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Adaptation of management control systems to rapidly changing environments: a comparative study of two brewing companies

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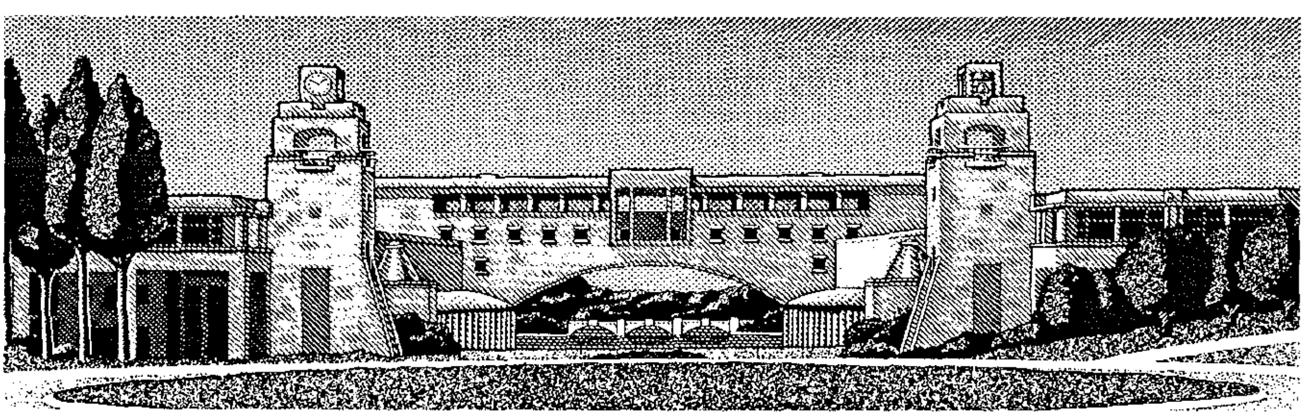

B O N D U N I V E R S I T Y

Adaptation of Management Control Systems to Rapidly Changing Environments: A Comparative Study of Two Brewing Companies

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Abstract

This study examines management control systems (MCS) in two major companies in the brewing industry, and how these systems adapted in response to significant changes in their operating environments. During the period of the study, the brewing industry in question shifted from an oligopoly in which co-operative behaviour occurred to one in which more market-based competitive action is evident. These changes took place in the context of considerable deregulation of the entire economy and the dismantling of trade barriers with a major neighbouring trading partner. In addition, there were significant changes in societal and political attitudes towards alcohol products.

The study involves a comparative analysis of the two companies over the period 1986 to 1990. The use of a broader framework for conceptualizing the relationship between contingent variables and MCS, coupled with the use of multiple methods of data collection including field studies, provided richer insights into the relationships between several contingent variables and MCS, how changes in MCS actually occur in response to changes in contingent variables and the relative effectiveness of these responses. This focus upon the processes by which MCS change is a departure from previous studies which have largely relied on data collected through structured questionnaires when analysing the relationships between MCS and contingent variables.

Our results support the contingency fit notion, in particular, the importance of matching structure to changes in the external environment. Further, changes in structure occurred largely in anticipation of these external environmental changes.

Key words: management controls systems change; contingencies; and organizational adaptation.

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Adaptation of Management Control Systems to Rapidly Changing Environments: A Comparative Study of Two Brewing Companies

INTRODUCTION

Recent research in accounting and management has considered the adaptation of management control systems (MCS) to situational factors [1,2,3]. Much of this research asserts that organizational effectiveness is a product of an appropriate matching between internal organizational characteristics and the demands created by external environments [4]. However, the **process** by which such matching is achieved is not well understood. Furthermore, how such matching contributes to effectiveness is equally unclear.

In dynamic environments, matching implies organizational change. Pettigrew [5] suggests a common pattern of factors for managing the **process of organisational change**. This pattern is best represented by five inter-related factors that pertain to environmental assessment, leading change, linking strategic and operational change, human resources and coherence. Observable differences in the way higher performing firms manage change compared to other firms over time should be explained by linking firm performance to sectoral and economic change [6].

More specifically, Innes and Mitchell [7] interpret the **process of management accounting change** as three groups of originating factors (facilitators, motivators, catalysts) whose nature and timing influence change. Facilitators were those conducive conditions necessary but not sufficient to management accounting change (eg. degree of autonomy). Motivators were those influencing the observed changes in a general manner (eg. market competitiveness, production technology). Catalysts were those directly associated with the changes, with their occurrence corresponding closely to the timing of the change (eg. loss of market share, deterioration in financial performance).

