortage of skilled workers and oversupply of unskilled workers), reduced technology cycles, changing expectations among workers and customers, government legislation, and many more factors (Anstey 1997: 7-10; McRae 1996: 6-11; Grobler 1996; Manning 1996: 16-20).

Kotter (1996) discusses the challenges organisations face today, and points out that globalised economies are creating hazards and opportunities, forcing firms to make dramatic improvements to survive. He continues by stating '[g]lobalisation, in turn, is being driven by a broad and powerful set of forces associated with technological change, international economic integration, domestic market maturation within the more developed countries, and the collapse of worldwide communism' (Kotter 1996: 18).

Internal Forces

Inside South African firms, changes are occurring as a result of, *inter alia*, organisational life cycle evolutions, the reinvention of core structures and processes, culturally diverse workforce talent, and a highly unionised workforce. Indeed, changes in the cultural make-up of workforce demographics and leadership, mainly because of affirmative action and equal opportunity programmes, are forcing organisations to re-examine their human relations and employment practices (Hilliard 1996; Grobler 1996; Manning 1996).

Change leaders must, on the one hand, meet the needs of a culturally diverse workforce comprising illiterate, unskilled and semi-skilled people (mainly black), while on the other, leading an educated and highly skilled workforce comprising mainly of whites. They will need to get people of different cultures and backgrounds together to negotiate and participate. South Africans have to come to terms with each other's cultural differences, acknowledge them, put them in perspective and discover the strengths and weaknesses in different ideologies. Only if South African managers succeed in resolving these issues can they improve the aggregate human potential available in South African organisations (Khoza 1994; Avolio 1995; Madi 1995; Manning 1997).

While both external and internal changes are forcing South African firms to continuously reassess their strategies and operations, the methods and timing with which employees respond to change and transformation are different (Beer 1975). Indeed, to cope with different responses to change, research shows that for organisational transformation and change management to survive and eventually prosper through employee buy-in, certain fundamentals need to be retained (see Nadler & Tushman 1988).

The principle here, drawn from the field of psychotherapy, is that for people to cope with enormous and complex change and transformation, they need to have something to hold on to that is stable. Change must occur by keeping some aspects the same, by building in stability in the process of change (Nadler 1983: 500). Therefore, the paradox for managers in firms undergoing change and transformation is how much turbulence to expose their employees to, while, at the same time, retaining some form of continuity and stability in order to obtain people commitment to the transformation process. Indeed, 'planned change', that is, change designed and implemented in an orderly and timely fashion, is preferable to 'reactive change', that is, piecemeal response to problems as they develop (Griffen 1987). While planned change and reactive change are interesting theoretical concepts, the reality facing most in South Africa is that they no longer have the luxury of always controlling which option to choose. Whatever option is chosen, managers need to understand the dynamics of change, and transformation, resistance to change, and change leadership principles and practices.

Principles and practices of organisational transformation in South Africa

To negotiate the transformation and change process, South African managers need to understand which forces are driving the change, the dynamics of change and what can be changed, and the steps involved in implementing the process.

From the literature it seems that there are different antecedents for change, which call for different change responses. When the antecedents are major shifts or changes in the external environment, like the organisations of the 1990s are experiencing, it calls for a reorientation (revitalising) that implies discontinuous, multilevel, frame-breaking (radical, revolutionary or transformational) or second-order change. This kind of change focuses on reforming the mission and core values, altering power and status, modifying structure, systems and procedures, revising interaction patterns, and appointing new executives from outside the organisation to implement and drive the transformation (Orlikowski & Hofman 1997; Jick 1993; Beatty & Ulrich 1993; Tushman, Newman & Romanelli 1986, Nadler & Tushman 1988; Greenwood & Hinings 1996; Robbins 1997).

Change action roles

When implementing change, Jick (1993) points out that there are three broad action roles in the organisation:

1. change strategists, who are responsible for identifying the need for change, creating a vision of the desired outcome, deciding what changes are feasible, and choosing who should sponsor and defend it;
2. change recipients (the largest group - the employees, management included) who must adopt and adapt to the changes - it depends on their adoption of and adaptation to the changes whether the transformation is successful or not;
3. the change implementors, who implement the actual day-to-day process of change - the change leaders. They help shape, enable, orchestrate, and facilitate successful progress. They are actually the people in the middle responding to demands from the change strategists while attempting to win cooperation from the change recipients.

Resistance to change

One of the best-documented findings in organisational change studies, is the existence of individual and organisational sources of resistance to change (Robbins 1997; Carrell, Jennings & Hearin 1997; Strebel 1996; Kotter 1995 and Nadler 1983). Inherent congruence in a company will make it resistant especially to frame-breaking changes (Nadler & Tushman 1988). According to Robbins (1997), organisations with a history of lengthy periods of success tend to be particularly resistant to change. Furthermore, Dalziel & Schoonover (in Jick 1993) found that companies with historic barriers to change are likely to continue this pattern of resistance. Jick (1993) argues further that if a company has a track record of opposing change, more care should be taken to design a gradual, nonthreatening, participative implementation process for future changes.

Resistance to change may develop from the individual, the organisation, or from both. Several research studies, as summarised by Robbins (1997), Carrell et al. (1997), Greenberg & Baron (1997), identify individual and organisational resistance to change as follows:

Individual resistance to change

Fear of the unknown: This relates to uncertainty about the causes and effects of change. It manifests in South African organisations as a fear for the changes the new workplace will bring, because of affirmative action appointments, changes in the workforce demographics, and in leadership as well as the impact of changes on social expectations and organisational commitments. Manning (1996, 1997) maintains that a by-product of diverse workplaces is distrust and negative attitudes towards diversity and perceived barriers to successful careers for newly disaffected groups. While the resistance, resentment, and aggression shown towards change leaders by a certain faction of workers must be taken into account on the one hand, the fears and uncertainties of others must also be considered.

Habit: Change requires new ways of doing tasks and challenges people to develop new skills. The increasingly diverse workforce in South African organisations forces people to change their old habits and accommodate different cultures and habits in the organisation.

Self-interest: This refers to an unwillingness to give up existing benefits that, to date, have been concentrated in the hands of whites in South Africa.

Economic insecurity: Changes in the organisation have the potential to threaten the job and economic security of employees, either by loss of job or reduced pay, and people may therefore resist changes. In South African firms this aspect is most prevalent amongst the previously advantaged group, white men, who perceive themselves as threatened by affirmative action and programmes that redress the wrongs of the apartheid era.

Failure to recognise the need for change, general mistrust, and social disruptions: Many organisational changes threaten the integrity of friendship groups in organisations which may or may not be cultural or gender bound, but which provide valuable social rewards; for example golf day activities primarily geared for men or corporate box seats at sports events frequented primarily by one race or culture.

Selective perceptions: Changes in the organisation may be perceived by some employees as threatening and by others as challenging. This aspect also ties in with the perception of the previously advantaged group in South Africa who sees the current changes in the workforce demographics as negative and the previously disadvantaged groups who perceive the changes as positive.

Organisational resistance to change

Structural inertia: Organisations are designed to maintain stability. The selection process, the induction process and organisational socialisation, formalisation of tasks and processes, and bureaucracy are all processes creating stability. When confronted with change these forces resist and cause structural inertia. Major change efforts in large South African firms are finding resistance from organisational structures put in place years ago under very different circumstances.

Cultural inertia: Many South African organisations have cultures that emphasise stability and tradition and these cultures resist change.

Work group inertia: Because of the development of firm group norms that help guide member behaviour, pressure exists to perform jobs in a certain way. However, the impact of technology and global competitiveness on work design means that today's work demands 'thinking' as opposed to just 'doing', and this means that work has become gender and race neutral.

Threats to existing power relationships, expertise, and to resource allocation and previously unsuccessful change efforts: Management is about power and resource allocation. The new realities of the South African workplace will mean a significant shift in power and resource allocation to those who were previously disadvantaged.

Thus, to reduce resistance to change when organisational transformation needs to take place, the culture must be ready and conducive to change; employee understanding, participation and support is needed; and some of the changes need to be incremental, step by step and congruent with the existing culture in order to maintain some stability. Furthermore, these changes need to be implemented carefully and with sensitivity. This is the usual dilemma change agents have to face - how to rejuvenate a company and yet not demoralise its loyal work force and management.

Change management models

There are different change management models, like Lewin's three step model of 'freezing', 'changing' and 'refreezing', the

Planned Change Model (which is an extension of Lewin's model) and the Action Research Model, which is a collaborative approach proposing joint diagnosis through data gathering, feedback and participation by all employees, and promoting the use of consultants (Carrell et al. 1997). Change is thus seen as an event to be managed during a specific period, and not as an ongoing process.

A more applicable model for South African managers to consider in today's fluid and uncertain environment is proposed by Orlikowski & Hofman (1997). This model assumes that change implementation is an ongoing process, rather than an event with an end point. It also assumes that although some changes may be planned, organisational change as an ongoing process can per definition not be anticipated ahead of time. This model recognise three different types of change:

1. anticipated or planned change
2. emergent changes, that arise spontaneously and that are not originally intended or anticipated
3. opportunity-based changes, that are not anticipated, but are introduced purposefully and intentionally during the change process in response to an unexpected opportunity, event or breakdown.

Approaches to organisational transformation and change management in South Africa

Kotter (1995, 1996), from research conducted in more than 100 organisations that went through a transformation process, draws two major lessons from the findings: first that a change process goes through phases that, in total, require a considerable length of time and, second that critical effects in any of these phases can have a devastating impact, slowing momentum and negating hard-won gains. He identifies eight errors common to organisational change:

1. Allowing too much complacency
2. Failing to create a sufficiently powerful guiding coalition
3. Underestimating the power of vision
4. Undercommunicating the vision
5. Permitting obstacles to block the new vision
6. Failing to create short-term wins
7. Declaring victory too soon
8. Neglecting to anchor changes firmly in the corporate culture.

Kotter (1995) also discusses the consequences of these eight errors:

1. New strategies are not implemented well
2. Acquisitions do not achieve expected synergies
3. Re-engineering takes too long and costs too much
4. Downsizing does not get costs under control
5. Quality programmes do not deliver hoped-for results.

Kotter (1995,1996) not only identifies common errors in transformation and their consequences, but also proposes an eight-stage process of creating major change. Each stage in the eight-stage process is associated with one of the fundamental errors that undermine transformation efforts.

The first step in Kotter's model is to establish a sense of urgency. Nadler & Tushman (1988) argue that energy must be created to shake up the status quo in order to get change initiated and executed by creating a sense of urgency.

The forming of a powerful guiding coalition is step two in the model. A group with enough power, in terms of titles, information, expertise, and reputation needs to be developed to lead the change effort.

Creating a shared vision and strategy is the third step in the model. Before change implementation can start, the change agent must thus first craft a vision, formulate corporate strategies, transpose these into human resources strategies, and then communicate the vision, strategy and core values to the employees on a continuous basis (Warren 1992).

To build stability into the change process, the past can be put into the vision for the future, because, as Hurst (1991: 81) noted, the 'purpose is to reinterpret the past and visualize the future, for it is the weaving of the "texts" or lessons from the past with the expected scenarios or "contexts" of the future that constitute the cognitive pattern that we call a "vision" of the future'.

According to Kotter (1995), step four - communicating the vision and strategies - cannot be overemphasised. Visionary strategies and core values need to be communicated to everyone in the organisation, using every communication vehicle-memos, meetings, workshops, forums or industrial theatre. Warren (1992) points out that employee understanding and acceptance of the visionary strategies are critical in bringing change about. He also emphasises that frequent and repetitive communication, which carries a simple message, is needed to do this.

Strebel (1996) found that managers and employees view change differently. Top management sees change as an opportunity to strengthen the business by aligning operations with strategy to take on new professional challenges and risks. However, for many employees, including middle managers, change is disruptive and intrusive, upsetting the balance. Strebel's findings emphasise the importance of communicating not only the vision and strategy to employees on a continuous basis, but also what is in it for them, in other words, how it will impact on their job descriptions and agreements, personal relationships with colleagues, and communication with management.

Hart & McMillan (1996) point out that for the mission to be aligned with the organisation, it must be communicated in such a way that the employees see a role to play in it, and that it is aligned with their personal ambition. Lynn, in Jick (1993: 8–17) proposes an elaborate communication process to help create a (new) mindset for employees, to accept, associate and adapt to change quickly and positively.

Steps five to seven of Kotter's model introduces many planned change approaches: structural, cultural, new practices, and rewards. The last stage grounds the changes in the corporate culture and helps make them stick.

It must be borne in mind that, even though a step by step process to organisational change is suggested, change does not occur, and cannot be implemented in a neat clear-cut fashion. Instead of a controllable process, more often than not change occurs rather haphazardly and chaotically, in spurts and not event by event (Orlikowski & Hofman 1997; Kotter 1995; 1996; Jick 1993).

It is also important to realise that the value of transformation lies in the process of change, the journey, and not in the actual changes or the destiny, because the destiny is forever changing with the changing internal and external environments (Jick 1993). It is more important

to instill a culture of ongoing change for continuous improvement in order to survive and to enable the organisation to meet the competitive challenges. When change is perceived like this, it is seen as a learning process, as organisational transformation or organisational innovation, rather than just as organisational change (Gebert 1996; Robbins 1997).

This journey must be driven by leadership in South Africa that is capable of understanding the dynamics of change as well as the new cultural profile of the followers they will lead. The following section outlines the critical challenges facing change leaders in South Africa. Indeed, this article proposes to link the issue of 'leadership' to 'transformation and change management' since, without strong and decisive leadership in South Africa in these fluctuating times, it is believed that many change efforts will fail.

Influence of leadership on change in South Africa

An early study by Human & Horwitz (1992) on change in South Africa, concluded that South African business is inward-looking and 'closed'. They found that South African managers do not rate issues such as globalisation, strategic alliances, and relationships with the state and community as very important. These managers have also shut themselves off from their organisations. They conclude that the mind of the South African manager reflects a siege mentality. Vermaak (1996) supports this by pointing out that the isolation of the past and the lack of competition have made South African organisations quite 'lethargic and myopic', and he suggests that they must 'wake up and change'. In the past few years South African organisations have seen so many unprecedented and major changes in both their internal and external environments, that they no longer have a choice other than to change (adapt) or die.

However, recent documented evidence (see Hofmeyer, Rall & Templer 1995) on South African management attitudes suggests that managers are beginning to acknowledge the critical importance of change management. The majority of managers also believe that the pace of change in the training of employees and managers, in affirmative action, and in the advancement of women is too slow.

This evidence, along with anecdotal and informal feedback from managers and executives attending executive and management courses at the University of South Africa's Graduate School of Business Leadership over a two-year period, indicate that the management issues of change and transformation are current and important. South African firms and their managers are beginning to break their siege mentality of past and it is believed that new leadership which recognises the need to transform and change is beginning to emerge.

Change in the context of leadership in South Africa

Leadership is a concept that has had several meanings during the century. During the past eighty years, over three thousand studies concerning leadership have been conducted. House (1993: 4) argues that 'almost all of the prevailing theories of leadership, and about 98 per cent of the empirical evidence available, is distinctly North American in character: individualistic rather than collectivistic; emphasising assumptions of rationality rather than aesthetics, religion, or superstition; stated in terms of individual rather than group incentives, stressing follower responsibilities rather than rights; assuming hedonistic rather than altruistic motivation; and assuming centrality of work and democratic value orientation' .

Apart from the North American character of the theory, the study of leadership was also, prior to the 1960s, largely limited to the study of white men occupying leadership positions in business organisations. Only in the 1970s and 1980s did research interest start in the experiences of women and men from minority groups in management (Berry & Houston 1993).

Thus, the existing theories and research are predominantly North American in nature and are largely based on one race and one gender. Yet, cultural differences in societies and in organisations are believed to account for significant amounts of variance in a wide range of behaviours. It is claimed that cultural differences influence individual expectations and assumptions about management, perceptions of their environment, attitudes towards others, modes of social interaction, expressions of emotion, and global behaviour patterns such as leadership and conflict management styles (Hofstede 1980, 1991; House 1993).

Given that cultural-semantic and evaluative interpretations of leadership vary widely, leadership can be defined in relation to the culture studied, and the type of preferred leadership can vary across culture and over time, and within different contexts. In preliminary research, Booysen & Van Wyk (Booysen 1994: 10–11) analysed focus group data obtained from 430 first year Masters in Business Leadership students and twenty middle managers in South Africa. Three conclusions emerged about leader behaviours in the South African context:

- A leader is an accepted person who displays a natural ability in a given situation to inspire others to willingly follow an ideal or vision.
- A leader is a person who leads followers to believe in themselves, their own strengths, abilities and worth, and who inspires his followers to commitment, motivation and self-confidence.
- A leader is a person who is capable of paradigm shifts, takes risks, is a facilitator of people, empowers people, and who is perceived to be a trustworthy person with high moral values.

While this research is of a preliminary nature, it reflects the kinds of issues and questions beginning to be raised by South African management researchers concerning the definition and meaning of leadership in this country. What is more, given the enormous degree of change occurring inside and outside organisations in South Africa, the issue of change and transformation cannot be divorced from the issue of leadership. The following sections, therefore, present the unique demographics of 'followers' in South Africa and summarises the debate around the leadership challenges facing South African managers.

Specific challenges facing South Africa's change leaders

It is believed that there are two critical challenges change leaders need to understand as they attempt to address transformation and change management issues in South Africa. They are challenges associated with changing workforce demographics and managing a culturally diverse workforce.

Table 1. Workers by occupation, population group and gender

Year	Total			Asians			Coloureds			Whites			Blacks		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
94	100%	78%	22%	6%	5%	1%	5%	4%	1%	58%	46%	12%	31%	23%	8%
95	100%	78%	22%	7%	6%	1%	4%	3%	1%	58%	46%	12%	31%	23%	8%
94	530 499	414 501	115 998	30 363	26 261	4 102	27 997	22 446	5 550	305 857	243 947	61 910	16 7282	122 846	44 435
95	586	463	123	40	35	5	24	19	5	340	271	69	182	138	44

Occupation group: Legislators, senior officials and managers
Source: *Statistical release* P0317 (1995,1996): October Household Surveys: 1994,1995

Changing workforce demographics

Table 1 identifies the number of workers by occupation, population group and gender for 1994 and 1995. (These are the latest official statistics available).

Table 1 reveals that out of the total population of people in legislative, senior official and management positions in 1994 and 1995, 78% are male (46% are white males and 23% are black males). In 1994 there were 5% Asian males and 4% Coloured males. In 1995 it changed to 6% Asian males and 3% Coloured males.

In 1994 and 1995 the statistics stayed consistent for females, and shows that from the total population in these occupation groups only 22% are female (12% are white females and 8% are black females, 1% are Asian and 1% are Coloured females).

Thus, males, especially white males, are the majority represented in these occupational groups in contrast to the number of females, who are underrepresented at these levels of management.

If the percentages given in Table 1 are compared with the percentages of the general population in South Africa (blacks, 75%, whites 13%, Coloured 9%, and Asian 3% [*South African Statistical Release*,1996]), it is also evident that whites, as a whole, are overrepresented (58%) while blacks are underrepresented (only 31% in both years). Thus, the demographics reflect a dominant group in senior management that is still white and male.

However, while the demoghraphics show that a preponderence of senior management positions are filled by white males, Grobler (1996) argues that future leaders of companies in South Africa should reflect the population composition of the country, and that the leadership philosophy should be aimed at the future and at achievement based on partnership. He continues by stating, that the days of autocratic leadership have gone forever - the concepts of demand and control are simply no longer acceptable. Leadership must include elements such as integrity, fairness, democracy, empowerment, broad consultation, respect for the individual, and sensitivity for cultural diversity. Grobler (1996: 11) concludes that '[t]he future leader must also be caring, show empathy, be willing to serve, and recognise human worth'.

Human & Bowmaker-Falconer (1992), Kemp (1994) and Grobler (1996) point out that a workforce that reflects cultural diversity needs to be managed by culturally diverse leaders in order for organisations to function optimally. They emphasise that managing diversity refers to managing people, getting to know people as unique individuals and valuing individual sameness and differences. Human et al. state further that managing diversity is about putting hard work and effort into creating kinds of people development systems where people from diverse backgrounds can express themselves, grow, develop and be promoted on merit. Grobler (1996: 18) continues by arguing that '[t]he success of the process depends on the competence of South Africa's managers and, in particular, the leaders of people who determine the returns that organisations realise from their human capital. Our strength as a country is in our diversity, and effectively achieving our goals in this regard is within our reach'.

There is no doubt that the implementation of affirmative action and equal opportunity programmes will bring more women and people of colour into the workforce and into leadership positions. This will lead to changes in the way managers behave and treat their employees and co-workers. The attitudes and behaviours of future leaders in South African organisations will need to reflect the culturally diverse attitudes and values that represent South African society at large. Indeed, racial and gender issues in 'leadership' will become contentious management topics in South Africa's new millennium.

Change leadership and cultural diversity in South Africa

Madi (1995) argues that previous thinking, action and behaviour of the South African corporate world and culture reflected something between that of Europe and the USA and not that of Africa. But he points out that with all the changes taking place in the New South Africa, firms will need to adjust to the idea that they are in Africa and that by the end of the century the average South African will be 15 years old and black, and they, with their sense of values, perceptions and frames of reference will be the workforce of tomorrow. Madi (1995: 14) continues by stating that business leaders should consider the views of Lovemore Mbigi, Eric Mafuna, Perfect Malimela and the like. Since 'these individuals may not be using the same approach, idiom or language as Clem Sunter, Anthony Manning or Lascaris and Lipkin, but they understand what makes the black 15-year-old, or even the 75-year-old, tick ... the real understanding of Africa lies in them'.

The aim of the next section is to explore some of the implications of Afro-centric world views on leadership and change management, and not to give an in-depth discussion thereof. (For an in-depth discussion of Afro-Centric management approaches refer to Mbigi 1995a; 1995b; 1995c; 1997).

Euro-centric and Afro-centric change leadership practices

Khoza (1994) stresses that Europeans would be crazy to behave as though they were not European; Americans and Japanese would come across as both funny and phoney if they tried to be anything other than American and Japanese respectively. Similarly, Khoza (1994) argues that Africans, in this particular case South Africans, should stop behaving as though they were an outpost of Europe or a state of America or from somewhere else.

Khoza (1994) argues further that it is a fallacy to believe that a business culture can be imposed on people and that it can work perfectly without taking into account the cultural archetypes of the people in question. Yet, according to him corporate South Africa is guilty of just this. Corporate culture, as experienced in South Africa, is very Euro-centric and business practice as currently conceptualised in most South African corporations is generally cast in a Euro-centric mould. Manifestations of this corporate style include decision-making that is informed by power relations rather than consensus, fostering adversarial relationships between managers and the managed, buyers and the suppliers, blacks and whites, etc. instead of consensual relationships.

Avolio (1995) points out that in South Africa there appears to be both an individualistic and communalistic orientation depending on whether the group is white, black, Asian or coloured. Koopman (1994: 41–42) espouses that whites primarily have designed exclusive institutions that give primacy to the individual, his development, and self-fulfilment which serve to foster liberal democracy. Blacks, on the other hand, believe that a person is part of the societal fabric and they see the need for each individual to find his/her place in a societal structure, to play a particular role in it and, to a large extent, subordinate himself/herself to the societal needs all of which leads to inclusive organisations. Mbigi (1995a, 1997) also argues that Africans share the principles of collective solidarity and not the principles of individual self-sufficiency. Khoza (1994) argues that to assume and to practice Western management practices without questioning them is to impose less than optimum solutions on South African management challenges and circumstances, because we are not taking advantage of our potential in terms of issues such as values, and the structure of society in general.

Central to Afro-centric management, is *Ubuntu* - the community concept of management. Mbigi (1995a) indicates that *Ubuntu* is not a management style or a business technique, but is a humanistic philosophy that focuses on people and puts down some guidelines for leadership style and management practice. *Ubuntu*, literally translated means: 'I am because we are' (Mbigi 1995a). It is an expression of collective personhood and collective morality. It implies encouraging individuals to express themselves through the group, through group support and commitment, acceptance and respect, cooperation and consensus, caring and sharing, and solidarity. Khoza (1994: 123) points out that *Ubuntu* is opposed to individualism and insensitive competitiveness, but it is neither comfortable with collectivism, where collectivism stresses the importance of the social unit to the point of depersonalising the individual. At the same time, it has a great emphasis on concern for people, as well as working for the common good (Khoza 1994; Mbigi 1995a, 1995b, 1995c, 1997). Mbigi (1995b) argues '[t]he heart and soul of *Ubuntu* is the solidarity principle, group conformity and care in the face of survival challenges, based on unconditional group compassion, respect, dignity, trust, openness and cooperation'.

The implications of an *Ubuntu*-oriented leadership style includes not only teamwork down to grass-roots level, but also the encouragement of the team members or followers to sacrifice their personal gain/goals for the gain/goals of the group as a whole. This style includes creative cooperation, open communication, teamwork, and reciprocal moral obligations (Khoza 1994; Avolio 1995; Mbigi 1995b, 1997).

Beaty (1996) argues that managers should not have to choose between Euro-centric and Afro-centric management approaches in South Africa while Madi (1995) urges that these two sets of values must hastily embrace each other. Beaty (1996: 8) states further that placing these two approaches on two ends of a continuum is not the current reality confronting most managers in South Africa. South African managers do not face a 'melting pot' of people from one or two cultures. In fact, the South African workplace reflects many diverse cultures including European, African, Asian, Indian, Middle Eastern, and others, and people from the same culture in South Africa frequently differ along regional and ethnic lines, reflecting a workplace that Beaty describes as a cultural fruit cocktail.

Thus, managers in this country need to extract the best management tools from groupings representing a variety of cultural management orientations within and outside of South Africa. Managers who understand and value the cultural diversity of the South African workforce and who are flexible in using 'what works' from a cultural perspective will have the competitive edge. Madi (1995) concludes as follows: '[t]he issue is not that there should be an Africanisation of the corporate culture in South Africa, but there should be South Africanisation of the corporate culture'.

In addition to the debate about a change in leadership style to include values inherent in 'Afro-centric' management, the need to examine gender issues in leadership practice is also of critical importance.

Gender change leadership practices

The influx of women into the workforce, together with the political, social and economic concerns with advancing gender equity in the work setting, is beginning to result in increasing numbers of women occupying leadership positions. Despite this, very few women are in senior and executive leadership/management positions in South Africa. Govender & Bayat (1993) point out that several individual, organisational and social barriers account in varying degrees for this underrepresentation of women in senior leadership positions. Many of these barriers have to do with the misperception that women do not show leadership potential and behave differently from traditional male leaders in ways that could be possibly detrimental to themselves and the organisation.

Betters-Reed & Moore (1995) argue that although the workforce (American) is becoming increasingly diverse, the predominant paradigm for educating and managing this new labour force has remained rooted in an exclusively Anglo-American male mindset and that even management development programmes designed to focus on females have suffered from the tendency to encourage women to 'think manager, think male'. They continue by noting that the implicit (and sometimes explicit) assumption has been that women would succeed if they adopted the characteristics of effective white male managers. The constantly reinforced message was that

women could succeed only if they became more assertive and competitive, dressed for success, and became more politically and socially astute. This is unfortunately also the case in South Africa according to Wilkenson (1995).

Because of the above-mentioned assumptions and the fact that they were breaking new ground, the first female executives adhered to many of the 'rules of conduct' that spelled success for men. Rosener (1990: 119–121) points out that a second wave of women is making their way into top management, not by adopting the style and habits that have proved successful for men, but by drawing on the skills and attitudes they developed from their shared experience as women. She states: 'This second generation of managerial women is drawing on what is unique to women's socialisation and is creating a different path to the top. Women are seeking and finding opportunities in fast-changing and growing organisations to show that they can achieve results - but in a different way. They are succeeding because of - not in spite of - certain characteristics generally considered to be "feminine" and inappropriate in leaders'.

This second wave of women leaders is equipped with a leadership style that is more consensus-building, open and inclusive (power and information sharing), more likely to encourage participation by others, enhance their self-worth of others, energise them, and they tend to be more caring than many of their male counterparts. Rosener (1990) refers to this approach to management as an interactive leadership style.

Betters-Reed & Moore (1995) and Wilkenson (1995) argue that as a result of competitive pressures and strategic rethinking which brought about flatter organisational structures - the horizontal corporation - and more decentralised authority and decision-making, the trend is to move towards more collaborative styles of working across organisational departments to create an environment where teamwork encourages innovation and creative problem solving. They add that Senge (1990) has spurred interest in the importance of understanding open models of communication among all employees for the purpose of improved learning and performance and that Total Quality Management also demands that these principles be adopted. It is clear from the above that these trends in organisational structure and strategy are shifting the paradigm of thinking away from the traditional hierarchical models of organisation and management towards what Betters-Reed & Moore (1995) refer to as a feminist or women-centred approach.

It is evident that female and male leadership styles tend to influence followers differently. Robbins (1997) points out that research suggests two conclusions regarding gender and leadership. Firstly, the similarities between women and men tend to outweigh the differences. Secondly, the differences suggest that male managers feel more comfortable with a directive style whereas female managers prefer a more democratic style. Appelbaum & Shapiro (1993) argue that since men have occupied most executive positions, their leadership style is defined as traditional and therefore, because the female leadership style contradicts the traditional, it is seen as nontraditional. Table 2 compares the feminine leadership model to the traditional masculine model.

It is important to emphasise that many men possess certain attributes that are mainly linked with the female model as set out in Table 2 and vice versa. From Table 2 it is evident that women tend to lead more in a transformational way. Where the followers become empowered, consensus is important and charisma, personal reference and personal contact are used to enhance interpersonal relations and to influence followers. Men on the other hand tend to lead in a more directive style, where job performance is seen as a series of transactions with

Table 2. Comparison of masculine and feminine leadership styles

Variables	Masculine	Feminine
Operative style	Competitive	Cooperative
Organisational structure	Vertical and hierarchical	Horizontal, network, egalitarian
Objective	Winning	Quality product
Problem solving approach	Rational and objective	Intuitive and subjective
Key characteristics	High control	Low control
	Cling to power	Power sharing/empowerment
	Strategic	Empathetic
	Unemotional	Collaborative
	Analytical	High performance
Perceived Power Base	Organisational position and formal authority concentrated at the top	Personal characteristics shared within a group
Perspective on leadership	Social exchange in terms of transactions	Follower-leader commitment relationship

Compiled from: Appelbaum & Shapiro (1993); Govender & Bayat (1993); Smith & Smits (1994); Wilkenson (1995) and Rosener (1990)

subordinates and rewards are exchanged for services and punishments for inadequate performance - a more transactional approach. Men are also more inclined to use formal position power and authority to control people.

In conclusion, research notes that a 'feminine' leadership style is much more conducive to effective change and transformation than autocratic and directive styles. 'Optimally, what would emerge from both styles is neither a "masculine" nor a "feminine" model of leadership, but a synergistic model that enables people to work together to maximise their collective strengths and to avoid their individual weaknesses' (Smith & Smits 1994).

Conclusion

There is no escaping or hiding from the frequency and intensity of events that will confront South African changes leaders. External forces, like shifts in government and its regulations, union activism, RDP (Reconstruction and Development Programme), GEAR (Growth, Employment and Redistribution Programme), and social responsibility pressures, an irregular economy, a free market system, international competition, deregulation, informal business, major mergers and acquisitions, and crime will force major changes on South African organisations (Van Schalkwijk 1997; Vermaak 1996). Internal forces, like affirmative action appointments - especially in management and executive positions - and a major shift in work force demographics (reflecting population demographics) as well as cultural and diversity challenges, will combine to force the culture, management style, and business strategies of South African organisations to change quite profoundly.

Thus, understanding and managing organisational change and transformation have become increasingly important in the business environment of South Africa. This article postulates that some of the greatest transformation and change management challenges South African organisations will face include the need to adapt to the new realities of a culturally different workforce, and to lead such a workforce in addressing the challenges of change and transformation that lie ahead.

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Cost impact of integrated supply chain management in the pulping industry of Southern Africa

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The international pulp industry is exposed to fierce competition. A large proportion of Southern African pulp is exported and the industry has to compete in international markets. The competitive success of the Southern African industry is largely dependent on a raw material resource of low cost wood. By improving efficiencies in raw material handling and utilisation, to provide a more uniform mill furnish, the Southern African industry could further reduce the unit cost of wood, increase mill throughput, and enhance pulp quality to improve competitive position. Integrated supply chain management is a key tool to achieving this. Recent research on timber raw materials has quantified the benefits of differentiating eucalypt hardwood species before pulping and varying cooking conditions to suit the material. Results from plant scale tests conducted with two species are reported. Eucalyptus grandis represents a well-established pulp raw material and Eucalyptus smithii a new raw material source. Each was cooked separately but under standard cooking conditions suited to Eucalyptus grandis. The results revealed a considerable loss of fibre and reduced pulp quality for Eucalyptus smithii. Total cost analysis suggests the loss is of considerable economic significance to the pulpmill. A high level of supply chain integration is seen as a key tool to recovering these losses. This relies on sharing information to develop partnerships across functional boundaries and synchronising material flows to link and align raw material supply and cooking processes with customer needs. The Southern African pulping industry currently exhibits a low level of supply chain integration, characterised by independent departments, high levels of inventory, and a narrow cost reduction focus. A model of information and material flows is presented as a means of achieving higher levels of integration. This requires long-term commitment, strong technical support, and an active encouragement of exchange of ideas, skills, and personnel across divisional boundaries between mill and forest. Based on this model an attempt is made to quantify total cost in the supply chain in an effort to verify the soundness of the supply chain concept in the pulping industry.

Introduction

The international pulping industry trading in commodity pulp products has been ranked with steel and petrochemicals as being exposed to some of the fiercest international competition (Swann 1993: 22–31). The industry is presently dominated by northern hemisphere producers in North America and Scandinavia, but southern hemisphere producers are increasingly gaining market share because of access to a large resource of fast growing, low cost wood raw material. Cheap wood is a key advantage to international competitiveness.

In Southern Africa, a large proportion of pulp produced is exported and the industry has to compete with other international producers. The success of the industry is very dependent on a resource of fast growing, low cost wood. By improving efficiencies in raw material handling and utilisation, the industry could reduce the unit cost of wood and improve mill throughput and pulp quality, thereby sustaining and increasing international market share. Improved production efficiencies are possible by differentiating timber according to the pulping properties of different species in order to process a more uniform mill furnish.

From an integrated supply chain viewpoint, the pulp production process in Southern Africa begins with growing a plantation timber resource; continues with the felling and transporting of timber raw material to the mill and processing the material to make pulp; and ends with marketing pulp on international markets. The process from the start of timber production involves a long period of time. Nevertheless, it is important to understand the full process because species, growth rate, and age of timber act as sources of variation which affect pulping characteristics of the timber and hence the production process and market value of the pulp end product.

It is apparent that to meet future demand for low cost timber, the range of species, growth habits, and ages of timber raw material at the mill gate will increase. It is therefore becoming increasingly significant to differentiate timber according to pulping characteristics before processing, in order to improve the uniformity of mill furnish. Integrating the supply chain from forest to mill is seen as important to implementing a system of timber differentiation to achieve productivity improvements. Integrated supply chain principles and the current status of the Southern African pulping industry are discussed as a basis for recommendations made to help further integration.

SBL Research Review 1997 1(3): 19-27
Cost impact of integrated supply chain management in the pulping industry of Southern Africa

Background

The Southern African pulping industry

South African industrial development as a whole and including the pulping industry, is still in the early phases of the integration of logistics activities. Supply channel integration and integration between functions within individual companies are generally at a low level (Cilliers & Nagel 1994: 4–14). The Southern African industry exhibits many of the characteristics associated with the 'base-line' condition of functional independence established by Stevens (1989: 3–8) in achieving an integrated supply chain. For example, responsibility for different activities in the chain is vested in separate and almost independent business units. This leads to high levels of inventory of both timber raw material and pulp end product. Inventory buffers are widely used as a price hedge in the international commodity pulp industry and are a major cause of rapid swings between oversupply and strong demand which make forecasting demand and price movements very difficult. The result is short-term planning and reactive production strategies. Functional boundaries are entrenched with incompatible control systems between functions and units. Adversarial attitudes between timber suppliers and timber processors are also experienced at an operational level. Production cost reduction efforts are usually focused within organisations and business units and rarely extend beyond their boundaries. Cost reduction and profit improvement at the expense of supply chain partners by transferring costs upstream or downstream is known to occur. For example, decisions to change the specifications for acceptable timber to the mill are made unilaterally by the mill and at increased cost to the supplier.

However, there is some evidence of an improving willingness to promote increased integration between forest and mill and between distribution functions and customers. These initiatives are being driven by cross-functional technical teams within companies in the industry. For example, technical departments within divisions supplying the processors with timber have highlighted processing opportunities which exist in the industry. The opportunities relate to developing an understanding of how raw material influences pulp and paper properties downstream in the value-adding process. To this end, a fibre grading system has been developed at Usutu Pulp Co. in Swaziland which has the potential to provide greater consistency in pulp strength characteristics by scheduling raw material supply from the forest to achieve a desirable blend (Morris, Palmer & Quilter 1993). Similar developments have taken place at Sappi Ltd where strong partnerships have been forged between Sappi Forests Research and the mill research and development divisions (*Sappi Forests Research* 1993–1995). Much of the research has focused on developing an understanding of the variation in growth and pulping properties of eucalypt species used in commercial forestry to a point where it can now be used to assist pulp manufacture by greater uniformity of the mill furnish (Clarke 1995). A similar approach is being followed by Mondi Paper Co. with a partnership between the Mondi forest tree improvement division and the technical department at Mondi Kraft, Richards Bay (Hulett, Denison & Roberts 1994). The partnership seeks to develop manufacturing opportunities that arise from understanding how wood and fibre characteristics of timber influence pulp and paper properties. Integration between the pulp distribution function and customers is taking place through the use of electronic data interchange to facilitate links with the customer. This is expected to improve throughput, forecasting, production planning, distribution, inventory controls, and accounting procedures. In turn, it will offer customers greater flexibility, streamlined services, and fast response to their needs ('Mill invests business system' 1996: 14).

The benefits of integrating the supply chain to improve material management, differentiate timber, and provide a more uniform mill furnish have been highlighted by technical support teams between forest and mill. The electronic interface with customers is also established. There is a need within the industry to implement these systems at an operational production level. This requires the sharing of information to develop partnerships across functional boundaries and the synchronising of material flows to link and align processes throughout the supply chain.

The need for timber differentiation

The processing of eucalypts represents a major portion of the South African pulping industry. Eucalyptus species widely used by the industry have been shown to be significantly different in their kraft pulping characteristics. This relates to differing rates of delignification in the cook (Clarke 1995).

Eucalyptus grandis has long been the dominant eucalypt used as a raw material in South African pulpmills and cooking conditions are geared towards pulping this species. However, other eucalypt species are increasingly being used and this is having a significant impact on mill throughput and pulp quality because of the variable pulping characteristics of the different species. For example, Eucalyptus smithii is known to delignify more rapidly than Eucalyptus grandis.

To demonstrate, at a plant scale, the benefits of differentiating timber to mill production efficiencies, over 1 000 tons each of Eucalyptus smithii and Eucalyptus grandis were pulped separately by the acid bisulphite process used in dissolving pulp production. Standard production cooking procedures were used for both species and the viscosity of the pulp was measured from three samples of each of nine cooks. Viscosity is a measure of pulp quality in terms of the length of cellulose fibres. Pulp yield was measured under a standard cooking regime, by four baskets suspended in one of the digesters and under a shortened cooking regime, by six digester pots in a minirig attached to the same digester and using the same cooking liquor.

The tests consistently demonstrated that Eucalyptus smithii and Eucalyptus grandis have very different pulping characteristics. For the nine standard cooks carried out for each species, Eucalyptus smithii consistently cooked to a viscosity below standard pulp quality requirements under standard cooking conditions. The low viscosities measured for this species indicate that chips were overcooked, resulting in loss of fibre and reduced pulp brightness. Under standard cooking conditions, an average pulp yield of 48 per cent was measured for this species, compared with an average pulp yield of 52 per cent under a shortened cooking time in the minirig. The loss of fibre due to overcooking represents a four per cent difference in pulp yield. This makes a significant difference to mill throughput. The results from these tests indicated that if the differences in pulping characteristics of Eucalyptus smithii and Eucalyptus grandis are ignored, and both species are processed under the same cooking regime, there is a loss of fibre, reduced pulp yield, and reduced pulp quality from a rapidly delignifying material like Eucalyptus smithii. In addi-

tion there is wastage of chemicals and energy in the pulping process when overcooking material (Pallet 1997).

These tests clearly indicated a need for timber differentiation in the pulping industry. Evidently, the differentiation of timber must in turn influence the supply of raw materials and therefore also various other activities in the supply chain. The question which must be answered is: What is the impact of these changes on the total cost in the supply chain and ultimately on the cost of the product to the final customer?

Total cost analysis is a key measure of the benefits of integrating the supply chain (Lambert & Stock 1993: 39). An analysis of total costs serves to target cost trade-offs within the pulp production process and quantify the total cost benefit derived from using differentiated timber. Total cost is derived from cost components associated with plantation management, harvesting, transport, woodyard processing, and pulping.

Problem formulation

In view of the above the problem statement of this study can be formulated as follows:

How can the application of the principles of supply chain management contribute to efficiency improvements and ultimately to optimising total cost in the pulping industry of South Africa?

Objectives

The objectives of this study are twofold:

Firstly, to develop a model for information and material flows in the supply chain of this industry, by applying fundamental principles of supply chain management to the South African pulping industry.

Secondly, to determine the total cost implications and cost benefits of implementing supply chain principles in the pulping industry, based on the guidelines provided by the model.

Research method

The first objective can be attained by analysing and integrating secondary sources of information on the supply chain and on the South African pulp industry. This information is then used to build a theoretical model which can serve as a basis for total cost calculations.

Using the basic technical analysis of the differentiation of timber conducted by Pallet (1997) on the cooking process of pulp as a point of departure and the various links in the supply chain of the pulping industry as identified in the model, a total cost formula which provides for cost trade-offs in the supply chain is derived. This formula is then used to quantify the total cost of the integrated supply chain of the pulping industry.

Supply chain management in the South African pulping industry

Basic principles revisited

The supply chain is defined as the connected series of activities concerned with planning, coordinating and controlling material, parts, and finished goods from suppliers to customers (Stevens 1989). The concept of the integrated supply chain management extends the principles related to materials management, parts and finished goods flow and control, and information management outside the boundaries of any single organisation to include suppliers and customers, to the mutual benefit of all parties. Integration occurs at the buyers/supplier interface throughout the supply chain and cooperation and teamwork between buyers and sellers is a key element to achieving integration (Larson 1993). This requires a holistic approach to the entire production process which is different from that currently adopted by conventional organisations who still follow a 'traditional approach' to supply chain management. A traditional approach to supply chain management is characterised by formality, clearly defined boundaries between supplier and purchaser, and a focus on price and product in all interfaces between parties involved in the flow of materials. Research (Sabbath 1995; Saunders 1994; Christopher 1992) emphasises that the traditional approach to supply chain management leads to inventory build-up, slow response times, lack of differentiation in the treatment and flow management of all materials, functional boundaries, and no cost transparency.

South African industrial development as a whole and including the pulp and paper industry, is still in the early phases of the integration of logistics activities. Supply channel integration between functions and integration between functions within individual organisations are generally at a low level (Cilliers & Nagel 1994). Relations between buyer and supplier within the supply chain are frequently adversarial rather than cooperative. It would appear that the South African pulp industry in particular still adopts a traditional approach to supply chain management.

As opposed to the traditional approach, the concept of the integrated approach to supply chain management extends management thinking beyond the boundaries of the organisation to develop relationships that benefit both parties (supplier and customer) and add value to the entire transformation (production) process. There are two important principles to achieving supply chain integration. The first is the integration of buyer and supplier through the development of partnerships throughout the supply chain. The second is the development of a process orientation. This means viewing the entire transformation process in a holistic manner, from raw materials to finished product at point of consumption. A closer analysis of these two elements highlights the relevance to the pulp industry.

Supply chain integration is built on a cooperative partnership between buyer and supplier with open communication and transfer of information between organisations. It is also built on the recognition of two perspectives at the buyer/supplier interface. The perspective of the supplier is one of meeting customer requirements within the constraints set by the supplier's organisation. The perspective of the buyer at the same interface is to seek added value from the supplier for the purchasing organisation. For these perspectives to coincide, the supplier requires an understanding of the purchasing organisation's strategy to ascertain what is valuable to the purchaser, and the buyer needs to recognise the constraints of the supplier. The development of a successful partnership across functional and organisational boundaries requires recognition of three important factors: information exchange, business and technical expertise, and a team approach (Landeros, Reck & Planck 1995; Reck, Landeros & Lyth 1992; Saunders 1994; Fawcett & Fawcett 1995; Harrington 1995).

The second element mentioned above is the development of a process orientation. In a supply chain, including the supply of timber to the pulpmill, it is the flow and processing of materials that give rise to value-adding opportunity. To achieve a smooth-flowing integrated logistics pipeline requires an approach that facilitates end to end process management. It is through aligning processes and material flows that strategic capability due to value addition is developed within an organisation. The key to transforming poorly integrated business processes into an integrated supply chain with strategic capability is to focus each process across functional and divisional barriers on customer needs at the end of the supply chain.

Implementation model for the Southern African pulping industry

The question that now arises is how can the principles described above be implemented in the supply chain of the Southern African pulping industry ? To reiterate, there are two key principles to integrating the supply chain of the pulping industry. The first is the development of partnerships across functional boundaries within the chain and the second is a focus on the entire process from raw material supply to marketing the final product. Information and information exchange are the foundation of partnership development and material flows from the connecting pathways that link the entire process. Figure 1 illustrates the flow of materials and the shared information requirements that are necessary to integrate the supply chain in the pulping industry of Southern Africa.

The model reflects an advanced stage of supply chain integration which extends the scope of integration outside the organisation to focus on the external customer. This embodies a shift in production perception from product orientation to being customer-oriented. The model has two major components. One is the functionalised but clearly interlinked components of supply, production and marketing. The second is the process-oriented production team which serves to coordinate the production functions and provide consistency in decisions relating to raw materials supply, pulp production, and marketing strategy.

In the model the production process spans the gap between the constraints of wood resource on the one hand and the requirements of the customers in terms of their products and markets on the other hand. The wood resource is constrained by the need to maximise fibre production per hectare to sustain a supply of low cost wood.

The wood resource is drawn upon to meet the needs of the supply chain subject to the constraints imposed by the availability of timber of different grades. Timber supply is directed by the felling plan which uses age class, species distribution, standing timber volumes, and compartment information to produce a harvesting schedule. The execution of the felling plan takes place with the flow of wood from the plantation to the mill. This is where control in supply operation is exercised. This requires information regarding inventory, in terms of timber grades and the levels of stocks on roadside, in the depots, and in the woodyard. It also involves measurement of costs reflecting the value of timber supplied according to grade.

Material flow between supply and production components is represented by the flow of the wood. It is important that the

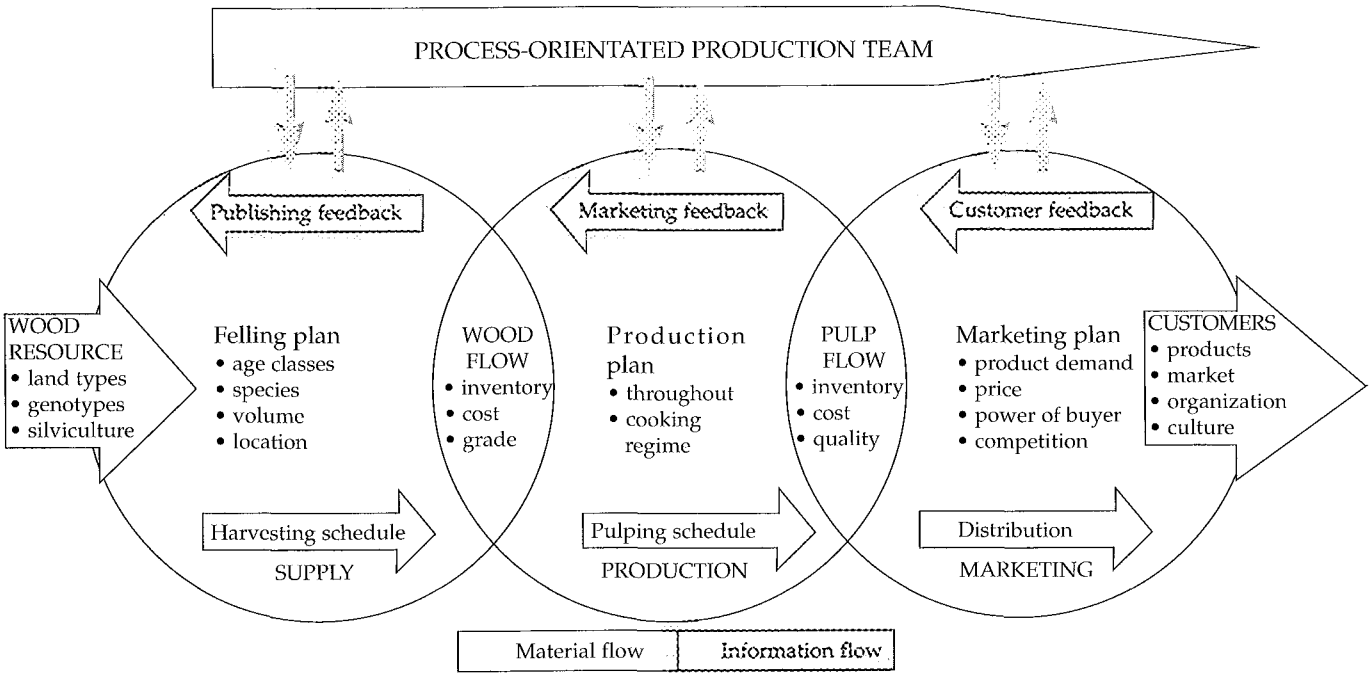

Figure 1. Model of information and material flows used to implement an integrated supply chain for pulp production (After Stevens 1987)

woodflow be monitored from the plantation to the woodyard in order to keep the timber grades separate (refer to Figure 1).

The pulping schedule centres around the production plan. This focuses on mill production considerations like maximising throughput, cost control strategies, and cooking procedures to meet pulp quality requirements. The execution of the production plan takes place with the flow of pulp from production to marketing and to the customer. In this regard it is important to emphasise that the figure clearly indicates the feedback of information from customer to production in order to ensure that customer requirements in terms of quantities, qualities, and timing are being adhered to. This also forms the basis of marketing feedback to update the production plan.

The marketing component in Figure 1 is the direct link with the customer and is the source of insight into the nature of the market and individual customers for the entire chain. The marketing plan requires information regarding product demand and price, the organisation's competitive position in the market, and the power of the buyer of its product. Marketing information together with supply and production information to the production team allow derivation of the product mix which is fed back into the marketing plan.

The role of the process-oriented production team in Figure 1 is to focus the process of turning wood into pulp onto customers' requirements. This team should be made up of members working within the supply, production and marketing functions but with a wider interest than pure functional interests, encompassing the entire process and with a focus on optimising the flow in the supply chain. Information accessed by the team should include: the availability of timber of different grades making up the wood resource; production constraints in the pulping process; and marketing opportunities as well as areas that need to be addressed in terms of product quality. In turn, the team should direct planning and flow of materials and products by integrating and coordinating external supply, external and internal flow, and customer requirements. The ultimate yardstick of success of the supply chain is lowest total cost of ownership to the end customer. This primary objective can only be achieved by maintaining an integrated approach to the supply chain and by trading off costs in the entire process of creating customer value.

Total cost and cost benefits of supply chain management

In the discussion on the need for timber differentiation reference was made to a technical analysis of the differences in cooking profiles and pulp yields of high and low grade timber. In attaining the second objective of this study, which is to determine the total cost implications and cost benefits of implementing supply chain principles in the pulping industry, the results from these tests are used as one of the inputs to quantify the impact of differentiated timber on the total cost of pulp production as well as the impact on profit opportunity. The analysis of total cost defines the sequence of operations within the pulp production process and provides complete integration of the supply chain from growing timber to pulp production (refer to Figure 1). It also serves to align the processes within the production chain by relating the costs for each component to the final pulp end product.

A total cost equation is derived and components and costs quantified for a dissolving pulp mill. The analysis serves to quantify the total cost benefit in the production process from using differentiated timber and to target cost trade-offs within the pulp production process in general and within the supply chain in particular.

Total cost components

The total cost of pulp production can be divided into two sections. The first is a function of the costs of plantation management for wood production and the second is a function of the costs of pulp production in the mill. Wood production costs can be subdivided further into the costs of plantation establishment (land preparation, fertilising, weed control, nursery, field planting); the cost of plantation maintenance (fertilisation, weed control, fire protection, pest and disease protection); the cost of harvesting trees at the end of the rotation; and the cost of transporting wood to the pulpmill. Pulp production costs can be subdivided into woodyard costs (chipping and storage) and pulping costs (chemicals, energy, and water). Each of these components makes up the total cost equation.

Total cost equation

The total cost of pulp production when integrated with timber production is defined as a function of the following components:

$$C = f(Cpm, Ch, Ct, Cw, Cp)$$

where

C = the total cost of pulp production (R/ton pulp)

Cpm = the cost of plantation management (R/ha)

Ch = the cost of harvesting (R/ton wood)

Ct = the cost of transport (R/ton wood)

Cw = the cost of the woodyard (R/ton wood)

Cp = the costs of pulping (R/ton pulp)

f = function

The cost benefit associated with grading timber relates to the scale economies achieved in terms of higher pulp yields in the mill for the same fixed cost throughout the supply chain. This is measured by introducing four factors that convert the costs of individual components within the supply chain to standard units for all cost components. For example, the real cost of timber production per hectare is converted from tons of wood per hectare to tons of pulp per hectare using the wood conversion factor. In this study, volume (m^3/ha), wood density (ton wood/m^3 wood), pulp yield (ton pulp/ton wood) and a wood conversion factor (m^3 wood/ton pulp) are used as conversion parameters. The consumption of wood to make pulp is inversely related to the product of wood density and pulp yield as expressed in the following equation (Borralho, Cotterill & Kanowski 1993):

$$WC = 1/(DEN * PY)$$

where

WC = the wood conversion factor (m^3 wood/ton pulp)

DEN = the density of wood (ton wood/m^3 wood)

PY = pulp yield (ton pulp/ton wood)

The conversion factors standardise units and allow measurement of raw material costs in terms of mill value. They convert the cost of plantation management from R/ha and the cost of harvesting, transport, and woodyard from R/ton wood, to a cost of pulp production in Raton pulp produced.

Other factors required in the total cost equation include:

VOL = the average volume growth of the plantation (m^3 of wood underbark per hectare)

PYm = the mill average mass of oven dry pulp produced per ton of bone dry timber which is 0.44 for Saiccor.

The total cost of pulp production can then be expressed as follows:

$$C = [WC/VOL(Cpm)] + [(Ch+Ct+Cw)/PY]+[0.44/PY(Cp)]$$

By quantifying the cost of each component, and understanding the pulp yield, density and yield characteristics of the timber, the total cost of production of a ton of pulp can be calculated. The costs of each component are quantified in the following section.

Component costs

The total cost components for pulp production are quantified below for typical eucalypt forestry conditions at the Saiccor mill in South Africa. The forestry related costs of wood production and delivery to the mill are taken from the annual report of the Forestry Economic Services for the calendar year January to December 1995 (Rusk, Pennefeather, Cronje & Meyer 1996). These cost reports are published annually and are considered to be the most comprehensive cost reporting available on plantation forestry. The 1995 survey sampled 56 per cent of the 1.3 n-million hectares of plantation in South Africa. The data is collected from a wide spectrum of timber growers from major corporations to small growers. Detailed costs for eucalypt plantation management, harvesting, and transport are reported. All costs are the average costs for production of dissolving pulp in South Africa. The costs are divided into woodyard costs and pulp production costs.

The costs of plantation management

Plantation management includes the direct costs of establishment/re-establishment, maintenance and protection and an overhead cost component. These costs were discounted to a net present value (NPV) assuming a nine year growth rotation (Rusk et al. 1996) and using a 5 per cent real interest rate (inflation free). These assumptions correspond to typical eucalypt growing conditions in South Africa (Uys & Kotze 1992). Costs of land were not considered.

The net present value of plantation management costs is presented in Table 1. From the table, the cost of establishment and re-establishment is the weighted average of both planting and coppicing of eucalypts. The total planting costs include the costs of land preparation, planting, blanking, and fertilising (total R1 595/34.ha). Planting or coppicing costs are incurred at the beginning of the rotation. The total maintenance cost includes the costs of weed control, brashing, and clearing storm, wind and fire damaged trees. Protection costs include the costs of pest control and the control of noxious weeds, fire protection and insurance, and conservation costs. Forest overheads are indirect costs that cannot be directly allocated to any of the silvicultural, harvesting or transport operations. They include costs incurred by administration, the replacement of hand tools, road and building maintenance, and maintenance of other improvements. The total cost of R583.24/ha is incurred annually for the length of the rotation, in this case for nine years.

Table 1. The NPV of plantation management for eucalyptus plantations grown on a 9 year rotation in South Africa (Rusk et al. 1996)

Phase	Cost component	Cost (R/ha)
Establishment	Land preparation	611.19
	Planting	537.26
	Blanking	177.02
	Fertilising	259.87
	Coppicing	331.94
	Total establishment cost	1123.03
Annual costs	Maintenance	85.56
	Protection	130.30
	Overheads	367.38
	Total annual cost	583.24
Total plantation management cost over 9 years		6372.19
NPV at the end of year 9		5268.60

Note: The total establishment cost is a weighted average of costs associated with planting (63%) and coppicing (37%)

The total cost of plantation management of R5 268.60/ha represents a standard cost for all eucalypt species. No distinction is warranted between high grade and low grade species. The cost benefits to differentiating timber in this component of the total cost equation derive from scale economies achieved from growing timber of higher value to the mill (higher pulp yields) for the same plantation management cost as low grade species.

The costs of harvesting and transport

The costs of harvesting and transport are reported as direct costs only (see Table 2). Overhead costs are included in the management of the plantation (Cpm). Costs presented in the table are the weighted average costs for these activities. The cost of harvesting (R22.97/ ton wood) is the total expenditure on felling timber and delivering it to roadside divided by the total tonnage felled. The cost of transport (R50.13/ ton wood) includes the total cost of loading timber at roadside, shorthaul transport to depot and delivery to the mill woodyard divided by the total tonnage delivered to the mill.

Table 2. The costs of harvesting and transporting timber to the mill (Rusk et al. 1996)

Cost component	Cost (R/ton wood)
Harvesting	22.97
Transport	50.13

The cost of harvesting and transport is the same for all grades of timber. The cost benefits of differentiating timber at the n-dil derive from the scale economies achieved by recognising the higher value of certain timber species to mill productivity.

The cost of the woodyard

Woodyard costs are presented in Table 3. The amount of R7.74/ton of wood represents the cost of chipping and storing timber raw material before processing. It is assumed that woodyard production costs are the same for all timber grades. As before, cost benefit is derived from chipping wood of higher value to the mill when timber is differentiated.

Table 3. Woodyard production costs (Industry sources)

Cost component	Cost (R/ton wood)
Woodyard	7.74

The cost of pulping

Pulp production costs are summarised in Table 4. The pulping input variable costs are the direct costs of cooking wood chips involving chemicals, energy, and water at a cost of R123.84/ton pulp. Indirect overhead fixed costs are R54.46/ton. The cost benefits to differentiating timber relate partly to savings in energy when altering cooking regime for high grade species, but mainly to higher pulp yields for the same production cost achieved with higher grade species.

Table 4. Pulping production costs (Industry sources)

Cost component	Cost (R/ton pulp)
Pulping input variable costs	123.84
Fixed costs	54.46
Total	178.30

Total cost analysis

The total cost analysis quantifies the difference in the total cost of pulp production when processing differentiated timber and undifferentiated timber. Cost benefits due to timber grading relate to improved economies of scale in all the processes making up the integrated supply chain. Improved scale economies are achieved when fibre yield is maximised in pulp manufacture and the fixed costs incurred throughout the supply chain are minimised when measured per ton of pulp produced. Cost increases due to the timber grading process must also be considered and incorporated into the total cost equation. Total cost benefit is achieved when trade-offs between cost increases and savings favour increased savings.

Cost trade-offs

The integrated supply chain examines the timber and pulp production process in its entirety. Timber grading and pulping separately requires maintaining the identity of timber from plantation to the digester. This is a possible source of cost increases in the process. At present, systems exist to maintain the identity of timber from the plantation to the woodyard gate, thus no cost increase in the harvesting and transport components of the supply chain have been incorporated. In the woodyard, however, roundwood and chips of different grades would have to be stored separately before pulping. The woodyard at Saiccor currently differentiates two types of raw material (wattle and saligna). This is done in order to process wattle through the magnesium section of the plant only. A timber grading precedent therefore already exists in the woodyard at Saiccor. If three grades of timber were introduced, there would need to be some restructuring of the woodyard requiring a small capital investment. The increased costs of depreciation and repairs and maintenance of new assets would increase the costs of the woodyard. For a R10m capital investment, the woodyard cost component (Cw) would increase to R9.00/ton of wood processed. The increased woodyard costs would have to be offset by the savings made in the manufacture of pulp from differentiated raw material.

Altering cooking requirements to suit high timber grades would result in savings in energy and reduction in the pulp production input variable costs for these grades. A 10 per cent reduction in energy use would reduce the variable cost of pulping (Cpv) to R120.00 per ton of pulp. The total cost balance as a result of cost trade-offs can be quantified using the total cost equation with the results from the technical plant scale tests (referred to earlier), as input data.

Input data

The results achieved in the technical tests are summarised in Table 5. The wood densities used for Eucalyptus smithii and Eucalyptus grandis in the table are those previously measured within the KwaZulu-Natal midlands under similar growing conditions to the material used in the plant scale cooks (Clarke 1995). The volume of timber grown per hectare (VOL) was derived from actual measurements of mean annual increment on plantations in KwaZulu-Natal grown on a 9.1 year rotation (Rusk et al. 1996). These records likely included plantations from which material for the tests was derived.

Table 5. Input data for total cost analysis of tests conducted at Saiccor (Clarke 1995; Rusk et al. 1996)

Timber grade	Species	Density (ton/m^3)	Volume (tons/ha)	Pulp yield (ton pulp/ton wood)	
				Undifferentiated	Differentiated
High	Eucalyptus smithii	0.55	123	48.0	51.8
Low	Eucalyptus grandis	0.44	123	53.1	54.2

Pulp yield data in Table 5 is divided into that representing undifferentiated timber and differentiated timber.

Cost analysis

The component costs and the total cost for pulping undifferentiated and differentiated Eucalyptus smithii and Eucalyptus grandis timber under different cooking regimes are summarised in Table 6. In the case of differentiated high and low grade timber, cost trade-offs have been incorporated. The woodyard component (Cw) has increased to R9.00/ton of wood and the variable cost of pulping (Cpv) reduced to R1 20.00/ton of pulp for high grade timber requiring less energy.

From the table, savings in total cost are made when both high grade and low grade timber are differentiated and cooked differently to the standard cooking regime currently practiced. The savings are greatest for high grade species like Eucalyptus smithii, where the total cost of pulp production under standard cooking conditions is R494.11/ton and R457.03/ton under a cooking regime better suited to the mate-

rial. This represents a saving of R37.08 for every ton of pulp produced from the number of this species when differentiated. Savings are also possible for low grade species like Eucalyptus grandis where the total cost of pulp production under undifferentiated cooking conditions is R483.32/ton and R475.83/ton under cooking conditions better suited to the material. This represents a saving of R7.49 for every ton of pulp produced from the timber of this species when differentiated.

Table 6. Cost components and total cost per ton of pulp for undifferentiated timber under standard cooking conditions and differentiated with cook adjusted to timber grade (Section on cost components)

Timber grade	Species	Cpm (R/ha)	Ch (R/ton pulp)	Ct (R/ton wood)	Cw (R/ton pulp)	Cpf (R/ton pulp)	Cpv (R/ton wood)	Total cost
Undifferentiated	E smithii	5268.60	22.97	50.13	7.74	54.46	123.84	494.11
Undifferentiated	E grandis	5268.60	22.97	50.13	7.74	54.46	123.84	483.32
High grade	E smithii	5268.60	22.97	50.13	9.00	54.46	120.00	457.03
Low grade	E grandis	5268.60	22.97	50.13	9.00	54.46	123.84	475.83

The analysis of the total cost equation in Table 6 quantifies the extent of the material wastage that occurs when undifferentiated timber versus differentiated timber is used in the pulping industry. In the case of both high grade and low grade timbers, savings in total cost were made by differentiating the raw material before cooking and adjusting the cooking procedure to suit the material. High grade material represents the upper margin of the savings that can be achieved (R37.08/ton of pulp) and low grade material the lower end (R7.49/ton of pulp). It is reasonable to assume that moderate graded timber would lie between the two. The savings would have a significant impact on production costs in a mill with the capacity to produce 600 000 tons of pulp per annum like Saiccor (*Engineering Week* 1995).

The savings quantified above refer only to the production of an unbleached pulp. There is considerable potential for further savings downstream from the pulp production plant in the process. For example, the overcooking of Eucalyptus smithii reduces the brightness of the pulp and requires prolonged bleaching to achieve acceptable standards of bleached pulp brightness. Adjustment of cooking regime to suit the timber grade being cooked would prevent prolonged bleaching. Consistent pulp characteristics, like viscosity and brightness, help the downstream processes achieve scale economies with longer runs of material of the same nature. This is also likely to provide a better quality of end product with accompanying increased value. The plant scale tests demonstrated the consistency of viscosity that can be achieved when material is graded and cooked separately. This would also produce savings in the downstream process.

The savings that are possible from differentiating timber before processing would also improve competitiveness in the marketplace. By lowering production costs in the mill, the position of Saiccor as lowest cost dissolving pulp producer in the world would be strengthened. The savings would also lead to increased profitability of the business by increasing the difference between the market price and production costs per ton of pulp. Further increases in profitability could arise, for example, from production of higher graded pulps, like 94 alpha, to increase market share in higher value products like acetate flake. It is likely that by differentiating timber before processing, the product mix could be shifted to include a higher proportion of higher value products. In an advanced phase of integration of the supply chain, it would be possible to accommodate the requirements of niche markets for higher value products by matching and processing the fibre resource from plantation through to mill to meet the needs of the market.

Recommendations

In order to fully understand and utilise the benefits of greater efficiency and cost reduction in the supply chain of the pulp industry the following is recommended:

- Conduct further plant scale and laboratory tests with other eucalypt species to confirm the timber grading system as developed for dissolving pulp production.
- Test the timber grading system and associated cost benefits for the kraft pulping process.
- Extend the cost benefit analysis to include downstream processing of unbleached pulp in the bleaching and paper making processes.
- Carry out an investigation into the layout changes and associated capital expenditure required in the woodyard to cater for differentiated timber chipping and storage requirements.
- Develop a cross-functional production team with strong technical support to coordinate timber differentiation and synchronise material supply with pulp production and market requirements.
- The phased integration of the supply chain concept in the pulping industry and the concomitant development of more advanced costing procedures to quantify the cost trade-offs and cost benefits of each phase.

Conclusion

The benefits of integrating the supply chain in the pulping industry are economically significant. They relate to the improved conversion of raw material to saleable product by differentiating timber according to pulping characteristics thereby improving the uniformity of the mill furnish. This in turn increases mill throughput and enhances pulp quality.

Achieving an integrated supply chain relies on the development of partnerships across functional and divisional boundaries and on orientating the production process towards the needs of the customer. In the Southern African pulping industry, the current level of supply chain integration is low with responsibility for different activities in the chain vested in separate business units and almost independent departments. This leads to high inventory levels, an adversarial relationship between forest and mill, short-term and reactive production planning, and cost reductions at the expense of supply chain partners. The benefits of improved material management and timber differentiation have been highlighted by technical support teams between forest and mill.

The achievement of a higher level of integration between forest and mill at an operational level is required to inherit the

benefits of differentiating timber. A model of information and material flows relating to the pulping industry and incorporating the principles of integrated supply chain management is presented. To be implemented successfully requires long-term commitment, strengthening of technical support, and active encouragement of exchange of ideas, skills, and personnel across divisional boundaries.

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The evolution of the role of the corporate centre: A value addition perspective

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The function of or the value added by the headquarters unit in a multibusiness firm is one of the four fundamental issues recently raised by prominent strategy scholars. In their view it lies at the centre of strategy practice and research. It is also the focus of this article. Although recent research findings on corporate restructuring and corporate refocusing seem to support the view that the conglomerate is a transitional form, the prevalence and persistence of highly diversified groups cannot be ignored. Therefore, rather than attempting to find general truths regarding diversification or divestiture decisions, it should be asked whether a business unit will benefit from being part of a diversified form. It is argued that the answer hinges on the value added by the corporate centre, where such value addition relates to the raison d'être *of the corporate centre and its ultimate impact on shareholder wealth. A clear distinction is drawn between corporate centre value addition and the related but different concepts of 'added-value' and 'value-added'.*

Introduction

What is the function of or the value added by the headquarters unit in a multibusiness firm? This is one of the four fundamental issues raised by Rumelt, Schendel & Teece (1994: 3) that, in their view, lies at the centre of strategy practice and research. It is also the theme of this article.

The rise to prominence of the large multibusiness firm and its dominance in the industrialised world can be regarded as the most distinguishing feature in the development of the industrial organisation landscape of the twentieth century (Davis, Diekman & Tinsley 1994). Although the emergence of the multibusiness firm has occurred gradually over the course of the century, it has gathered considerable speed since the 1960s when firms started to turn to unrelated diversification through mergers and acquisitions to satisfy their growth needs (Shleifer & Vishny 1994).

Thus, from the 1960s to the 1980s, the 'firm-as-portfolio' model (Fligstein 1991) came to dominate industrial organisations. The structural arrangement used to organise activities in these firms has been the multidivisional or the M-form or, a derivative, the holding company or conglomerate structure with first-level differentiation on the basis of semi-autonomous companies. However, Davis et al. (1994) argue that by the 1990s, the conglomerate firm or the 'firm-as-portfolio' model in the United States had in effect become 'deinstitutionalised'. They report not only a one-third drop in the level of total diversification amongst *Fortune 500* firms, but also a 44 per cent decline in the level of unrelated diversification in the course of the 1980s. These results are supported by Markides (1993) who found that at least 20 per cent and as many as 50 per cent of *Fortune 500* firms refocused during the period 1981 to 1987.

Changes in business rhetoric during the 1980s provided impetus to these developments by denouncing the conglomerate form in favour of the lean, focused and networked firm (Davis et al. 1994). The business press referred to the dawning of the 'era of restructuring' (Markides & Berg 1992). Business leaders were advised to 'stick-to-the-knitting' (Peters & Waterman 1982) and to 'focus on core competencies' (Prahalad & Hamel 1990). Corporate restructuring through 'refocusing' (Markides 1995a) or 'downscoping' (Hoskisson & Hitt 1994) replaced conglomeration, apparently with the support of the world's stock markets. For instance, a number of empirical event studies (e.g. Schipper & Smith 1983; Miles & Rosenfeld 1983; Hite & Owers 1983; Rosenfeld 1984; Markides 1992,

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1995a; Johnson, Brown & Johnson 1994) have indicated that refocusing/divestiture announcements were associated with statistically significant positive abnormal returns.

Although these findings seem to indicate support for the view that the conglomerate is a transitional form (Teece, Rumelt, Dosi & Winter 1994), the prevalence and persistence of highly diversified groups can, nevertheless, not be ignored. In addition, while the above evidence appears to imply that reductions in diversification create market value, it cannot easily be reconciled with the value created by conglomeration in the past (Rumelt et al. 1994: 45). However, while there is still controversy in the economics literature surrounding the limits to the scope of the firm (Rumelt et al. 1994: 44; Markides 1995b: 12), it is now accepted in the strategy literature that there are benefits as well as costs associated with diversification and that the marginal diversification benefits tend to decrease as the firm diversifies further away from its core business (Markides 1995b: 13).

Therefore, rather than attempting to find general 'truths' regarding diversification or divestiture decisions, perhaps the appropriate question that should be asked is: 'Does a business unit benefit from being part of a diversified form?' (Dess, Gupta, Hennart & Hill 1995: 374). It is argued in this paper that the answer to this question hinges on the value added by the corporate centre. Firstly, the role of the corporate centre is placed within a historical perspective. Secondly, the opportunities for corporate centre value addition is reviewed. Lastly, a distinction is drawn between the concepts 'added-value' and 'value-added'. It is an attempt to separate these concepts from corporate centre value addition.

The evolution of role of the corporate centre

The origin of the corporate headquarters unit or the corporate centre is intimately linked to the origin of the multidivisional structure or the M-form in the early decades of the twentieth century. This invention was prompted by the administrative overload that resulted from trying to manage diversified operations through the centralised, functionally departmentalised U-form. It enabled the separation of the day-to-day operational management responsibilities for the businesses from the resource allocation, long-range planning, appraisal and coordination and, in particular, the entrepreneurial responsibilities of top management (Chandler 1962: 12). In a more recent publication, Chandler (1991: 33) elaborates on the role of the corporate centre:

> From the start the functions of the new corporate headquarters of these new multimarket business enterprises became and remained that of maintaining the long-term health (usually defined as continued profitability) and growth of their firms. To implement this role the executives at the new headquarters carried out two closely related functions. One was entrepreneurial or value-creating, that is, to determine strategies to maintain and then to utilize for the long-term the firm's organizational skills, facilities and capital and to allocate resources – capital and product-specific technical and managerial skills – to pursue these strategies. The second was more administrative or loss-preventive. It was to monitor the performance of the operating divisions; to check on the use of the resources allocated; and, when necessary, redefine the product lines of the divisions so as to continue to use effectively the firm's organizational capabilities.

Unrelated diversification since the 1960s and the institutionalisation of the 'firm-as-portfolio' model led to a further extension of the entrepreneurial corporate role to include decisions on the type of business a company should be in (Drucker 1955; Andrews 1987). Consequently, the chief executive role as 'strategist' and 'architect' of corporate direction started to take shape. An underlying assumption was that managerial skills were general in nature and that they could be transferred across industries (Chandler 1991).

Furthermore, the development of portfolio management tools by management consulting firms (e.g. Boston Consulting Group) and big corporations (e.g. General Electric) allowed corporate managers to use two simple metrics (industry growth and relative market share) to categorise individual businesses and to use these categories as the basis for resource allocation decisions. These tools not only served to reduce complexity but, more importantly, also encouraged a preoccupation with cash flow management and internal self-sufficiency (Collis & Montgomery 1995). Thus, the emphasis shifted to the need for a 'balanced' portfolio of businesses with sufficient cash generators to fund developing and high-growth businesses. These developments can be seen to have led to the substitution of the goal of 'corporate wealth maximisation' for that of 'shareholder wealth maximisation' (Donaldson & Lorsch 1983), this being consistent with Selznick's (1957) view of the corporate role in defending institutional integrity.

Apart from managing the portfolio of businesses and monitoring their performance, corporate managers were also made aware of their crucial roles in managing the internal context of the firm (Bower 1970) as well as its external context in terms of resource dependencies (Pfeffer & Salancik 1978) and stakeholders (Freeman 1984). However, by the end of the 1970s, the impact of information technology, the changing nature of competition and globalisation (Alvarez & Ferreira 1995) as well as increased scepticism about corporate managers' ability to manage and add value to a diverse portfolio of businesses, coupled with a dramatic change in business rhetoric (Davis et al. 1994), led to a new concept of corporate strategy and yet another shift in emphasis regarding the role of the corporate centre. Corporate managers were encouraged either to ensure the appropriability of economies of scope or synergy across divisional boundaries through horizontal strategies, thereby achieving a 'fit' in their diversification strategies (Porter 1985), or to divest unrelated businesses and to return to their core competencies (Prahalad & Hamel 1990) and a consistent 'dominant logic' (Prahalad & Bettis 1986).

In effect, a contingency approach to corporate strategy is emerging. Factors such as corporate objectives, the characteristics of individual businesses and industries, actual and potential links between businesses, corporate resource strengths, organisational culture and top management personalities (Grant 1991: 360) determine the appropriate corporate strategy and the accompanying corporate management style (Goold & Campbell 1987). The potential of the corporate office to create value and to add value to its underlying businesses has become significant (Goold, Campbell & Alexander 1994). Corporate management has to fit the particular characteristics (mental maps, structures, systems and processes, functions, services and resources, and people and skills) of the 'parent' company with the characteristics (critical success factors and

'parenting' opportunities) of its businesses. Only when such fit is achieved, can the corporate office create value and justify its existence (Goold et al. 1994).

Corporate centre value addition

Towards a definition

Up to this point, the terms 'value', 'value addition' and 'value creation' have been used in a rather generic sense but consistently with their use in the strategy literature where the concepts are seldom defined. The terms convey the meaning of 'contribution' or 'benefits exceeding costs' (from a corporate centre perspective) and 'market value' (from an organisational or shareholder perspective). Although these meanings will be maintained, it is necessary to distinguish them from the concepts 'added-value' and 'value-added' (here to be used in hyphenated form to emphasise the distinction) which have more precise meanings in the accounting and financial strategy literatures. However, even here the terms are often used interchangeably (Brandenburger & Stuart 1993). These concepts are discussed later in the article.

Corporate centre value addition refers to the actions taken by the corporate centre to contribute, in addition to the contributions of the operating companies, to shareholder wealth; that is, to increase the market value of the corporation as a whole. This definition is consistent with the meaning implied by Rumelt et al. (1994: 3) where they consider the function of or the value added by the headquarters unit in a multibusiness firm. In other words, the definition focuses on the *raison d'être* of the corporate centre. If the corporate centre adds value, the benefits derived from its activities exceed the cost of undertaking those activities. This should be reflected in the market value and, thus, the share price of the corporation.

How corporate centres add value

While the question of corporate centre value addition has been brought to the fore mainly as a result of the shareholder wealth maximisation and refocusing waves of the 1980s, a definitive answer has not as yet emerged (Rumelt et al. 1994: 296; Goold & Luchs 1993). Although various scholars have commented on how such value can be added, the dynamics of corporate centre value addition over time has received little, if any, attention.

Chandler (1991) emphasises the corporate roles of entrepreneurship (creation of new value) and administration (prevention of value dissipation). He argues that these roles are determined by the managerial capabilities of the corporate centre, in particular resilience and insight in responding to evolving challenges of growth and expansion. The corporate centre's entrepreneurial role involves overseeing the implementation and further development of the overall strategic direction of the firm through the identification of growth opportunities, and acting as an internal capital market to its divisions by providing them with the necessary resources and central expertise to pursue new projects (Chandler 1991; Markides 1995c). In this way, the top management team influences to a large degree the style and process of management throughout the organisation and, as a result, add value to the key resource allocation choices (Bower 1970; Donaldson & Lorsch 1983).

In addition, it has been suggested that the corporate centre should strive to accelerate the further development of the underlying businesses by encouraging broad-based entrepreneurship throughout the corporation, thereby harnessing and exploiting initiatives taken at local levels (Bourgeois & Brodwin 1984; Ito & Rose 1994). Such initiatives provide the requisite diversity for continuing strategic renewal (Burgelman 1983). However, in order to establish an entrepreneurially responsive organisation, the centre has to shape an appropriate organisational context (Bower 1970). This involves the administrative role of the corporate centre.

In its administrative role, the corporate centre has to establish an appropriate fit between strategic direction and the elements of organisational design (Chandler 1962). Rather than sequentially, this is likely to take place simultaneously with the centre's entrepreneurial activities (Grinyer & McKiernan 1990). With specific reference to the fostering of entrepreneurship, necessary contextual factors include top management encouragement and sanction, resource availability, and a supporting organisational structure (Kuratko, Montagno & Hornsby 1990), aspirations beyond current capability, a strong team-orientation, and appropriate incentive systems (Stopford & Baden-Fuller 1994), organisational slack (Cyert & March 1963; Hambrick & D'Aveni 1988), and the devolution of decision-making power to increase the ability of subsidiaries to act independently (Ito & Rose 1994). This need to increase the independence of unrelated subsidiaries follows from the information processing limits of the corporate centre (Galbraith 1973; Williamson 1975, 1985), which give rise to the problem, encompassing the essence of the M-form, of maintaining a balance between centralisation aimed at enhancing the integrity and coherence of the corporation (Selznick 1957; Teece et al. 1994) and decentralisation.

In assessing the potential of corporate centres to create value, Hill (1994) distinguishes between related and unrelated diversifiers. He identifies the two main avenues for value creation as the ability of the centre to appropriate economies of scope (by emphasising, in the case of related diversifiers, resource sharing, the transfer of information, and cooperation between units) or economies of allocation (by emphasising competition among unrelated divisions for capital). With regard to economies of scope, Hill, Hitt & Hoskisson (1992) argue that, in order to exploit the interrelationships and synergy between related operating units, the corporate centre has to create a structure that allows for greater central control or influence over the operating decisions of divisions, a structure which they refer to as the centralised multidivisional structure or the CM-form. Markides (1995b: 136) found tentative empirical support for the CM-form hypothesis. Williamson (1994), on the other hand, stresses the role of the centre in designing and administering appropriate incentive systems for divisional management teams, while for Ito & Rose (1994), corporate centre value addition has to do with the creation and transfer by the centre of assets, competencies and knowledge to the underlying subsidiaries, and the provision of financial support to a subsidiary that is temporarily in trouble.

For Goold et al. (1994), corporate centres add value if they are good 'parents' to their subsidiaries. 'Parenting' here refers to the ways in which the centres influence the subsidiaries such as: by improving business planning, budgeting and decision-making processes; by enabling the establishment of horizontal linkages between units; by providing market-related and competent centralised functions; and by making wise acquisition, divestiture and new venture decisions. The nature

of the parenting role, however, depends on the match between the specific business portfolio, the 'dominant logic' of top management (Prahalad & Bettis 1986), and the corporate management style (Goold & Campbell 1987). This illustrates not only how dominant logic works in different types of corporations, but also why unrelated diversified firms can be successful and why related diversified firms can fail; that is, when relatedness has been defined in terms of product–market/technological similarities rather than in terms of strategic similarities (Goold & Luchs 1993; Markides & Williamson 1994). The emphasis of corporate centre value addition in the parenting framework is, therefore, on the competencies of the centre and on how the centre fits these competencies to the needs and opportunities of the underlying businesses.

In summary, corporate value addition seems to emanate from the provision of financial, transactional, administrative and operational assistance (Williamson 1975; Teece et al. 1994) that fit the needs and opportunities of the underlying businesses (Goold et al. 1994), and from the facilitation of the sharing of knowledge and other intangible assets among the firms in the portfolio (Ito & Rose 1994). Such value addition is recognised by the market by awarding the firm a market value higher than its break-up value (Markides 1995c). However, with growing subsidiary independence, the potential for appropriating any one or more of these value addition opportunities may become limited (Ito & Rose 1994) and the value of the firm's stock may be down-rated as a result (Davis et al. 1994), thus indicating the need for corporate restructuring or, more specifically, corporate refocusing. Given market pressures for shareholder wealth maximisation (e.g. Rappaport 1986) and efficient internal and external monitoring mechanisms, it would therefore be reasonable to expect that a competent corporate centre will assess, on a continuous basis, its contribution to shareholder wealth by querying the need for subsidiary dependence.

Measuring corporate centre value addition

Refocusing or scope reduction often seems to be linked with increases in market value, which generally leads to the conclusion that corporate centres did not add value (e.g. Porter 1987). The problem, however, is how to determine *ex ante* whether value is being added or not. Therefore, while Goold & Luchs (1993: 22) state that '[t]he test of a corporate strategy must be that the businesses in the portfolio are worth more under the management of the company in question than they would be under any other ownership', little assistance can be offered to determine whether that is the case. This problem is linked to the general problem of accounting for 'goodwill', 'invisible assets' (Itami & Roehl 1987) or corporate 'intellect' (Quinn 1992).