In this study, we explore how firms adapt to economic and sectoral changes. The relative effectiveness of the responses of two companies operating in the New Zealand brewing industry were examined. In particular, the study focuses upon changes in the management accounting system (MAS) and structural characteristics which collectively are taken to represent the MCS[1]

According to Pettigrew and Whipp [6], the rate and trajectory of change in an industrial sector characterised by significant boundary changes may be much faster than the sensing and adjustment pathways of individual firms to the regrouping of the sector. The relative slowness of the sensing and adjustment process of firms, and their failure to recognise that the bases of competition may have changed in that sector is a key factor explaining their loss of competitive performance. It is however unclear how MCS are implicated in the adjustment process and its consequences. We therefore address the following research question:

> *Why firms operating in the same country, industry and product markets should record such different performances? More specifically, are differences in performance associated with the way they have adapted their MCS?*

MATERIALS AND METHODS

Approach

Because of the exploratory nature of this research, field studies are especially relevant as they are more likely to provide insights through gaining of first-hand knowledge of how accounting and control systems work in their specific contexts [8,9]. The use of field studies at the micro level of the firm to directly investigate change provides a potentially more insightful approach for explaining observed differences in practice, and for understanding the process by which management accounting develops [7].

According to Pettigrew [10], if researchers are interested in the links between the capability of firms to manage change and their relative competitive performance, then one needs to select sites which illustrate high and low performance. This he describes as "go for polar types". Furthermore, to emphasise the change-management aspects implied in our research question requires a comparison of firms operating in a rapidly changing economy and sector.

Selection of the Companies

The two New Zealand brewing companies were identified from a larger project which was conducted in two stages. Stage one involved collecting data through a mailed questionnaire to 202 New Zealand public-listed companies in 1985[2]. Stage two of the study was conducted in 1986 and involved an in-depth investigation of a sample of the manufacturing firms which responded to the Stage one survey. Potential participants were companies which recorded very low or very high perceived environmental uncertainty (PEU) scores relative to other companies, and which were either very small or very large (in terms of number of employees)[3]. Eleven companies agreed to participate, including the two brewers labelled hereafter as Firm A and Firm B.

The two brewers were chosen for this study because both were operating in an economy and industry undergoing rapid change during the period of the study[4], they were competing in the same market segments, yet they represented polar extremes in terms of their relative performance. Further, limiting the study to a single industry in this way enabled us to interpret differences in PEU scores as being attributable to differences in perceptions, rather than differences in objective environments.

[2] Results from this phase of the study have been published in [11] and [12].

[3] A low PEU score was defined as less than 4.0 and a high PEU score as greater than 5.0. Note that 89.1% of the PEU scores for manufacturing firms were greater than 3.5 (mid-point of possible PEU score) - that is, most respondents perceived fairly high degrees of uncertainty. In the case of size, firms with less than 300 employees were considered "small" while those with more than 1500 employees were considered large. Size and PEU were used because they emerged from the stage one analysis as being the variables most highly associated with MCS characteristics.

[4] Robin Cooper suggested that these circumstances could result in companies experiencing "fracture points" when outlining his field work methods in a panel discussion at the AAANZ Conference (1992).

Data Collection

Multiple data sources were used over the period 1986 to 1990. These included interviews, field administered questionnaires and archival data. Interviews were conducted with the group financial accountant of Firm A and the chief executive of Firm B in 1986[5] . Both researchers were present at the interviews and separately recorded the interviewee's responses. In addition, permission was given to tape the interviews, which were used to validate the responses recorded by the researchers. Each interview took about three hours.

The first part of these interviews was structured, and information relating to contextual and organizational factors was collected through a field administered questionnaire (FAQ) which was based on Khandwalla's study [13] . This was more comprehensive than the mailed questionnaire used in stage one. The following data were collected: organization objectives, perceived environmental uncertainty, technology, structure, control and information systems, selection, training, conflict resolution and coordination devices, subjective performance, nature of the business, total sales revenue, and sales revenue by major industry. The second part of the interview was unstructured and sought information on how senior management make decisions regarding the choice of controls, in response to changes in contextual and organisational factors. Here, management were first asked to nominate the factors which were most important with respect to the company. Questions were then posed on how the company altered its control strategies with respect to changes in these factors.