At this stage, it seems that one has to rely mainly on market assessments. Markides (1995c) suggests that if the break-up value of a firm exceeds its market value, this would be an indication of over-diversification and thus, implicitly, of a lack of corporate centre value addition. However, it may not be so easy to determine break-up values, which means that market under-valuation (that is, when the firm trades at a discount to its underlying net asset value) seems to be the only indicator. The reliability of this indicator is under suspicion though since it assumes efficient (perfect) markets with full information and the ability to correctly evaluate this information. Shleifer & Vishny (1994), for example, allude to the possibility that event studies, often used to evaluate the market value of various corporate strategies, such as refocusing by analysing market reactions on the announcement date, may only measure what investors think value is and not real value.

Added-value versus value-added

While the previous section examined the value added by the corporate centre and its impact on market or shareholder value, the concern here is with the value added by the corporation as a whole, measured other than with reference to increases in market value. A distinction, however, has to be made between added-value and value-added. While the latter is used most often in accounting circles (and its use here will be limited to explicating the difference), the more recent former term is increasingly used in the strategy and financial strategy literatures.

Kay (1995) defines value-added as the difference between the value of firm output (or gross income) and the cost of material inputs. Added-value (or rent from the perspective of the economist) is defined as '[t]he difference between the market value of a firm's output and the value that its inputs would have in comparable activities undertaken by other firms' (Kay 1995: 274), where input and output values are comprehensively accounted. Added-value therefore differs from value-added in that the costs of all inputs are deducted, including labour and capital, and not only material costs. Added-value also differs from operating profit because it requires a full charge for the value of the operating assets deployed.

Another related, but perhaps more fundamental definition is provided by Brandenburger & Stuart (1993: 1). From a cooperative game theory perspective, they define added-value as 'the value created by all the players in the vertical chain minus the value created by all players except the one in question'. Although this definition is consistent with the one employed by Kay (1995), it differs from Kay's definition in two respects: firstly, on the supply side, Kay makes use of the 'opportunity cost' of capital and actual outlays on labour and material, whereas Brandenburger & Stuart utilise the 'opportunity cost' associated with all inputs (capital, labour and material); secondly, on the demand side, Kay uses the firm's actual returns as opposed to the concept of 'willingness–to–pay' of buyers used by Brandenburger & Stuart.

On the basis of the above conceptualisation, Brandenburger & Stuart (1993) argue that, in order to create a positive added-value, a firm has to have a favourable asymmetry between itself and other competitors in terms of buyer 'willingness-to-pay', supplier 'opportunity cost', or both. They then proceed to identify four value-based strategies that firms could employ in order to create such asymmetries. Kay (1995), on the other hand, argues that the source of added-value has to be traced to the application of firm distinctive capabilities (which derive from the relationships that the firm establishes with its stakeholders) to an appropriate market, where the resulting benefits can be appropriated and sustained (that is, become a true competitive advantage).

The source of competitive advantage therefore lies in the ability of a firm to add more value than another firm in the same market. Kay thus views added-value as the key measure of corporate success, although it is naturally related to all the other frequently used measures such as the accountant's emphasis on profitability and earnings per share, the banker's

interest in the aforementioned as well as in cash flow (which is central for economists), the investor's and analyst's concern with share prices, capital gains and dividends, and the strategist's emphasis on the strength of competitive advantage.

Conclusion

In this article, corporate centre value addition was defined from a corporate strategy perspective, relating it to the *raison d'être* of the corporate centre and its ultimate impact on shareholder wealth. A clear distinction was made between corporate centre value addition and the related but different concepts of added-value and value-added.

From a research point of view, it was noted that the evolution of corporate strategy over time, especially within the context of the current corporate refocusing wave, has received little attention, and so has the internal dynamics associated with corporate centre value addition. In the light of the large-scale restructuring of the South African corporate landscape through the unbundling of diversified groups, future research in the corporate strategy field should attempt to address the following questions:

- How does corporate strategy and structure evolve within a refocusing context?
- Why does corporate strategy and structure evolve in this way? In other words what is the underlying logic driving the evolutionary process?
- How does the corporate centre create and sustain value before, during, and after major refocusing?

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Using the Myers-Briggs Type Indicator (MBTI)® as a human resource management tool in the assurance industry

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Given the complexity and instability of the environment within which assurance companies have to function, it is essential to select the right persons to act as assurance consultants and managers and to train and develop them in order to foster an efficient workforce. The validity of the Myers-Briggs Type Indicator® (MBTI®) as a selection and trafficking tool in the assurance industry was investigated. It was established that the MBTI® can discriminate between personality profiles of consultants, administrative staff and branch managers, but that the personality profiles of the present sample differ significantly from a corresponding data bank sample. The MBTI® scales were also used to predict job success, but none of the adjusted R^2 values were significant. It was argued that despite the mixed results, the MBTI® could be used effectively to investigate the complex relations among variables which may contribute to employees' job success and to develop and train them.

Introduction

Armstrong (1991) explains that the present post-entrepreneurial phase in human resource management started as a reaction to the more disreputable features of the enterprise culture with its emphasis on greed and individualism. Nowadays the emphasis is on the virtues of teamwork, a 'climate of consent' and the contribution of a strategic approach to human resource management to organisational success (Armstrong 1991: 29). 'This means unleashing the latent creativity and energies of people throughout the business by emphasising common interests, gaining understanding and acceptance of the mission and core values of the organisation, and increasing commitment by involving people in its affairs' (Armstrong 1991: 33).

According to Storey (1995: 3, 4) the most important contribution to modern strategic human resource management discussed in corporate strategy literature has probably been the resource-based theory of organisations with concomitant developments in the fields of 'intelligent enterprises', 'core competencies', and 'competing capabilities'. The essence of this theory is that a sustained competitive advantage derives from an organisation's internal resources. For these to offer an ongoing competitive advantage, they must have four qualities: they must add value, be unique or rare, be difficult for competitors to imitate, and be nonsubstitutable (e.g. by technology). Storey (1995) asserts that acknowledgement that human capital resources actually fit these requirements rather well are on the increase.

Storey (1995: 6) believes that human resources give an organisation its competitive edge. Therefore the aim should be not mere compliance with rules, but employee commitment, and employees should be carefully selected and developed. Because of these factors, human resource decisions are of strategic importance, and top management's involvement is essential. Human resource policies should be integrated into the business strategy. These policies should stem from it and even contribute to it. Because human resource practice is critical to the core activities of the business, it is too important to be left to personnel specialists alone. Consequently, line managers need to be closely involved both as deliverers and drivers of the human resource policies and much attention should be paid to the management of managers themselves. As human resource management is so important, Storey (1995) believes that managing culture is more important than managing procedures and systems, that integrated action in selection, communication, training, reward and development is essen-

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tial, and that restructuring and job redesign to allow devolved responsibility and empowerment are essential.

One can therefore agree with Duffey (1990: 93) that an organisation's 'human capital' may indeed be its greatest competitive potential, and given the complexity and frequent instability of the political, technological, social and economic environments within which modern organisations have to function, the success of individual managers and organisations often depends on the commitment, motivation, communicative skill, leadership, and trust displayed by the employees of organisations (Kreitner & Kinicki 1992).

The need for effective recruitment, selection, placement, and development of managerial skills in the life assurance industry

The current situation in the life assurance industry in South Africa is under consideration in the present study. A number of factors contribute to the complexity and instability of this industry.

Pressure to disclose the true earnings of life assurers is increasing. Although the industry has performed well over the past 15 years (where the price and earnings ratio of the sector is almost 70 per cent higher than the industrial index), its volatility is hidden by profit generated mainly by investment returns (Cameron 1995a). Commissions are included in initial costs and these costs are high in the first year, while profit comes through only later in the life of a policy (Cameron 1995a). Jones (1995) alleges that because of a lack of transparency in the South African industry, with many instances of companies being uncompetitive and inflexible in comparison with other forms of investment, the pressure is mounting for some kind of regulation. He states that agents should also be better trained, for agents without expertise or training are allowed to sell policies in South Africa, while the Australian industry, for instance, requires certification of all financial planners. Alan Parsonson, the managing director of Old Mutual Fund Managers in Britain, is of the opinion that the answer to regulation lies in the type of controls applied in Singapore (Cameron 1995b). These regulations cover only a few pages and severely restrict the trading of organisations and individual agents whose persistency rate (based on the number of cancelled policies) falls below 90 per cent (Cameron 1995b).

However, after disclosure rules were announced in Australia, assurance sales dropped by 40 per cent in the first year. Legislative changes implemented in Britain at the beginning of 1995 resulted in a considerable decrease in income (Jones 1995) and the number of agents has declined by more than 230 000 in five years (Cameron 1995b). According to Wessels (1995), the South African Life Offices' Association (LOA) is already investigating regulation. He protests against Jones' disapproving view of the industry and asserts that the drop in sales in Australia was the result of the cost of new entry barriers to assurance intermediaries which made assurance too expensive for lower income groups. John Beak, executive director of Norwich Life, warns that disclosure could harm the industry as it did in Britain where the debate between the government and industry on the form that disclosure should take, alienated the general public ('Experts warn of disclosure pitfalls' 1995).

There has already been a shake-out in the local industry where medium-sized companies like Southern Life and African Eagle and Liberty Life and Prudential have merged to become large players, while smaller companies have to compete in niche markets (Smith 1995). By making use of computer technology and advanced data systems, competition is focused on providing efficient service at a lower cost and concentrating on product and service innovations. Although life assurance premiums in South Africa are at 10.3 per cent of GDP the highest level in the world and premium income is increasing by about 15 per cent per year, the number of policies sold is increasing by only 3 per cent per annum and the annual premiums on policies today are lower in real terms than ten years ago (see Smith 1995). The country is becoming poorer, and consumers are becoming more demanding. Many additional demands such as tax, food, clothing, and short-term insurance are also made on disposable income. As the traditional White male market has peaked, industry growth will probably come from emerging markets, where nearly 80 per cent of women have no life assurance and only 12 per cent have retirement annuities (Smith 1995).

Furthermore, the potential impact of Aids is particularly severe on the life assurance industry. According to Dr P Coetzer, a Sanlam medical adviser, an HIV-positive person has a 6 000 per cent greater than average chance of not reaching the life expectancy age, resulting in actuarial calculated premiums on life assurance which will be unaffordably high ('None left untouched' 1995). The spread of the HIV-virus in South Africa doubles every 13 to 14 months and between 250 000 and 300 000 people will develop Aids-related illnesses in the next five years ('None left untouched' 1995). Janina Slawski, senior manager corporate actuarial at Southern Life, has estimated that Aids-related expenses will consume 30 per cent of the country's health budget in 2010 ('None left untouched' 1995). In the same article, Theo Hartwig, chief actuary and assistant general manager of Old Mutual, Zimbabwe, indicates that although Old Mutual's business in Zimbabwe is one-tenth of that in South Africa, the company has already paid out R100 million for Aids deaths.

If one accepts that high-calibre human resources are indispensable to an organisation wishing to maintain its competitive edge and that such an assertion is even more applicable in an unstable industry, as argued above, it becomes clear that it is essential for organisations to recruit, select and place personnel extremely effectively.

Cook (1993) comes to the conclusion that bad selection not only wastes effort and time, but also costs the organisation huge sums of money. According to Love (1991: 20) 'a rough analysis of time showed that for ever [sic] hour not spent on recruiting, you could expect to waste eight hours training and supervising [insurance] agents who would fail'. After reviewing previous studies, Cook (1993) concludes that the best workers are worth about twice as much as poor ones.

However, management of an organisation cannot be satisfied with good recruitment, selection and placement procedures and techniques only. It is also vital that once somebody is chosen to join the organisation, he or she can follow a proper induction programme to smooth his/her path into the organisation and can become a productive, motivated and satisfied member of the organisation. Hence managers should be trained to manage their subordinate consultants in order to cut down on personnel turnover and to assist others to be more productive.

In a survey of South African, North American and European executives conducted by Amrop International, it was found

that South African executives fared significantly better than their peers in their propensity for taking a long-term strategic approach, for their ability and willingness to take risks and to deal with fast changing environments. However, they are inclined to try new ideas only within existing parameters so that there is no fundamental change in their outlook or actions (Herbert 1995). South African executives are driven leaders, are highly motivated by production and results, and are rated as more articulate and persuasive than their international peers, but apparently they do not subscribe to a culture of teamwork and are not seen to have the inclination to initiate teamwork (Herbert 1995). Herbert (1995) also reports that South African executives use power to get results rather than using their authority on a more egalitarian basis, and they are more competitive and controlling and less outgoing and friendly than their international peers. Hence the strength of South African managers is offset by a weakness in people skills. It therefore comes as no surprise that in a study by MBA students of The London Business School, it was established that skills in managing people are sought after in South Africa, while technical skills are not in short supply (Tommey 1995).

Taking into consideration the crucial role of human resource management in modern organisations, the dearth of people skills among South African executives, and the relative instability of the life assurance industry, it is essential that the right persons are identified, developed and trained to act as managers.

Research problem

The company[1] commissioned the proposed study in reaction to a high personnel turnover as well as low productivity of a large proportion of its staff and branch managers who struggle to manage their subordinates well enough to inspire them to do their jobs efficiently. Thus the aim of the present study is to develop a successful selection procedure and basis for the motivation/training of assurance consultants and branch managers.

Incorporating a personality test into current assessment models

According to Iles & Salaman (1995: 219), selection and assessment in the UK and USA are based on the traditional psychometric model with its roots in the psychology of individual differences and sophisticated psychometric and statistical techniques. In this model the principal focus is on a 'job', conceived of as a set of discrete tasks. Criteria for performing these tasks are selected and individual attributes of various kinds (knowledge, skills, abilities, et cetera) are chosen as predictors of job performance. These attributes are measured through a variety of techniques and procedures, such as tests, interviews, biodata, and assessment centres. The validity of the assessment process is judged in terms of the statistical relations among the predictor variables and the criteria for job success, in other words the criterion-related validity (usually the predictive validity) of the various procedures and techniques. Although other concerns such as selection bias or the adverse impact on women and minorities are also taken into account nowadays, this model values individualism (individual attributes are taken to predict individual performance), managerialism (the most important criterion of performance is the achievement of organisational goals as defined by top management), and utility (cost-benefits accruing to organisations in using different selection procedures) (Iles & Salaman 1995).

The traditional model is based on the following assumptions which are open to criticism (Iles & Salaman 1995). Firstly, it is assumed that people do not change much over time so that characteristics they display during assessment remain quite stable over an extended period. Consequently, the prediction of future job performance on the basis of such stable attributes and skills is possible. The model also assumes that objective assessment of individual attributes and skills is possible and these measurements can be used to predict job performance. Another assumption is that job content does not change much and consists primarily of a specific set of tasks which can be identified through job analysis. It is believed that these tasks can be measured to provide an assessment of job performance even though 'objective' assessments are often hard to come by and supervisors' evaluations are frequently used instead. Finally, the principal assumption is that the key purpose of assessment in the work environment is the prediction of job performance.

Iles & Salaman (1995) believe that this model has some merit because individual differences in performance do contribute significantly to variations in organisational performance. However, many other factors, such as economic and political conditions, organisational culture, strategic planning, may also influence organisational performance. Furthermore, the kinds of attributes measured by psychologists, for example locus of control, intellectual flexibility and personality traits, do seem to be affected by such work experiences as stress, occupational success, racial discrimination, and the type of job one performs. It therefore seems that people change as a result of job experiences - a conclusion that undermines the assumptions underlying the traditional model.

Researchers and practitioners are also questioning this model for a variety of other reasons (see Iles & Salaman 1995). As organisations change, decentralise, restructure, become flatter and devolve accountability, the conception of a 'job' as a stable collection of discrete tasks is coming under pressure. Resource-based organisations, multiskilling, flexible specialisation, and self-directed work teams have made this notion of a 'job' outdated. Furthermore, other developments such as downsizing and the growth of 'portfolio careers' have changed concepts of career success and career development. Knowledge-based and skill-based reward systems have also undermined the use of job evaluation and the role of the 'job description' as the basis of reward systems. Self-directed work teams, matrix structures, and notions of empowerment have challenged the traditional role of the supervisor and his/her evaluations of workers. The increasingly heterogeneous nature of the workforce has questioned some assumptions about evaluation and the validity of measuring instruments. In addition to these developments, in Western Europe assessment has come to play a more strategic role in facilitating individual development and cultural and organisational change rather than being implemented exclusively for selection and placement. Many of the changes have led to the rise of a more 'process-oriented' model of assessment in Western Europe, a model rooted in social psychology rather than in the psychology of individual differences.

The fairness and validity of traditional assessment and selection procedures have also been challenged on political and legal grounds. In this regard, race, age and gender differences have become issues in the USA, while in Europe, gender, but

not so much racial or age discrimination, has come under the spotlight (Iles & Salaman 1995). Measuring instruments have increasingly been seen as exhibiting unfair and illegal discriminatory features which led to a decrease in the use of psychometric tests in the 1970s (Iles & Salaman 1995). Given South Africa's history, race, and to a lesser extent gender issues in the form of affirmative action policies, these tests have inevitably become a focal point of human resource management locally.

Iles & Salaman (1995) explain that these developments have also stimulated research into 'validity generalisation' in an effort to determine whether tests are in fact valid across different situations. In an effort to create selection procedures which are more valid but with less negative impact than psychometric tests, work samples, assessment centres and structured, criterion-related interviews have been developed. Jobs are analysed thoroughly to identify the criteria and competencies considered to constitute effective job performance, and in the selection procedure itself an effort is made to sample job content directly by means of simulations of some kind. These developments represent a departure from the traditional psychometric paradigm with its attempts to assess rather abstract and general 'indicators' such as personality traits and intellectual abilities as predictors of job success (Iles & Salaman 1995). Current procedures seem less biased and more valid than psychometric tests or traditional unstructured interviews because of the possible close correspondence between predictor and criterion measures, and because both measures represent job performance as accurately as possible.

Hesketh & Robertson (Iles & Salaman 1995) call for the development of a process model of selection that can be positioned within a broader theoretical perspective on human abilities, personality, motivation, and skill acquisition. Such a model requires an examination of the task demands of environments and their interaction with individual psychological variables, and is more concerned with relationships, attitudes, interaction, negotiation, identities, and self-perceptions than with measurement, prediction, and job performance.

Iles & Salaman (1995) explain that a 'social process' model makes several assumptions that diverge from those of the psychometric model which is so popular in the USA. Firstly, people do change constantly in the course of their careers in organisations. This assumption underlies much of the British work on career and work role transitions and the European contributions on training and development, which often make extensive use of action learning and work-based learning (Iles & Salaman 1995).

Another assumption that is in conflict with the American model is that subjective self-perceptions are critical to people's work motivation and performance, and that all these factors are influenced by assessment and selection procedures (Iles & Salaman 1995). The jobs people do increasingly involve interaction, negotiation and mutual influence, often taking place in multiskilled, flexible, self-directed work teams. Iles & Salaman (1995) believe that this is the reason why European organisations continue to rely on the interview as the main selection method, because it opens up opportunities for a bilateral exchange of views, mutual decision-making, and mutual negotiation.

In summary, it seems that the criticism of traditional selection and placement procedures appears to have led to two kinds of development in the field. In the USA it led to a more rigorous application of the traditional psychometric methodology in the form of more precise job descriptions, criteria of performance that reflect these job descriptions more accurately, and measuring procedures that imitate criterion measures. In contrast to these developments in Europe and to some extent in the UK, researchers and practitioners developed a social process model involving people's relationships, attitudes, interaction, negotiation, identities, and self-perceptions.

Using personality tests in selection, placement, and managerial training

Given the developments in the field of human resource management as described above, one can use a measuring instrument or assessment technique such as a personality test to examine people's relationships with others and their environment. If one can show the test has predictive validity in the sense that the aspects assessed by the instrument correlate with measures of job success, such an instrument may be useful in the selection, placement, and training of personnel.

Cook (1993) explains that in practice, the personality tests used in the present context are mostly personality inventories such as the Minnesota Multiphasic Personality Inventory (MMPI) and Cattell's Sixteen Personality Factor Questionnaire (16PF). Smith & George (1994) assert that although the validity of nonwork-related personality tests is poor, these are used extensively, probably because practitioners think personality is important for job performance and they are seduced by the pseudoscientific appeal of the procedures. The criterion-related validity of inventories has been very disappointing for a long time, although recent meta-analyses show encouraging results (Cook 1993). According to Cook (1993), inventories have some predictive validity especially as far as motivational aspects are concerned, that is, what the person 'will do', rather than ability, that is, what he/she 'can do'. Corresponding with Cook's perception, Hollenbeck, Brief, Whitener & Pauli (1988: 442) state that the premise underlying their study is 'that personality traits, which as a whole reflect individual differences in values, needs or beliefs, are more strongly related to one's motivation to perform than one's capacity (i.e. aptitude) to perform'. However, Smith & George (1994), like practitioners and researchers in the United States, believe that there should be a strong relation between job content and the content of the selection method. They allege that the validity of job-related personality tests is promising in cases where such strong relations exist.

A distinction between the American model which is based on individual differences and the European social process model which is not discussed in the literature, is that the former concentrates on the measurement of job performance in terms of 'output' while the latter focuses on 'input' in terms of a person's relationships and interaction with others and the environment. The nature of the relation between 'input' and 'output' as visualised here, is not always clear and is rather complex since a multitude of factors such as organisational culture, power distribution, external environment, feelings of efficacy, perceptions of equity, et cetera, may play a role in an intricate web of interrelated variables (cf. Hollenbeck et al. 1988). However, if one could determine how people habitually react to others and their environment, one would be able to predict with some accuracy how they would probably behave in their work environment. A person's personality gives an indication of how he/she will probably behave in different situations. If there is a relation between a person's personality

and job success, one can use measurements of personality to predict job success. One can also use such personality measures to coach and train those who are less successful in their jobs.

What is the MBTI®?

The Myers-Briggs Type Indicator (MBTI®) is a personality inventory developed by Isabel Briggs Myers and her mother, Katharine Cook Briggs, in an attempt to identify people's preferences as defined by Carl Jung (Hartzler 1992). It is a self-report inventory published in three forms: Form F (166 items), Form G (126 items), and the Abbreviated Version, Form AV (50 items) (Myers & McCaulley 1985). It is scored on four bipolar scales: introversion-extroversion (I or E), sensing-intuition (S or N to distinguish it from I, the symbol for introversion), thinking-feeling (T or F), and judging-perceptive (J or P).

The MBTI® identifies a person's preferences on the above-mentioned scales where 'preferences' can be interpreted as being analogous to one's natural preference for writing with either one's right or left hand (cf. Myers 1993). When one uses one's preferred methods, one is generally at one's best and feels most competent, natural and energetic. The MBTI® indicates the differences in people resulting from:

- where they prefer to focus their attention (E/I)
- the way they prefer to take in information (S/N)
- the way they prefer to make decisions (T/F)
- how they orientate themselves to the external world (J/P in relating to the outer world)

As one exercises preferences in each of these areas, one tends to develop behaviour patterns and attitudes characteristic of other people with similar preferences. There is no right or wrong in these preferences. They simply produce different kinds of people, interested in different things, drawn to different fields. Each type has its own inherent strengths, as well as its likely blind spots (Myers 1993: 3).

Jung explicitly discussed the extroversion-introversion orientations and the sensing-intuition and thinking-feeling functions in his work, but the judging-perception function (JP) was developed by I Myers and K Briggs, based on their interpretation of the importance Jung attached to judgement and perception (Myers & McCaulley 1985). The JP preference describes the attitudes and behaviours identifiable to the outside world and, in conjunction with EI, is used to identify which of the two preferred functions is dominant and which is auxiliary (Myers & McCaulley 1985). Essentially, the idea is that when one's mind is active, one is either taking in information - *perceiving* (P) - or organising that information and coming to conclusions - *judging* (J) (Myers 1993). According to Jung, there are two opposite ways to perceive, namely *sensing* (S) and *intuition* (N). There are also two opposing ways to judge, namely *thinking* (T) and *feeling* (F). The combination of scores is used to identify 16 possible personality types, depending on the person's dominant orientation and functions: ISTJ, ISFJ, ISTP, ISFP, INFJ, INTJ, INFP, INTP, ESTP, ESFP, ENFP, ENTP, ESTJ, ESFJ, ENFJ, and ENTJ.

Applications of the MBTI® relevant to the proposed study

The MBTI® had been used in the past in the following relevant studies:

- Davey, Schell & Morrison (1993) assessed the information-processing types of mining personnel and found that ISTJ and ESTJ were the most prevalent.
- Rice & Lindecamp (1989) used the MBTI® to study personality types and business success of small retailers and they found that the ET-type fared best.
- The MBTI® has also been used in organisations for career counselling, team building, leadership development, to motivate staff, and to change the corporate culture (Bridges 1992; Moore 1987).

The following researchers have used the MBTI® to study managers specifically:

- Mason & Mitroff (1973) contend that most existing management information systems (MIS) implicitly assume a situation ideal for an ST-type manager and are thus structured for these individuals. The authors believe MIS should be structured to accommodate other types of managers too.
- Kilmann & Mitroff (1976) explored links between managerial styles (ST, SF, NT, etc.) and organisational styles (also in terms of ST, SF, NT, etc.) in an effort to shed light on a variety of organisational and managerial phenomena.
- Mitroff, Barabba & Kilmann (1977) investigated the relations between the type of person and the kind of strategic plans he/she makes in a large federal organisation.
- Henderson & Nutt (1980) found that people with ST (sensation-thinking) styles evaluated projects as riskier than their SF counterparts and were the most reluctant to adopt such projects while people with SF (sensation-feeling) styles were more risk tolerant and more likely to adopt the same projects.
- Alavi & Henderson (1981) report that decision style, as measured by the MBTI®, influences utilisation of a model-based decision support system (DSS). In particular, persons described as ST-types are more satisfied with a system that provides an analytical decision model.
- Taggart & Robey (1981) developed a model based on a combination of decision strategies (measured by the MBTI® and left/right hemisphere dominance) to understand human information processing and management decision-making.
- Kleiner (1983) drew a heterogeneous sample of 437 organisation members (182 managerial and 255 nonmanagerial) and found that there are significant negative correlations between quality of work life and EI, TF and JP; work motivation and SN and JP; work satisfaction and EI, SN and JP; and quality of life and EI and JP.
- Slocum & Hellriegel (1983) demonstrated how the S and N functions can play a role in gathering information while the F and T functions help with the evaluation of information. They applied their model in an analysis of a number of well-known managers.
- Blaylock & Rees (1984) used the MBTI® as an indicator of cognitive style of decision makers and found that decision makers with different cognitive styles prefer different sets of information in the decision-making process, and that information containing community welfare considerations is identified as 'useful' five times more frequently by F-style decision makers than by T-style decision makers.

- Barr & Barr (1989) used the MBTI® in case studies to analyse leaders and executive styles.
- According to Myers & McCaulley (1985: 4–5) the MBTI® can be used, *inter alia*, in career guidance, in situations requiring cooperation and teamwork, and in communications.

Using the MBTI® in the present study

Although Smith & George (1994) claim that personality tests are not valid predictors of job success, Cook (1993) believes, on the evidence of recent meta-analyses, that the future of these type of instruments is promising. It is also true that even a measuring instrument with low criterion-related validity can be used effectively as a selection instrument providing the selection ratio is low, that is, the test is used to select a small number of candidates from the group who applied for a position (Huysamen 1980).

If one can use the MBTI® to establish whether there is a relation between personality type and success as an assurance consultant or manager, such information can be employed in recruitment, selection, placement, and training of consultants and managers. It is proposed that the extent should be determined of the relations between personality type and criteria of job success such as the number of policies sold, the monetary value of commissions to consultants, and a measure of stability of consultants' sales and period of employment at the company (for consultants) and success of subordinate consultants (for managers).

The following hypotheses can be investigated:

1. There is a relation between personality types and the job categories of sales consultants and branch managers.
2. There is a relation between the personality type of consultants and job success.

Method

Subjects

Only employees who were prepared to fill in the MBTI® voluntarily were included in the sample. Table 1 gives the frequencies and percentages of male and female consultants, branch managers, and administrative personnel who participated. Administrative staff served as a baseline against which consultants and managers could be assessed. As branch managers are the immediate supervisors of the consultants, only this management category was included.

As the company was interested in the selection and placement of consultants exclusively, only this category was included in the relevant analyses. Moreover, participants were not required to identify themselves on the questionnaire, with the result that the MBTI® scores of only those who could be identified could be linked to the company's personnel records. Consequently a relatively small sample of 320 consultants was used in the regression analyses and the data for males and females were combined otherwise the samples would have been too small to make reasonable deductions.

The sole female branch manager (see Table 1) represents 10.0 per cent of all the managers in the company and the male branch managers represent 17.7 per cent of all the managers. Female and male consultants represent 23.7 per cent and 31.2 per cent of their respective categories in the entire company. Thus, with the possible exception of the female branch manager, it seems as if the sample is fairly representative of the entire company.

Table 1. Frequencies and percentages of participants who completed the MBTI® in categories of job title by gender

Job title	Gender		Total
	Female	Male	
Consultant	54 (10.1%)	355 (66.1%)	409 (76.2%)
Branch manager	1 (0.2%)	43 (8.0%)	84 (15.6%)
Administrative	14 (2.6%)	70 (13.0%)	84 (15.6%)
Total	125 (23.3%)	412 (76.7%)	537 (100%)

* Frequency missing = 1

Apparatus

As explained, Form G of the MBTI® was used to assess the subjects' personality types.

Reliability and validity of the MBTI®

Indices of internal consistency (split-half reliability) and test-retest reliability are given in Chapter 10 of Myers & McCaulley (1985: 164–174). A short summary of the reliability coefficients of Form G is given in Table 2. Based on the information supplied by Myers & McCaulley (1985), it would appear that the reliability of the different forms of the MBTI® have been established for a wide variety of samples.

Table 2. Reliability indices of Form G calculated for the MBTI® data bank (Myers & McCaulley 1985: 166, 169)

Reliability coefficient	N	MBTI® scales			
		EI	SN	TF	JP
Split-half with Spearman-Brown Correction	32 671	0.82	0.84	0.83	0.86
Coefficient Alpha	9 216	0.83	0.83	0.76	0.80

Myers & McCaulley (1985 Chapter 11: 175–223 as well as sections of Chs. 6, 7, and 9) provide extensive information on the construct validity of the MBTI®. It is clear from this information that the construct validity of the MBTI® is reasonably well-established. However, since prediction of job success is under consideration in the present study, criterion-related validity, predictive as well as concurrent, is relevant. Myers & McCaulley (1985) also furnish lengthy information on implementing the MBTI® to predict career success (Chapter 7) and success in educational environments (Chapter 8). From this data it is clear that the MBTI® can be used fruitfully under these circumstances. Myers & McCaulley (1985 *inter alia* 177–206) also supply a comprehensive list of tests which correlate with the MBTI® scales. Thus the concurrent validity of the MBTI® is also acceptable.

Procedure

Biographic information, personnel turnover rates, the number of policies sold, persistency, and pay in the form of commission were obtained from company records. The number of policies sold, persistency, and commission are used as criterion measurements of job success of the consultants.

Persistency is expressed in terms of a percentage and refers to the ratio of all policies which are not cancelled by clients to

all the policies sold by a specific consultant. As such, this variable gives an indication of how satisfied the client is with the product and service of the consultant. Remuneration in the form of commissions is seen as a continuous reinforcement to encourage consultants to sell more policies and provide a reliable service to clients.

The MBTI® was administered under supervision of the company's personnel department. Although all the consultants, branch managers, and administrative personnel were requested to complete the test, they were not forced to comply. They were also promised that the information would be treated in the strictest confidence and that they would not be discriminated against on the basis of the test results. Those who preferred to remain anonymous could do so, but those who desired feedback had to provide their names.

Results

The MBTI® profiles of consultants, branch managers, and administrative staff are compared with one another. In this case the term 'profile' refers to the frequency distribution of the relevant persons over the 16 personality categories identified by the MBTI®. These profiles are also compared with data from a computerised data bank of more than 250 000 records gathered since 1971 at the Centre for Applications of Psychological Type, Inc. (CAPT) in Gainesville, Florida (Myers & McCaulley 1985: 227). Finally the prediction of job success with the MBTI® is examined.

Comparison of the MBTI® profiles of consultants, branch managers, and administrative personnel

To determine whether personality profiles of consultants, branch managers, and administrative staff differ significantly from each other, the frequencies in the 16 different MBTI® categories (see Table 3) were compared with chi-square tests. The profile of the consultants differed significantly from those of the administrative staff [$\chi^2(15, N=493) = 65.8, p<0.01$] and branch managers [$\chi^2(15, N=453) = 36.2, p<0.01$] and the profiles of the branch managers and the administrative staff also differed significantly [$\chi^2(13, N=128) = 109.7, p<0.01$]. The two categories ENFJ and INFJ were not included in the comparison of branch managers and administrative staff out of the analysis as the frequencies in these categories were zero (see Table 3).

Table 3. Frequencies* and percentages** in terms of job title by personality type

Job title	Type							
	ENFJ	ENTJ	ENFP	ENTP	ESFJ	ESTJ	ESFP	ESTP
Consultant	5	38	5	21	22	205	5	15
	0.9%	7.1%	0.9%	3.9%	4.1%	38.2%	0.9%	2.8%
Branch manager	0	7	2	8	0	18	0	3
	0.0%	1.3%	0.4%	1.5%	0.0%	3.4%	0.0%	0.6%
Administrative	0	0	7	0	4	29	7	3
	0.0%	0.0%	1.3%	0.0%	0.7%	5.4%	1.3%	0.6%
Total	5	45	14	29	26	252	12	21
	0.93%	8.4%	2.6%	5.4%	4.8%	46.9%	2.2%	3.9%

Job title	Type							
	INFJ	INTJ	INFP	INTP	ISFJ	ISTJ	ISFP	ISTP
Consultant	2	5	2	2	9	64	3	6
	0.4%	0.9%	0.4%	0.4%	1.7%	11.9%	0.6%	1.1%
Branch manager	0	2	0	2	0	2	0	0
	0.0%	0.4%	0.0%	0.4%	0.0%	0.4%	0.0%	0.0%
Administrative	0	1	2	0	8	18	1	4
	0.0%	0.2%	0.4%	0.0%	1.5%	3.4%	0.2%	0.7%
Total	2	8	4	4	17	84	4	10
	0.4%	1.5%	0.7%	0.7%	3.2%	15.6%	0.7%	1.9%

At this stage a warning about the utilisation of the chi-square test in the above-mentioned analyses should be sounded. As a result of the low observed frequencies in a number of the categories in Table 3, the expected frequencies in these categories were also very low. If the expected frequencies in categories are five or lower, the calculated chi-square tests will give an overestimation of their real value, which in turn may lead to unwarranted rejection of the null hypothesis (Du Toit 1975; Levin & Rubin 1991). When the observed frequencies are too low it is recommended that larger samples should be used or that categories should be combined when analysed (Du Toit 1975; Levin & Rubin 1991). Unfortunately the present sample cannot be enlarged at this stage, but this problem should be kept in mind in future research. As the division into categories is based on personality type and job titles, it is does not make sense to combine the different categories.

Comparison of the MBTI® profiles of the company with data from the MBTI® data bank[2]

The MBTI® bank data for males and females were combined and used to calculate expected frequencies. These expected frequencies were found to differ significantly [χ^2 (15, N=33 124) = 691.4, p<0.01] from the frequencies observed in a combined group of consultants and branch managers from the present study. In this case all the expected frequencies were much higher than five.

The MBTI® bank data for 'insurance agents, brokers and underwriters' (N = 101) and 'managers and administrators' (N = 7 463) (see Table 4; Myers & McCaulley 1985: 244–292) were used to calculate expected frequencies. These expected frequencies were compared with frequencies observed in the present study in the categories consultant and a combination of branch managers and administrative staff (see Table 4). The personality profiles of consultants differ significantly [χ^2 (15, N=510) = 365.9, p<0.01] from the data bank sample and the personality profiles of the combined group of branch managers and administrative staff also differ significantly [χ^2 (15, N=7 564) = 58.8, p<0.01] from the corresponding data bank sample. Once again it should be noted that in both above comparisons some of the expected frequencies were less than five with the result that the calculated chi-square values may be an overestimation of the real values.

Table 4. Comparison of frequencies and percentages of consultants, branch managers and administrative staff in the different personality categories in the present study with corresponding job categories from the MBTI® data bank*

Job title	Data source	MBTI® Personality type							
		ENFJ	ENTJ	ENFP	ENTP	ESFJ	ESTJ	ESFP	ESTP
Consultant	Present	5	38	5	21	22	205	5	15
	study**	1.2%	9.3%	1.2%	5.1%	5.4%	50.1%	1.2%	3.7%
Agents	Data bank*	4	4	14	6	9	22	7	4
		4.0%	4.0%	14.0%	5.9%	8.9%	21.8%	6.9%	4.0%
Man +	Present	0	7	9	8	4	47	7	6
Admin	study**	0.0%	5.5%	7.0%	6.3%	3.1%	36.7%	5.5%	4.7%
Man +	Data bank*	367	751	517	365	546	1 272	209	202
Admin		4.9%	10.1%	6.9%	4.9%	7.3%	17.0%	2.8%	2.7%

Job title	Data source	MBTI® Personality type							
		INFJ	INTJ	INFP	INTP	ISFJ	ISTJ	ISFP	ISTP
Consultant	Present	2	5	2	2	9	64	3	6
	study**	0.5%	1.2%	0.5%	0.5%	2.2%	15.6%	0.7%	1.5%
Agents	Data bank*	4	4	4	3	3	7	2	4
		4.0%	4.0%	4.0%	3.0%	3.0%	6.9%	2.0%	4.0%
Man +	Present	0	3	2	2	8	20	1	4
Admin	study**	0.0%	2.3%	1.6%	1.6%	6.3%	15.6%	0.8%	3.1%
Man +	Data bank*	232	421	340	267	469	1115	189	201
Admin		3.1%	5.6%	4.6%	3.6%	6.3%	14.9%	2.5%	2.7%

* Total number of insurance agents, brokers and underwriters = 101 and total number of managers and administrators = 7 463 in the MBTI® data bank (see Myers & McCaulley 1985: 244–292); these totals form the base of the relevant percentages in this table.

** Present sample: Total number of consultants = 409; total number of branch managers and administrative staff combined = 128; these totals are the base of the relevant percentages in this table.

Predicting job success with the MBTI®

Before investigating the predictive validity of the MBTI®, Cronbach's Alpha Coefficients were calculated to get an indication of the internal consistency of the scales. Separate coefficients were calculated for Extroversion (E) and Introversion (I), Sensing (S) and Intuition (N), et cetera, as these scales to a large extent share items, consequently coefficients based on combined scales, e.g. EI, SN, would overestimate the internal consistency of such scales. The relevant coefficients are given in Table 5 and compare quite favourably with the coefficients from Myers & McCaulley (1985) given in Table 2.

Table 5. Indices of internal consistency (Cronbach's Alpha) of the MBTI® scales

Internal consistency	MBTI® scales							
	E	I	S	N	T	F	J	P
Cronbach α	0.81	0.80	0.75	0.69	0.74	0.64	0.81	0.85

Note: $N = 556$

Table 6. Results of the regression analyses to predict job success with the EI, SN, TF, and JP indices as independent variables

Dependent variable	N^*	F	p	Adjusted R^2
Pay	320	1.13	0.34	0.002
Policies	320	0.45	0.77	0.007
Persistence	269	0.70	0.59	0.005

* These numbers represent subjects for whom reliable measurements of job success were available and whose MBTI® scores could be correlated with these criterion measures.

Multiple regression analyses were performed to determine to what extent the MBTI® could predict job success. The scores of the subjects on the eight different scales E, I, S, et cetera were combined to form the four bipolar indices EI, SN, TF, and JP as recommended by Myers & McCaulley (1985). These indices were used in the regression equations to predict job success. 'Pay' in the form of commissions on policies sold, 'policies' which refer to the number of policies sold, and 'persistence' which refers to the percentage of policies not cancelled by the client, were used as criterion measures of job success (see Table 6). Summary statistics for the different independent and dependent variables as well as the relevant intercorrelation matrix are given in Tables 7 and 8.

Table 7. Summary statistics for the variables used in the regression analyses

Variable	N	Mean	Standard deviation
EI (independent)	320	8.4	10.5
SN (independent)	320	7.5	9.9
TF (independent)	320	10.7	9.4
JP (independent)	320	11.7	11.9
Pay (dependent)	320	R5 798.35	R5 244.77
Policies (dependent)	320	7	5
Persistence (dependent)	269	81.9%	17.2%

Table 8. Intercorrelation matrix of variables used in the regression analyses

Variable	EI	SN	TF	JP	Pay	Policies	Persistence
EI	1.00						
SN	-0.11*	1.00					
TF	0.11*	0.09	1.00				
JP	0.00	0.48**	0.21**	1.00			
Pay	-0.01	-0.09	-0.06	-0.10	1.00		
Policies	-0.01	-0.05	-0.06	-0.03	0.77**	1.00	
Persistence	0.06	-0.07	0.00	0.02	0.11	0.01	1.00

Note: $N = 320$ except for Persistence where $N = 269$

* $p < 0{,}05$

** $p < 0{,}01$

The results of the multiple regression analyses are given in Table 6. From the very small adjusted R^2 values and the *F*-values, none of which is statistically significant, it is clear that not one of the independent variables, whether considered alone or in combination with the others, contributes significantly to the variation in the dependent variables.

Discussion of the results and recommendations

From the results it is clear that some of these are in the expected direction while others are not. A discussion of all these results and an attempt to link them to the theoretical issues will follow.

Comparison of the MBTI® profiles of consultants, branch managers, and administrative personnel with one another and with the data bank information

Validity can be defined as the extent to which a measuring instrument measures what it is supposed to be measuring. Validity can be divided into three categories depending on the purpose for which the instrument is intended. If one wishes to measure a psychological construct, the construct validity of the instrument is important, in order to measure the content of a specific domain, the content validity of the instrument is of the essence, and finally, if one is interested in measuring some or other criterion of job success, the criterion-related validity of the instrument should be investigated. The aim in this study is to use the MBTI® to select and place people as assurance consultants and to train and develop branch managers; consequently the criterion-related validity of the instrument is relevant.

Two types of criterion-related validity can be distinguished, namely concurrent and predictive validity depending on the time at which criterion data are available. In the case of concurrent validity, criterion data are available at the time when the test results are obtained, while in the case of predictive validity, criterion data become available after the test results have been obtained. In the present study the subjects already belong to the specific job categories. Thus, in this sense, they are considered to be successful as far as the criterion is concerned. To assess the criterion-related validity of a measuring instrument in such a situation, one has to determine whether the instrument can discriminate between people on the basis of their scores in such a way that those belonging to a specific job category are grouped together, while those who are not in that job category are excluded from the group. In the present situation it would mean that consultants should have a specific personality profile which would differ from the profile of administrative staff and possibly branch managers. If the MBTI® is to be used for selection and placement, the consultants' profile should also differ from that of the general population.

The results show that the personality profiles of consultants, branch managers, and administrative staff do in fact differ significantly from each other. However, if one compares the percentages in Table 3, it is clear that for all three job categories the highest percentage of the total number of incumbents fall in the ESTJ class (consultants 38.2%; branch managers 3.4%; administrative staff 5.4%) and for both consultants (11.9%) and administrative staff (3.4%) the second highest percentage are in the ISTJ class. Because of the problems associated with expected frequencies which were too low, it would be prudent to repeat the study with a larger sample in order to find more support for the hypothesis that the personality profiles of consultants, branch managers, and administrative staff differ from each other.

The personality profiles of the combined group of consultants and branch managers also differ significantly from the MBTI® data bank information which is based on a large sample of 32 671 from a general population of subjects. Like the present sample the largest percentages of subjects in the data bank sample also fall in the ESTJ (males + females: 12%) and ISTJ (males + females: 12.5%) categories (cf. Table 4). When the consultants and branch managers are combined in the present study, 49.2 per cent of the total fall in the ESTJ category and 14.6 per cent in the ISTJ category. Thus the percentages in the present sample falling in these categories are disproportionately high in comparison to the data bank information.

Furthermore, although it is expected that the personality profiles of insurance agents and managers and administrators in the MBTI® data bank should not differ from the profiles of subjects with similar job descriptions in the present sample, significant differences did in fact occur. From Table 5 it is also evident that for both the present sample and MBTI® data bank, the highest percentages occur in the data bank which ESTJ and ISTJ categories with the exception of 14 per cent of the insurance agents in the data bank fall in the ENFP category. But nevertheless, the percentages in the present sample for the different job descriptions in the ESTJ and ISTJ categories are almost twice as high as those for the corresponding jobs in the data bank (In this case however, the percentages for the ISTJ managers and administrative staff in the present sample (15.6%) and managers and administrators from the data bank (14.9%) are virtually the same).

However, if one ignores the E/I preferences for the moment, it is evident that the present organisation can be classified as an STJ-type since 62.5 per cent of subjects fall in this category. According to Barr & Barr (1989), STJ organisations are typically autocratic, hierarchically organised and managed with strong values of conservatism and stabilisation. In these organisations management controls the work. Emphasis is placed on policies, procedures and work roles, rather than on the workers, and loyalty, responsibility and industriousness are favoured (Barr & Barr 1989). Barr & Barr (1989) claim that while STJ companies did well in a more stable world that functioned at a slower pace, they are ill-equipped for the modern volatile business environment. As human resource management is currently in a postentrepreneurial phase of development (see Armstrong 1991), in which teamwork, a climate of consent, and empowerment of workers are valued highly in order to inspire both managers and workers, it is essential to develop these values within the organisation. From the literature overview it is evident that the MBTI® is an excellent instrument to facilitate such an enterprise.

Predicting job success with the MBTI®

Concurrent validity was discussed in the previous section. The present section deals with predictive validity. This type of criterion-related validity is investigated with the aid of regression analysis and is based on the (usually linear) correlation between test scores and measurements of the criterion. To assess the predictive validity of a measuring instrument adequately, all applicants should be tested and appointed to the job categories under consideration. During their period of employment, criterion data should be gathered in order to

obtain information about the successful as well as unsuccessful candidates. The correlation between the test and criterion data - which is called the validity coefficient - would then indicate the extent to which an individual's job success can be predicted on the basis of the test scores.

The EI, SN, TF, and JP scales were used to predict job success. Commission, number of policies sold, and a persistence factor were used as measures of the criterion. Multiple regression analyses were performed but the results were not significant.

The question is why these results are not significant. The first and probably most obvious answer seems to be that the test is not suitable for the purpose of predicting job success; in other words it is not valid for this type of application. This conclusion would agree with Smith & George's (1994) observation that unless there is a strong link between the content of the test and the job, personality tests are not good predictors of job success. However, if one considers the findings of researchers and consultants who have used the MBTI® fruitfully, other feasible answers have to be considered.

As explained in the previous section, the present study lends itself to the determination of concurrent validity as criterion data are available at the time of testing. Since all applicants are not appointed and a number of those appointed resign within a year or less, no criterion or test data are available for these persons and the sample for whom data are available is quite homogeneous. This leads to a restriction in the range (i.e. the variability) of test as well as criterion scores. In turn such a restriction will decrease the correlation between the test and criterion and thus, in effect, lower the predictive validity of the measuring instrument (Ghiselli, Campbell & Zedeck 1981; Nunnally & Bernstein 1994).

Even though the measuring instrument used for the prediction of job success may be reliable and valid, often the criterion measures of job success are not reliable or valid measurements of job success. Descriptive statistics for the variables used in the present study are given in Tables 7 and 8. From Table 7 it is clear that the standard deviations of the variables pay, policies and persistence, which are the measures of job success, are relatively large for such a homogeneous group as described above. In the present case these large standard deviations indicate that the variables being measured are relatively unstable and thus unreliable. For the variables pay, policies and persistence to be valid measures of job success one would also expect that the correlations between persistence and pay and persistence and the number of policies would be higher than those given in Table 8 (0.11 and 0.01 respectively). Therefore these variables may not be valid measures of the criterion. It is recommended that the company investigate the reliability and validity of its criterion measures and that it improves its information gathering and storing procedures as some of these problems may stem from unreliable record keeping practices.

A distinction was made between the US and the European human resource management models. In the US model jobs are analysed thoroughly and in the selection and placement procedure an effort is made to sample job content directly, preferably by means of simulations of some kind. On the other hand, the European model is based on a human process approach which recognises the role of psychological variables such as personality traits, intellectual flexibility, stress, et cetera and environmental factors such as organisational culture, economic and political conditions, et cetera. Factors such as the volatile nature of the present day business environment, the pressure of international competition, the availability of massive information bases at electronic speed, et cetera have contributed to the demise of the notion of a job as a stable collection of tasks. The nature of the relation between an employee's input and output is particularly complex because a multitude of factors such as organisational culture, power distribution, external environment, feelings of efficacy, perceptions of equity, and so on may play a role in an intricate web of interrelated variables (cf. Hollenbeck et al. 1988). Therefore, instead of trying to predict job success using regression analyses under the assumption that the relation between input and output is relatively simple, the complex web of relations among all variables which may contribute to an employee's feelings of job satisfaction, motivation, et cetera should be investigated. Psychological measuring instruments could be utilised as tools in a selection, placement, development and training process to investigate these relations. As explained above the MBTI® could be employed very productively in such a context.

Conclusion

With human resource management being in the postentrepreneurial phase of development, and the current emphasis on teamwork, a climate of consent and empowerment, the development and training of personnel, and team building are of crucial importance to modern organisations in order to realise a competitive edge in the current volatile business environment. Furthermore, the management of managers themselves is also critically important for the survival of organisations. Efficient human resource management is so indispensable that all managers, not only the designated department, should be involved in the project. It was argued that the MBTI® could be utilised very effectively to these ends.

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[1] Because of the confidentiality of the information contained in the present report and the sensitivity of the proposed research, the name of the company that requested the investigation cannot be divulged.

[2] See Myers & McCaulley (1985).

Customer needs and quality levels: An integration of various approaches

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A customer-based definition of quality is proposed and aligned with the strategic issues which impact on an organisation's relationship between stated and delivered customer needs. The strategic intent was defined as the organisation's intended purpose of how it will comply to such requirements, taking into account the firm's environment. Five levels of intent were postulated, namely reactive, corrective, adaptive, differential and prospective intent. The relationship between the proposed concepts is postulated to focus on the concept of quality as the degree of fit between stated customer needs and delivered customer needs. The strategic quality intent then sets the degree of fit that the firm requires to align itself with its leadership's perceived needs.

Introduction

The concept of 'quality' has many meanings in the business world. Some are emotional reactions to observed behaviours, while others include 'specifications', 'goodness' and 'skill'. The concept and its use can be likened to a prism through which a shaft of light finds its way: it radiates a spectrum of meanings, coloured by the interpretation and judgement of every customer a firm has dealings with.

The positive contribution of quality to business improvement is well-supported in the literature. The conclusion of one of the PIMS letters serves as an example: 'Analysis indicates that a customer-orientated, quality-differentiated strategy can often lead not only to customer preference and loyalty, but also to increased market share and lower costs.'

Many organisations try to emulate this predicted success. They usually install an ISO 9000 quality system or train their employees in the methods of Total Quality Management (TQM), but a number of firms have reported no business improvement at all as a result of their efforts (Gehani 1993; Reitsperger 1993; Barclay 1993). Unfortunately, they end up being disillusioned with the 'myth of quality' and tend to disregard any further attempts to improve quality. Possible reasons for the perceived failures are the following:

- The existing quality approaches tend to focus on expected results without explaining or understanding the reasons why it should be so. For example, ISO 9000 requires a quality policy statement which is signed by the firm's managing director.
- Most companies with ISO 9000 listing have these policies, but they do not know how these policies relate to the firm's quality system, or in what manner they determine the best strategic intent for the firm.
- Firms train their employees in Total Quality Management in an attempt to instil a certain culture, only to find that the imposed behaviour could not fit the organisation's existing responsibilities.

The correct behaviour for business improvement can be determined by rules which are not based on the results of other successful companies, but which are tailored to each company's chosen quality strategy.

A lack of business improvement may also result from the number and variety of different quality approaches found in the literature:

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- Each of the quality approaches has a self-styled definition for quality which is a major cause for confusion if the firm tries to 'mix and match' certain approaches. The definitions tend to emphasise the results of good quality, for example 'conformance to requirements' and 'fitness for use'.
- A particular definition may perhaps limit a firm's possibilities for improvement. It can be questioned whether it is really more cost-effective to always conform to customer needs. Some smaller businesses simply cannot afford to consistently satisfy most (stringent) customer needs. They may therefore choose to sort their total production into client categories during final inspection; or they may intend not to inspect at all, and only react to customer complaints.

Finally, another reason for lack of improvement may be that all of the quality approaches infer a relationship between an organisation's potential for business improvement and its quality strategy, but none of them explicitly formalises this correlation. This may cause internal conflict between the stated quality policy and the firm's responsibilities in complying with the customer's needs. The misalignment of this relationship is believed to be the root cause of many of the quality approach failures in industry.

In summary, although each of the main quality approaches contributes to the understanding of the concept of quality, their underlying interdependence and combined strategic effect on business improvement have not been established.

Four articles will attempt to tie these concepts together in an integrated model that focuses on customer needs being understood and met:

1. This, the first article, investigates the various concepts of quality found in the literature and determines the most appropriate definition of quality with respect to business improvement. Since various levels of quality exist throughout industry, an attempt will also be made to classify such quality levels with respect to customer needs.
2. The second article will discuss a firm's strategic intent with regard to quality when considered in relation to the quality definition described in the first article, with the aim of understanding the impact of the strategic intent on customer needs. The organisation's strategic quality intent and its chosen level of quality could be influenced by the firm's environment. The aim then is to provide a link that clearly illustrates the dependencies.
3. The third article will deal with management responsiveness to change in its environment, and the subsequent alignment of the firm's quality system to suit its strategic needs. Management responsiveness is seen as management's ability to 'make quality happen', whereas the quality system relates to the control of input needs and the level of discipline required to process such inputs into acceptable output.
4. The fourth article will integrate the quality-related concepts of strategy, environment, management responsive - ness and systems into a model that may be used to evalu ate their combined effects on business improvement. The proposed model is illustrated in Figure 1 below:

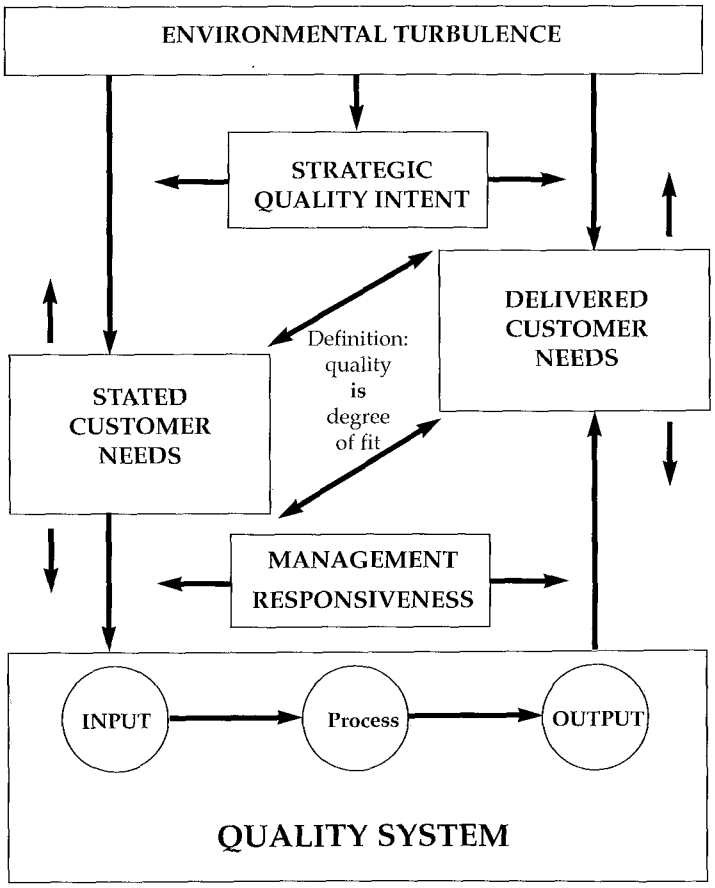

Figure 1. Proposed quality model

The model illustrates the main focus point of quality to be the degree of fit between stated and delivered customer needs. Stated customer needs represent initial needs as expressed by the customer, whereas the delivered needs depict the final product or service as experienced by the customer. The model is further developed in this and subsequent articles, but a summary of its main components is as follows:

- The concept of 'business improvement' represents the perceived gain (or loss) of a firm when it maintains a chosen quality level. (Deming 1982; Juran & Gryna 1988; Crosby 1979; Ishikawa 1985). Such 'gain' could, for example, be a decrease in the firm's defect levels, an increased market share because of a competitive quality level, or a reduction in the number of customer complaints.
- The concept of 'quality' is defined as the degree of fit between stated and delivered customer needs.
- Both stated and delivered customer needs change dynamically relative to one another, as indicated by the 'up' and 'down' arrows in the model. This is often found to be the case in practice, and a static definition of quality could constrain a firm's potential for further business improvement. Five different levels of quality are hypothesised to hold for the model, as shown in Table 1. The term 'level of quality' may be defined as the degree of fit between what the customer needs and what the customer gets.

Table 1. An organisation's quality levels

Quality level	*Degree of fit between stated and delivered customer needs*
Quality level 1	Delivered needs are significantly inferior to stated needs
Quality level 2	Delivered needs are inferior to stated needs
Quality level 3	Delivered needs are equal to stated needs
Quality level 4	Delivered needs exceed stated needs
Quality level 5	Delivered needs significantly surpass stated needs

Figure 2 illustrates how the dependent variable (business improvement) is influenced by the independent variables (environmental turbulence, strategic intent, management responsiveness, and quality system) as a function of the quality level. This may be illustrated mathematically as follows:

$y = f(X1, X2, X3, X4)$

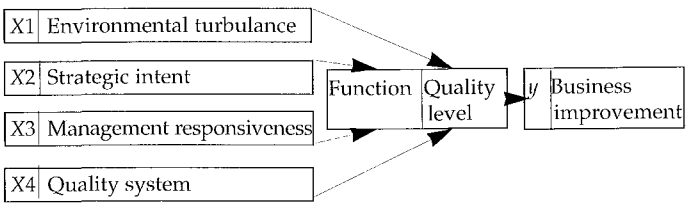

Figure 2. The proposed relationship between the 'quality level' variable and its influence on 'business improvement' as a result of the independent variables

The various levels at which the variables are postulated to correlate most strongly are shown in the tables below. Ansoff (1990) postulates five levels of turbulence as far as the organisational environment is concerned. These levels are compared to the five quality levels in Table 2.

Table 2. An organisation's levels of environmental turbulence

Quality level	*Environmental turbulence*
Quality level 1	Repetitive
Quality level 2	Expanding
Quality level 3	Changing
Quality level 4	Discontinuous
Quality level 5	Surprising

The firm's strategic quality intent regulates the quality intent with regard to its environment. Five levels of strategic quality intent are again hypothesised in line with the firm's quality levels, as shown in Table 3.

Table 3. An organisation's levels of strategic quality intent

Quality level	*Strategic quality intent*
Quality level 1	Reactive
Quality level 2	Corrective
Quality level 3	Adaptive
Quality level 4	Differential
Quality level 5	Prospective

The concept of management responsiveness is seen to stem from the way in which management responds to change and from the type of control and structure they feel most comfortable with. Ansoff describes five levels of response capability, each of which is aligned to the quality levels as shown in Table 4.

Table 4. The management responsiveness levels of a firm

Quality level	*Management responsiveness*
Quality level 1	Custodial
Quality level 2	Production-based
Quality level 3	Marketing-based
Quality level 4	Strategic
Quality level 5	Flexible

The firm's quality system effectiveness is aligned with the postulated quality levels as indicated in Table 5.

Table 5. The quality system effectiveness of a firm compared to its quality levels

Quality level	*Quality system effectiveness*
Quality level 1	Defensive
Quality level 2	Inspection-based
Quality level 3	Control-based
Quality level 4	Value-based
Quality level 5	Transcendent

Finally, in order to correlate business improvement with the different levels of the proposed quality model, five levels of business improvement are postulated, as shown in Table 6.

Table 6. The levels of business improvement with respect to quality

Quality level	*Level of business improvement*
Quality level 1	Very low
Quality level 2	Low
Quality level 3	Moderate
Quality level 4	High
Quality level 5	Very high

The main objective of the study was to show that a relationship exists between a firm's measure of business improvement (dependent variable) and the related independent variables of the following dimensions:

- level of environmental turbulence
- strategic quality intent
- management responsiveness
- level of quality system effectiveness (combined causes)

The alternative hypothesis holds that there is no significant relationship between the stated variables.

A total of 202 firms were researched in terms of the hypothesised relationships. The research concludes that there is a significant and strong relationship between business improvement and the chosen independent variables.

A delimitation was that only the quality-related dimensions of business improvement were considered. Thus, business performance measures such as return on investment (ROI), turnover, labour productivity and earnings per share, were not included as measures for the study. It is believed that although such measures are fundamental to judging the overall performance of a firm, they can only be used indirectly to assess the effectiveness of an organisation's quality strategy. Measures such as process defect levels and number of customer complaints are seen to indicate more directly the effect of business improvement efforts with regard to quality.

A further delimitation was that the concept of cost of quality was not pursued in the research other than subjectively estimating its value as a cost of control. This concept has been found to be confusing for industry, specifically for the financial sector which regards such costs as not being quantified or specific enough to indicate the effect of quality performance on the bottom line. The principles of this concept may be found in BS 1643 (Juran's *Quality control handbook* 1988) and in Feigenbaum's book *Total quality control* (1991), and it has extensively been dealt with in the available literature on quality. It is a time-consuming and expensive process to extract useful costs of quality from the records of an organisation, and its worth should be judged in relation to the measurable 'bottom-line' results that are achieved as a direct consequence thereof.

In this study only manufacturing firms were investigated, with no formal reference to the service, trading or construction sectors of industry.

It was assumed that the research could be done in isolation from other organisational systems such as the financial system or from those elements of the human resource management system that do not normally impact the firm's quality system. Although quality, in some instances, provides the financial motivation for training needs, such factors were not considered.

It was also assumed that the perception-based evaluation of, for example defect levels and cost of control of an organisation provided sufficient proof of correlation between the studied dimensions of quality. Since the objective of this study was to provide a model for understanding the contribution of the presented quality dimensions to business improvement, only correlation between such dimensions without quantifying their actual or financial values was tested.

Furthermore, the assumption was made that the concept of a quality level might be defined as the yardstick of the degree of fit between stated and delivered customer needs. Traditionally, quality control sampling plans have indicated 'acceptable' quality levels as the measure of risk associated with a particular sample size. Although there appeared to be some justification for common ground in both of these concepts, an explicit statistical risk was not associated with the use of the term.

Finally, the presented variables of environmental turbulence, strategic quality intent, management responsiveness and quality system effectiveness are the most important elements of a quality model. Even though factors such as a firm's handling of industrial relations and the relevant phase of the economic business cycle may have a severely damaging impact on business improvement efforts, they were not considered as part of the quality model for this study.

The confirmed relationships of a firm's environmental turbulence, its strategic quality intent, its management responsiveness and its quality system effectiveness with business improvement should provide a better understanding of the fundamental nature of quality. This may lead to a rationalisation of the various quality approaches, presenting business leadership with decision-making criteria that focus directly on strategic business improvement with reference to quality.

The presented quality model forms a structured basis for formal system accreditation to quality management standards such as ISO 9000. Through assessments, the nature of the quality system and the responsiveness of its management in relation to the firm's environment and its chosen strategy could be judged, and this would help formalise the most relevant parameters (or variables) for a particular company.

A discussion on the concept of quality with reference to some influential authors in the field, follows.

The concept of quality and its impact on strategy

Davidow & Malone (1992) visualise the twenty-first century as having 'virtual corporations', each instantly responsive to customer demands: the employees would dedicate themselves to the craft of previous years and sophisticated electronic systems would support them in a highly interdependent work environment. To do this effectively, mastery of both information and relationships requires an organisation that appears 'almost edgeless, with permeable and continuously changing interfaces between the company, supplier, and the customers' (Dawidow & Malone 1992: 5). Peters (1989: 53) states that 'if you are not reconfiguring your organisation to become a fast changing, high-value adding creator of niche markets, you are simply out of step'.

Meaningful restructuring of the organisation requires an understanding of the forces at work in creating quick response products and services (Davidow & Malone 1992). This means developing new procedures and methods for basic business activities and not just electronically imitating the old and current ways. Davidow and Malone (1992: 155) further suggest business improvement by using the appropriate quality management techniques which, in turn, could create a more profitable level of perceived quality in the market. The Profit Impact of Marketing Strategy (PIMS) studies during the last twenty years support this observation. These results have consistently shown that high perceived customer quality correlates with improved return on investment, profit, market share, capacity utilisation, and employee morale (Bradley & Klavans 1985; Buzzell 1986).

The concept of quality must be understood well if it is to be used profitably. This requires a fundamental understanding of the strategic impact of quality on business improvement.

The strategic impact of quality on business improvement

Feigenbaum (1991: 17–19) states that quality is a crucial hinge for business success in today's markets and, as such, must be structured explicitly and measurably so as to contribute to business profitability and positive cash flow. Sound business growth must be fostered strongly and positively through quality which must be a major competitive advantage to the organisation. Quality requires total commitment to the creation, production, and sale of products that perform consistently, reliably and safely during their life cycle.

Feigenbaum (1991) establishes two quality management requirements for strong strategic impact:

1. The total customer satisfaction oriented concept of quality, based on reasonable cost of quality, must be evident in all value-adding activities of the organisation.
2. The quality function must assure both customer satisfaction and the cost of quality result.

The strategic impact areas for quality lie in increased profitability, reduced cycle times, quick response to customer needs, and effective and efficient resource utilisation (Feigenbaum 1991).

Juran (1991: 81–85) found in a survey of quality award-winning businesses in America that such organisations usually incorporated quality goals into their business strategy. These goals were based on a sound knowledge of both the organisations' practices as well as the best quality achievements already obtained elsewhere in their industries.

According to Johnson (1989: 39–50), quality should nurture the essence of entrepreneurship within the strategic thrust of the company. Quality is an innovative approach that solves old problems and creates new opportunities within an organisation. By keeping abreast of real and perceived customer goals and translating them into action, characteristics such as 'dynamism', 'flexibility' and 'service to customers' can be attained. Johnson (1989) also states that by making entrepreneurship work, stagnation will be replaced with dynamism, an atmosphere of communication will be created and the organisational process will be enabled to work towards a single objective: meeting the customer goal and ultimately transcending it. The firm should look at the function of each step in the process and identify its effect on the firm's overall performance against the customer goal.

Deming (1982: 108) sees the impact of quality on strategy as a consistency of purpose and a 'dedication to improvement of competitive position and to provide jobs for their employees'.

Goldratt (1990) develops the strategic necessity of quality from its impact on the goals of an organisation. The strategic goal of an organisation is seen as making more money now as well as in the future. The employees of a company should, therefore, work towards this goal by accommodating clients in every possible way. Furthermore, Goldratt claims that quality-related processes for improvement such as TQM have not 'verbalised' their fundamental measurements precisely and can therefore not show the impact of local decisions on strategic goals. 'They (TQM) simply solved their problem by shoving aside the financial measurements, stating that "Quality is Job One"' (Goldratt 1990). Goldratt also argues that in the 'throughput world', a company is viewed as a chain of dependent variables, where the weakest links are either policy or physical constraints, and which offer the starting points for strategic quality improvement. This contradicts TQM which, by using the Pareto principle to classify ad hoc opportunities for improvement, implies that the organisation is a set of independent variables with no unified focus for strategic positioning. Thus, localised efficiencies may be increased without consequence to the main throughput of the firm.

The competitive success of *World Class Manufacturing* (Schonberger 1990, 1986, 1982) is strategically dependent on quality to provide both the information and the systems that measure conformance to customer requirements, and to highlight opportunities for improvement. *World Class Manufacturing* relies on minimum cost, quick response methodologies, simple and effective information systems and practical on-the-job 'root cause' problem solving. Strategically, this requires all the activities in the company to be monitored as dependent processes linked by internal customer requirements that need prevention-oriented feedback.

The strategic impact of quality on business improvement has thus far been presented on the strength of the proposed theory and experience of some well-known authors in the field of quality.

The empirical research on quality has produced mixed results, with few clear directions for managers. The relationship between quality and variables such as price, advertising, and direct cost is both complex and difficult to predict. Few unambiguous results are found in the literature. Even where the expected relationships have emerged, further work is required because of the very aggregated nature of the PIMS and *Consumer Reports* quality measures that have been employed. Nevertheless, a number of tentative generalisations can be made:

- Quality and price lack a consistent association, although positive correlations are common in hedonic studies that equate quality with performance and features.
- Quality and advertising are positively correlated in some product categories and uncorrelated in others, with nationally advertised brands generally ranking ahead of regional or miscellaneous brands.
- Quality and market share are positively correlated when the PIMS measure of relative quality is used but are negatively related when other measures are used.
- Quality and cost are negatively correlated when quality is defined as total quality cost. When measures of direct cost are used, the results vary by industry.

- Quality and productivity are positively correlated when quality is defined as conformance/reliability and productivity is defined as labour productivity of total factor productivity.
- Quality and profitability are positively correlated when the PIMS measure of relative quality is used.

The tentative and inconsistent nature of the findings suggests that further research is required. Garvin (1988) believes that the greatest need is for studies that recognise the multiple dimensions of quality, examine them empirically, and relate them to cost, market share, profitability, and other measures of business performance. More refined research is deemed vital; otherwise, managers will continue to lack hard evidence linking quality with the bottom line.

In summary, quality's role in an organisation's strategy is that of profitably satisfying the customer. It is dependent on market-related goals and the inherent capability of available resources. Garvin's survey indicates a lack of consistency in the literature when relating quality to business improvement. He concludes, however, that quality has a significant impact on an organisation's strategic choices, and that managers need to understand and use these principles.

The observed inconsistencies stem not from the quality of the research, but primarily from the differences in definition of the concept of 'quality'. A summary of some of the definitions of quality found in the literature will be given with the aim of developing a working definition for this study.

Defining the concept of 'quality'

The multiplicity of definitions of 'quality' in the literature will be illustrated and the critical differences between them with regard to meaning and intent will be highlighted. A working or operational definition of quality is then developed for the purpose or this research, and it will be differentiated into five 'levels of quality'.

Classification of definitions of quality found in the literature

The definitions may readily be classified into four major categories:

1. *perception-based*: evoking an emotional response to that which is seen and experienced,
2. *onformance-related*: relating to specification and applicable standards,
3. *alue-based*: the concept of getting value for money,
4. *transcendent*: being innovative as the market creators and leaders.

Perception-based quality definitions

Peters & Waterman, in their book *In search of excellence*, proclaim quality and reliability as the 'life raft for all points in the economic scale' (1982: 174) and they describe quality as a sense of integrity used to get close to the customer. In *A passion for excellence*, Peters & Austin state that 'quality involves living the message of the possibility of perfection and infinite improvement, living it day in and day out, decade by decade'(1986: 99). Quality is a passionate, all-hands-on proposition, catering for happy people, happy customers and pride in work. Peters develops this meaning in *Thriving on chaos*, where he defines quality as the customer's perception of the product or service offered (1989: 71). He alleges that most quality programmes fail because of having either a system without passion, or passion without a system. He adds: 'This is not the place, nor am I the expert, to make a recommendation other than Have a system' (Peters 1989: 74). In his later book, *Liberation management*, Peters defines quality as 'I know it when I see it' (1992: 677), expressing it as a 'Glow! Tingle! Wow!' sensation. Quality and competitiveness appear synonymous, but they only work well if the underlying systems are in place.

Townsend & Gebhart (1990: 4) propose that two distinct types of quality exist - *Quality in Fact* and *Quality in Perception*. A supplier who performs to specification achieves *Quality in Fact*. Townsend & Gebhart liken this part of their definition to that of Crosby (1979). They elaborate: 'It is also the definition used by Phil Crosby in *Quality is free*. Crosby (1979) states that 'quality is "conformance to requirements", an explanation that leaves unclear whose requirements are dominant - the customer's or the manufacturer's'. Juran & Gryna's (1980, 1988) definition, 'fitness for use', also leaves many questions not only unanswered but unasked. Juran and Crosby both leave the defining of quality solely within the province of the producer. Such a definition falls short of being truly useful in the pursuit of quality.

Quality in Perception is defined as the subjective quality the customer perceives. A product or service achieves *Quality in Perception* when it meets the customer's expectations. It means being as good as, or better than, what the customer expects.

Townsend & Gebhart (1990) believe that for sustained success, close attention should be paid to both aspects of quality. They explain the difference between these types of quality as follows: 'If a manufacturer, or provider of services, does things exactly as it intends to, its output will be a quality product; it fulfils the requirements necessary to be labelled "Quality in Fact". If it is not perceived as quality, that is, its intended customer believes it to fall short of his or her expectations, no sale will occur. To ignore the dual nature of quality is to court disaster. The relationship between the two is multiplicative, not additive; a zero for either reduces the total to zero. The possibility of bankruptcy with a complete inventory of quality products does exist' (Townsend & Gebhart 1990:4-7).

Grant and Leavenworth (1980: 338) describe quality as follows: 'In the popular sense of the word, particularly as applied to consumer products, the word quality means general excellence. More particularly, it may mean excellence in relation to certain things that a consumer wants in a particular product'.

Berry (1991: 3) believes customers to be reasonable in their expectations and therefore defines quality as 'meeting customers' needs and reasonable expectations'.

The Baldrige framework makes no effort to define quality, but refers to it as 'a full landscape of areas where organisations will want to be proficient in order to ensure their success and continuous improvement' (Hart 1992: 4).

Conformance-related quality definitions

Crosby (1979: 13) believes that the problem with quality is not what people do not know about it, but what they think they know about quality. In this regard, he believes quality to be similar to sex: everyone is for it. Everyone feels they understand it. Everyone thinks that execution is only a matter of following natural inclinations. Most people also believe that 'someone else' causes all the problems in this area.

Crosby (1979: 14) further argues that it is erroneous to think of quality as meaning, for example, goodness, luxury, shininess or weight. He reasons that the listener assumes the speaker to mean exactly what he or she, the listener, understands by the phrase. Crosby therefore defines quality as conformance to requirements, ensuring that all the critical limits are measurable and mutually agreed upon between customer and supplier.

To Juran & Gryna, quality means 'fitness for use' (1988, 1980). The end user does not always know the specifications and therefore judges the product or service as fit for use.

Juran & Gryna also distinguish between *little quality* ('q') and *big quality* ('Q') (1988). Little quality ('q') focuses on product features and functions - the traditional manufacturing definition of quality. Big quality ('Q') has a total-company perspective and includes all the people and activities that come together to meet and exceed customer requirements.

Value-based quality definitions

Schonberger, author of *World Class Manufacturing* (1986) and *Building a chain of customers* (1990), claims that most people think about quality in narrow, outdated terms. He recommends that waiting time be included in the definition of quality since it measures responsiveness to customer requirements. 'Glitz and pizzazz' are part of the definition, but 'performance - be it dazzle, aroma, or speed - must be repeatable, or its appeal to customers fade'. Therefore, he defines quality as what attracts, delights and holds the customer's loyalty and total quality as including quality of product, service, time, place, equipment, tools, processes, people, environment, safety, information and measurements. Total quality spotlights the processes, with emphasis on better averages and less variability.

Feigenbaum (1991: 7) defines product and service quality as the composite characteristics of marketing, engineering, manufacturing, and maintenance through which the product and service in use will meet the customer's expectations. Teboul (1991: 47) defines quality as the ability to satisfy needs at the time of purchase and use at the best cost, while minimising losses and surpassing the competition.

The International Organisation for Standardisation (ISO) defines quality in its document ISO 8402–1994 as 'the totality of characteristics of an entity that is relevant to its ability to satisfy stated or implied needs'. An 'entity' is either a process, a product, an organisation, or a combination thereof.

Taguchi (1988, 1981) defines quality as the loss imparted to society from the time a product is shipped to the customer. He categorises loss as either that caused by functional variation or that caused by harmful effects. The essence of his definition is that the smaller the loss generated by a product or service from the time it is transferred to the customer, the more desirable it is. Oakland (1989: 204) indicates that there are two particular problems with this definition:

- It does not include losses to society during the manufacture of the product or operation of the service
- It is rather profound and requires much thought, data collection, and analysis to be useful in the detailed business of quality management.

Deming (1982) defines quality as a predictable degree of uniformity and dependability, at a low cost and suited to the market. Shingo (1987) describes quality as the actions taken to eliminate defects associated with all activities of the company.

Hronec (1993: 48) believes quality to be broader than just meeting customer specifications, and defines it as 'understanding, accepting, meeting and exceeding customer needs, wants and expectations, continuously'. Finally, Ishikawa (1985: 44) defines quality as the development, design, production and service of a product that is most economical, most useful and always satisfactory to the customer.

Transcendent-based quality definitions

Garvin (1988: 40–50) lists five types of definitions of quality: the transcendent definition (quality is an ideal), the product-based definition (quality is based on a product attribute), the user-based definition (quality is fitness for use), the manufacturing-based definition (quality is conformance to requirements), and the value-based definition (quality is value for money).

Transcendent definition: According to the transcendent view, quality is synonymous with 'innate excellence'. It is both absolutely and universally recognisable, a mark of uncompromising standards and high achievement. Quality cannot be defined precisely, and it is an unanalysable property 'we learn to recognise only through experience' (Garvin 1988). Garvin sees the difficulty with this view to be its inability to measure quality differences between products or services, except by impression and judgement.

Product-based definition: Quality is a precise and measurable variable. Differences in quality therefore reflect differences in the quantity of some attribute of the product. If more of the same attribute means better quality, a better quality product or service results in a higher cost, which may lead to higher prices. A one-to-one correspondence between product attributes and quality does not always exist; sometimes high-quality products are simply different, or aesthetically more pleasing, and cannot be measured as an objective attribute.

User-based definition: According to user-based definitions, quality is in the eye of the beholder. This is a very subjective definition of quality in that it relies on 'averaging out' individual preferences and separating quality attributes from those that maximise consumer satisfaction. An example of the latter is consumers who may enjoy a particular brand because of its unusual taste or features, but still regard another brand as being of a higher quality.

Manufacturing-based definition: Manufacturing-based definitions focus mainly on the engineering and manufacturing practices of an organisation. Crosby's (1979) definition of quality as conformance to requirements' typifies this viewpoint. Its primary focus is, however, internal, and based on performance to acceptable limits.

Value-based definition: Value-based approaches define quality in terms of costs and prices as related to perceived value. Garvin (1988) refers to recent consumer survey results which show that the value-based definition is becoming more prevalent in society. However, the approach blends two distinct ideas, namely, excellence and worth, which lack well-defined limits and are often highly subjective.

Garvin (1988: 49) ascribes the existence of multiple definitions of quality to the fact that quality has eight critical dimensions. These are performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. Some of these dimensions are mutually reinforcing

while others are not, but it is this interplay that permits competition on selected dimensions. The dimensions can be described as follows:

1. *Performance* refers to the primary operating characteristics of a product.
2. *Features* include the 'bells and whistles' of the product.
3. *Reliability* relates to the probability of a product malfunctioning or failing in a specified period of time.
4. *Conformance* establishes the extent to which a product meets pre-established standards.
5. *Durability* is a measure of product life.
6. *Serviceability* relates to the courtesy, competence and ease of repair associated with a product.
7. *Aesthetics* indicates how the product sounds, tastes, feels or smells.
8. *Perceived quality* rates the perception of quality rather than quality itself.

Garvin relates his dimensions further to the principal definitions of quality:

- the product-based approach focuses on performance, features and durability,
- the user-based approach relates to aesthetics, perceived quality, and serviceability,
- the manufacturing approach focuses on conformance and reliability.

It is interesting that Garvin does not elaborate on the transcendent-based or value-based definitions. Yet it can be stated that these two concepts define today's quick response quality needs. The transcendent requirement surpasses the specifics and relates to the holistic view of quality, which, if done correctly, adds value to the product or service being offered. This correlates with Pascale's (1990) view of transcendent response.

Pascale (1990: 248) defines quality as an organisational discipline that embraces research and design, extends to the customer, entails competitor analysis and relies on objective data for corrective feedback. The results of these actions create a competitive advantage in areas where the firm seeks to differentiate itself from the rest of the market. He sees the concept of 'quality' as contributing 'motivational appeal' to a chosen strategy in that most people can easily relate to quality's measured progress of improvement.

Furthermore, Pascale (1990: 248) sees quality as the counterweight to the 'seductive pull of financial objectives'. He states that it is widely acknowledged that exclusive reliance on financial measurements can compromise a company's long-term future. Quality is thus thought of as 're-establishing a constructive tension' between what the firm currently has and what it would like to achieve. Pascale describes the paradigm of 'constructive tension' as based on sustaining an organisation's vitality and engendering adaptation to change. The four 'change drivers' in the new mindset are fit, split, contend and transcend, defined as follows (Pascale 1990: 24):

1. *Fit* refers to the internal consistencies and coherence of the organisation.
2. *Split* relates to the breaking up of bigger organisations or processes into smaller units to sustain ownership and identity.
3. *Contend* draws attention to the presence and value of constructive conflict within an organisation.
4. *Transcend* is the style used to manage and relate *fit*, *split* and *contend* to the extent that a successful renewal process demands. Pascale sees this not just as an incremental increase in the difficulty of the management task, but as a completely different mindset. 'It looks to the tension between contradictory opposites as the engine for self-renewal. It is predicated on the notion that disequilibrium is a better strategy for adaptation and survival than order and equilibrium' (Pascale 1990: 24).

The concept of quality as presented by Pascale is seen as that of 'transcendent' quality, based on the innovative pursuit of quality both high in 'perception' and high in 'fact', which is aimed at influencing and surpassing customer requirements.

In summary, there are both perception-oriented and results-specific definitions for quality in the literature. The perception-based definitions are either broad, involving the total chain of processing events that satisfies customer requirements, or narrow, with specific reference to the product or service as acquired by the customer. The results-specific definitions for quality tend to range from specification-based to holistic, with 'holistic' encompassing all tangible aspects of the product or service.

In a sense, the definitions all relate stated customer requirements to delivered customer requirements. Crosby's (1979) definition is seen as a special case of this relationship, where the organisation has chosen to conform to customer requirements. However, this choice could well be to either exceed existing requirements, as defined by Hronec (1993), or to establish a new or innovative requirement in the market. A good example of the latter would the innovative introduction of the multi-programme computer operating system, known as 'Windows', where the acceptable standard at the time of introduction was efficient single-programme operation.

Summary

Quality for the purpose of this research can therefore be defined as follows: *'Quality' is defined as the degree of fit between stated customer needs and delivered customer needs.* Figure 3 graphically illustrates this concept. Figure 3 shows a dynamic relationship between 'stated' and 'delivered' customer needs as indicated by the 'up' and 'down' arrows in the figure. Thus,

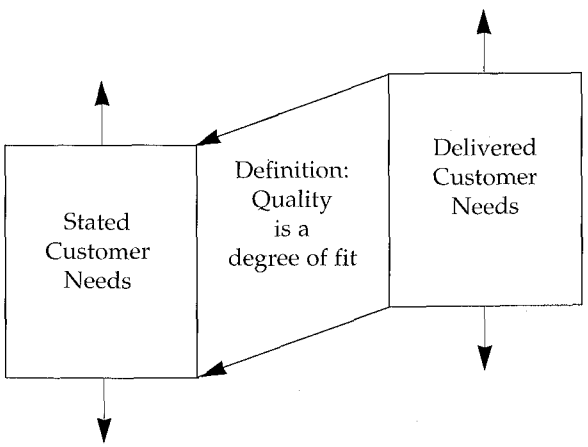

Figure 3. A graphical presentation of the proposed definition for quality

the degree of fit is not a static entity as suggested by the definitions for quality in the literature, but may take on various 'levels' of fit relative to one another. The relationship between stated and delivered customer needs is postulated to have five differentiated levels of quality shown in Table 7.