Also annual reports and profiles for the two brewing companies published from 1986 - 1990 were collected. Additionally, a comprehensive search of news indexes was conducted, and all relevant news articles were collected and analysed for the same time period.

[5] In our letter to the companies seeking their participation in the study, we specified that the interviewee should have a high degree of influence in decisions relating to the choice of controls and be familiar with the overall organization, including the structure, production technology and management controls employed.

Results

Rogernomics: A Program of Major Economic Change

The first stage of what ultimately turned out to be a considerable deregulation of the New Zealand economy commenced in about mid-1984 under the direction of Minister of Finance, Mr (now Sir) Roger Douglas. As part of this program of deregulation, trade barriers were removed through substantial cuts to protective tariffs, the New Zealand dollar was floated and industry subsidies were reduced and ultimately withdrawn. This entry into the deregulation process came after similar concepts had been embraced by larger economies such as the US, the UK, and Australia. But the changes were implemented rapidly and to a degree that gave New Zealand one of the least regulated financial systems in the world within six months of the new government's term [14].

The rapid pace of economic change was pushed along by a group of politicians and bureaucrats who had a clear idea of what they wanted to do. According to one commentator:

> *The swiftness with which the new Labour government moved to change the existing order reflected its view that the best solution for a problem is to head straight for the cause, rather than try to paste over the symptoms with stop-gap measures...... The new government went to work first on the country's finance sector. The removal of the extensive web of controls and government regulations has cleared the way for a freely operating system, where interest rates and exchange rates are determined by market forces of supply and demand... Government policy also included reform of the tax system, and the removal of import licences and subsidies...".*

(Carew, [14] pp5,7)

Most of these changes introduced by Minister Douglas could have been anticipated by business leaders from the publication of his reform agenda in 1980, some four years prior to the election of the Labour Government. Under his alternative budget to put New Zealand on a sound commercial footing, Douglas [15] (pp14,20) noted,

> *"Any economic strategy must involve an attack on the balance of payments difficulty and this involves...more import substitution..., or improved export performance..., or some combination of these.....Existing controls are not working. They do not promote consumers' interests. They have not increased competition. Often they do not serve the interests of*

industry and commerce except for established monopolies, which have been able to grow stronger at the expense of competition and the consumer...We should reform controls on prices, trade practices, mergers, takeovers and monopolies."

One of the most significant changes was the dismantling of trade barriers with Australia under the Closer Economic Relations (CER) Agreement which came into effect in January, 1983 and was to be phased in by 1995.

Brewing Industry Changes

One effect of these changes was the transformation of an oligopolistic brewing industry into a fiercely competitive one. The origins and histories of both Firm A and Firm B are remarkably similar. Both were initially formed in the 1920-30 era from amalgamations of regional breweries - a strategy that both continued for the next forty years. They also acquired extensive hotel interests leading to the practice of tied houses as a means of gaining market share. Throughout this time they dominated the beer industry and jointly controlled access to the industry through their command over local malt supplies and bottling facilities. Both New Zealand's only malt supplier and a large bottling company were jointly owned by the brewers. New chief executives were appointed in both companies in 1982.

Both Firm A and Firm B are involved in the manufacture and distribution of beer, the distribution of wine and spirits and have substantial interests in the accommodation industry. Firm A had revenue of $700 million in 1985 and employed 7,000 people. Firm B's annual revenue was $339 million and it had 3,000 employees. Brewing, wine and spirit merchant operations accounted for 67% of Firm A's revenues and 88% of Firm B's, while hotel operations accounted for the remaining revenues in both cases. In 1990, the merged entity of Firm A and a retail chain had revenues of $2,297 million and 6,800 employees while the corporation which acquired Firm B in 1987, had revenues of $1,440 million and 5,200 employees.