Table 7. The postulated levels of quality

Quality level	*Degree of fit between stated and delivered customer needs*
Quality level 1	Delivered needs are significantly inferior to stated needs.
Quality level 2	Delivered needs are inferior to stated needs.
Quality level 3	Delivered needs are equal to stated needs.
Quality level 4	Delivered needs exceed stated needs.
Quality level 5	Delivered needs significantly surpass stated needs.

Quality level 1 indicates delivered customer needs that are significantly inferior to the needs requested by the customer. Such quality would generally be unacceptable to the customer. An example would be the export of mules as a means of transport from a developing country to a developed country already reliant on motorised transport.

Quality level 2 shows the delivered customer needs as inferior, but perhaps acceptable on price when compared to the stated needs. An example would be Japan's entry into Western markets in the 1950s. Japan manufactured and supplied cheap cast iron toys that broke after the second or third handling, whereas the Western world manufactured a similar toy that outlived its handling needs.

Quality level 3 indicates that delivered customer requirements comply with the stated requirements. An example would be receiving reading spectacles that comply exactly with your eye requirements.

Quality level 4 shows delivered customer requirements exceeding stated requirements, to the extent that a firm may expect repeat business from a client. An example is buying a relatively cheap car that is reliable and requires little maintenance .

Quality level 5 indicates delivered customer requirements to significantly surpass stated customer requirements to the extent that a new market is developed. If the developing country in the level 1 example were to import motorcars when it's only means of transport were mules, this would serve as an example of level 5.

To summarise, various definitions of quality have been presented, each with its own unique meaning with respect to quality. A working definition of quality was then developed from the presented definitions, focusing on the degree of fit between stated and delivered customer needs. The degree of fit was then classified into five quality levels.

The next article will introduce the concept of 'strategic quality intent' and relate it to the proposed quality levels.

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Global logistics: principles for implementation in South African business

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From a logistics point of view, the international expansion of industry and trade during the last two decades of this century is perhaps the most important development in managing the flow of materials, components and services across international borders. Exploitation of the advantages offered by supply and consumer markets on a worldwide scale led to the true globalisation of many organisations. By its very nature globalisation of trade is dependent on excellent logistics support systems. The theory of global logistics is aimed at providing guidelines for the provision of such a service. This article therefore aims at determining the fundamental theoretical basis of global logistics in an endeavour to identify and formulate suitable global logistics strategies which can provide a competitive advantage in a global market. Two of these strategies are supply chain management and cycle time compression. An analysis of how these strategies can contribute to the overall business strategy and to the development of world-class customer service. In addition, the South African perspective on world trade and the possible role that global logistics can play in carrying firms in the domestic economy into a world of global trade are analysed. It is, however, clear that as far as integrated logistics is concerned, South African business is lagging behind some of its major competitors in the global market place. There are many opportunities in the international market - with specific emphasis on the market in Africa - for South African business, provided that the essential steps in implementing global logistics as part of a corporate strategy are taken. Guidelines are also drawn up for South African business on the implementation of global logistics.

Introduction

One of the most important phenomena of the twentieth century has been the international expansion of industry (Lambert & Stock 1993: 667). Global markets now offer more sales opportunities than domestic markets and are therefore increasingly important. Organisations also expanded logistics activities backwards into supply markets because globally these markets offer lower cost and technologically advanced products and services. All over the world organisations have broadened their sourcing and marketing considerations and are looking at global logistics strategies and operations to provide a competitive advantage through effectiveness, efficiency and differentiation (PE International Consulting Services 1995). Logistics managers are finding that they need to do much work in terms of conceptualising, designing and implementing logistics initiatives which may be effective globally (Coyle, Bardi & Langley 1992: 119). As firms evolved towards worldwide sourcing and global marketing, supply chains lengthened, increasing the risk and the complexity of the operations substantially (Byrne 1992: 53).

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New international markets are opening up for South African organisations and, similarly, South African markets are opening up for international competition. It is therefore meaningless for South African organisations to view logistics and supply chain management as purely domestic phenomena. To be world-class organisations, logistics management should be regarded as a global function. More importantly, global logistics capabilities should be developed for specific regions. Logistic systems for operations linked to Europe are significantly different from operations in the Pacific Rim - simply because of the different management culture and geography. (Compare for example the logistics issues in the Southern African Development Community (SADC) countries with those in the European Union (EU) (Bowersox & Closs 1996: 127)). South African organisations should therefore realise that, depending on the particular circumstances, logistic strategies will have to be adapted to find an optimum between two important parameters: maximising customer service while maintaining the lowest possible total costs.

Objectives

This article aims to achieve the following objectives:

- To analyse and understand logistics and its functioning in a global marketplace.

- To determine which strategies are suitable for global logistics given the nature of the international market.
- To provide South African organisations with implementation guidelines for global logistics.

Definitions and demarcation

The Council for Logistics Management defines logistics as follows (Coyle et al. 1992: 6):

> Logistics is the process of planning, implementing and controlling the efficient, effective flow and storage of raw materials, in-process inventory, finished goods, services, and related information from point of origin to point of consumption (including inbound, outbound, internal and external movement) for the purpose of conforming to customer requirements.

This definition of logistics certainly applies to global logistics, since there is no fundamental difference in the basic procedures when domestic logistics is compared to global logistics (Gattorna 1996: 409). One should, however, realise that global logistics is much more complex than domestic logistics because of the distances involved in global logistic support systems. Distance or space increases not only the cost of transport services but also the management risks and costs associated with longer in-transit times. In addition, global logistics is more complex because of the earlier commitment to forecasts, longer lead times and potentially larger pipeline inventories (Taylor 1996: 86). Additional complicating factors are the multiple national locations of operations and facilities and the cultural and ethical differences encountered in global operations. It should be emphasised that global logistics and international logistics (sometimes referred to as multi-domestic logistics) are in essence not the same. Levitt (in Cooper 1993: 12) differentiates the term global and multinational as follows:

> The multinational corporation operates in a number of countries and adjusts its products and prices in each - at high relative costs. The global corporation operates with resolute certainty - at low relative costs - as if the entire world (or major regions of it) were a single entity; it sells the same thing in the same way everywhere.

Evidently, global logistics is much more complicated than multi-domestic logistics. Global logistics would source materials and components worldwide, use logistic support systems such as transport, forwarding and inventory holding on a geographically dispersed basis, support offshore manufacturing in multiple locations and distribute products in many countries, all in accordance with an integrated global strategy. International logistics would support corporate operations in individual markets throughout the world without the essential drive to integrate strategies for these different markets.

In view of the emphasis on the global perspective, the significance of global logistics in the international trade environment has to be determined.

Significance of global logistics

In the introduction the importance of global input and consumer markets was referred to. The essential reason for the importance of these markets, from a global logistics perspective, is the global volumes associated with world markets. These markets can not only attain extremely low per unit costs, high availability and excellent quality from a supply perspective but, in terms of marketing, high potential sales volumes and the concomitant revenues can be achieved. It is these high volumes of trade which provide business activity that can absorb the relatively high global logistics costs. On the other hand the critical role that global logistics play in the growth of global trade as well as in the establishment of the support structures without which global integration of manufacturing cannot take place, is emphasised. In brief, world trade depends to a significant degree on the availability of economical and reliable international logistics services (Taylor 1996: 84).

In this regard Shapiro (in Taylor 1996: 84) states that strong logistics capabilities can be used as a weapon to help a firm gain competitive advantage in a very competitive global environment. On a global scale input logistics creates a competitive advantage by ensuring low input costs, reliable availability and world-class quality, while output logistics improves consumer choice, providing superior customer service and contributing to a stronger marketing position due to a competitive advantage in cost structures and superior quality.

From a more philosophical perspective, global logistics contributes to value creation in three major areas (Lambert & Stock 1993: 9):

1. Global logistics creates place utility by making products available for purchase or consumption anywhere in the world: value is added through eliminating distance by moving raw materials and final products from point of origin to point of consumption efficiently and in the required quantities.
2. Value is also added in global logistics by creating time utility: in the global business environment time is of the essence and in particular the reliability of lead times, the compression of time from product design to final delivery to the customer and by providing flexibility in providing for variations and flexibility in customer requirements related to time.
3. The integrated global logistics process culminates in possession utility: possession utility simply enables the customer to utilise the product or service at the lowest total cost of ownership.

The impact of global logistics on global trade in general and on specialised production, global sourcing and worldwide marketing in particular, is extremely difficult to support with recent figures. World trade figures are almost always outdated and suspect. However, an indication of global logistics activities can be obtained from the following world trade figures (Taylor 1996: 85): 'While the worlds total output of goods grew by 3.5 per cent in 1994, trade in merchandise (excluding services) grew by 9 per cent to a total of $4.06 trillion. World trade in merchandise totalled $3.7 trillion in 1992.' It is clear that not only is world trade growing at an impressive rate but, perhaps more importantly from a global logistics point of view, exports and imports are growing at a much faster rate than total economic output. According to one estimate worldwide logistics expenditure will rise to nearly $2.1 trillion by 1999 representing 16 per cent of worldwide Gross National Product (GNP) (Coyle et al. 1992: 119). In Figure 1 the actual and expected growth of worldwide logistics expenditure over two decades is depicted. Based on the steady upward trend in Figure 1, there can be little doubt that global logistics is increasing in importance.

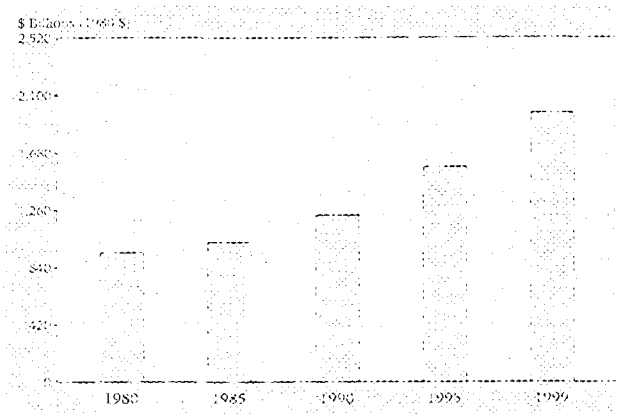

Figure 1. Worldwide logistics expenditure (Coyle et al. 1992: 120)

Another perspective can be gained by analysing the logistics costs as a percentage of the value added in different industries. In Figure 2 somewhat dated information is provided in this regard. The information emphasises the fact that for goods such as petroleum and chemicals, commodities that are traditionally part of global trade, the logistics costs represent a relatively higher percentage of the added value. These products also have relatively low value to volume (weight) ratio which signifies that logistics costs can be prohibitively high in terms of world trade for some commodities. In this regard Cooper (1993b: 15) stresses that the 'logistics reach' of a product has a direct relationship to the value density of that product.

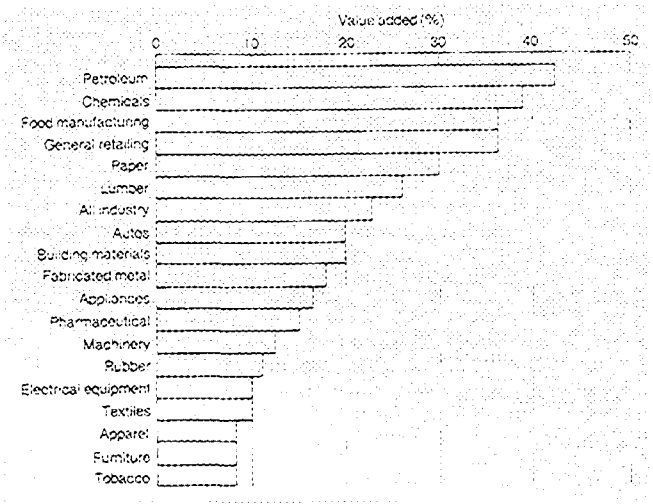

Figure 2. Logistics costs and value added (Lambert & Stock 1993: 10)

A final perspective on the significance of global logistics can be found in the impact of logistical cost saving on the competitive position of goods in the global marketplace. According to Byrne (1992: 53) and also to Hise (1995: 40), logistics processes represent at least 10 per cent of the total delivered cost of goods. If global logistics costs can be reduced by more efficient global logistics strategies, it will have a profound effect on the competitiveness of international players.

If the proposal is accepted that global logistics is a significant element in global trade, then, from the point of view of South African organisations, it is essential to analyse the forces driving global logistics in order to determine the relevance of these forces for organisations in the domestic economy.

Forces driving global logistics

It is clear from the literature (Bowersox & Closs 1996: 127–134; Byrne 1992: 53; Cooper 1993a: 35) that the forces driving global logistics are similar in many regions of the world. Although there is sometimes a particular emphasis on a factor in a specific region (environmental concern is a major force driving logistics in Europe), there is ample evidence that South African organisations should carefully consider the follow driving forces when structuring global logistics strategies.

The globalisation of markets

The growth in international trade is not necessarily an indication of the globalisation of world markets. Globalisation means that the same products (or variants tailored to local tastes) are sold in more countries than ever before (Cooper 1993: 13). One of the reasons for this trend is the fact that industrialised countries have experienced growth rates of more than ten per cent over extended periods of time. Since these countries' popuations have stabilised the logical option has been to extend operations into areas with high population densities. Julius (in Cooper 1993: 13) estimates that trade between the subsidiaries of the same company accounts for more than half the trade between Organisation for Economic Cooperation and Development (OECD) countries. Globalisation means new markets for final products and intermediate goods outside the domestic market, new sources of raw materials and technologically advanced components and the possibility to manufacture products in areas with a comparative advantage in cost (e.g. labour, materials or infrastructure). Associated with the globalisation of markets is the emphasis on quality and customer satisfaction which is an absolute prerequisite for success in global markets. In response to globalisation many firms have developed international supply chains sourcing value adding components from a number of different countries (Levy 1997: 94). On the input side, sourcing globally means long supply chains, knowledge of global supply trends, inventory levels, logistics links (e.g. transport systems), and infrastructure (e.g. roads, ports and bulk handling facilities). On the distribution side, worldwide marketing means having, for example, expertise in transportation systems, import regulations and procedures of many countries and knowing the customs and preferences of the nations. In essence, global logistics is becoming more customer-oriented than ever before.

Regionalisation

Regional trade blocks are a direct result of increasing globalisation. Countries form trade blocks not only to promote trade within a particular region but also to protect trading partners within the regional treaty from outside competition. Regionalisation creates equal opportunities for trade within the block for partners of varying degrees of sophistication (Zubrod & Barron 1996: 62). Trade blocks usually lower trade barriers within the block and, in so doing, establish a favourable climate for accelerating global trade. As a result of these trade blocks organisations restructure their global supply chains in order to take the best possible advantage of opportunities in both supply and consumer markets. Global logistics strategies must be adapted to the treaty rules regard-

ing diverse considerations such as quality (e.g. ISO 9000 in Europe), environmental sensitivities, and documentation. The proliferation of trade blocks, as indicated in Figure 3, is one of the main driving forces for deregulation, economic stability, and stimulation of global markets.

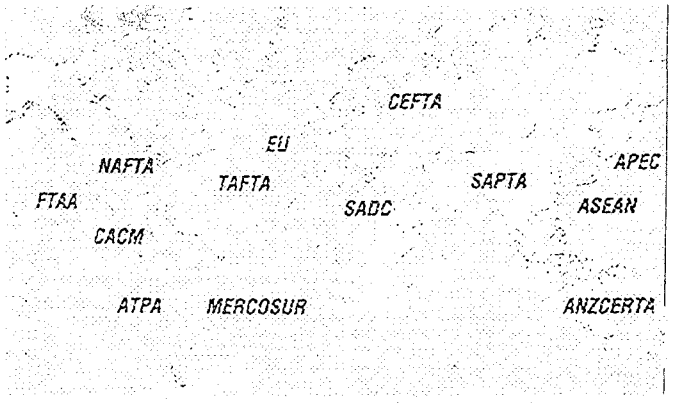

Figure 3. Trade blocks of the world (Zubrod & Barron 1996: 61)

Technology

It is often stated that the enabling technology for global logistics is information technology. Because of electronic data processing (EDP), information regarding availability, suppliers, prices, and global trends in supply and consumer markets is almost instantly available via electronic media (Cooper 1993: 37). Technology also influences other logistics elements such as transportation systems, communication links, and forwarding and clearing procedures.

A different perspective is that firms often endeavour to acquire technology by integrating supply chains with suppliers that have technologically superior products. In this way global supply chains play a major role in technology transfer and in ensuring that a competitive advantage created by a technological breakthrough cannot be sustained over the longer term.

Deregulation

Bowersox & Closs (1996: 133) regard deregulation in many areas of global trade as one of the most important driving forces that has created a 'borderless' world. Transport deregulation was a major force in influencing the structure of logistics systems all over the world. This deregulation caused major changes in the ownership of various transport modes. It also created opportunities for integrating different transport modes and, importantly, influenced the price structures of transport on a global basis. In deregulating transport many new opportunities for restructuring global supply chains were created. Equally important is the deregulation of financial systems. Linked to the advances in information technology previously referred to, global foreign exchange markets are now much more integrated, facilitating foreign exchange transactions and capital transactions between countries.

Economies of scale

Economies of scale is a central driving force for globalising logistics (Cooper 1993b: 13). If the world is the marketplace for a firm's product, then substantial economies of scale can be achieve by centralising manufacturing for mass production. The precondition is, however, that efficient and effective logistics capabilities must exist to enable the organisation to gain and maintain a competitive advantage in terms of sourcing globally and distributing products, thereby creating customer value on a global scale.

It is important to emphasise that these driving forces are often integrated and interdependent and that isolating the individual elements is often impossible. It is essential to grasp this fact because of the overriding influence of external environmental factors on the formulation and implementation of global logistics strategies.

Logistics strategies for a global environment

There are few areas in business where the globalisation of industry and trade has had such a profound impact on strategic thinking in organisations as can be found in global logistics strategy. Traditionally, logistics strategy centred on a 'push' philosophy where all logistics systems were geared to satisfy an anticipated (or forecasted) demand for products and services. In a global environment where maximum customer service at the lowest possible total cost of ownership for the customer provides the competitive advantage, a 'pull' philosophy is preferred. The implication is that global logistics strategy must be totally oriented towards actual (or realised) customer requirements and the satisfaction of these requirements in the shortest possible time frame while maintaining globally competitive prices. In this regard Cooper (1993: 28) made the following statement: 'Understanding customers' service preferences is the starting point of re-engineering logistics processes to ensure greater cost-effectiveness, thus customer service preferences should be the starting-point for the development of logistics and supply chain strategies.'

La Londe & Masters (1994: 35) observe that there are two main business logistics strategies which will remain dominant in the twenty-first century. They further state that the two strategies are often mutually supportive and reinforcing and that it is somewhat artificial to distinguish between them (La Londe & Masters 1994: 45). However, since a logistics strategy is simply a plan of action supporting overall corporate strategy, it can be expected that firms will develop within the two main strategies, many substrategies supporting the main strategy in a specific business environment. In particular, since globalisation of business is the most important thrust of the twenty-first century, it can be expected that these two strategies will be dominant in global logistics. Closer analysis of the two main logistics strategies, supply chain management and cycle time compression, clearly illustrates this point.

Supply chain management as a global logistics strategy

The notion of regarding the flow of materials as a supply chain is linked to two very familiar concepts in management theory (Hugo, Van Rooyen & Badenhorst 1997: 44). The value chain concept recognises the simple truth that all activities in the chain of input-transformation-output must add value aimed at ultimate customer satisfaction. Linked to the concept of the value chain is the well accepted principle that all activities in the logistics process are interdependent and part of an integrated system (Rinehart 1992: 27). As a logistics strategy, supply chain management is in essence extending integrated logistics concepts beyond corporate borders to include the logistics operations of vendors and customers (La Londe & Masters 1994: 37). This elementary statement, however, does not do justice to the underlying and much more complex philosophy of supply chain management.

Some of the most distinctive characteristics of supply chain management may be illustrated by means of an adaptation of the well-known value chain model. The supply chain in Figure 4 emphasises the 'pull' principle of the supply chain because the customer is central to supply chain activities (Hines 1995: 308).

The customer and customer requirements regarding time, place, and possession utility define what value is required from the product and what service levels are demanded. The total cost of ownership for the customer determines ultimately if the product or service will be competitive.

The supply chain is a single entity rather than several logistics activities or processes in the integrated logistics approach. Supply is the central objective of the supply chain as a whole and the single most important objective of all organisations, divisions and individuals involved in the supply chain (Christopher 1992: 13). Each of the separate entities act together as a team and the traditional arms length barriers (e.g. between suppliers and purchasing organisations) are broken down.

The importance of information technology in the supply chain is also stressed in Figure 4. A common Electronic Data Interchange (EDI) system will ensure that customer requirements are transmitted and correctly translated into the various demand signals. The suppliers to the purchasing firm are immediately aware of the quality requirements of the eventual customer and has a direct role to play in satisfying the requirements of that customer.

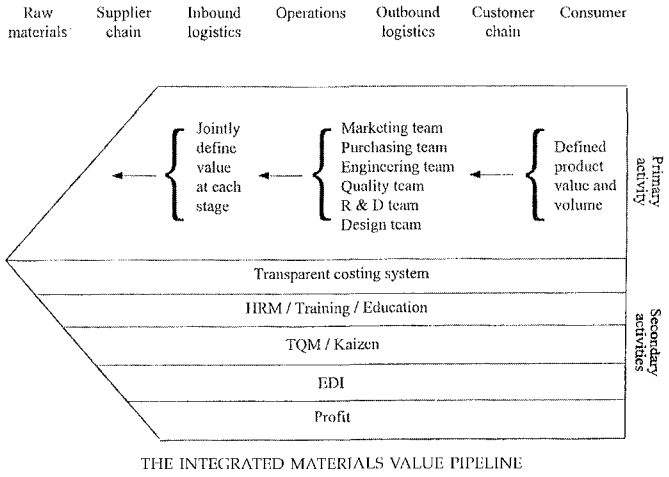

Figure 4. Supply chain management (Hines 1995: 308)

The important characteristic of supply management is, however, the commitment of all entities involved to the joint responsibility of making the supply chain function optimally. The implications are a long-term understanding and a relationship of trust between all the parties involved, a sharing of confidential information including cost transparency, and a commitment to continuous improvement.

An absolute commitment is necessary of top management of all entities involved in the supply chain to the supply chain philosophy, because only top management can reconcile the conflicting objectives in the supply chain and ensure the ultimate smooth functioning of the chain (Christopher 1992: 13).

In summary, supply chain management as a logistics strategy differs from the well-known integrated logistics approach in the following ways: the basic logistics approach is founded on a 'push' philosophy, while supply chain management clearly depends on a 'pull' philosophy which regards customer requirements as being central; the integrated logistics system consists of a number of processes or activities balanced at interfaces, but which are not fully integrated, while the supply chain is a single unit exclusively focused on customer satisfaction.

Cycle time compression

Using time as a competitive advantage is one of the most fascinating phenomena of the globalisation of industry and trade. At the same time, because logistics is such an important part of globalisation 'time based competition' is a natural part of any global logistics strategy. In this regard the following comment by Bagchi (1992: 11) is noteworthy: 'In the current marketplace, characterised by faster declining product life cycles, the winning strategy is to be quick to market. To succeed in this marketplace successful companies will have to reduce significantly the time to market and they will have to emphasise efficient coordination of all business functions'.

Compressing cycle time as a logistics strategy implies that the time from the conceptual product design to the delivery of the final product to the consumer is reduced by what are essentially logistic interventions. The objective is to manage the flow of materials in such a manner that the time needed to respond to customer demand is minimised. Compressing cycle time involves three important elements: speed, flexibility, and quality.

According to La Londe & Masters (1994: 40) cycle time reduction can be applied to production and distribution and given the important contribution of suppliers to the total lead time, the input logistics side of the supply chain could equally be scrutinized for opportunities for compressing cycle time. An overview of some substrategies of cycle time reduction illustrates this concept.

On the input logistics side, the design and development cycle can be expedited by making suppliers aware of new product development at an early stage. Suppliers can contribute by providing information on materials, manufacturing procedures, and, in particular about new technology that is available and which may contribute to shorter design cycles. When logistics can make a contribution to product design and development, supplier partnerships and technology transfer may be viable options.

During the production phase the aim is to reduce the time that the material is in the firm from raw material stage to finished goods to delivery to the customer. Well-tried techniques such as MRP (Materials Requirement Planning), DRP (Distribution Requirement Planning), and JIT (Just-in-Time), which are in essence scheduling techniques, may contribute to the concept of compressing cycle time, since delays in lead time may make a crucial contribution to total cycle time. An innovate substrategy is to implement the 'postponement' concept in the production phase. According to Taylor (1996: 87) postponement as a logistics substrategy utilises information and transportation technology to postpone inventory holding to that stage where costs are at the lowest. 'The objective of postponement as a strategy is to maximise competitive advantage while at the same time minimising the level of logistical expenditure' (Taylor 1996: 88). From a production point of

view postponement may imply that production is delayed until an actual order is received - a true 'pull' strategy. It may also imply that a product is completed to a specific stage and that the final manufacturing activities are delayed until clear customer specifications are received so that a product may be 'customized' in the shortest possible time. The postponement option which takes place closest to the manufacturing plant is sometimes regarded as bundled manufacturing, and the aim is to maintain the commonality of the product as long as possible before customising for distribution to specific customers becomes necessary (Cooper 1993: 17).

In the distribution phase, reducing the order cycle time may imply many different substrategies, for example, increasing stock availability rates, prepositioning field inventories, or using premium freight services (La Londe & Masters 1994: 40). All these options carry a particular cost penalty which must be traded off against the ideal of service excellence to customers. Again postponement-based substrategies may contribute to compressing cycle time. In this regard Taylor (1996: 89) states the following: 'Geographic postponement calls for centralisation of inventories in one or a small number of distribution centres with direct shipping to customers, rather than speculating on which areas of the world to place inventories.'

It is evident that a postponement strategy can only be considered when superb information systems and logistics support systems are in place. An optional substrategy in this regard is the deferment of assembly, or packaging of products until such time as the actual order is received from the customer.

Time is indeed the trade goods of the global marketplace and global logistics can undoubtedly contribute to ultimate customer satisfaction and therefore to corporate goals by being proficient in the implementation of cycle time compression as a weapon in the fiercely competitive global business environment. Finally, it is clear that the implementation of the two main global strategies presupposes an advanced degree of sophistication both in logistics implementation and technological support structures. Whether the South African business community has as yet attained this degree of sophistication remains to be seen. Some light may be shed on this question by reviewing what may be regarded as world-class best practices.

World-class best practice in global logistics

Commenting on the many dimensions of world-class performance and the attainment and maintenance of a competitive position in the global market, Fawcett, Birou & Taylor (1993: 4) support the view that there are mainly five dimensions which are crucial in being competitive in global markets. These dimensions are cost, quality, delivery dependability, flexibility and innovation. Even a cursory glance at the two main strategies of global logistics analysed previously, reveals that they are primarily aimed at just these dimensions. However, it may be helpful to provide an overview of what Bowersox's research (in Trunick, Richardson & Harrington 1994: 44) found to be world-class attributes of logistics in a global environment:

- World-class best practice is typically focused on positioning logistics as a key element of business strategy
- Logistics strategies increasingly seek competitive advantage by being highly customised to specific customer requirements
- There is an emphasis on establishing and maintaining strong supply chain relationships in leading organisations
- Performance measurement is increasing in scope and importance
- Organisation structures are increasingly difficult to generalise as firms shift from functional to process management
- Reward and recognition systems are slowly being revamped to 'incentivise' meaningful work.
- In information technology the emphasis is shifting from a general change management enabler to developing means to achieve specific ends

The above overview as well as the analysis of the most important global logistics strategies can now act as a background for the analysis of logistics as a management philosophy and an implementation imperative in South African business.

South African logistics in a global environment

Relatively little research has been done on the status of logistics and its implementation in South Africa. Two studies (Franz, Cilliers & Andrews *s.a.*; Cilliers & Nagel 1994) provide useful background information so that some perspectives may be gained about the status and future trend of global logistics in South Africa.

According to Cilliers & Nagel (1994: 10) in a study which measures logistics excellence in South African business, domestic logistics is in a state of supply chain confusion. They summarise as follows: 'Logistics is either not considered at all or is treated according to a fragmented approach both within the individual company and the supply chain'.

The following specific conclusions are also reported in the study (Cilliers & Nagel 1994: 10):

- Understanding for logistics has increased but the practice still lags behind
- Logistics is not seen as a creator of value
- Logistics management is still fragmented
- There is a lack of a holistic approach to logistics and supply chain management
- There is a lack of integrative systems

In the summary of a study conducted by Franz et al. (*s.a.*: 13-25) many more indications are provided that logistics as an important business activity is not at all being managed efficiently in South Africa. For example, this study reports that there is a fragmented approach to logistics, that limited integration exists among logistics partners, that there is little understanding of costs and performance measures, and that there is a lack of appreciation of the advantages of information technology. According to the preceding theoretical analysis these concepts are fundamental to basic business logistics and therefore also to global logistics.

From this somewhat dismal picture the conclusion must be drawn that the potential of global logistics in providing a competitive advantage in world markets is still not being exploited by South African organisations. If this premise is taken as a point of departure, the obvious question that must be raised is whether the participation of South African organisations in world trade is of a magnitude to warrant the use of the fairly sophisticated strategies implied by global logistics.

In Figure 5 an analysis is provided of the growth in South African imports and exports over a five-year period covering 1991-1996. The figure clearly indicates that both elements of foreign trade have more than doubled over the period indicated and that imports as well as exports were around the R120 billion level in 1996. From a logistics point of view these figures imply that an amount of R240 billion worth of products and services are currently being channelled through what is largely uncoordinated South African logistics systems and, given that current foreign trade trends prevail, that the figure of R240 billion is likely to increase substantially in the next five years. In a discussion of these trade figures Czypionka (1997: 4) comments as follows:

> Worldwide experience has shown that trade increases as tariff protection is removed. This will also increase the level of competition within the country and experience has also taught that more competition makes for better products and more competitive prices.

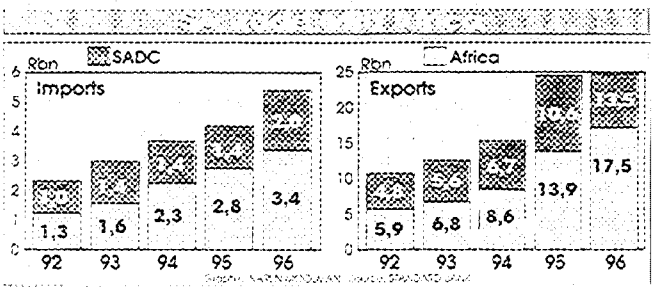

Figure 5. Growth trend of South African foreign trade (*Business Day Supplement*, October 1997: 7)

Again the implication is clear: South African business is part of the global market and organisations should therefore realise that all possible efforts, including the implementation of global logistics strategies, should be made to gain a competitive advantage.

A second perspective on the need for global logistics strategies for South African firms may be achieved by analysing the major trading partners of domestic firms. In Table 1 an analysis is provided of the international trade with South Africa's five top trading partners in two comparable periods in 1997 and in 1996 as well as the percentage of change in imports and exports for 1996 compared with the 1995-year.

From a global logistics point of view the information in Table 1 indicates that South Africa's major trading partners are situated in three different trading blocks each with a completely different management style and different international trade conventions with regard to, for example, quality standards and clearing and forwarding procedures. It should be noted that many firms in the countries indicated in the table (Coca Cola, Mercedes Benz, Sony, ICI and Benetton are examples) are typically global players, many with sophisticated global logistics support structures in place. Also, the supply lines to these trading partners are long with the implications of high inventories, long lead times, increased complexity and high risk. It should also be noted that, although information about trade with Hong Kong, Singapore, Malaysia, Indonesia and Korea does not appear in the table, international trade between South Africa and these countries is experiencing a sharp increase. Logistics support to these areas has many new challenges for domestic firms, particularly for those with aspirations of becoming global players.

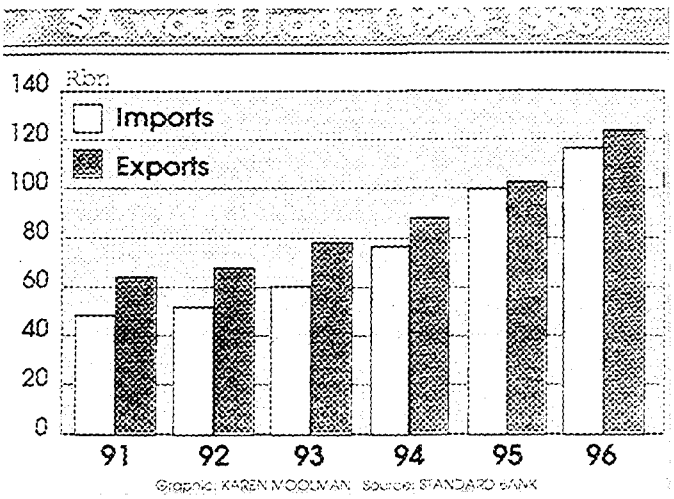

Figure 6. South African trade with SADC and Africa (Standard Bank in *Business Day*, October 1997: 4)

Trade with Africa offers a third perspective on the need for global logistics capabilities. South Africa is often referred to as the gateway to Africa in terms of international trade. In Figure 6 information is provided about South Africa's trade with the SADC countries and also with Africa in general. As a partner in the SADC trade block trade, for South Africa, will become increasingly important, not only because of the SADC development objectives but also because of a need to counter the threat of expanding global trade from other trade blocks, in particular the Pacific Rim countries. Figure 6 indicates increasing trade with SADC countries and with Africa during the period 1992-1996 - but this trend can only continue if global logistics capabilities are developed as a competitive advantage by South African firms. Africa currently has serious difficulties in terms of infrastructure, particularly financial and transportation structures. Because South African firms inherited a

Table 1. South Africa's top five international trading partners (*Business Day* October 1997: 60)

(Value: R millions)

Rank 1996	Country	Jan-Apr 1997		Total	Jan-Apr 1996		Total	Percentage change: 1996/1995		
		Export	Import		Export	Import		Export	Import	Total
1	UK	3 700.6	4 433.9	8 134.5	4 603.3	3 983.9	8 590.2	-4	11	-5
2	Germany	1 792.6	5 337.3	7 129.9	1 478	5 148.5	6 626.5	21	4	8
3	US	2 064.5	4 929.7	6 994.2	1 839.2	4 550.3	6 389.5	12	8	9
4	Japan	2 263.6	3 193.6	5 457.2	1 793.3	2 939.4	4 732.7	26	9	15
5	Italy	903	1 542.2	2 445.2	962	1 663.9	2 625.9	-6	-7	-7

competitive advantage due to the strong rail, air and financial links between the Republic and in particular the SADC countries, trade can be expected to grow over the short- and medium-term. However, the international community is determined to improve many of the existing deficiencies in Africa's infrastructure as evidenced by the development of, for example, the Beira corridor. These developments will erode the current advantages South African firms enjoy. Developing global logistics capabilities equal to those of countries in the triad (Europe, North America and the Pacific Rim) is the only way South African firms will be able to maintain their advantage of short supply lines into Africa.

The broad analysis of South Africa's international trade position emphasises two important aspects. Firstly, international trade between South Africa and its major trading partners is growing and is currently already at a significant level. Secondly, and perhaps more importantly, is the obvious fact that as part of the global marketplace South African firms will have to develop global logistics capabilities to ensure a competitive advantage as a trading partner in many international spheres, but particularly also in Africa.

Recommendations to South African firms

In view of the discussion on the theory of global logistics and on the current status of logistics and international trade in South Africa, the following guidelines for the implementation of a global logistics strategy by South African firms can be suggested (derived from Bowersox, in Trunick et al. 1994: 44; Cilliers & Nagel 1994: 12; Hise 1995: 40).

Fundamental knowledge of logistics principles

South African organisations should pay urgent attention to ensuring that all personnel who could be included in teams structured to serve the supply chain concept in an organisation acquire fundamental theoretical principles and pragmatic competencies in managing logistics processes. Added to this should be insight and understanding of international business and, in particular, the globalisation of trade.

Embrace the principles of integrated logistics

The integration of logistics activities to facilitate cost trade-offs and to create a business philosophy of managing all materials flow activities as a single entity, should be paramount in the business re-engineering processes which so many South African organisations are currently experiencing (Byrne & Markham 1993: 42).

Customer orientation and supply chain strategy

Top management should embrace a corporate culture which is aimed at creating a differential advantage through customer service. The logical consequence of such a cultural change would be the implementation of the supply chain concept in domestic and in global logistics.

World-class best practice in logistics

The fact that there is no fundamental difference between logistics management and global logistics in terms of processes should motivate firms to adopt world-class best practice in domestic and global logistics. World-class best practice typically focuses on positioning logistics as a key element of overall business strategy and in specific strategies aimed at attaining a competitive advantage in domestic and global markets.

Information technology

Information technology (IT) is the enabling technology for global logistics. South African organisations should endeavour to incorporate logistics processes in the broad IT-design of an organisation. EDI (Electronic Data Interchange) offers major advantages and cost savings and, in general, efficiency improvement through the availability of information on international market trends and through the reduction in lead times. IT-applications in logistics will almost certainly provide advantages outside of the traditional logistics activities (for example in operations management). The prerequisite, however, is that the logistics IT-system should always be integrated with the broader IT-system of the organisation.

Bench marking and performance measurement

Measuring logistics performance and, in particular, the performance of global logistics is an essential part of the successful implementation of global logistics. Bench marking against the performance of competitors in South Africa is no longer sufficient, since a competitive advantage can only be built on world-class best practice. A formal procedure for evaluating actual logistics performance resulting in quantitative data aimed at performance improvement is an absolute prerequisite.

Total cost of ownership

The implementation of global logistics cannot be contemplated without developing a costing system which would provide detailed information on all processes in the supply chain and in compressing cycle time as a global logistics strategy. A useful approach in achieving this goal is to develop a costing system aimed at total cost of ownership, because this approach will not only provide reliable cost data but is also, in essence, customer-oriented.

In summary it must be emphasised that implementation guidelines like those provided can only be useful if top management fully supports the philosophy, cultural change and organisational re-engineering required to lay the foundations of the successful implementation of global logistics.

Conclusion

In the global environment of the twentieth century a business can no longer afford to be only domestically-oriented. The single most important link between trade blocks in the world environment, between partners in different countries, between new market opportunities and a growing organisation, and, perhaps most important, between competitors in the global marketplace is global logistics.

Global logistics, as it has evolved over the past two decades, has developed a solid theoretical foundation based on well-known business logistics principles. This article indicates that many of these principles can be applied equally efficiently in domestic and in global markets. It is, however, in the global marketplace where global logistics becomes a truly efficient weapon in the battle for competitive supremacy. Organisations which accept this fact are in a position to regard the world as their market and to gain the advantages of world volumes of trade.

South African organisations are lagging behind in implementing integrated logistics management and, by implication, are unable to fully exploit the advantages offered by the

global marketplace. World-class competitors with a competitive advantage based on superb global logistics operations are already competing in South Africa, and will be threatening many of the markets where these organisations could traditionally compete effectively. Implementing global logistics should therefore become part of the business strategy of forward looking South African organisations.

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Service quality measurement: A critical review of the SERVQUAL model

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Considerable research has been conducted on how consumers evaluate service quality performance. The most commonly accepted approach is the Gap Theory Model which defines service quality as the direction and magnitude of the difference between customers' expectations and perceptions of the service. This model has been used as an instrument of analysis in several companies. Based on research, SERVQUAL, a multiple item scale for measuring service quality, was developed. The 22-item questionnaire was based on five generic quality dimensions and had become the most popular measure of service quality. Despite its popularity several analysts have suggested that the measure has serious shortcomings that limit its usefulness, such as the overlap of process and outcome, and scaling, and that there may be limitations to widespread use. This article reviews SERVQUAL and the various criticisms of the model in the literature.

Introduction

A basic problem of the management of service quality has to do with the nature of services. Although the results of the service, and the instruments it involves may be concrete, the service itself, unlike tangible products, is abstract and difficult to define.

Several definitions of service quality have been suggested in the literature. Some authors have defined service quality as 'meeting the needs and requirements of customers' (Murdick, Render & Russell 1990; Smith 1995), while Lewis (1989) states that 'service quality is how well the service delivered matches the customer's expectations'. More radical definitions have also been advanced: 'providing better service than the customer expects' (Lewis 1989).

In essence, however, the concept of quality has been viewed in the academic world as the difference between expectations and the perceptions of outcomes. The service must correspond to the customers' expectations and satisfy their needs and demands. Edvardsson, Thomasson & Ovretveit (1994) include in their definition of the 'right quality' the various interested parties that need to be considered: 'The right quality is achieved when expectations are fulfilled, needs satisfied and demands met: those of customers, staff and owners'.

Given the intangible nature of services, it is essential that consumers develop realistic and accurate expectations and that service firms, in turn, deliver these services at or above the level of these expectations. The success of a service firm will depend on how well it meets or exceeds customer expectations. If service quality is to be a cornerstone of a service firm's strategy, the firm must have the means to measure it. By using distinct measures, firms can identify the most appropriate action and resources can be allocated more efficiently along the service process.

One instrument that was developed to satisfy these goals in service quality measurement is the SERVQUAL scale (Parasuraman, Zeithaml & Berry 1988). In developing this scale the authors defined service quality as the difference between customer expectations for, and perceptions of, actual performance along five dimensions. However, despite initial popularity among practitioners and academics, the model has been criticised on both conceptual, methodological and interpretive grounds.

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Service quality measurement: A critical review of the SERVQUAL model

Objectives and methodology

This article firstly reviews the evolution of SERVQUAL and the theory underlying the model. Since conception by its authors, SERVQUAL has evoked a great deal of response from both academics and practitioners. Some of the applications of the model in different service settings are reviewed and the concerns raised by researchers, as well as other criticisms and shortcomings of the model are highlighted. Various conceptual, methodological and interpretive arguments articulated in the literature are presented both for and against the model. Finally, the article offers suggestions as to the use of the model by practitioners, as well as directions for future research.

The evolution of SERVQUAL

Expected and perceived quality

During the 1980s three American researchers, Berry, Parasuraman & Zeithaml (1985) studied the quality of services. Their early research was about customer-perceived quality in four service industries: banks, credit card companies, stockbrokers, and service companies for household goods. They used focus group interviews with three groups in each industry and expressed the results of their findings as ten factors or dimensions, namely tangibles, reliability, responsiveness, competence, courtesy, credibility, security, access, communication, and understanding (Parasuraman, Zeithaml & Berry 1985). In a later study (Parasuraman et al. 1988) they reduced the number to five: tangibles, reliability, responsiveness, assurance (which consolidated the competence, credibility, courtesy and security attributes), and empathy (which consolidated the access, communication and understanding attributes).

- *Tangibles* refer to the physical environment in the service organisation: facilities, equipment, staff and their dress, i.e. concrete objects which the customer can easily observe.
- *Reliability* is the company's ability to perform the promised service. Price agreements and other conditions should be fulfilled, time limits kept and the service performed accurately from the start.
- *Responsiveness* entails performing the services promptly and quickly, helping the customer and being available when he or she needs help.
- *Assurance* covers the knowledge and competence of the staff and their ability to elicit trust and confidence.
- *Empathy* was defined as 'caring, individual attention the firm provides to its customers'.

The three key points that arise from this research are:

- Service quality is more difficult for customers to evaluate than the quality of tangible goods.
- Customers do not evaluate service quality solely on the outcome of a service; they also consider the process of the delivery.
- The only criteria that count in evaluating service quality are defined by the customer (Zeithaml, Parasuraman & Berry 1990).

One of the most important conclusions in the study by Berry et al. (1985) is that customers' assessment of service quality is the result of a comparison between their expectations and experience of after service delivery. If their expectations have been met, they are satisfied, if not, they are dissatisfied. If expectations have been exceeded, they are more than satisfied.

In further studies of service quality the three authors found that there are two levels of customers' expectations of the service: 'adequate' and 'desired' (Parasuraman, Zeithaml & Berry 1991). The first level is what the customer finds acceptable and the second is what he or she hopes to receive. The distance between the adequate level and the desired level is the 'zone of tolerance'. This zone expands and contracts and may vary from customer to customer and from one situation to another for the same customer. Similarly they vary, depending on the quality dimension involved.

The Gap Model

The same researchers (Parasuraman et al. 1985) developed a model which depicts how various gaps in the service process may affect the customer's assessment of the quality of the service. (Refer to Figure 1.) The model is useful in assisting managers and staff to examine their own perceptions of quality and to recognise how much they really understand the perceptions of customers.

Gap 1 is the difference between the customer's expectations and management perceptions of customer expectations. Management does not understand how the service should be designed and what support or secondary services the customer requires, i.e. what the right quality for the customer is.

Gap 2 is the difference between the company's quality specifications and management perceptions of customer expectations of the service and its quality. Often in an attempt to reduce costs, management places internal restrictions on how a service is to be performed, restrictions which deprive the staff of the opportunity to meet the customer's expectations.

Gap 3 is the difference between the quality of the service delivery and quality specifications. Even if the quality of the service is carefully specified in a company, the result in practice may be different from what was intended. Service quality is difficult to standardise since it is often dependent on personal contact between the customer and company staff.

Gap 4 is the difference between the quality of the service delivery and the quality promised in communicating the product/service. It is important not to promise the customer more than the company can deliver. At the same time, it is important for the company to inform customers about the efforts being made to elevate the quality, which would otherwise not be visible to the customer.

Gap 5 is the most crucial gap because it indicates the difference between expected and perceived service quality. This gap is a function of the other four gaps:

$$\text{i.e. Gap } 5 = f(\text{gaps } 1, 2, 3, 4)$$

It is this gap that Parasuraman et al. (1985) seek to measure using the SERVQUAL instrument which is discussed below.

The gap model is basically customer-oriented. Quality is realised by the customer after the service has been received and it relates to the difference between expected and perceived quality. The model is also process-oriented because it identifies the gaps that may arise in various parts of the service process, which eventually affect the difference between the customer's expected and perceived quality. The model is thus based on

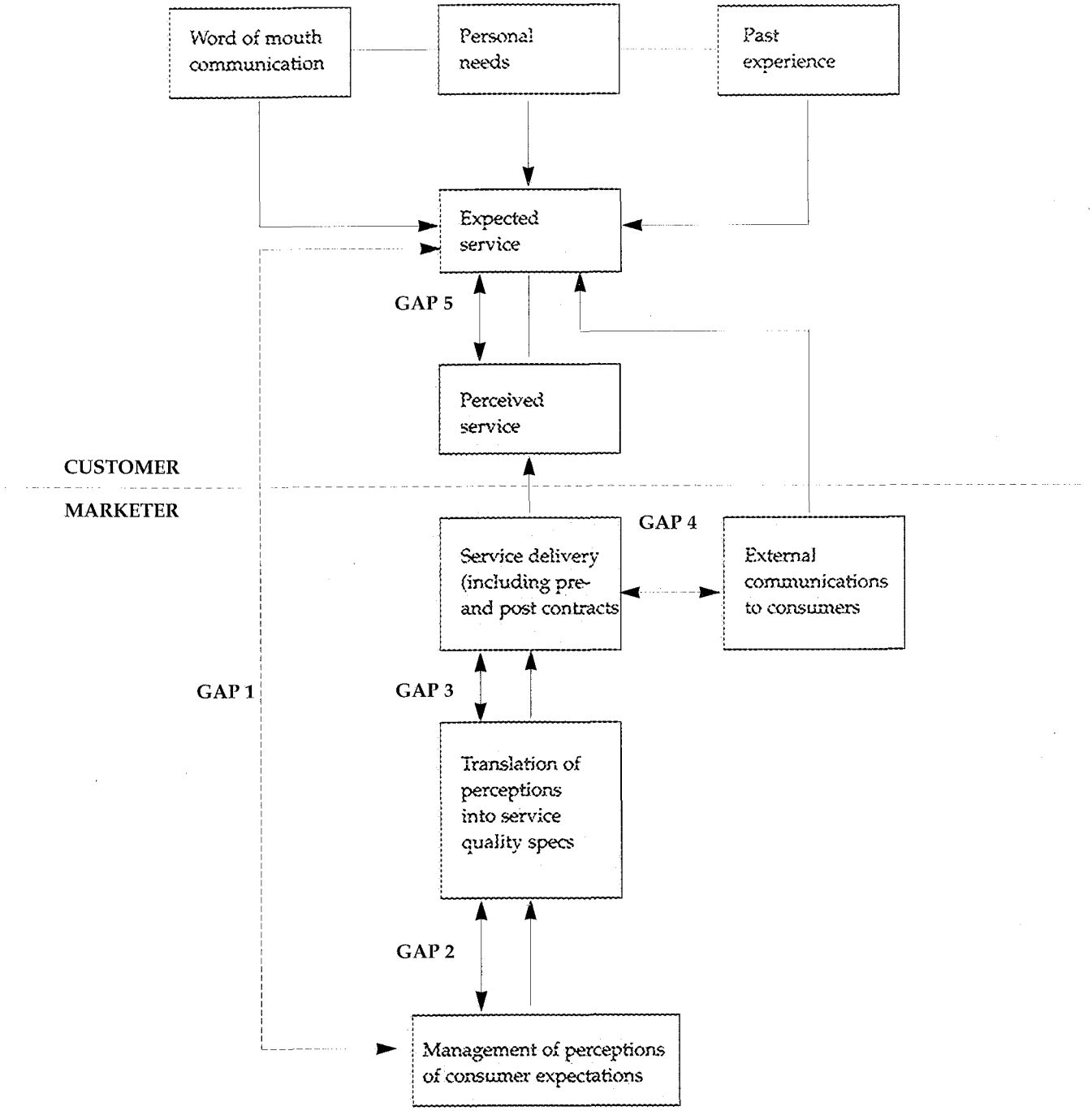

Figure 1. The Gap Model (Parasuraman, Zeithaml & Berry 1985)

what is known as the 'disconfirmation of expectations paradigm' in services marketing literature.

Figure 2 shows a further development of the original gap model. This new model illustrates the interorganisational factors which affect the different gaps. It thereby facilitates an analysis of what caused the gaps and how they can be reduced.

The gap model, which was developed from empirical research, has been used as an instrument of analysis in several companies. Researchers (Parasuraman et al. 1988) have developed an instrument, SERVQUAL, for measuring service quality in the previously mentioned five dimensions (tangibles, reliability, responsiveness, assurance, and empathy).

The SERVQUAL model

The above findings based on Parasuraman et al.'s exploratory research serve as the foundation for the development of SERVQUAL, a multiple item survey tool for measuring service quality. The method was considered by the authors as being 'generic' to all service industries.

There are two parts to the measuring process: the first step is to establish the customers' perception of an ideal service and the second step is to measure the customers' perception of the services provided by a specific company. Perceived service quality is described as the degree and direction of discrepancy between customers' perceptions and expectations. Consequently, SERVQUAL was developed to measure the

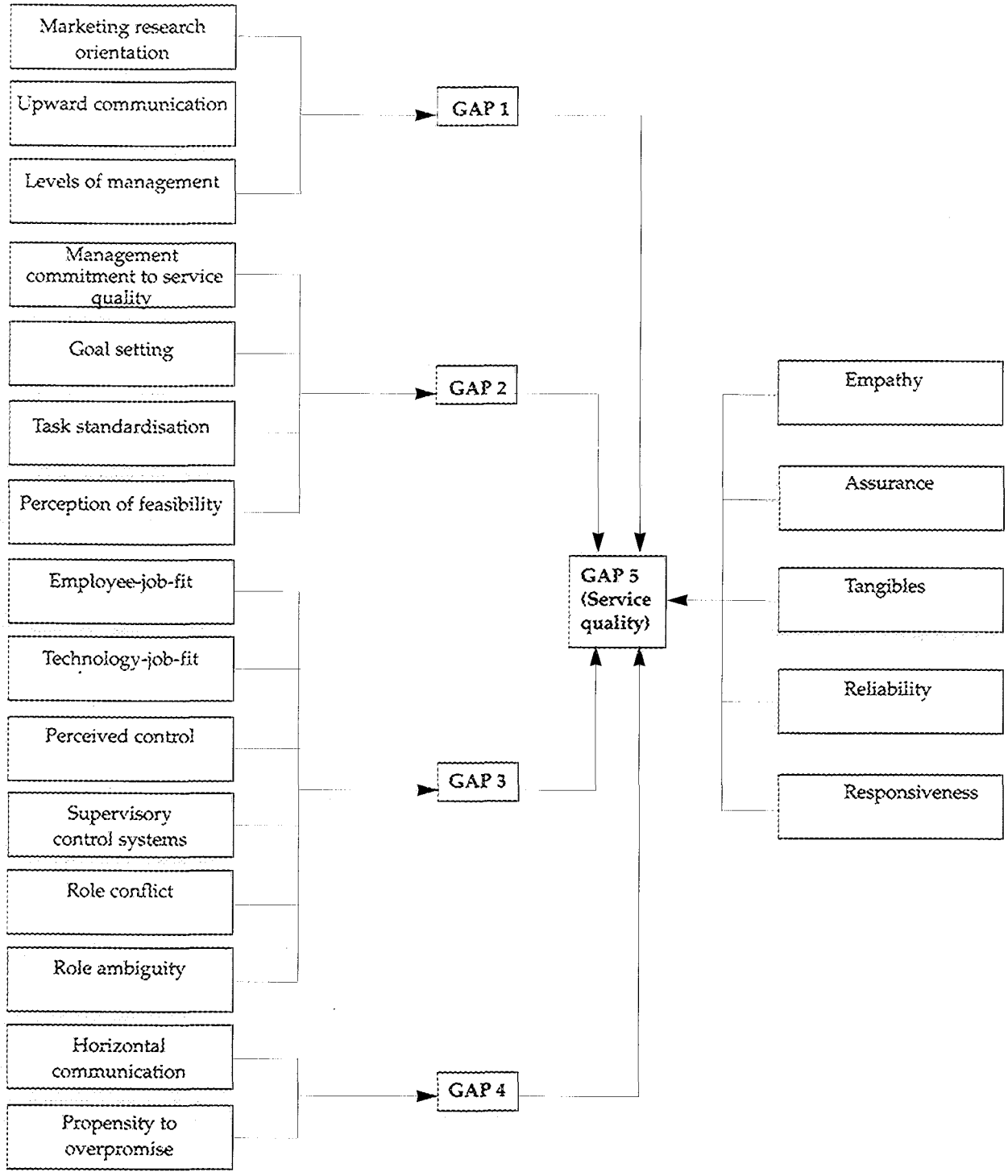

Figure 2. Extension of the Gap Model (Parasuraman, Zeithaml & Berry 1988)

'gap' between expected service and perceived service. This gap corresponds to 'Gap 5' in the gap model described earlier.

The measuring procedure requires the customers to react to 22 statements based on the five quality dimensions. Each of the 22 items was recast into two statements - one requiring respondents to identify which firms in the industry 'should provide'; the other what the customer perceived the firm 'did provide'. There are four or five statements for each quality dimension. (Figure 3 illustrates the five dimensions.)

The respondents are requested to react to the statements on a Likert scale with seven intervals ranging from 'strongly agree' to 'strongly disagree', but with no verbal descriptions for points 2–6. First the expected quality is measured and then the perceived quality. In the first measurement the seven-grade scale produces an 'ideal profile' for each dimension. The profile of customer perceived quality obtained in the second measurement can then be contrasted with the 'ideal'. Deviations between expected quality and perceived quality can then be studied - gap scores or P-E scores could be com-

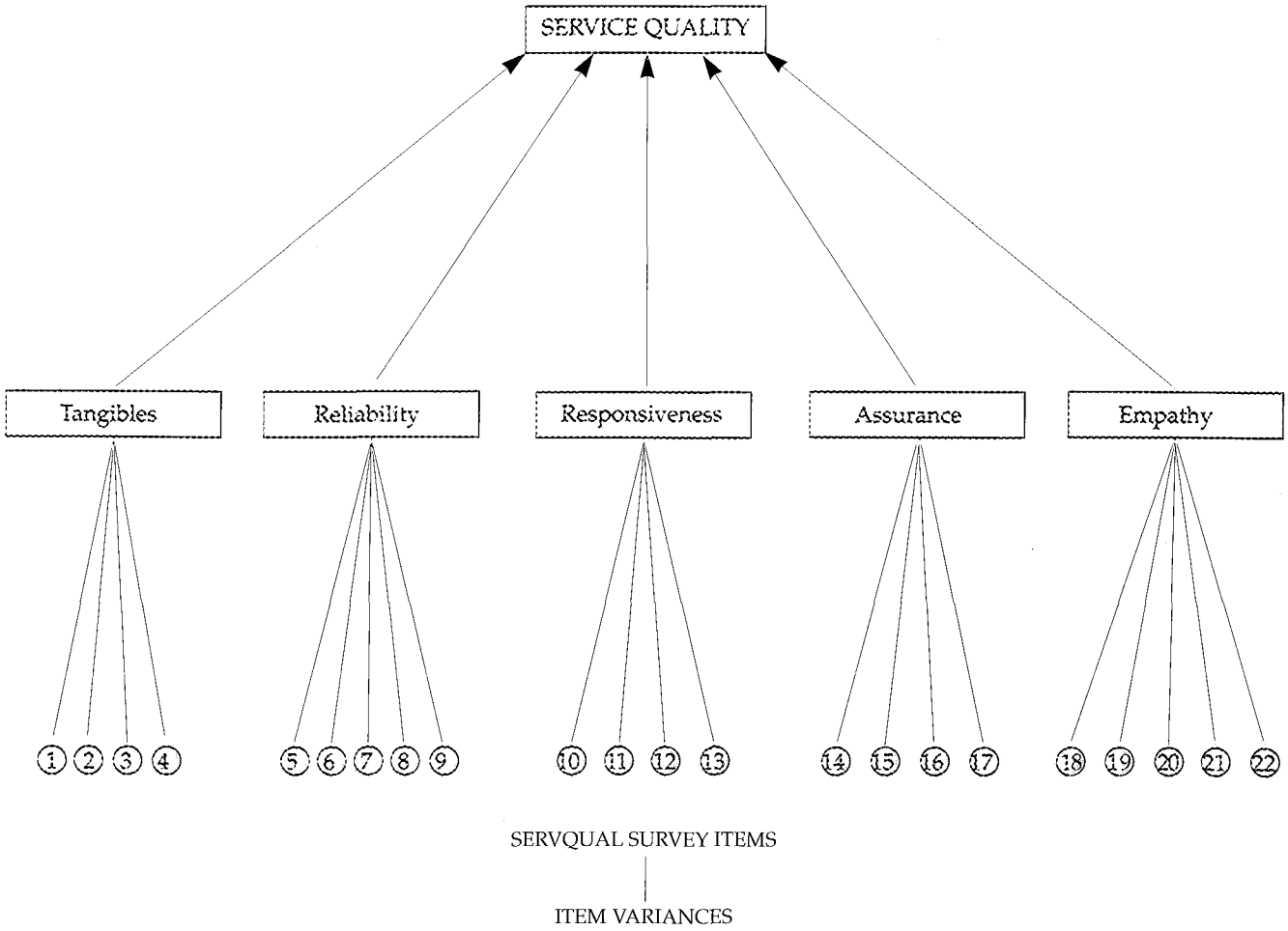

Figure 3. Service quality as conceptualised by Parasuraman et al. (1988)

puted and used in further analysis. Thus, a SERVQUAL score is computed as follows:

SERVQUAL score = Perception score - Expectation score

The variables which show the biggest deviations and which the customers see as the most important when assessing quality provide guidelines for quality improvement.

It is important to note that Parasuraman et al. (1988) describe this gap as a measure of service quality as distinct from the measures of satisfaction, on the basis of the nature of the expectations included and the timing involved. In other words, perceived service quality is a 'global judgement or attitude relating to the superiority of the service', whereas measures of satisfaction relate to a service encounter.

The authors further propose that a company's average service quality along each of the five dimensions can then be derived by averaging the SERVQUAL scores across the items on each dimension. Therefore, an overall global service quality score can be obtained by averaging the dimension scores.

To this point the scores are unweighted for relative importance of the different dimensions. Zeithaml et al. (1990) extended the theory to suggest that weighted SERVQUAL scores can also be derived by including importance items that correspond to the original items. The weighted SERVQUAL score is computed as follows:

SERVQUAL score = (Perception score - Expectation score) X Importance score

A revision of SERVQUAL was presented by Parasuraman et al. (1991) which introduced a number of changes. The original SERVQUAL had included negative statements which were subsequently deleted since several researchers experienced problems with these measures (e.g. Carman 1990; Babakus & Mangold 1992). Babakus & Boller (1992) argued that the negatively worded items could be responsible for the factor structure proposed by Parasuraman et al. (1988). A further change focused on the expectations element where respondents were now required to indicate what an 'excellent service would provide' rather than what 'firms in the industry should provide'. Some of the 22 items were changed and/or replaced and minor wording changes were also made.

Uses of SERVQUAL

Parasuraman et al. (1988, 1991) describe SERVQUAL as a concise multiple-item scale with good reliability and validity which offers a number of potential applications across a broad spectrum of services. It provides a basic skeleton through its expectations/perceptions format, encompassing statements for each of the five dimensions. This skeleton, the authors argue, can be adapted and supplemented to fit the needs of a particular organisation.

Parasuraman et al. (1988, 1991) suggest a variety of potential applications of the SERVQUAL model. It can be used periodically to track customer perceptions of service quality relative to that of its competitors. The five-dimensional format of the

model allows a firm to assess its level of service quality along each dimension, as well as overall. The instrument can also be used to categorise a firm's customers into several perceived quality segments (e.g. high, medium, low) on the basis of their individual SERVQUAL scores. These segments can then be compared and contrasted on characteristics such as demographic and psychographic variables so as to gain managerial insights. The instrument can also be used in multi-unit retail companies to track the level of service provided by individual stores and to group the stores into several clusters with varying quality images. An evaluation of store characteristics in the different clusters may reveal attributes that are critical for ensuring high service quality.

In addition, Zeithaml, Parasuraman & Berry (1992) have shown how SERVQUAL can be used in measuring a firm's performance against its competition, which is an important step in the firm's positioning process.

Despite SERVQUAL's initial popularity, several studies have, however, identified shortcomings of the model and have failed to provide support for it on a number of issues.

Applications and shortcomings of SERVQUAL

Flexibility vs integrity - Is SERVQUAL a generic measure of service quality?

The SERVQUAL authors, Parasuraman et al. (1988: 30–31) state: ' it [the model] provides a basic skeleton ... when necessary, can be adapted or supplemented to fit the characteristics or specific research needs of a particular organization'. It should be noted, however, that in 1991, they state: 'Since SERVQUAL is the basic "skeleton" underlying service quality, it should be used in its entirety as much as possible. While minor modifications in the wording of items to adapt them to a specific setting are appropriate, deletion of items could affect the integrity of the scale and cast doubt on whether the reduced scale fully captures service quality'.

A key difference with respect to the SERVQUAL instrument is the extent to which researchers have adhered to the 22-item format. Most researchers, even while commending SERVQUAL for its face and/or content validity, have added to, deleted from or amended the item content so as to make the questionnaire more relevant to a specific service situation. This raises the question as to what extent the proposed 22-item scale offers a generic measure.

Similarly a considerable number of researchers have failed to identify the five underlying dimensions. Carman (1990), for example, has identified a greater number of dimensions and others have highlighted the multifaceted nature of services. Some of these are discussed later.

Replication studies of SERVQUAL have, therefore, suggested that the instrument itself requires substantial amendments and extensions to include other key elements affecting the consumers' evaluation of the service.

An extension of the model by Carman

To address certain shortcomings of SERVQUAL, Carman (1990) proposed an extension of the work by Parasuraman et al. (1988). He replicated the SERVQUAL model in four diverse service industries. The purpose was to investigate six questions related to the SERVQUAL scale:

1. the extent to which the number of dimensions of service quality is generalisable to all settings
2. the robustness of the wording of the SERVQUAL items
3. service situations with multiple service functions and the role of product quality in bundled retail service offerings
4. the validity of analysing the differences between expectations and perceptions
5. the necessity of administering the expectations battery
6. the relationship between expectations and importance.

Carman (1990) found the dimensions to be 'useful and generally persuasive'. However, certain problems were encountered. Although the model adequately satisfies the first two questions, practitioners 'will need to make some changes in adapting the instrument to a particular setting and will need to make substantial changes in adopting the instrument with respect to questions 3 through 6' (Carman 1990).

Carman's research shows that in using the SERVQUAL model caution should be exercised in reducing the original ten dimensions to five as in any one setting five to seven dimensions were important. These were identified as tangibles, reliability, responsiveness, security, courtesy, personal attention, and trust.

In all settings it would be necessary to alter the wording of some of the individual SERVQUAL items in order to make the item more appropriate to the setting. Some dimensions should have additional items added to those in the original article.

In settings where customers receive a variety of service in a departmentalised way, e.g. department stores and airline travel, customers are able to assess service quality in each of these settings separately. They will evaluate them separately and the overall evaluation of the retailer will be some generalised aggregation of the quality of the parts. In these situations it is necessary to assess service quality in each and then to determine the extent to which each contributes to a perception of overall quality. Carman (1990) suggests that in each of the parts, the same five to seven dimensions are appropriate and can be incorporated into this extended model.

In summary Carman suggests the following:

- The treatment of expectations in traditional applications of the SERVQUAL scale is suspect.
- Importance weights should be included in the measures of service quality.
- The contribution of individual SERVQUAL items to the identified dimensions appears to vary across industries.

The use of SERVQUAL in retail banking

A study conducted by Blanchard & Galloway (1994) sought to determine the perceptions of both customers and staff of the requirements of a quality service in retail banking. The gap model and the SERVQUAL model developed by Parasuraman et al. (1985, 1988) were identified as being the most appropriate for modelling the data, but they found that, although the service gap model provides an excellent basis for analysis, the SERVQUAL model was of limited value.

Blanchard & Galloway argue that the SERVQUAL dimensions are not 'true dimensions' because a fundamental ambiguity lies in the overlap of process and outcome. These are not

separate dimensions, as they are by definition orthogonal and measurable: 'The elements are far too closely interlinked to form the basis of a rigorous analysis of the service situation, and they do not map unambiguously onto the basic classification of outcome, process and expectation' (Blanchard & Galloway 1994).

The researchers contend that although the SERVQUAL dimensions were ostensibly attractive they did not readily align with customer statements of expectations and in many cases customer statements involved at least two of the SERVQUAL dimensions. This interdependence is widely recognised, but as a result the use of the term 'dimension' is invalid, and the lack of clarity it introduces substantially reduces the value of the model.

There are particular problems with reliability which appears to qualify the other four attributes as well as being an independent issue. For example, the requirement for cash to be available at all times in ATMs is clearly a reliability issue, while the politeness is an assurance issue. Reliability is perhaps a prerequisite for quality service in all cases and therefore in a different category from the other dimensions which may or may not be significant in a particular service. The responsiveness dimension too (which contains 'soft' issues e.g. staff listen, as well as 'hard' issues e.g. tills open at busy times) is problematic in that it does not focus on specific issues which either the customer or the service designer is likely to address. This would not matter if the dimensions represented some underlying structure, but their ambiguity and overlap suggest that this is not the case.

As a result of these shortcomings Blanchard & Galloway (1994) propose a model based on three dimensions, namely process/outcome, subjective/objective, and soft/hard. These are, according to them, measurable and probably orthogonal. They argue that the model has the advantage of allowing service attributes to be allocated a value within each dimension and provides a classification which avoids overlap and ambiguity. The model also demonstrated that process is far more important than outcome in determining customer perceptions of service quality.

Another study which focused on banks (Brown, Churchill & Peter 1993) also questioned the generic application of the SERVQUAL model. The purpose of their study, however, was to examine the problems associated with using difference scores. However, a major problem arose during their investigation in attempting to modify the wording of the SERVQUAL items to fit the alternative conceptualisation. The authors were concerned by the omission of items they thought would be critical to subjects' evaluation of the quality of service they receive from a bank (e.g. the convenience of a bank's location or its operating hours). They suspected issues such as these were not supplementary or support the original item list because of Parasuraman et al.'s (1988) emphasis on generating a measure applicable across service industries and their consequent focus on items in the analysis that had stable factor loadings across industries. The authors noted that 'it takes more than the simple adaptation of the SERVQUAL items to effectively address service quality in some situations' (Brown et al. 1993).

SERVQUAL in an international recreational service setting

Taylor et al. (1993) tested the applicability or 'generalisability' of the SERVQUAL model using 'confirmatory factor analysis' (Lisrel VII). The study comprised of the following three steps:

1. Confirming the dimensionality and reliability of the original SERVQUAL scale versus importance weighted SERVQUAL.
2. Assessing the performance of the summed–and–averaged dimensions of the SERVQUAL scale.
3. Assessing the influence of service quality on consumer satisfaction.

Their results of step 2 suggest that the summed–and–averaged scales appear adequate measures of service quality in both the original and importance-weighted SERVQUAL scales, while the results of step 3 indicate that service quality evaluations affect positively consumer perceptions of satisfaction across recreational services settings when importance weights are captured and considered.

However, the results of step 1 suggest that neither SERVQUAL nor importance-weighted SERVQUAL's hypothesised five-factor structures are confirmed by confirmatory factor analysis in the research settings. Furthermore, evidence is presented suggesting that the reliability of the alternative scales is not significantly different, i.e. the addition of importance measures does not appear to enhance the reliability of the scale.

These results lead to the conclusion that the SERVQUAL scale appears as a 'doubtful' scale for measuring service quality in the leisure activities setting and that although the SERVQUAL scale appears to have some support, there may be several limitations that must be addressed prior to widespread use in international applications.

SERVQUAL in a retail setting

An examination of the usefulness of SERVQUAL in a retail setting was conducted by Finn & Lamb (1991). The researchers posited that if the SERVQUAL scales possess construct validity (i.e. if the 22 items in the model measure the five dimensions) in a retail setting, then a survey of retail store customers should produce results that conform to the model.

Using Lisrel and the chi-square goodness-of-fit statistical technique to their results indicate that the SERVQUAL measurement is not appropriate in a retail store setting and challenge the validity of SERVQUAL scales as measures of the determinants of perceived quality in a retail setting. Finn & Lamb (1991) attribute the failure of the model to the following:

- The SERVQUAL scales do not capture the essence of the service quality construct in retailing. Retailing does not fit into the data set of the original four industries identified by Parasuraman et al. (1988), i.e. banking, credit card, repair and maintenance, and long distance telephone companies, and the scales are therefore inappropriate for measuring the five dimensions.
- Perceived quality in retailing is not a function of the five constructs identified by Parasuraman et al. (1988).

The abovementioned service categories are polarised closer to the pure-service end of the pure-service/pure-goods continuum than is retailing. It may well be that consumers use different criteria to evaluate competing goods retailers than they use to evaluate retailers that are exclusively service firms.

This study raises the question of whether the five dimensions used in the model are generic, and also whether the

model measures the determinants of perceived service quality in all service industries. The results reported by Finn & Lamb (1991) suggest that the construct validity of SERVQUAL should be examined on an industry by industry basis before it is used to gather consumers' perceptions of service quality.

A similar study of retail apparel customers' expectations and perceptions of service quality offered in retail speciality stores was conducted by Gagliano & Hathcote (1994). Using the SERVQUAL model the researchers discovered that they had to reanalyse their data using a four dimensional factor analysis instead of the original five due to the overlapping of two of Parasuraman's factors and the low ranking of a fifth factor. The five determinants did not factor out as expected. The researchers replaced responsiveness, assurance and empathy with personal attention and convenience arguing that these were more appropriate in the apparel specialty setting.

Gagliano & Hathcote (1994) suggested that the SERVQUAL scale should be used cautiously and that it should be refined before it can be accepted as a valid measurement scale in apparel specialty store settings.

Other criticisms of SERVQUAL

The use of difference-scores

While not generally recognised, the conceptualisation of service quality as a difference-score leads to a number of potential problems. These problems were reviewed and an investigation was carried out by Brown et al. (1993) to determine if they arose empirically with SERVQUAL. In an earlier publication by Peter, Churchill & Brown (1993) the authors cautioned the use of difference-scores as measures of constructs. They concluded that difference-scores are:

- less reliable than other measures
- may appear to demonstrate 'discriminant validity' (involves the extent to which a measure is novel and does not simply reflect some other variable)
- may only be 'spuriously' correlated to other measures since they typically do not discriminate from at least one of their components
- may exhibit variance restriction (which occurs when one of the component scores used to calculate the difference-score is consistently higher than the other component).

Brown et al. (1993) also explored a nondifference-score conceptualisation of the same facets of service used in the SERVQUAL measure. The investigation indicated that the problems with SERVQUAL, brought on by its measurement as a difference-score, manifest themselves empirically. Although SERVQUAL had high reliability, its reliability was below that of a nondifference-score measure of service quality. Moreover, not only did SERVQUAL fail to achieve discriminant validity from its components, but the perceptions component, by itself, performed as well as the difference-score on a number of criteria. SERVQUAL also exhibited variance restriction effects and the distribution of SERVQUAL scores was nonnormal.

Brown et al. (1993) established that the nondifference-score measure did not exhibit these problems. Moreover, it displayed better discriminant and nomological validity properties. They claimed that the nondifference-score measure performed better than SERVQUAL on a number of important psychometric and statistical considerations. It did so while requiring subjects to respond to only half as many items (22 instead of 44), and thus is twice as efficient. The nondifference-score measure also allowed subjects to compare their expectations and perceptions directly and did not restrict them to some arbitrary, linear difference. Thus, the authors state:

> These disappointing results raise serious doubts about the correspondence between the SERVQUAL measure and the theory underlying it. It seems the theory is incorrect in specifying five components of service quality or that the measure is incorrect in capturing only one component of service quality when theory suggests there are five dimensions. In future research it should be investigated whether SERVQUAL is only assessing a unidimensional construct, rather than the question of the validity of the theory, or measure, or both (Brown et al. 1993).

Cronin & Taylor (1992) also found that their measure of service performance produced better results than SERVQUAL. Their nondifference-score measure consisted of the perception items used to calculate SERVQUAL scores. This measure assessed service quality without relying on the disconfirmation paradigm. Brown et al. (1993) have presented a new measure that performs as well as the perceptions component of SERVQUAL yet includes a comparison of perceptions with expectations.

The results of a qualitative assessment by Teas (1993) of the original SERVQUAL model (1988) and the revised model (1990) also indicate that the measures lack discriminant validity with respect to the concepts of 'attribute importance', 'performance forecasts', and 'classic attribute ideal points'. This suggests that a considerable portion of the variance in the SERVQUAL expectations measures may be caused by respondents' misinterpretations of the question rather than to different attitudes or perceptions.

Parasuraman et al. (1993, 1994) defended the above criticism by arguing that the deficiencies of the difference-score conceptualisation are not as severe as they are made out to be: 'The superior predictive power of the P-only (perceptions) measure must be balanced against its inferior diagnostic value'. Furthermore they argue that the difference-score formulation 'provides richer, more accurate diagnostics for improving service quality' (1993) and that managers can continue to have confidence in the difference-score conceptualisation of SERVQUAL. The use of difference scores is nevertheless questionable and further research is deemed necessary.

Practical issues and the timing of administering SERVQUAL

The major shortcoming of the SERVQUAL model as identified by Carman (1990) is that Parasuraman et al. (1988) suggest collecting data on consumers' expectations of the service they are about to receive, presumably as they come in the door; then to ask a very similar battery of questions on consumers' perceptions of the service received, as they leave. Then the authors recommend finding the difference between the perceptions and expectations and using this value in the quantitative analysis. Carman finds that this procedure is not very practical nor is it the best analytical procedure and suggests alternatives on how to get around this problem.

In addition to the practical difficulties identified by Carman (1990) in administering the SERVQUAL model, timing difficulties in the administration of the two sets of SERVQUAL statements have also been experienced by other researchers. It

would appear from Zeithaml et al.'s work (1990) that the two batteries of questions should be administered at the same time and not be related to an encounter. Two studies emphasising the importance of the timing are briefly discussed below.

Bolton & Drew (1991a) offer an examination of the conceptualisation and operationalisation of service quality which questions the model of Parasuraman et al. (1985, 1988). They developed a model of the longitudinal effect of a service change on perceptions of service quality. Unlike the previous research of Carman (1990), Bolton & Drew's analysis investigates temporal changes in individual attitudes. That is, the literature on service quality typically measures the construct and its underlying dimensions using cross-sectional data rather than attempting to measure attitude changes in service quality perceptions over time. Bolton & Drew criticise the cross-sectional approach for failing to account for the possibility that the factors which explain differences among consumers' attitudes at a given time (t), may not be the same as the factors that cause changes in a given consumer's attitude at the time ($t + 1$). Thus the magnitude and direction of the gap between customer expectations prior to a service and the evaluation of the service received, impact on the level of consumer satisfaction/dissatisfaction.

The findings of another study conducted by Clow & Vorhies (1993) is adequately summarised below:

> ... the simultaneous measurement of consumer expectations and evaluation of service quality led to biased measures of expectations. Expectations continue to play an important role following the consumption experience. For dissatisfied consumers, the gap between expectations and experience gets larger. For satisfied consumers, the gap becomes smaller. For accurate measures of service quality, consumer expectations should be measured before the service experience and evaluation of the service after the patronage occurs (Clow & Vorhies 1993).

The exclusion of price or value

The SERVQUAL model has also been criticised for ignoring price or value. Consumers' expectations and consequent evaluation of the service must be affected by price. Zeithaml et al. (1990) do argue that a key influence of customers' expectations is price, but the conceptualisation of quality as distinct from value is why it is not perpetrated into the definition of perceived quality. Smith (1995) argues that this distinction is of little value when assessing consumer evaluations of a firm or its competitors: 'Expectations of an excellent organisation would appear to bias consumer expectations towards those of high-priced providers and would be of little value to those targeting the low-price/reasonable quality segment'. As a result, Freeman & Dart (1993) included fees as a dimension in their study of accounting firms.

Criticisms of the expectations scale

Two key issues have arisen as a result of the practice of calculating the gap between consumers' expectations and perceptions as a measure of service quality. Firstly, Teas (1993, 1994) questions the meaning of the expectations measure and suggests that a substantial portion of the variance in the expectations scale is due to differences in respondents' interpretations of the question being asked rather than to the variance in respondents' attitudes. In a study conducted by Smith (1995) the revised expectations measure (i.e. from 'should' to 'excellent companies will') appeared to have little advantage over the original scale. The mean score for the expectations scale was 6.401. She noted that of the 29 items the lowest mean score was 5.13. These high scores for the expectations scale are likely to result in negative P-E scores, 'which affects both the diagnostic utility of the measure and the underlying conceptual interpretation' (Smith 1995).

The second issue is whether the expectations battery should be administered at all. Smith (1995) noted that several researchers neglected to measure expectations and several others highlighted the independent effects of perceptions on consumer evaluations of satisfaction or quality (Carman 1990; Bolton & Drew 1991a; Cronin & Taylor 1992). Consequently, the usefulness of the adoption of the disconfirmation paradigm was brought into question.

Cronin & Taylor (1992, 1994) questioned the five dimensions of the SERVQUAL model by arguing that the disconfirmation-based paradigm of the model is flawed. They also provided empirical evidence that service quality should be measured as an attitude. The authors have proposed an alternative measure called SERVPERF, which is a performance-based measure of service. Apart from other literature supporting the performance-based paradigm (Babakus & Boller 1992; Babakus & Mangold 1992; Boulding et al. 1993), Cronin & Taylor (1994) cite the following as the 'most telling evidence thus far':

> Our results are incompatible with both the one-dimensional view of expectations and the gap formation of service quality. Instead, we find that service quality is directly influenced only by perceptions [of performance] (Boulding et al. 1993).

Consumers' interpretation of gap scores

Parasuraman et al.'s (1988, 1991) conceptual interpretation of gap scores suggest that where gap scores are positive the respondent perceives higher quality and therefore would offer more favourable evaluations.

The findings of a study conducted by Smith (1995) illustrate how the respondent's evaluation of the standard of a service does not solely derive from a comparison of expectations of excellence with perceived performance, but also from other factors which may include the importance of elements of a service, and experience of alternative suppliers. Furthermore, attribution and halo effects may cause respondents to perceive their chosen supplier more favourably. The impact of response sets due to the nature of the scales and the respondents, should also be considered.

Midpoint of the perceptions scale

One further reason why SERVQUAL may present meaningless information with respect to the interpretation of gap scores is where the respondent 'does not know' and may therefore record a '4' on the perceptions scale. Whether expectations are positive or negative, the resultant score would suggest inappropriate action to the practitioner (Smith 1995).

Smith (1995) identified at least five broad meanings which respondents assigned to the midpoint ('4') of the scale, i.e.:

1. An evaluative response including intention
2. Observations of lack of consistency of the service provider

3. Neutrality
4. Assumptions
5. 'I don't know'

Smith found that the percentage of respondents recording '4' on their perceptions were substantial (that is, up to 24% in certain cases) which warranted concern. 'Clearly, when considering vector attributes the resultant gap score will be negative, offering potential for misinterpretation'.

Managerial implications and recommendations

The results reported by various researchers suggest that the construct validity of SERVQUAL should be examined on an industry by industry basis before it is used to gather consumers' perceptions of service quality. Managers are advised to carefully consider which issues are important to service quality in their specific environments and to modify the SERVQUAL scale as needed. The nondifference-score version of the scale can serve as a useful starting point for these modifications.

Cronin & Taylor (1992, 1994) have suggested a performance-based measure of service as an improved means of measuring the service quality construct. They have consistently argued that managers should not include consumer expectations in measures of service quality, although expectations can impart valuable information 'if their unique effect on purchase behaviours and performance perceptions are conceptualized properly'. In addition to performance-based measures, performance-based maps would be of benefit.

Other researchers have provided a means of overcoming psychometric problems with SERVQUAL. Brown et al. (1993) and Carman (1990) suggested that statements be rephrased and that respondents record their evaluation on a scale ranging from 'much worse than I expected' through 'neutral' and 'much better than I expected'.

Other issues listed in this article also need to be carefully considered before managers apply SERVQUAL to a particular setting. The continuing debate about SERVQUAL is encouraging for managers, as a universally acceptable tool should begin to emerge once the conceptual, methodological and interpretive issues surrounding SERVQUAL are resolved.

Presently, however, an important implication is that managers should not treat SERVQUAL as an 'off the shelf' (Finn & Lamb 1991) measure of perceived quality. Considerable refinement is needed for specific companies and industries before applying the model.

Future research

The criticisms cited in this article should not serve to render the SERVQUAL model redundant. However, it should encourage researchers to use the existing model as a basis for further exploration.

The need for a theoretically sound and generalisable measuring system in service industries is immense. Managers are often forced to use quality measures which are appropriate for rating product quality but not service quality, or that lack both conceptual bases and empirical generalisability. This can result in faulty analyses which could lead to poor decision-making. An appropriate measuring system will help service managers to develop quality standards which more accurately represent the activities that result in the provision of the service.

Despite the various methods suggested with respect to measuring service quality, none except SERVQUAL has received extensive empirical testing. The debate about SERVQUAL makes it clear that the conceptual clarity about the dimensions of service quality has not as yet been achieved. To have an impact on service strategy, the studies of service quality will need to incorporate variables other than those identified in SERVQUAL, e.g. price/quality or value relationship. The incorporation of these variables would help to clarify the relative priorities of not only the dimensions of quality, but also the other 'service winners' (Rosen & Karwan 1994).

Thus, service firms are still faced with uncertainty when trying to identify an appropriate measure of service quality. Given the importance of measuring and controlling service quality and the shortcomings of existing efforts, additional research in this area seems warranted.

Conclusion

As service quality has become increasingly important to service strategies, its assessment has become more critical; strides have been made in recent years to measure it. The most popular measure, SERVQUAL, involves the subtraction of subjects' expectations of the service they would receive from their perceptions of the service they actually did get with respect to specific items. The differences are averaged to produce a total score for service quality. While the scale attempted to provide a generalisable measure of service quality, a number of studies have shown that such a claim may be inappropriate. In addition, despite initial popularity among practitioners and academics, SERVQUAL has been criticised on both conceptual and methodological grounds.