The nature of the industry prior to "rogernomics" was best described by a Firm A executive who observed,

> *......I suppose we sat down and we probably agreed policies or we'd section the market, or we'd say that's your area, we won't interfere in this area of yours - we had joint venture companies, we both supplied products to say that company or that hotel - we might provide the bulk beer, our competitor might provide bottled beer, or something - and we sort of abided by those agreements.*
>
> (Financial Accountant - Firm A)

During the late eighties however both brewers spent their marketing dollars attempting to erode each other's market share. Downward trends in consumption coupled with the inroads made by both home brewing and beer imports made the industry far more competitive. From 1981 to 1985 total beer consumption remained static at about 375 million litres per annum rising marginally to about 400 million litres in 1987 but then it fell to 371 million litres in 1990. Home brewing is growing and now accounts for about 23 million litres per annum while imports have also grown to about 17 million litres. In addition, there have been considerable changes in societal and political attitudes towards the products offered by the companies. The introduction of low alcohol beers is indicative of these changes while others were reflected in the Sale of Liquor Act[6]. During this period there was an increasing awareness that the beer market was no longer simply Firm A versus Firm B.

These changes made it possible to examine how the two companies adapted to the changing economic and sectoral environment and the relative effectiveness of their respective adaptations.

Firm Comparisons

Objectives. In 1986 both companies rated the objective of earning a high, above average profit as being important. Firm A also rated the achievement of a high average rate of growth in sales as very important while this objective was rated as relatively unimportant by Firm B, which instead rated employee morale as very important. This suggests that Firm A was more aggressive and growth-oriented than Firm B.

Production Technology. The companies employed very similar production technologies in 1986, using mainly large batch, mass and continuous process technologies. This suggests that they not only

[6] In particular the location and timing of liquor sales had implications for marketing strategies.

competed in the same markets but also on similar product characteristics (ie. relatively undifferentiated products).

Perceptions of Competitive Environment. In 1986, senior management of Firm A perceived greater levels of uncertainty in their operating environment than did their counterparts in Firm B. Further, senior management of the two companies attached varying degrees of significance to specific dimensions of the operating environment. Firm A consistently rated more highly the uncertainty associated with output-related factors (price, product, market activities of competitors and tastes and preferences of customers) and the economic and technological environment. In contrast, Firm B rated more highly the uncertainty related to input-related factors (competition for inputs and manpower). The areas of major difference between the companies are presented in Table 1.

TABLE 1: MAJOR DIFFERENCES IN PERCEPTIONS OF COMPETITIVE ENVIRONMENT REVEALED IN FAQ RESPONSES

Dimension of Competitive Environment	Firm A	Firm B
Unpredictability of competitors' actions	5[a]	1
Instability of external environment	5.5	3
Proliferation of external constraints	3	6

[a] The scores are based on a 7-point scale, with 1 representing very predictable, very stable or no increase in constraints and 7 representing very unpredictable, very unstable or great proliferation in constraints.

These differences were reinforced by comments made during the interviews with senior management of the companies.

Unpredictability of competitors' actions. As noted above a situation of oligopoly had existed, with Firm A and Firm B in control of the market. In the past the management of the two companies controlled the market place. Agreements were entered into which determined who supplied particular product lines to which hotel or company. However as one senior executive observed in 1986,

> *"...agreements now have been disbanded, one or other of the two companies is buying the other's share in that company and it's open competition out there....I think it's becoming less predictable...I suppose in the past we could have been accused of being a silent oligopoly...but these days it really is fierce competition out there...we have become probably more aggressive towards our competitor. There's not the `old gentlemen's club' atmosphere, maybe as there was in the past..."*

(Financial Accountant - Firm A)

Senior management of Firm A saw the competition as becoming less predictable and Firm A became more aggressive towards their main competitor, Firm B. In contrast, senior management in Firm B felt the competition was becoming more predictable,

> *"Yes, well our competitors are becoming more predictable because...they are very good companies and the better your competition, the more predictable they are."*

(Managing Director - Firm B)

Instability of external environment. As a result of the Labour Government's November 1984 budget there was a freeing up of the market, making the brewing industry a more open market. The senior management of Firm A foresaw instability in the short term but a stabilising market in the longer term and believed the company was poised to take advantage of new opportunities:

> *"...with the freeing of the economy within the country for business generally its long term is becoming more stable,...with sky-rocketing interest rates and the NZ dollar fluctuating probably it's unstable in the short term if you're looking at a period of six months or so, but I think in the long term one could say once those policies are put in place and they've time to work their way through the system...that it will be more stable for businesses to work in."*

(Financial Accountant - Firm A)

The changing environment, from a price controlled industry to open competition, was perceived as a `completely new ball game'. Factors of little significance in the past became very important and senior management of Firm A were aware of and perceived more uncertainty in the external environment.