Several researchers have questioned the extent to which the model is generic to all industries, and similarly, have failed to identify its five underlying dimensions. Other issues vital to the consumer's evaluation of the service are not addressed by the model. Some researchers have also questioned the relevance of expectations in the model as well as the timing and frequency of administration. Others have argued against the use of difference-scores which has led to psychometric problems in the model.

The P-E formulation has been shown to be problematic in that the scores are usually negative, which questions the current base employed by SERVQUAL, and the reasons why positive scores might be obtained. The use of a midpoint scale in the model also has its shortcomings.

The SERVQUAL model remains an issue of debate in contemporary services marketing literature. Some researchers have recommended the abandonment of the model altogether, while others continue to modify or extend the model in their applications. Despite its criticisms, the ground-breaking work of Zeithaml et al.(1990) has paved the way for a deeper understanding of service quality and the eventual development of an important measurement tool.

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Critical success factors for management information systems

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Computer-based management information systems provide powerful support to managers at all levels to perform strategic planning and to control daily operations. Such systems can vary widely in terms of complexity, sophistication, and the level of integration within an organisation. A management information system cannot be bought off the shelf and be ready for use like a word processing package - it requires a formal project to acquire it and to adapt it to meet the specific needs of the organisation. After the acquisition and implementation process, it requires teams of people to feed data into it, to process the data and to generate the required reports. A support infrastructure is required which includes the capability to handle special requests, to perform routine and emergency maintenance, and to ensure that the appropriate supplies of materials and spares are always available. Because much of the information is of a sensitive nature, security is important, as is the need for backups and a fall-back capability. Management information systems require a large investment from companies in terms of capital outlay as well as the training of users, operators, and maintainers. They also tend to become a highly critical facility of the organisation and must therefore perform optimally. This article describes a research project that attempted to identify the factors that could make the difference between success and failure for management information systems. A number of proposed success factors were identified in the literature on management information systems. The degree to which these factors were applied in real companies were determined by means of questionnaires, and compared with the perceived success of the management information systems concerned. The analysis of the questionnaires led to the identification of two groups of success factors: 119 factors that most MIS managers regarded as important, and 28 factors that were applied to a greater extent in the more successful systems.

Introduction

Although computer systems that provide an information service to managers differ widely in terms of functionality, technology, and level of integration, certain factors can be identified that are important or even critical for the development, implementation, and operation of most management information systems in modern organisations. This article describes a research study that has been conducted to identify the critical success factors for management information systems (Van Aardt 1995).

Problem definition

Today, almost every organisation of medium or high complexity relies on computer-based management information systems to provide the information required to make strategic and operational decisions. These systems may range from simple spreadsheets to multimillion rand integrated systems that cover all facets of the organisation. In addition to the capital outlay required to acquire such systems, organisations also invest heavily in people power and in the training of personnel to operate the systems. But the investment in these systems is usually dwarfed by the financial implications of the decisions that management needs to make, based on the output of the management information systems of the organisation. It is therefore very important that an organisation's management information systems should be effective and reliable, and that they will enable managers at all levels to make the correct decisions timeously.

The problem can be phrased as a simple management question: What can be done to reduce the risk and increase the chances of success when implementing and operating a management information system?

The research approach

A study of the literature on management information systems had identified potential success factors for the implementation and operation of management information systems. These proposed success factors were then evaluated by testing the hypothesis that there is a positive correlation between the presence of the factor and the success of the system.

The data required

The data gathering process involved the following steps:

- A set of proposed success factors had to be identified from the literature.

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- The degree to which the proposed factors had been applied by organisations in practice had to be determined. For this purpose, questionnaires were sent to the managers of the MIS departments of companies, asking questions about the way they developed, implemented and operated their systems.
- The degree of success of the related management information systems had to be determined. This was achieved by sending questionnaires to the users of the systems (the company managers) to determine the perceived success of the systems in terms of specific success criteria. For each of these success criteria the respondent was asked to indicate how important the particular criterion was for him/her, and then how he/she rated the organisation's systems in terms of that criterion.

The population addressed by the research

The population addressed by the research can be defined as management information systems applied in manufacturing organisations of medium size. Although management information systems are applied in most organisations of medium and high complexity, the differences between the systems used in a service organisation such as a hospital, and those used in a factory may be quite significant. Therefore, the guidelines that may be derived for a manufacturing organisation may not be fully applicable for certain other types of organisations.

The sample for this research was drawn from manufacturing organisations of medium size, with 400 to 1500 employees. The technical aspects specific to manufacturing were not addressed, and therefore the results may be useful over a broader range of organisations. No tests have been performed to determine the confidence with which the conclusions could be applied in other organisation types.

The response to the questionnaires

A total of 150 sets of questionnaires were sent out. Of these, only 30 fully useable sets were received back in time for inclusion in the analysis. Although the response rate was poor, sufficient information could be obtained from the returned questionnaires to do a conservative evaluation of the proposed success factors. Since the goal of the research was to evaluate the success factors proposed in the literature, a perfect statistical experiment is probably not required. In the analysis, the policy was to err on the side where the least damage would occur - e.g. the cost of paying attention to a factor which is not really critical for success would be less than the cost of neglecting one that actually is important.

Determining the success of a company's management information system

The evaluation of the success of (management) information systems has been the topic of several research articles, and the last word has not yet been spoken on the subject. The approach followed here has been based on the assumption that the users' perception of success can be used as a measure (surrogate) of actual success. The questionnaires and the basic approach have been derived from the research done by Innes (1991), who in turn based her approach largely on the work of Miller (1989).

The process to derive a user's rating of the success of his/her company's system is based an the concept of Multi-Factor Evaluation (Render & Stair 1991: 199). The rating is derived by taking the average of the user's ratings for each of the individual success criteria, weighted by the importance that he/she attached to the criterion, so that a criterion that was regarded as very important would weigh much more than one that was not important at all.

The mean of the ratings of the individual users from a responding company was used as the ultimate success rating for the management information system of that company. Because of the small sample size and especially the large number of cases where three or fewer users responded, the absolute values of the ratings were highly suspect. It was therefore decided to group the companies into three levels: top, middle and bottom. In the analysis of the success factors, the degree to which each proposed factor has been applied, was compared between the top and bottom companies, while the middle level provided a degree of separation (a buffer) to ensure that the two groups that were being compared really did differ in terms of the success of their management information systems.

Analysis of the responses from the MIS managers

From the literature, a total of 174 factors had been identified which could contribute to the successful development, implementation, and operation of management information systems. These factors were phrased in the form of questions such as 'Does the MIS provide protection of sensitive information against unauthorised access?' For each question, the MIS manager could select one of seven responses:

1: No/Not at all
2: Barely/To a small extent
3: Moderately/Somewhat/Medium
4: Largely/Mostly
5: Yes/Definitely/Fully
X: Not applicable
?: Cannot answer/Don't know.

The analysis of the questionnaires received from the MIS managers led to the identification of two major groups of factors:

1. Those factors that are strongly applied in most management information systems - the 'given' factors without which no MIS manager would dream to operate or develop his/her system.

   In this case the factors were evaluated in terms of the following hypotheses:

   Null hypothesis: The population's mean application of the factor is 3, i.e. medium.

   $$H_0: \mu = 3$$

   Alternative hypothesis: The population's mean application of the factor is greater than 3, i.e. it is applied mostly or fully.

   $$H_1: \mu > 3$$

   A total of 119 factors have been identified for which the null hypothesis could be rejected at the 99 per cent of confidence, implying that these factors are largely to fully applied in most management information systems.

2. Those factors which are applied to a significantly larger extent by the top success group - the factors that distinguish the highly successful systems from the below average ones.

The hypotheses that were evaluated in this case, were:

Null hypothesis: The mean application of the factor by the top success group and by the bottom group is the same:

$$H_0: \mu_{Top} = \mu_{Bottom}$$

Alternative hypothesis: The mean application of the factor by the top success group is higher than for the bottom group:

$$H_1: \mu_{Top} > \mu_{Bottom}$$

The analysis led to the identification of 28 factors for which the null hypothesis could be rejected at the 90 per cent level of confidence, implying that the top group of companies apply these factors to a significantly larger extent than the bottom group. The smaller level of confidence (90 % as opposed to 99 % for (1)) has been chosen in this case to reduce the effect of Type II errors, i.e. accepting the null hypothesis if it is false. To be on the conservative side, it is better to identify too many factors than to miss some.

The resultant guidelines for management information systems

A brief overview will now be given of the factors that have been identified in the research as 'critical success factors' for the development, implementation, and operation of management information systems.

A strategic approach to management information systems

The literature stresses the need for a planned, systematic approach to management information systems, and the risks involved in allowing systems to evolve haphazardly on the impulse of individual managers (Awad 1988: 83, 387; Clagett et al. 1989: 134, 136; Long 1989: 267). If an organisation does not have a comprehensive management information system strategy, it may end up with 'islands of information' where each manager owns his/her own portion (and version!) of the total picture, which he/she guards jealously and which he/she tends to regard as the absolute truth (Clagett et al. 1989: 123). The research project confirmed that this truth is largely recognised in organisations, and that they specifically emphasise the following guidelines:

- The objectives of the management information system must be formally defined, and must be based on the objectives of the organisation (Clagett et al. 1989: 135).
- The organisational structure must support information flow from the lowest to the highest levels (Clagett et al. 1989: 88).
- Lower-level information systems in the organisation must feed the necessary information directly into the management information system, and all equipment and software used in any information system should support the flow of information to other systems (Long 1989: 103).
- All systems should use the same databases, thus avoiding the duplication of data and the use of conflicting information. The management information system should also have direct access to the source of information, eliminating intermediaries who can distort the data (Long 1989: 103; Dilton-Hill 1993: 24).
- The benefits of the system must warrant its cost. As with any other tool in the organisation, the temptation to spend money on unnecessary features must be resisted, and the most cost-effective solution should be selected (Burkan 1991: 25).

The research showed that in the case of the more successful systems, the system objectives clearly stated that the purpose of the system was to support and assist management, and the management information system was recognised as a strategic weapon for the organisation. Emphasis was placed on the capability of information systems to share the same data and to feed data from the lower to the higher levels. They also adopted a life-cycle approach, with planned updates of hardware, software, and the complete information systems. Finally, cost-effectiveness analyses were performed to ensure that the value added would warrant the cost.

Management information system development and implementation

Development and implementation of a management information system is a complex and expensive process and the risk is high that cost and schedule overruns would occur or that the users' requirements would not be met. It is therefore essential that the process should be treated as a formal project and that the principles of project management should be fully applied.

Conceptual design

During the conceptual design phase, the basic character of the system is determined, and the major design decisions are made. The users, and especially top management, should be intimately involved and their preferences should guide the process (Clagett et al. 1989: 151). Specific trade-off studies should be performed to narrow down the choices and to ensure that the user gets a system that meets his/her needs as closely as possible while staying within the budget.

It is not only the organisation's managers who will determine its ultimate success; it will depend greatly upon the staff who will enter data into it, maintain it, or who will use it to provide information to the top managers. Certain procedures that used to be performed manually will be taken over by the system, or the implementation of the system may require some reorganisation within the company. If all the people whose lives will be affected by the system are involved as early as possible, the chances of success are greatly enhanced (Clagett et al. 1989: 180).

The system is installed to meet specific needs of the managers, and these needs must be clearly identified in quantitative terms. The exact information needs of each manager must be identified (Clagett et al. 1989: 159, 161). On the other hand, it does not make sense to automate outdated and ineffective processes. It is therefore essential to precede the introduction of a management information system with a careful scrutiny of the company's business processes.

One of the most important decisions that need to be taken in the implementation of a management information system, is the choice of technology - state of the art or proven technology? A new technology implies significant risk and may cause the project to slip or fail. A proven technology may imply less risk, but it also implies a greater probability that some of the users' more special needs may not be met. A proven technology is also often a somewhat aged one, and if the system is going to have a lifetime of about ten years, it may become difficult to support it at the end of that period.

Another very important decision needs to be made early in the conceptual design phase: custom development of proprietary software? It essentially boils down to a choice between low risk and exactly meeting the users' requirements. Custom development is very risky compared to proprietary software which has been tested by many users, but no proprietary package can meet the special requirements of all users. On the other hand, a proprietary package can be so versatile and powerful that its cost and the cost of the hardware it requires cannot be justified for the relatively simple needs of a smaller company.

The research showed that in the case of the more successful systems, more trouble was taken to involve staff members in the conceptual design, to ensure the compatibility of the new system with existing or planned future information systems, and to consider the external constraints that could affect the system.

Detailed design

Specialists who understand the technology behind the system perform the detailed design. Analysis of the available methodologies and techniques falls beyond the scope of this article, but certain basic principles need to be recognised since they could make the difference between success and failure.

In the first place, it is necessary to identify the sources of all the data that the system will require and to develop a suitable data capturing process, with the appropriate source documents and data entry screens (Clagett et al. 1989: 193). Similarly, the destinations and formats of all the output information generated by the system need to be designed in detail. Each output that the system generates must have a specific recipient who will have ideas about the exact format that he/she prefers.

The database design and the processing of data so that it becomes useful information are specific disciplines of computer science, but it is obvious that a thorough design of these aspects is essential for the success of a management information system. It is also the area where the response time of the system is determined.

A user communicates with the management information system by means of some kind of a menu system that allows him/her to select a specific function or information item. The advances in menu system design have been very rapid in recent years, often with an emphasis on appearances rather than functionality. What is important for a management information system, is the ease and speed with which the user can access the required information. A very deep menu structure can cause user frustration because he/she has to go through too many steps to get to the information, while a wide structure may confront the user with too many options at a time. The way that the menu structure allows the user to communicate with the system is a primary factor that determines user-friendliness (Burkan 1991: 134).

The detailed design should not only address the system itself but the support procedures and support infrastructure must also be designed. For example, what regular maintenance will be required? How will emergency and after-hour maintenance be handled? What provision is required for user complaints or special requests? Who will be responsible for the acquisition of supplies and spares and what quantities should be kept in stock? When will system upgrades occur and how will new releases of proprietary software be incorporated? What training needs to be arranged for the data capturing clerks, the support staff, and the users? (Clagett et al. 1989: 222, 226). It is also necessary to design the organisation that will operate and support the system. In the end, it is the MIS department that provides an information service to the managers, and the management information system is really only the tool that they use.

No management information system with a limited budget can fully satisfy all the requirements of all the managers. It is very important that the users should have clarity about the features that the system will *not* have, and the functions it will *not* be able to provide. Ensuring that the users understand the limitations of the system is essential if user acceptance is to be achieved (Burkan 1991: 85).

In the research it was found that for the more successful systems, the designers paid more attention to the design of the menu system and the data processing. Together with the database design, these two factors will determine to a large extent how the system will behave, what its reaction times will be, and how it will interact with the user.

Development

During the development phase, the designs are translated into software, or the selected proprietary software is acquired and customised where necessary. Very early during this process, the necessary computer equipment must be acquired, and if the system is based on a computer network, it must be installed and tested. As the system evolves, obvious improvements to the design will become apparent, but a strict and formal change control system is essential to ensure overall system integrity. In parallel with the development of the system itself, the support infrastructure must also be developed and the necessary staff must be recruited. Initial supplies of source documents must be ordered, as well as all other supplies and spares that have been identified during the design.

Implementation and evaluation

The implementation phase is concerned with setting the system to work and switching from the old system to the new one (Awad 1988: 517; Clagett et al. 1989: 205, 207; Long 1989: 389; O'Brien 1990: 526). It includes physical installation, acceptance testing, transferring data from the old system to the new one, loading initial data into the system, training the operators, data capture clerks and users, and assisting everyone to overcome initial problems. A detailed implementation plan is essential, and provision should be made for a thorough evaluation period, during which the necessary fine-tuning and warranty repairs can be performed. The research showed that for the successful systems special attention was given to the training of support staff.

The daily operation of management information systems

In the daily operation of a management information system, it is essential that the users should recognise its importance and be involved in ensuring its effectiveness. A senior manager should be responsible to control activities related to the system. He/she should supervise and approve the design, upgrading and maintenance of the system. Ideally, a senior manager should act as the system's sponsor to protect the system's goals in the case of conflicting interests (Clagett et al. 1989: 10; Burkan 1991: 24).

The MIS department must have clearly defined roles, and all managers and employees should understand what the department's functions are. It should be adequately staffed and equipped, and it should provide a user liaison person (help desk) to handle users' requests and make sure that they receive prompt attention (Awad 1988: 543; Long 1989: 446; O'Brien 1990: 481-489).

Controls must be in place to ensure that the system is used as it was intended (Clagett et al. 1989: 222; Long 1989: 394; O'Brien 1990: 542). The controls should include protection against human errors, fraud, and equipment failure. Provision must be made for routine and emergency maintenance, and to handle special requests from the users. Since both the users and their requirements will change, provision must be made to adapt the system to changing requirements. A programme must be implemented to ensure ongoing system improvement (Long 1989: 393; Mathieson & Warton 1993: 34, 37).

In the more successful systems, particular attention is paid to ensure that the system is used as it was designed. Procedures are in place to minimise human errors, to protect against fraud, to provide emergency maintenance, to handle special requests from the users, and to adapt to changing requirements.

Finally, security and error protection must receive special attention. Of the various success criteria, the users rated this as the most important. If a system loses its data, or if unauthorised people gain access to sensitive data, the managers will not trust the system. It should perform validation of operator inputs, of the information processing, and of its own outputs (Long 1989: 394; O'Brien 1990: 542-547). Information must be protected against unauthorised access, and regular backups must be made. To ensure that the system's security and error protection meet these high standards, regular independent audits should be performed (Long 1989: 396; O'Brien 1990: 553).

Why do management information systems fail?

The research did not provide any data which could directly be used to answer this question. Obviously a system fails if enough of the important success factors are ignored. During system development, the project can fail because its complexity and cost are underestimated, or if the user requirements are not correctly analysed. However, the users do not necessarily know enough about management information systems to be able to identify all the requirements that the system should meet.

An insufficient budget can cause a management information system to fail during the development phase or to perform poorly during the normal operations. It is essential that experienced people should be involved in the estimation of development cost, and blindly selecting the lowest tender often leads to disaster.

Using the wrong technology could cause a system to fail during the development process, or to perform poorly after implementation. Using the wrong development methodology or a development team with insufficient skills and experience can lead to a project that slips and overspends drastically.

A system based on proprietary software can fail, even if the same software has been used successfully in many other places. That typically happens if the software is applied in a situation that differs too much from the original target application, or if the system requires such extended customisation that it invalidates the testing that had been done on the initial software. An overeager salesperson that makes promises that cannot be kept may be responsible for customer disappointment.

Human factors can cause a system to fail, and the major cause is poor communication: between the users and the development team; the users and the MIS manager; the users and the support team, etc. Inadequate training of the users, the data capture clerks, the support team or even the development team can lead to poor system performance.

If the necessary controls are not in place to ensure that the system is used as intended, it can lead to unreliability. Bureaucracy, on the other hand, can lead to user rejection. The low cost and ease of use of the personal computer provides a serious temptation for managers to create their own little islands of information. If they proliferate in an uncontrolled fashion, the day will come when managers will start to question the validity of the information provided by the management information system. This can only be prevented if the goal of an integrated system with a common database for everybody is pursued relentlessly.

Summary

An organisation's management information system is an important, but also very expensive tool. This article provides some guidelines that could lead to more successful development, implementation, and operation of management information systems in modern organisations.

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Corporate diversification motives and consequences: A theoretical synthesis

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The development of the industrial organisation landscape has been characterised in particular by the increased significance of the multibusiness firm and its ascendancy in the industrialised world. Since the 1960s firms have expanded through mergers and acquisitions. This indicated a shift towards unrelated diversification and therefore the 'firm-as-portfolio' model became dominant in industrial organisation. Nevertheless, recent research appears to imply that the diversification trend has come to an end. Although these findings seem to indicate support for the view that the conglomerate is a transitional form, the prevalence and persistence of highly diversified groups can, however, not be ignored. It may well be that some firms are good at focus while others are good at managing diversity. This suggests that a different perspective may be needed in order to understand diversification/divestiture decisions. It should probably be asked whether a business unit will benefit from being part of a diversified form. The aim of this article is to explore the motives behind firm diversification moves and to examine existing evidence regarding the consequences of such moves.

Introduction

The rise to prominence of the large multibusiness firm and its dominance in the industrialised world can be regarded as the most distinguishing feature in the development of the industrial organisation landscape of the twentieth century (Davis, Diekman & Tinsley 1994). Initially it has been the need for market power or scale and for securing supplies and control over distribution channels that led firms to adopt strategies of horizontal and vertical integration and, what became known as the multidivisional organisational structure or the M-form (Chandler 1962; Williamson 1975). However, the introduction of antitrust measures to safeguard and/or enhance competition in Western economies had the effect of limiting firm growth opportunities, in core business areas, to organic growth. From the 1960s, therefore, firms turned to unrelated diversification through mergers and acquisitions to satisfy their growth needs (Shleifer & Vishny 1994), leading to the largest takeover wave since the monopoly-driven mergers at the turn of the century (Stigler 1968).

From the 1960s to the 1980s the 'firm-as-portfolio' model (Fligstein 1991) became 'institutionalised' (Davis et al. 1994). The structural arrangement used to organise activities in these firms still has been the M-form or, a derivative, the holding company or conglomerate structure with first-level differentiation on the basis of semi-autonomous companies. However, recent evidence emanating from research on corporate restructuring and corporate refocusing seems to suggest that the diversification trend has been arrested. Davis et al. (1994), for example, argue that by the 1990s, the conglomerate firm or the 'firm-as-portfolio' model in the United States had in effect become 'deinstitutionalised'. They report not only a one-third drop in the level of total diversification amongst *Fortune 500* firms, but also a 44 per cent decline in the level of unrelated diversification over the course of the 1980s.

Apart from this 'return to corporate specialisation' (Bhagat, Shleifer & Vishny 1990), there is also evidence which seems to suggest that the merger and acquisition wave of the 1960s and the 1970s had been a mistake. Ravenscraft & Scherer (1987) found that between 19 and 47 per cent of all acquisitions made in this period had subsequently been divested. Shleifer & Vishny (1994: 409) argue that 'both theory and evidence strongly favor the view that unrelated diversification was a mistake from the start'. Although these findings seem to indicate support for the view that the conglomerate is a transitional form (Teece, Rumelt, Dosi & Winter 1994), the prevalence and persistence of highly diversified groups can, nevertheless,

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not be ignored. It may well be that some firms are good at focus while others are good at managing diversity (Reed's (1991) theory of bimodality in diversification). This suggests that a different perspective may be needed in order to understand diversification/divestiture decisions. Rather than attempting to find general 'truths' regarding such decisions, perhaps the appropriate question that should be asked is: 'Does a business unit benefit from being part of a diversified form?' (Dess, Gupta, Hennart & Hill 1995: 374).

The aim of this article is to explore the motives behind firm diversification moves and to examine existing evidence regarding the consequences of such moves. First, corporate diversifiaction will be defined and conceptualised for present purposes. This is followed by a review and synthesis of diversification theories, that is, the motives for or explanations behind corporate diversification. In the third section, an overview is provided of existing evidence regarding the consequences of diversification.

Definition and conceptualisation

In an authoritative synthesis of research on corporate diversification, Ramanujam & Varadarajan (1989) report a great deal of variation in the way diversification is conceptualised, defined and measured. For present purposes, their definition of diversification is adopted as follows: 'Diversification is defined as the entry of a firm or business unit into new lines of activity, either by processes of internal business development or acquisition, which entail changes in its administrative structure, systems, and other management processes' (Ramanujam & Varadarajan 1989: 525).

The effect of diversification is an increase in firm scope or diversity, that is, an increase in the number of distinct businesses in which a firm is simultaneously active (Pitts & Hopkins 1982). Note that the definition above allows for two fundamental modes of diversification: through organic growth or via acquisition. With regard to the direction of diversification, Ramanujam & Varadarajan (1989) found that most diversification moves can be understood in terms of change along one of Abell's (1980) three dimensions for conceptualising a business, namely the customer functions the firm seeks to satisfy, the customer groups it targets, and the technologies it uses in the process. Finally, the extent of firm diversification or its diversity status (Ramanujam & Varadarajan 1989) can be conceived in terms of three broad categories, namely vertically integrated, related-diversified and unrelated-diversified (Rumelt 1974).

Diversification theories

Extensive literatures have been developed since the early 1970s to explain firm diversification moves and various competing and complementary theories have been advanced. These theories can be divided roughly into externally-oriented (or environmental) theories, focusing mainly on unrelated diversification, and internally-oriented (that is, organisational and managerial) theories. Note that other classifications of diversification theories are possible and also that the categories are not mutually exclusive. Reed & Luffman (1986) for example suggest that firms diversify for proactive and/or defensive reasons.

External explanations

Bhagat et al. (1990) argue that the aggressive enforcement of antitrust legislation since World War II, especially in the United States, encouraged unrelated diversification and thus the formation of conglomerates. Antitrust enforcement frustrated the horizontal growth needs of firms and left them with no option but to expand into markets unrelated to their core business activities (Donaldson 1994: 28; Fligstein 1991). Capital market sentiments played a significant role in this process. Markides (1995: 21) states that '[i]t is now widely accepted that the stock market systematically "overvalued" the stock price of companies that grew by acquisition in the 1960s'. This was not only because growth per se was valued, but also because a new breed of mutual fund managers placed a high value on earnings stability, which could be obtained through a diversified portfolio (Donaldson 1994: 25–26). The signals emanating from the capital markets therefore provided incentives to firms to pursue diversification strategies.

It was, however, not only the investment community but also society in general which appeared to endorse firm diversification strategies. Donaldson (1994: 19) argues that the leaders of society at the time, who were the children of the Great Depression, encouraged corporate management to adopt a pluralistic view of their responsibility to the various corporate constituencies, and thus to emphasise the maximisation of corporate as opposed to shareholder wealth (Donaldson & Lorsch 1983), which could be pursued through aggressive growth/diversification strategies. Furthermore, from an institutional perspective, the dramatic growth experienced by the first movers into unrelated diversification prompted other organisations to imitate their strategy or risk losing legitimacy (Fligstein 1991).

Finally, Goold & Luchs (1993) suggest that the rhetoric emanating from business schools and propagated by management theorists at the time stressed the applicability of general management skills across industries and provided professional managers with the necessary confidence to pursue unrelated diversification. So did the development of portfolio management tools which assisted management in developing balanced portfolios of businesses (Collis & Montgomery 1995), in accordance with the requirements of the capital market.

Internal explanations

The internal theories on firm diversification take either an insidious view of managerial intentions, mainly represented by agency theorists, or a more benign one propagated by resource-based and transaction cost theorists, organisational economists and strategy researchers. Agency theorists have proposed that diversification and the quest for growth were mainly the result of managerial self-interest in attempting to minimise risk and to increase power, income and employment stability (Jensen & Meckling 1976; Amihud & Lev 1981). In the process, firms might have grown beyond the point that optimises shareholder value. Furthermore, according to the free cash flow hypothesis (Jensen 1986), agency costs would be exacerbated by the retention by corporate managers of free cash (defined as unused cash after all positive net present value projects have been funded), rather than its distribution to shareholders. This, so the argument goes, would allow managers to avoid monitoring by the financial markets and to divert these funds to less productive uses in pursuit of further growth and diversification.

Not discounting the plausibility of the above theories, a more positive perspective, and in fact the prevailing theory of diversification (Chatterjee & Wernerfelt 1991; Peteraf 1993), can be characterised as resource-based. It has for long been a

dominant theme in the literature that diversification moves should be based on existing firm resources. For example, Penrose (1959) suggests that the need to ensure the continuing full utilisation of firm resources (in particular human capital) drives corporate growth and diversification, Rumelt (1974) mentions 'core skills' which can be used in other markets, and Chandler (1991) argues that successful diversification depends on the extent to which the marketing and technical expertise of top management can be transferred to other business areas.

Hill (1994) proposes that such diversification, by definition, has to be related to the existing business of the firm as it entails the transfer of firm-specific capabilities to new areas of business, and that it most often takes place through internal as opposed to acquisitive growth. Indeed, the diversification trend today seems to support the resource-based view. Markides (1995: 8) provides some empirical evidence that firms increasingly diversify into markets related to their core businesses, and likewise do Teece et al. (1994) who show that as US firms grow more diverse, they nevertheless maintain a constant level of coherence between neighbouring activities.

In essence, the resource-based theory of diversification rests on the economies of scope or synergy that can be achieved by using the superior governance characteristics of the M-form to transfer excess resources, which have multiple uses (that is, they are fungible) and for which there is market failure (e.g. due to high transaction costs or imperfect mobility), to other markets where the resource requirements match the excess resource capabilities (Teece 1982; Dundas & Richardson 1980; Williamson 1975,1985; Montgomery & Wernerfelt 1988; Palepu 1985). The diversified firm therefore assumes the role of an internal capital market, with the corporate centre largely involved in identifying market opportunities for the transfer of excess resources such as managerial skills, brand names, financial resources, proprietary technologies and customer loyalty, the management of financial flows, and financial monitoring.

Building on this work, Teece et al. (1994) address the issue of the degree of relatedness (which they term 'coherence') among a firm's lines of business, where coherence is defined in terms of common technological and market characteristics. Drawing on concepts from organisational economics, they propose that the boundaries of the corporation should be understood in terms of learning, path dependencies, technological opportunities, the selection environment, and the firm's position in complementary assets.

Other reasons, propagated by industrial organisation and strategy researchers, why astute corporate managers should pursue diversification include the advantages associated with market power (Berry 1971; Rhoades 1973; Palepu 1985) and growth (Guth 1980). By maximising the size of their firms through acquisitive diversification strategies, corporate managers not only satisfy the growth expectations of stock markets (as discussed above), but also their quest for self-reliance and the maximisation of corporate wealth (Donaldson 1994: 19). In addition, from a financial point of view, growth by acquisition allows firms to increase their debt capacities with significant tax benefits as a result (Galai & Masulis 1976).

Related vs. unrelated diversification

Although there are opportunities for economies of scope through unrelated diversification, especially when considering firm assets such as customer loyalty, access to distribution channels, and brand names, Hill (1994) suggests that the pursuit of synergistic economies is the principal aim of a strategy of related diversification, whereas for unrelated diversification, the main avenue for value creation arises from 'allocation economies' or, in other words, from the benefits associated with the internal capital market. Recent research evidence seems to support the view that differences exist in the forces that encourage related and unrelated diversification. Chatterjee & Wernerfelt (1991), reporting empirical support for the resource-based theory of diversification, suggest that excess physical resources, most knowledge-based resources, and external financial resources are associated with more related diversification. On the other hand, they found that excess internal financial resources are associated with more unrelated diversification.

Roughly supporting these results, Ollinger (1994) found that in the oil industry in the United States, market and technological change tended to motivate entry into related markets, whereas surplus cash flow, government regulatory policy, and limited related investment opportunities motivated unrelated growth. His research also indicates that a combination of internal and external explanations may be needed in order to understand growth through diversification, a conclusion which has received support from strategy researchers for quite some time. For instance, Miles (1982) demonstrates how the diversification decisions of firms in the tobacco industry were shaped by a combination of motives related to the macro environment, the industry-specific competitive environment, firm-specific characteristics, and firm performance.

Consequences of diversification

The relationship between diversification and firm performance has for long occupied a central position in strategic management research and it has been (and arguably still is) the conflicting findings of numerous studies on this relationship that continue to provide the impetus for more research (Dess et al. 1995). Having reviewed 32 empirical studies of the diversification strategy–performance relationship, the authors conclude that not much has been learned. Similarly, Ramanujam & Varadarajan (1989) state that the findings of studies attempting to demonstrate the effect of diversification on performance remain inconclusive.

So, while Rumelt (1974) found that related diversification is associated with better performance than unrelated diversification (support for which has been obtained by, amongst others, Salter & Weinhold 1979; Bettis 1981; Palepu 1985; and Jose, Nichols & Stevens 1986), he later found that the high profitability associated with related constrained firms in his original sample was due to industry factors (Rumelt 1982). On the other hand, some scholars have demonstrated that unrelated diversifiers outperform related diversifiers (e.g. Michel & Shaked 1984; Dubofsky & Varadarajan 1987), others that there is no relationship between diversification strategy and performance (e.g. Montgomery 1985; Hill, Hitt & Hoskisson 1992), and still others that the relationship is curvilinear, thus implying that there is an optimal limit to firm diversification (e.g. Grant, Jammine & Thomas 1988; Markides 1995).

The apparent failure of strategy researchers to find a stable relationship between diversification and performance has been attributed, in the main, to methodological problems. Dess et al. (1995) identify four such problems: the failure of most

studies to address the limitations of cross-sectional research (its inability to distinguish cause from effect and to allow for the control of the impact of unobservable factors, such as managerial skills, technical know-how, and tacit organisational routines); the failure to explore implementation issues (such as the effect of organisational structure); the overreliance on Rumelt's (1974) original classification scheme (which treats the sources of economic rent that might arise from diversification as synonymous); and the focus on the corporate level as the unit of analysis (rather than the business unit level). Also recognising some of these methodological problems, Ramanujam & Varadarajan (1989) call for clinical, process-oriented studies to address the process and contextual issues of diversification which are likely to moderate the link between diversification and performance.

Recent work seems to make an attempt to come to grips with some of the unobservable and contextual factors that may affect the diversification–performance linkage. In particular, the meaning of relatedness has received increased attention, especially from scholars working within the resource-based theory of diversification. An early start has been made by Prahalad & Bettis (1986) who propose that, from a managerial point of view, diversity among lines of business does not arise from variety in technologies or markets per se, but rather from strategic dissimilarities which require variety in the 'dominant logics' used by top management. Chatterjee & Wernerfelt (1991) provide some empirical evidence which suggests that the relatedness of diversification moves and the link between diversification and performance should be seen within the context of the resource profile of the firm. They conclude that '[b]oth more or less related moves can lead to value creation contingent on the resource profile of the diversifying firm' (Chatterjee & Wernerfelt 1991: 46).

Building on the above work, Markides & Williamson (1994) argue that the traditional way of measuring relatedness between two businesses is incomplete since it does not take the strategic importance and similarity of the firm's underlying assets into consideration. In their view, the long-run advantage of related diversification has more to do with the ability it affords the diversifying firm to expand its stock of strategic assets (those assets that are imperfectly imitable, -substitutable and -tradable), rather than the exploitation of scope economies. Their empirical results seem to support their hypotheses that 'strategic' relatedness is superior to market relatedness in predicting when related diversifiers outperform unrelated ones, and that related firms will outperform unrelated ones only in those markets where accumulated assets are important.

Other mediating factors which seem to receive attention from researchers include organisational structure and compensation strategies. Hill et al. (1992) suggest that for a diversified firm to achieve high performance, a fit has to be established between its diversification strategy, organisational structure, and control systems. Related diversifiers seeking benefits from scope economies should adopt an organisational arrangement that support cooperation between units, whereas unrelated diversifiers seeking 'allocation' economies should adopt a structure that encourages competition between business units. While their results indicate support for these views, Markides & Williamson (1996), testing for the same hypotheses, report only conditional support. Finally, with regard to compensation strategies, Gomez-Mejia (1992) found support for the notion that compensation strategy mediates the relationship between diversification strategy and performance. This work suggests that firm performance may be a positive function of the degree to which compensation strategy reinforces or matches diversification strategy.

Conclusion

It is clear from the discussion above that although progress has certainly been made, the consequences of diversification are still not very well understood. In particular, the relationship between diversification strategy and performance is extremely complex with many difficult to measure variables playing a mediating role. It appears, however, as if the resource-based theory of diversification has the potential to capture these complexities, albeit perhaps only eventually to conclude that the relationship is contingent on the particular characteristics of the firms involved.

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Organisational change and transformation: A theoretical synthesis

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Over the past twenty-five years a substantial amount of research has focused on the character, process, and content of organisational change, as well as the circumstances surrounding this change. The emphasis in the study of organisational change has usually fallen on the antecedents or consequences of change and the processes through which change arises, develops and progresses. Research has for the most part concentrated on the former, but there seems to be a shift towards the study of change processes. This article aims to classify and review the most prevalent perspectives on organisational change with a focus on process theories and change dynamics. The dilemmas associated with classification attempts will be highlighted and the developments in the subfields of strategic change and corporate entrepreneurship will be assessed in the context of organisational change and transformation.

Introduction

Considerable research effort has been channelled over the past 25 years towards examining the nature, process, and content of organisational change, as well as the contexts or conditions under which such change occurs. Technological developments, the changing nature of competition, the restructuring and organisational transformation wave since the 1980s, and the search for new organisational paradigms to cope with these developments have added impetus to these efforts.

To date, the study of organisational change has tended to focus on two types of issues (Van de Ven & Huber 1990): the antecedents or consequences of change, and the processes through which change emerges, develops and grows. Although much of this research effort has been concerned mainly with the former, there appears to be growing interest in the study of change processes (e.g. Pettigrew 1985; Pettigrew & Whipp 1991; Greiner & Bhambri 1989; Stopford & Baden-Fuller 1994; Ghoshal & Bartlett 1994).

The aim of this article is to classify and review the most prevalent perspectives on organisational change with an emphasis on process theories and change dynamics, to highlight the dilemmas associated with classification attempts, and to assess developments in the subfields of strategic change and corporate entrepreneurship in the context of organisational change and transformation.

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Theories of Organisational Change

In the literature on organisational change there seems to be a considerable amount of consensus that organisations change in one of two fundamentally different ways (Meyer, Brooks & Goes 1990): evolutionary (continuously, slowly and incrementally, or first-order change) and revolutionary (discontinuously, rapidly and transformationally, or second-order change). While this evolutionary–revolutionary dichotomy perhaps originates from the field of evolutionary biology, where a distinction has been made between Darwinian gradualism and punctuated equilibria (Gould & Eldredge 1977; Gersick 1991), it has found application in a number of quite diverse fields: single- versus double-loop systems in systems analysis (Ashby 1960), evolution and revolution in industrial development (Schumpeter 1934), single- versus double-loop learning (Argyris & Schön 1978), and competence-enhancing versus competence-destroying changes in technology (Tushman & Anderson 1986).

Incremental theories

Incremental or adaptation theories of organisational change (where adaptation refers here to both proactive and reactive responses) maintain that firms assess their changing environments on a continuous basis and adapt to threats and opportunities purposively (e.g. March & Simon 1958; Lawrence & Lorsch 1967; Andrews 1987; Pfeffer & Salancik 1978; Quinn 1980; Pettigrew 1985). Note that these theories emphasise the interactive relationship between the firm and its environment. Therefore, although adaptations may be viewed as proactive, such actions will always be in response to some environmental stimulus, such as external dependencies in the resource dependency model of Pfeffer & Salancik (1978), or a perceived stimulus emanating from a managerial 'enacted' environment (Weick 1979).

Transformational theories

Transformational theories of organisational change, on the other hand, focus on periodic discontinuous, metamorphic, or frame-breaking changes in organisations to overcome inertia or stagnation and to enable better alignment with the environment. These changes, for example driven by life-cycle stage progression (Greiner 1972), shifts between strategic types (Miles & Snow 1978) or structural gestalts (Miller & Friesen 1984), and competence-destroying changes in technology (Tushman & Anderson 1986), lead to rapid organisational transformations followed by a return to relatively stable configurations. As was the case with the incremental theories, transformational theories also emphasise the interactiveness of the organisation–environment relationship. Managers, either proactively or reactively, observe internal or exogenous discontinuities and respond to them in a purposive manner.

Ecological theories

A third category of change theories can, however, not as easily be partitioned as either incremental or discontinuous. These theories, which will be referred to as ecological theories (Tushman & Romanelli 1985), can be divided into two main classes: the neo-institutional school (e.g. DiMaggio & Powell 1983) and population ecology (e.g. Hannan & Freeman 1977, 1989). The change theory emanating from the neo-institutional school can be classified as evolutionary and incremental, with institutional isomorphism as the dominant change mechanism. Isomorphism results from the normative expectations of institutional environments which put pressure on firms to conform to these expectations in order to achieve legitimacy and to enhance their chances of survival (Meyer & Rowan 1977; DiMaggio & Powell 1983). Note that the unit of analysis in this case can be either the individual firm or an industry.

The focus of population ecology, on the other hand, is change across entire industries or populations of firms as the result of relative entry and exit rates driven by environmental variation, selection, and retention. While individual firms are relatively inert, populations of firms are propelled by differential birth and mortality rates to evolve gradually towards a fit with the technological and economic constraints of environmental niches (Hannan & Freeman 1977, 1989). Therefore, although a population of firms may undergo revolutionary change over a long period of time, the actual change mechanism from the perspective of the individual firm tends to be incremental and slow, especially when it refers to transformational change or change in the core features of the firm (Hannan & Freeman 1984). In fact, given that structural inertia is a central tenet of population ecology theory, it can be argued that it is actually a theory of inertia or nonchange, as change decreases the survival chances of firms by setting back the 'liability-of-newness' clock (Stinchcombe 1965). Note that apart from level of analysis differences, the ecological theories of change are in essence deterministic or context-driven theories of change, whereas the incremental and transformational theories are driven by managerial choice.

Theory classification and other dilemmas

While an attempt was made to classify the principal theories on the basis of the mode of change (continuous or discontinuous), these categories are not mutually exclusive (as in the case of the population ecology theory). However, other classification dimensions can also be used. Meyer et al. (1990), for example, use mode of change (first-order versus second-order) and level of analysis (firm or industry) as their classification dimensions, and thus distinguish between adaptation theories (incrementalism and resource dependency, first-order change at the firm level); evolutionary theories (neo-institutionalism and population ecology, first-order change at the industry level); metamorphosis or transformational theories (second-order change at the firm level); and revolution theories (punctuated equilibrium and quantum speciation, second-order change at the industry level). Nadler & Tushman (1990), from a leadership perspective, classify change theories in terms of the nature of change (incremental versus strategic) and the nature of the response (anticipatory versus reactive), and identify four categories: reorientation (strategic and anticipatory), recreation (strategic and reactive), tuning (incremental and anticipatory), and adaptation (incremental and reactive).

Still another classification dimension, as well as a major point of contention among change theorists, centres around the initiation of change, that is, whether change comes about as a result of managerial choice (in general the incremental and transformational perspectives) or environmental determinism (mostly represented by the ecological perspectives). Ever since the seminal works of Barnard (1938) and Selznick (1949), much of organisation theory has been concerned with the link between the organisation and the environment. Although the traditional contingency theorists (e.g. Lawrence & Lorsch 1967) viewed this link more in terms of static organisational adaptation or fit to environmental conditions and thus as a unidirectional process, the influence of open-systems theorists such as Von Bertalanffy (1968) encouraged a view of interdependence between the organisation and its environment. This facilitated a more dynamic perspective, further enhanced by the notions of 'enacted environment' (Weick 1979) and 'strategic choice' (Child 1972). However, from an ecological perspective, the prevailing theory is essentially one of environmental determinism (Hannan & Freeman 1977; Aldrich 1979). In fact, at its limit, population ecology does not accord much significance to managerial action.

While much of the controversy between these two schools of thought can be ascribed to the different units of analyses to which these theories actually apply (the individual firm versus a population of firms), Hrebiniak & Joyce (1985) argue that attempts to classify change as either organisationally or environmentally (or context) determined are misleading, as they divert attention away from the need to recognise the interactive nature of the organisation–environment relationship in adaptation processes, for which both choice and determinism

are essential to develop an accurate description. They point out that, consistent with the concept of equifinality, even if an environment is highly deterministic, choice is still possible with regard to the selection of the means to the end 'determined' by the environment. Choice and determinism should therefore be considered as independent variables which, if positioned on two separate continua, lead to four main types of organisational adaptation: natural selection (low choice and high determinism), differentiation (high choice and high determinism), strategic choice (high choice and low determinism), and undifferentiated choice (low choice and low determinism).

The attempt by Hrebiniak & Joyce (1985) to link the choice–determinism perspectives has also been pursued by Hambrick & Finkelstein (1987), who use the concept of managerial discretion to bridge the polar views. Depending on the degree of discretion that managers have to act volitionally, organisational outcomes will be either more internally determined or environmentally determined. In this regard, Singh (1993) points out that there is growing evidence which suggests that, because of the limited effectiveness of internal governance mechanisms (due in part to the influence of inside directors on corporate boards) and the marginal reaction of capital markets to major strategic announcements, managers have more discretion in making critical decisions and implementing major changes than is implied by the traditional principal-agent model.

Apart from the choice–determinism debate, other change theory dilemmas seem to persist. These relate to the speed of change (subsumed in the incremental-transformational dichotomy), the time it takes for transformational change to take effect, and the content of change (peripheral as opposed to core). While transformation theorists claim that these changes occur rapidly (e.g. Miller & Friesen 1984; Tushman & Romanelli 1985; Romanelli & Tushman 1994), there is growing evidence which suggests that transformational change only occurs over long periods of time (e.g. Donaldson 1990; Stopford & Baden-Fuller 1994; Gersick 1991). With regard to the content of change, population ecologists argue that, due to structural inertia, changes in the core features of firms are rare, and that if they do occur, are hazardous (Hannan & Freeman 1984). This is in stark contrast not only with the argument of transformational theorists, but also with evidence of successful transformational change (e.g. Donaldson 1990; Stopford & Baden-Fuller 1994; Haveman 1992; Kelly & Amburgey 1991). Again here, as with the level of analysis problem alluded to earlier, the problem may be one of different approaches as to the period of analysis. Whereas transformational theorists tend to focus on relatively short change periods (ten years or less), population ecologists usually analyse populations of firms over several decades.

Towards an integrative theory of change

The natural historian, Stephen Gould, once said: 'The history of life contains long periods of boredom and short periods of terror' (quoted by Meyer et al. 1990: 93). His and Eldredge's (1977) punctuated equilibrium view of evolution gave rise to a similar theory of organisational change, articulated by Tushman & Romanelli (1985). Trying to reconcile the incremental, transformational and ecological approaches to organisational evolution, Tushman & Romanelli propose a punctuated equilibrium model of organisational change, where organisations evolve through convergent periods (characterised by incremental change), which are periodically punctuated by reorientations and recreations which set the stage for the next convergent period. These cycles of convergence and reorientation are driven by the tension between internal and institutional forces for stability or inertia and competitive, technological and legal pressures on firm performance for fundamental change. Executive leadership mediates between these opposing sets of forces.

The punctuated equilibrium model, therefore, has three defining constructs: convergence, reorientation (or recreation), and executive leadership. Convergence, which is similar to Miller & Friesen's (1984) 'momentum', takes place incrementally, works towards achieving greater consistency with a particular strategic orientation, and is driven by inertial forces for stability. Convergent processes, however, impede the ability of an organisation to initiate reorientations; that is, they lead to the development of core capabilities, which in the process may also become core rigidities (Leonard-Barton 1992), adversely affecting firm performance. Sustained periods of low performance coupled with major environmental changes then drive organisational reorientation or recreation, which can happen either proactively or as a result of a major crisis. Reorientation, which again can be likened to Miller & Friesen's (1984) 'revolution', involves simultaneous and discontinuous shifts in strategy, structure, power distribution, and control systems, whereas recreation involves not only all the foregoing, but also a discontinuous shift in the firm's core values and beliefs (Tushman & Romanelli 1985). Inertia and performance are therefore the two basic factors affecting organisational evolution, and the tension between these factors is mediated by the perceptions and decisions of executive leadership, which is the key mechanism of intervention in the model.

Today, there seems to be considerable support for the punctuated equilibrium model of organisational change. The model is not only echoed by Miller & Friesen's (1984) model of momentum and revolution in organisational adaptation, but also by Kuhn's (1970) work on the nature of scientific revolutions. Gersick (1991) has indicated not only the relevance of the punctuated equilibrium paradigm to the study of organisations, but also its broad applicability to other fields by comparing models from diverse domains such as adult and group development, biological evolution, history of science, and physical science.

Empirical evidence on some change theory issues

Despite the considerable support for the punctuated equilibrium model of organisational change, debate continues with regard to the period that organisations spend in their 'punctuated' states. On the one hand, researchers such as Tushman & Romanelli (1985) and Miller & Friesen (1984) contend that punctuation periods are brief, whereas others (e.g. Gersick 1991; Huff, Huff & Thomas 1992) support much longer periods of punctuation. Romanelli & Tushman (1994), using data on the US minicomputer industry, found that the majority of organisational transformations were accomplished via rapid and discontinuous change, that small changes in strategies, structures, and power distributions did not accumulate over time to produce fundamental transformations, and that transformations were influenced by major environmental changes as well as CEO succession.

In contrast, Stopford & Baden-Fuller's (1994) study of 10 troubled firms in four European industries shows that the abil-

ity to bring about major transformations has to be developed internally and that it generally takes many years to achieve. They suggest that although partial changes may occur rapidly, transforming the whole firm occurred very slowly in their sample of firms, more in accordance with the incremental and emergent school of thought than with the metamorphic school. In fact, even when they faced severe crises, their firms took many years to change. This is consistent with the results of Romanelli & Tushman (1994) who also could not find support for their hypothesis that major performance declines will substantially increase the likelihood for revolutionary change.

A third perspective is offered by Grinyer & McKiernan (1990) who, reporting on the results of their study of 25 firms in the UK which 'sharp-bent' from stagnation to sustained performance (Grinyer, Mayes & McKiernan 1988), argue that the dichotomy between the 'slow' and 'fast change' schools of thought is false. They found that in firms with effective higher-level learning processes, effective monitoring, predictive and analytical systems, and where senior management are confronted with strategic issues on a regular basis, the need for transformational change will be detected sooner, the actions needed to bring it about will be identified more quickly through the supportive systems, and readjustment will take place more rapidly.

With regard to the population ecology perspective of organisational change, Kelly & Amburgey (1991) investigated the US air carrier industry between 1960 and 1985 (a sample of 136 firms out of a population of 178). They found, contrary to the predictions of inertia theory, that discontinuous environmental change was not associated with increased probability of organisational change, and that organisational change was not related to an organisation's chances of survival. Haveman (1992) also provides an empirical test of Hannan & Freeman's (1989) structural inertia theory, specifically the proposition that change is detrimental to organisational performance and survival chances. Her analysis of 308 firms in the California savings and loan industry between 1977 and 1987 (a period characterised by dramatic environmental shifts) indicates that organisational change may prove beneficial if it occurs in response to dramatic environmental shifts that threaten the organisational form with extinction, and if it builds on established internal competencies and routines. In addition, in accordance with the evidence on longer punctuation periods, she observed that while the individual firms in her population demonstrated only moderate changes on a year-to-year basis, they underwent major change over the ten-year observation period.

The dynamics of change

Tushman & Romanelli (1985) argue that cycles of convergence and reorientation in the punctuated equilibrium model are driven by the tension between internal and institutional forces for stability or inertia and competitive, technological and legal pressures on firm performance for fundamental change. This tension between 'inertia' and 'stress' (Huff et al. 1992) has, however, been recognised for quite a while (in fact it is contained in Barnard's (1938) concepts of efficiency and effectiveness), although different intellectual domains within the broad field of management and organisation have tended to focus on either one or the other. The business policy and strategy literature has focused traditionally on the many forces (for example technological change, the dynamics of competition and industry evolution, regulatory reforms, and their resultant performance pressures) that make past strategic positions less appropriate and therefore require organisations to realign strategy and structure with the business environment (e.g. Chandler 1962; Andrews 1987; Porter 1980; Tushman & Anderson 1986; Rumelt 1984).

The organisational literature (organisation theory, organisational economics) and the more recent ecological approaches, on the other hand, have emphasised the factors that increase inertia (and therefore resistance to change) such as standard operating rules (Cyert & March 1963), bureaucratic characteristics (Crozier 1964), industry 'recipes' (Grinyer & Spender 1979), organisational 'routines' (Nelson & Winter 1982), managerial 'dominant logics' (Prahalad & Bettis 1986), creeping rationality (Fredrickson & Iaquinto 1989), and commitment escalation (Whyte 1986; Brockner 1992). Structural inertia theory (Hannan & Freeman 1989; Haveman 1992) identifies four internal and four external groups of forces that serve to constrain organisational change: internal forces are investment in plant, equipment, and specialised personnel, limited information received by key decision makers, political constraints, and organisational history; the external forces for stability are legal and economic barriers to entry into new areas of activity, constraints on external information gathered by decision makers, legitimacy considerations, and the problem of collective rationality.

From a dynamic perspective, however, Huff et al. (1992) point to the dilemma that, since both stress and inertia are expected to increase over time, drastic change becomes simultaneously more and less likely. They develop a formal model, based on the interaction between cumulative stress and inertia and expressed in a form widely used in the field of innovation diffusion, to predict the evolution of renewal efforts (status quo enhancing as well as frame-breaking renewal) over time. Both the internal and external contexts of the firm determine at any point in time the respective levels of accumulated stress and inertia (Ginsberg 1988). Although some stress will always be present due to the impossibility of achieving perfect firm–environment fit, when inertia exceeds the stress level, the status quo will be maintained. However, when the level of stress exceeds the level of inertia, incremental adjustments will be made to strategy, structure, and systems. Drastic change will be initiated only when the stress–inertia differential exceeds a certain threshold level (and in the presence of perceived strategic opportunities), since at that point the organisation's ability to make state-maintaining adjustments will no longer be able to cope with the level of stress in the firm.

The work of Huff et al. (1992), among others, highlights in particular the importance of individual and collective cognitive interpretations in developing an understanding of the dynamics of organisational change. This is an aspect that has received considerable research attention since the classic work of Cyert & March (1963) who used changes in aspiration levels and the application of various 'search rules' to analyse short-term organisational adaptation and the operational decision-making processes that lead to incremental adjustments. While recognising the power of inertia, Cyert & March however do not examine the dynamics of fundamental change.

Building on the work of Cyert & March (1963), Grinyer & McKiernan (1990) distinguish between two schools of thought on organisational change: the inertia-precipitated crisis school (e.g. Miller & Friesen 1984; Grinyer & Spender 1979) which

maintains that due to the power of inertia (reinforced by sagas, myths, and belief systems), only events of 'creative destruction' (Schumpeter 1934) or crises will serve to jolt organisations from their inertial states; and the designed adaptation school (e.g. Lawrence & Lorsch 1967; Hofer & Schendel 1978; Andrews 1987) which sees the firm as constantly assessing and adapting its fit to a changing environment. Accommodating both these schools of thought, Grinyer & McKiernan (1990) suggest a framework for fundamental change based on actual versus anticipated performance differentials and their impact on senior management aspiration levels. In their model, these aspiration levels are determined by past performance, competitor performance, new CEO, top team and/or board influence, the expectations of external stakeholders, and managers' awareness of opportunities in the business environment. If actual performance compares favourably with anticipated performance, no action will be taken (the status quo will be reinforced). However, if there is a discrepancy, management will first seek and employ functional, local solutions such as cost-cutting and tighter control. If this does not have the desired result, strategy will be reviewed and adapted, although still within the existing pattern of 'operations, beliefs and rules'. Only if this is still not effective, and now facing a crisis, will management start to question and change the underlying organisational suppositions, which will result in fundamental organisational change.

The problem, however, with Grinyer & McKiernan's (1990) model is that firstly, if performance appears to be satisfactory, no change can be expected (not very useful to explain the many companies today that, while successful, continuously challenge the status quo). Secondly, for major change to take place, a crisis is needed which does not explain voluntary fundamental change. In fact, based on the results of their 'sharpbender' study (Grinyer et al. 1988), the authors concede that fundamental change 'may occur *before* the onset of an externally generated, real crisis, because of concern that continued deterioration will precipitate a turnaround situation, or because changing personnel, new perspectives, or external pressure create greater dissatisfaction with the level of performance achieved historically' (1990: 143), giving rise to what they call an 'aspiration-induced crisis'.

More recently, Bettis & Prahalad (1995) have suggested a perspective on change dynamics which perhaps holds more promise for explaining organisational change since it does not presuppose a crisis and can also be employed to explain continuous change. Prahalad & Bettis (1986) introduced the concept of organisational 'dominant logic' (the way in which managers conceptualise the business and make critical resource allocation decisions), similar to Grinyer & McKiernan's (1990) pattern of 'operations, beliefs and rules'. This dominant logic, which acts like an information filter, is incorporated into the strategy, systems, values, expectations, and reinforced behaviour of the organisation (Bettis & Prahalad 1995). They argue that fundamental change will only take place through the gradual unlearning of the existing dominant logic, which will be brought about by the deliberate construction of important organisational events that will decrease stability and challenge the existing dominant logic.

Other scholars who have started to examine the dynamics of fundamental change include Nadler & Tushman (1990) who, focusing on how the role of executive leadership varies for different types of change, note that reorientations are frequently driven by new 'outsider' executive leadership, and Lant, Milliken & Batra (1992) who investigated the triggers of strategic reorientation from a learning perspective. They built and tested a model of the decision-making process that drives strategic reorientation and show that poor past performance, environmental awareness, top management team heterogeneity, and CEO turnover increase the likelihood of such reorientations.

The internal dynamics of actual change processes (as opposed to the nature of these processes and the dynamic between stress and inertia) have, to date, received relatively little attention. Some of the more notable exceptions include the work of Pettigrew (1985), Pettigrew & Whipp (1991), Greiner & Bhambri (1989), Grinyer et al. (1988), Stopford & Baden-Fuller (1994), and Ghoshal & Bartlett (1994). This work has been done more from a 'strategic change' perspective and is reviewed in the section that follows.

Strategic change and corporate entrepreneurship

Since strategic management as a field is fundamentally concerned with environmental change and organisational adaptation (Hofer & Schendel 1978), it can be conceptualised as the study of organisational change and change management (Schendel 1994). Thus, in the strategic management literature much use is made of the term 'strategic change', although continuing controversy surrounds the definition of the term (Ginsberg 1988). In addition, since fundamental change generally involves the creation of something new, the act of bringing about strategic change is often referred to as corporate entrepreneurship (Guth & Ginsberg 1990). The following two subsections review some of the latest contributions in these two fields, not only very much related to one another, but also to organisational change and transformation in general.

Strategic change

The controversy surrounding the definition of 'strategic change', according to Ginsberg (1988), has to do with *what* has to become different for the change to be labelled as 'strategic', which has led to the often used distinction between the content of strategy and the process of strategy-making (e.g. Chakravarthy & Doz 1992), a distinction whose relevance is frequently questioned (e.g. Huff & Reger 1987). In developing a framework for assessing and modelling strategic change, Ginsberg (1988) proposes the use of the term 'changes in strategy', rather than 'strategic change', in order to overcome problems of definition.

In his conceptual framework, Ginsberg (1988) categorises approaches for assessing changes in strategy along two dimensions: firstly, those approaches that conceptualise strategy in terms of a position or a perspective. While the former seeks to locate the organisation in its external environment, the latter seeks to understand the 'collective mind' that shapes the organisation's relationship with its environment. The second dimension distinguishes between viewing change as change in magnitude or in pattern. This classification gives rise to four categories of change in strategy: when strategy is conceptualised in terms of *position*, then change in magnitude may for example be a change in the number of businesses in which a firm competes, whereas change in pattern may be a change in the relatedness of these businesses. With strategy conceived as a *perspective*, change in magnitude could be change in the intensity of the firm's norms and values, while change in pattern could be change in the configuration of these norms and

values. Note that Ginsberg's (1988) distinction between the magnitude and the pattern of change could easily be linked to Tushman & Romanelli's (1985) view of change as convergence and reorientation.

Whilst scholars working in the field of strategic change still tend to distinguish between content and process, another strand of research, best exemplified by the work of Pettigrew (1985), has emphasised the need for strategic change research to attend not only to issues surrounding the content of change in strategy, but to integrate it with the process of change and the contexts in which it occurs (Pettigrew 1985; Pettigrew & Whipp 1991). For Pettigrew, strategic change is a process that incorporates streams of activities over time, assuming a variety of patterns: long periods of incremental adjustment, interspersed with hiatuses and/or revolutions. In particular, he calls attention to the need to see strategic change not as a straightforward rational process, but rather as a jointly analytical and political process where managers use bargaining and compromise to reach essentially unpredictable outcomes (Pettigrew 1985).

This greater emphasis on the emergent nature of strategic change is in contrast with Tichy (1983), who defines strategic change in terms of the deliberate major interventions by top management to overcome organisational inertia. While Mintzberg & Waters (1985) made the emergent/deliberate distinction, the two approaches were integrated by Tushman & Romanelli (1985) in their punctuated equilibrium model. Thus, Greiner & Bhambri's (1989: 68) definition of strategic change takes cognisance not only of the two different perspectives and their interrelatedness, but also of the variability of punctuation periods: 'Strategic change involves a shifting interplay between deliberate and emergent processes that receive their relative emphasis under certain environmental and organizational conditions, leading radically or gradually to major changes in strategy (e.g. mission, product/market mix), and/or organization (e.g. structure, systems, culture, people), and which result in a realignment between the firm and its environment'.

Applying the integrated approach to strategic change research, Pettigrew & Whipp (1991), in their complex analysis of pairs of firms in four different industries in the UK, investigate the link between strategic change and competitive success, viewed as a joint process. They successfully unite a multilevel and dynamic view of competition with a contextually and processually sensitive understanding of strategic change. While rejecting simplistic rationality assumptions, their approach emphasises the dynamics of strategic change, organisational learning, unlearning and the development of new knowledge, the cognitive limitations to managerial action, the impermanence and fragility of competitive advantage, and the inevitability of ambiguity. Their findings indicate five central factors associated with the management of strategic change and competitive success: the understanding that a firm, as an open learning system, develops of its environment; appreciation of the context-sensitive nature of leadership and its role in directing energy; the ability to link strategic and operational change and to view implementation as both intentional and emergent; the development of an approach to human resource management that relates to the total set of knowledge, skills, and attitudes that the firm needs to compete; and the ability to maintain coherence, which does not refer to the simple notion of 'fit', but rather to the capacity to hold the organisation together while at the same time reshaping it.

In another notable piece of research, Ghoshal & Bartlett (1994), through a longitudinal field study of a corporate turnaround experience, focus on the interrelatedness of organisational context and managerial action and suggest that the central task of general managers is to shape this context. They identify four principal dimensions of organisational context: *discipline*, established through clear performance standards, fast feedback, and consistency of sanctions, induces members to strive voluntarily to meet expectations; *stretch*, established through shared ambition, collective identity, and personal meaning and significance, encourages the setting of ambitious objectives; *trust*, created through equitable decision processes, the involvement of individuals in these processes, and capability as the criterion for appointment, fosters group commitment and the keeping of these commitments; and *support*, established through access to resources, freedom of initiative, and senior managers who provide guidance and help, encourages a climate of assistance and countenance to others. The authors indicate how these dimensions can be developed within the context of corporate renewal, and how they in turn influence the levels of individual initiative, mutual cooperation, and collective learning within organisations.

Finally, Greiner & Bhambri (1989), investigating the internal dynamics of deliberate strategic change at the business unit level as opposed to the corporate level, propose a typology of four broad intervention approaches based on two dimensions: the scope of the deliberate intervention (limited or comprehensive); and the decision-making style of the CEO (unilateral or collaborative). Note that these dimensions can be seen as proxies for the content and process aspects of strategic change respectively. The authors conceptualise deliberate strategic change in terms of attempts by senior management to guide emergent reactions towards major change and, on the basis of an in-depth case analysis, suggest the following sequential six-phase model capturing the internal dynamics of deliberate strategic change (of the comprehensive and collaborative variety): the replacement of the existing CEO with an 'outsider' to create political uncertainty; the consolidation of the power of the new CEO through a demonstration of expertise in solving short-term performance problems; the development of a new strategic consensus in order to secure top team commitment; the realignment of structure with strategy and with key people to create an integrated dominant coalition; the transferring of leadership and power to middle managers to release talent and energy and to implement the new strategy and structure; and the design of incentive systems to assure consistent behaviour and to secure cooperation. In addition, Greiner & Bhambri (1989) found five broad themes in support of the six intervention phases. These were related to the definition of a strategic logic to capture competitive advantage, the establishment of an appropriate organisational context to guide behaviour, the coalescence of political leadership around the new strategic direction, the learning of the value of collaboration to give effect to the new strategy, and the empowerment of many employees throughout the organisation to identify with the strategic direction.

Corporate entrepreneurship

Although the discussion of strategic change clearly incorporates aspects of corporate entrepreneurship, some scholars however prefer to assign separate status to the latter. The difference between the two subfields has perhaps more to do with their origins (strategic change from a general management and business policy perspective, and corporate entrepre-

neurship from studies on corporate venturing and the management of innovation), than with anything substantive.

Nevertheless, Guth & Ginsberg (1990), strongly influenced by Schumpeter's (1934) view of the entrepreneur as one who gives effect to new combinations, argue that all changes in a firm's *pattern* of resource deployment which results from the carrying out of new combinations, should be regarded as part of the domain of corporate entrepreneurship. Note, however, the overlap with Ginsberg's (1988) own conceptualisation of strategic change (or rather changes in strategy) as change in pattern or change in magnitude, which clearly makes corporate entrepreneurship an element of strategic change.

Along similar lines, Stopford & Baden-Fuller (1994) distinguish between three types of corporate entrepreneurship: corporate venturing or intrapreneurship, which has to do with the creation of new businesses within an organisation (e.g. Burgelman 1983); corporate entrepreneurship associated with the transformation or renewal of an existing organisation (e.g. Kanter 1983; Grinyer et al. 1988); and corporate entrepreneurship associated with 'creative destruction' or the changing of the 'rules of competition' (e.g. Schumpeter 1934). While Guth & Ginsberg (1990) suggest that each type of corporate entrepreneurship has distinctive characteristics, Stopford & Baden-Fuller (1994) found in their study of the turnaround of 10 troubled European firms in hostile environments, that the three types of corporate entrepreneurship can exist simultaneously in one firm, that they share many attributes of entrepreneurship, and that they are all necessary to shed past behaviours and to rebuild industry leadership. Their research provide support for five bundles of attributes common to all types of corporate entrepreneurship: proactiveness, which is associated with high levels of risk taking; aspirations that stretch beyond current capability; a strong team orientation within the organisation; the capability to overcome adversity and to surmount challenges; and the capacity for collective learning.

Conclusion

This article has shown that while the incremental, transformational and ecological approaches to change all have merit on their own, differences between these perspectives mainly relate to differences in units of analysis and the time period over which change phenomena are observed. The punctuated equilibrium model, which integrates these approaches, seems to have gathered considerable support as an underlying framework. Regarding change dynamics, considerable attention has been given to the tension between organisational inertia (the need for stability) and stress (the pressures for change). Current work seems to emphasise the influence of organisational learning, cognitive perceptions, aspiration levels, and executive leadership as mediating factors between inertia and stress.

The literature on strategic change, although very much related, focuses on the contents, contexts and processes of changes in strategy, with increasing emphasis on the integration of these elements. Calls for research again stress the need for institutional detail and attention to the internal dynamics of change processes. In particular, there appears to be broad consensus that research should provide rich evidence of a longitudinal process nature leading to grounded theories of large system change (Tushman & Romanelli 1985; Greiner & Bhambri 1989; Grinyer & McKiernan 1990; Pettigrew 1990; Van de Ven & Huber 1990; Mintzberg & Westley 1992). In addition, Greiner & Bhambri (1989) identify the need for work that examines the internal dynamics of deliberate strategic change at the corporate level of analysis, and Guth & Ginsberg (1990) for research into the processes by which executives inspire and energise large organisations to innovate and to renew themselves.

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Fast food franchisors – their critical success factors and management information requirements

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The primary objective of this article is to identify the critical success factors of the fast food industry in South Africa from a franchisor's perspective. This franchise industry is growing rapidly, with turnover being in the region of R2 billion per year. Foreign competition is threatening to take market share from the established fast food franchisors. If critical success factors are known, measurable and controllable, franchisor managers can act to avoid failure and improve profitability or reduce losses. Secondary objectives include information needed to monitor the critical success factors, the cost and value of the information systems used and franchisor perceptions on quantity and quality of information. A total of eight industry-specific critical success factors were identified, of which three were considered by franchisors to be difficult or impossible to measure. Most franchisors were happy with the quantity of information being generated to monitor the critical success factors whilst few were satisfied with the quality. While most franchisors maintained that they knew the cost of their management information systems, only some would say that they knew the value of the information stored on their systems. The context of the franchisor environment is explored as well as the information needs uncovered using the critical success factors methodology. It was found that senior managers intuitively understand and accept the use of critical success factors and that the methodology can take account of the unique characteristics of fast food franchisor management.

Introduction

The fast food industry in South Africa really started in the mid-to-late 1960s with the importation of ideas which had then been apparent in the USA for a number of years. These ideas hinged on a new concept for South Africa in consumer fast food service which was based on a formula. This formula is applied rigorously throughout all participating stores and outlets and ensures that standards surrounding product, quality, customer service, price, etc. are adhered to. This formula is called business format franchising.

Market sources reveal that South Africa has a franchised fast food industry currently turning over more than R2.5 billion per year. This turnover is growing at around 13 per cent per year which is expected to increase markedly with the arrival of overseas competitors in the market, in particular McDonalds and Burger King (hamburgers), Dominos (pizza), and Subway (sandwiches).

Once a brand has been established in the market, the fast food franchisor must concentrate on brand promotion and protection of market share to survive and then to expand. As emphasised in Marketing Mix (1990: 58), it is very hard to look at one fast food chain in direct competition with another, because each is different in its product and supposedly in its objectives. Each franchisor is literally in competition with everything that is eaten.

Rodkin, as quoted in Sunday Times (1995: 13), states that 'franchisors will create intense competition in the fast food and restaurant sector, which currently represents 30–40 per cent, the greatest slice, of the SA franchise industry'. According to O'Connor (in Sunday Times 1995: 13) 'more and more consumers will get used to the idea of going to a franchise for their needs – whether it's a funeral parlour or a hamburger outlet'. These statements have serious implications for the managers of South African fast food franchises. In the face of such threat and opportunity they will need to concentrate on what is critical to their success and to ensure that these factors will enable them to attain their set objectives, whether that be growth, consolidation or contraction. The isolation of these factors is the primary aim of this survey.

To complement the primary aim of the study, the following secondary objectives are proposed:

- To ascertain whether the critical success factors are measurable or not.
- If they are measurable, the information requirements necessary to monitor these critical areas will be determined.

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- To establish what information is being measured and stored by the fast food franchisors.
- To ascertain whether franchisor management is satisfied with the quantity and quality of information received from its management information systems.
- To find out whether franchisor management is aware of the cost of its management information systems.
- To determine whether value has been attached to information generated and stored.

These aims are both descriptive and exploratory.

Theory of management information and critical success factors

The value of good business decisions is related to the availability, accuracy, timeliness, and relevance of the information available. As the ability to store information becomes increasingly simplified and cost-effective, the tendency to store all information, useful or not, increases. The solution to this problem lies therefore not only in the storing of information but also in the access to that information (Blair 1984: 13–23).

Determination of information requirements

Fast food franchisors, like all organisations, require information for ongoing support as well as for long-term planning. The determination of information requirements is a key element in developing the strategy for management information systems (MIS) in any organisation. Davis (1982: 4–30) differentiates between two levels of information requirements:

- The organisational information requirements needed to define an overall information system plan.
- The requirements for each database including the requirements for each application.

Management information systems planning

Many of the issues that face fast food franchisors in seeking to implement management information systems are reflected in the literature on management information systems planning. For example, Bowman, Davies & Wetherbe (1983: 11–25) suggest that effective management information systems planning involves four difficult processes. They are strategic MIS planning, organisational information, resource allocation, and methodology selection.

Any fast food franchisor will need to adopt a similar pattern in identifying its management information aims. The essentially nontechnological character of information planning is discussed by Adriaans and Hoogakker (1989: 64-74) who demonstrate that, at the strategic level, information analysis should focus on top management goals and critical success factors.

Cost of MIS systems

Despite the rhetoric on the strategic significance of information and information services to organisations, information costing and value are acknowledged as being 'difficult' (Orna 1990) and 'underdeveloped fields' (Burk & Horton 1987).

According to Audrey Mullins, as quoted in Fast Food and Family Restaurant (1993), training programmes, computer systems software, and even marketing have become highly specialised but are no longer a luxury with basic systems becoming more affordable. The cost of basic MIS systems is declining even as their application is increasing. However, to entice the prospective user, more and more applications are being offered that may have questionable benefit. Charles Wang (in Herbert 1995: 10), who agrees with this, believes that about 33 per cent of computer spending is wasted. As the proportion of organisational resources devoted to information functions increases, these functions can no longer be treated as unallocated costs.

Value of information

In deciding to store and manipulate certain data in preference to others, it was assumed that fast food franchisors apportion more value to some data than to others.

As Broadbent & Lofgren (1993: 685) state, when information and its management become a major activity the question of value becomes critical as the costs become apparent and pervasive. The major reason why managers experience problems in identifying the value of products and services emanating from the information system is that this is an extremely difficult challenge. The main method used nowadays is the perceived value approach which is based on a subjective evaluation by users.

Common mistakes in MIS planning

There is not much literature available on the management information needs of fast food franchisors and what they are getting in terms of information. However, the literature often outlines common mistakes such as:

- The information requirements of managers not being thought about at a sufficiently early stage.
- Little attention being paid to information that is not internal, quantitative or objective.
- External and soft information needs being ignored.

The critical success factor method

In an attempt to overcome the shortcomings of approaches to MIS, Rockart (1979: 81-93) developed the critical success factor approach based on the earlier work of Daniel (1961: 111-121) who stated that a company's information system should be selective, focusing on success factors. Daniel suggested that in most industries, three to six factors determined success and that 'these key jobs must be done exceedingly well for a company to be successful'. Rockart defined critical success factors as: 'The few key areas where things must go right for the business to flourish'.

Critical success factor methodology is a procedure aimed at making explicit those few key areas that dictate managerial or organisational success. Critical success factors emerge via structured dialogues between a critical success factors analyst and the interviewee and, briefly, involves the following:

- Understanding industry background.
- Goal and critical success factor identification.

There are significant benefits in taking the necessary time to think through the critical success factors for managers in organisations. Boynton and Zmud (1984: 17-27) suggest that the strengths of critical success factors lie in two key areas:

- The critical success factor method generates user acceptance at senior management level. Senior executives intu-

itively understand the thrust of this method. Friend (1989: 7-15), reviewing the growth of executive information systems, supports this point.

- The critical success factor method favours a top–down planning process – initially focusing a participant's attention on a core set of essential issues and then refining them in a manner that allows an evolving design to be continuously examined for validity and completeness.

Methodology

In order to gather the data needed for this application of critical success factors, a structured questionnaire guide was formulated. This guide was based on the theory available and on questions raised by this theory. The population consisted of fast food franchisor companies based in Gauteng. From this population a sample of twelve was selected, based on:

- The need to obtain a cross section of the industry varying from small to large fast food franchises. No franchises with less than 25 outlets were considered and one group interviewed numbered more than 400 outlets.
- The need to obtain a group of interviewees whose reputations and standing in the industry were considerable.
- The need to represent independent and conglomerate franchisors. A conglomerate is taken to mean two or more brand names grouped into the company.
- The need to cover a selection of brands ranging from burgers to pizza to chicken.

By utilising the above criteria it was hoped that the views expressed by the interviewees would be as broad as possible and be representative of the fast food franchise population in South Africa. In fact, of the eight franchisors eventually interviewed the total turnover was R1 billion, representing some 970 franchisees. This compares with the total turnover of R1.8 billion for fast food franchisors. The franchisors were split into those with 25 to 30 outlets (two), 30 to 80 outlets (two) and more than 80 outlets (four).

After the selection of prospective interviewees, each was contacted telephonically. The purpose of the proposed survey exercise was then explained, specifically the use of critical success factors in the attainment of their operations' long-term objectives. The interviewees were asked to prepare in advance of the interview by thinking about their objectives and about the critical success factors. Prior to the interview, a one–page introduction was faxed to each interviewee giving a brief outline of the interview process.

The interview began with a review of the critical success factor method as a means of determining management information needs. A clear definition of a critical success factor was given. The interviewee was then asked to describe the goals and objectives of his organisation. Having identified the goals, the interviewee was asked to list factors critical to the successful achievement of those goals. Most respondents had little difficulty with this, supporting the general conclusion from the literature that senior managers readily understand these factors.

Once critical success factor identification had been exhausted, the critical success factors were read back to the interviewee as a method of checking that none had been mistakenly included or forgotten. The interviewee was then asked to say what information requirements would be necessary to measure and monitor these critical success factors and to produce answers to the secondary objectives outlined earlier.

This aspect of the interview was more difficult than had been expected, the reason being that many of the critical success factors identified were of a 'soft' nature. Most participants felt that the critical success factors could be measured in some way but that the value of doing so was not evident. Consequently many interviewees responded that these factors were measured by 'gut feel' brought about by years of experience in the industry.

Results

The information collected revealed a recognisable and cohesive range of issues; however, individual answers differed in style and detail. The data analysis, therefore, is largely qualitative. An initial survey of the results identified a few major themes in each section and these were gradually refined into more detailed subject categories under which results were aggregated. For respondents' goals this was a relatively simple process; however, the task became progressively more complex through the determination of critical success factors and information needs. The critical success factors were grouped under a number of headings that approximated to activity areas. Without exception all franchisors identified one goal, namely growth.

The critical success factor set

A total of some 16 critical success factors were identified by the interviewees. A few of these were not mutually exclusive and were combined into a single factor. Table 1 shows the combined list of ten critical success factors and the response rates from the franchisors.

Table 1. Ranked critical success factor response rates

	Critical success factors									
Franchisor	Franchisee selection	Training	Site selection	Marketing	Customer satisfaction	Franchisee support	Operational control	Product consistency	Alliance forming	Pricing
A	x	x	x	x				x		
B	x		x		x	x				x
C		x			x					
D	x		x		x				x	
E	x	x	x	x						
F		x		x	x	x	x			
G	x			x			x	x		
H	x	x	x	x						
Total	6	5	5	5	4	2	2	2	1	1

Table 2. Critical information set

1. Franchise Selection	
Measure	**Information requirements**
Financial status	Credit record and rating Current income Cash available
Biographical data	Age Qualifications Experience Family background
Outlet success	Turnover Number of customers Increase in sales
2. Training	
Measure	**Information requirements**
Initial training	Pass rate for each subject per individual Collective pass rate
Remedial training	Items/subjects that need bolstering – from biweekly or monthly visits
3. Site Selection	
Measure	**Information requirements**
Economic	Rental Passers–by Income group Housing mix Total spend
Location	Parking space Site access Competitors' position Passing traffic count
4. Marketing	
Measure	**Information requirements**
Merchandising and promotions	Past sales histories Sales during promotions Customer numbers, increases and decreases Sales after promotional activities Increase or decrease in gross profit Effects on sales mixes
Advertising and image	Competitor activity Current promotional activity, local and nationwide Industry trends Customer opinions Customer perceptions
Strategy	Sales Profitability Competitor sales and activity Environmental changes Economic forecasts Fashion trends Customer needs and perceptions

5. Customer satisfaction	
Measure	**Information requirements**
Satisfaction	Verbal feedbacks Repeat visits Amount spent Response forms
Nonsatisfaction	Complaints (total) Repeat complaints Response forms
6. Franchise support	
Measure	**Information requirements**
Marketing (critical success factor number 4)	As in critical success factor number 4
Operational control (critical success factor number 7)	As in critical success factor number 7
7. Operational control	
Measure	**Information requirements**
Sales	Daily sales for each item Cumulative sales
Stock	Items in stock Items out of stock Items to be ordered
Quality	Check list from field staff, based on biweekly or monthly visits
8. Product consistency	
No commentary was given on this factor	

The critical information set

The information requirements are those mentioned by the franchisors and hence show a leaning towards the more easily measurable factors. The information set (refer to Table 2) is a rough reflection of what is needed. A more vigorous analysis would be a study in itself.

Franchisor perceptions on quantity and quality information

In line with the expectations raised by the literature, six out of eight franchisors were satisfied or more than satisfied with the quantity of information being passed on to them. Interestingly, only three out of eight were satisfied with the quality of the information and only one out of eight was satisfied with both. The lack of satisfaction with quality could be directly correlated to the lack of information on those factors that the manager needs to know rather than what he often thinks he wants to know. (Refer to Table 3.)

Cost and value of MIS

It has been said that a cynic knows the cost of everything and the value of nothing. The same nearly applies to fast food franchisors. When asked about the cost of MIS, seven interviewees, as set out in Table 4 below, stated that they knew the cost or that it could be found out relatively easily. However, when asked if the value of the information contained was known, only two seemed to know.

Interpretation of findings

Critical success factors for franchisors

The franchisor is the linchpin of the franchise business. He/she has certain obligations to his/her franchisee and, of course, expects something in return. The partnership is a mutually beneficial one and the wide range of issues regarded as being critical to business success demonstrates the franchisor's awareness of his/her responsibilities.

Along with the factors that were deemed critical, two significant areas were identified as not being critical to the success of the franchise. These were the relationship between franchisor and franchisee, and long-term strategic planning. The fact that the franchisor did not view the relationship with the franchisees as critical is surprising, as an entire thesis (Edelstein 1991) was written on this matter. However, Edelstein did not

Table 3. Franchisor perceptions on quantity and quality of information

Franchisor	Quantity	Quality
A	x	
B		x
C	x	
D	x	x
E	x	
F	x	
G		x
H	x	
TOTAL	**6**	**3**

x = satisfied with quantity or quality

Table 4. Cost of existing management information systems and value of information contained

Franchisor	*Cost of MIS*	*Value of information*
A	x	
B	x	x
C	x	
D	x	x
E	x	
F	x	
G		
H	x	
TOTAL	**7**	**2**

x = knowledge of cost or value

find out if the matter was critical before the research was undertaken. Long-term strategic planning is an area which deserves more attention, especially with the arrival of severe foreign competition.

Information requirements for critical success factor measurement

Obtaining the information necessary for monitoring the critical success factors was found to be relatively straightforward, where the critical success factors could be measured. Extensive monitoring took place to cover factors such as operations and marketing. The measures identified had two main sources:

- operations – derived from financial and stock records
- checkup data – obtained from regular weekly or biweekly visits from field staff personnel.

The practicalities of measurement are simple for those factors that can be measured. Further investigation would be needed to find out if intangibles such as franchisee selection could be inferred from cross–correlating it to already stored information. Using incomplete information could lead to incorrect conclusions being drawn; so this possibility would have to be researched thoroughly.

If the franchisor values critical success factors which are not easy to measure, and they must be valuable because they are critical to the success of the company, then ways and means should be found to measure these.

Focusing on operations does undoubtedly have benefits that will continue to refine marketing procedures, in-store dynamics, and so on. However, the amount spent on operational information generation has to be related to what could have been spent in other areas, perhaps with greater return.

Perception on cost and value of information

The fact that most interviewees stated that they know the cost of management information systems is not surprising. What was surprising was that few could put a finger on the value of the information. This requires comparative decisions, for example, would gathering 30 per cent more operational data (which is easier to measure) be as valuable as beginning to measure franchisee support.

Perceptions on quantity and quality of information

The above perceptions were reinforced by those on quantity and quality. Most interviewees felt that the quantity of infor-

mation being passed on to them was more than sufficient. In terms of quality, the information being delivered received a poor rating with most interviewees not being satisfied. It is suggested that the reasons for this are:

- The factors being reported on are easy to measure.
- The more important factors are being ignored as they are supposedly difficult to measure.

Implications for further research

This study focused solely on the critical success factors of the franchisor. This was so because the franchisor performs the major policing role in the franchisor/franchisee relationship. It would be useful to gain insight into the critical success factors of the franchisee to see how they differed from those of the franchisor.

The research also showed that the franchisors were unhappy with the quality of information being generated and were fairly ignorant of the comparative value of information stored on their systems. Further research that could for instance focus on comparative valuation of information stored would be useful in two ways:

- It could put a stop to any further unnecessary expansion of information on the already overresearched operational side of fast food franchising.
- It would be able to place a value on the information missing which is usually regarded as being critical to the franchisor and hence spur on ways to capture this data.

Additionally it would be useful to ascertain if information needs change as the franchise grows, and whether the franchisor takes action if needs do change.

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