"There's the whole Australian market now so the New Zealand beer market is open to the importation of Australian beer which has been, I suppose, a factor over the last two years. So certainly is price competition and a strengthening or a weakening NZ dollar. The impact that has on imports is a price competitive factor. The fact that we have moved in the last three years from a price controlled industry - a category A industry - to open competition...it's a completely new ball game."

(Financial Accountant - Firm A)

Table 1 shows that, relative to the senior management of Firm A, senior management of Firm B perceived the environment as changing more slowly. Indeed, when questioned during the interviews, the chief executive of Firm B did not regard the economic and technological environment as being important with respect to his company.

It is significant that these two firms in the same industry undergoing change read the environment so differently. To the extent that the environmental dimensions, *unpredicatability of competitors actions* and *instability of external environment*, reflect the complexity and rapidity of change of the environment it is noteworthy that Firm A perceived high levels of uncertainty emanating from both dimensions. Firm B however perceived only low levels of uncertainty arising from some increased dynamism in the market place. In other words Firm B wanted to play the old game a little faster whereas Firm A foresaw a completely new and much faster ball game. This "slightly faster game" was conveyed by Firm B's Managing Director when he noted,

You've got to run faster to get out before they do. Because we know what they're going to come out with - so we've got to run just that bit faster but beat them to it.

Proliferation of external constraints. The brewing industry is a very political industry, susceptible to political intervention and manipulation. Constraints emerge from societal attitudes and ultimately legislation. Both companies believed that there had been an increase in social constraints, in particular the growing concern over the alcohol abuse problem, and they actively supported the calls for moderation.

"The social constraints will get greater and greater I believe, as the pressures build up and the only smart thing for us to do is to realise that and do something about it."

(Managing Director - Firm B)

Recently, Firm A became more aggressive in dealing with this situation.

> *"...the industry that we're in is a very political industry...we are very susceptible, I suppose to the political whims; we're even seen as being evil, or moderately good and we can be a whipping boy for anyone who wants to use us in that way - whether it's road accidents, funding for hospitals or what. So the industry has always had those problems. It's probably something we've only started to face up to in the last three to four years. We've tended in the past to go along with them. I think there's been a change recently to us getting out there and maybe trying to manage those factors. Turn them around to our advantage more, blunt the edge of them a bit. Where in the past we tended to sit back and ride the punches maybe now we're going out a bit more aggressive, counter punching ourselves."*
>
> (Financial Accountant - Firm A)

Apart from these changing societal attitudes the brewing industry is also specifically constrained by legislation. A large number of statutes, the Sale of Liquor Act, town planning constraints or building codes all present legal constraints and requirements for the industry. To this time the industry "lived with" these constraints but with an upcoming review of the Sale of Liquor Act industry leaders were hoping for a more streamlined and less regulated approach to their industry. In particular the senior management of Firm A felt confident that a less restrictive approach would ensue from the review of the Act[7].

Management Control Systems Response. Recall that MCS is defined in this study as being a combination of structures and systems.

Organization Structure. Both companies were highly divisionalized along very similar lines, with each company having separate Hotels and Liquor Groups/Divisions which were further broken down into regions and divisions. However, the companies differed considerably on delegation of authority. Firm A scored higher than Firm B on all eight dimensions of this variable on the FAQ. Firm B had an overall average of 2.75 on the scale of 1-7, with 7 being complete delegation of authority compared to an overall average of 6.25 for Firm A. The range of scores for Firm A was 5 to 7, compared to 1 to 4 for Firm B.

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[7] Legislation allowing the sale of wine in supermarkets was not passed until 1990.

Firm A had commenced a program of restructuring in 1983. This involved divestment of interest in non-allied industries, and a concentration on activities within the liquor and accommodation industries. This had led in turn to a policy of decentralization of control, and a renewed focus on the needs of the customer. As the managing director noted in the 1984 Company Profile:

> *"The major pre-occupation of management during the financial year (1983-4) has been to re-establish the company on decentralised lines, to focus on customer needs, to plan for improvements in efficiency and productivity at all levels; and to plan the relocation of corporate and divisional offices to Auckland".*

Notwithstanding a pervasive charter that espoused delegation, Firm B tended to operate with greater centralization of authority than did Firm A. This comparative structuring of authority was highlighted by how the two companies went about resolving conflicts, and improving coordination between personnel. Firm B used ad hoc committees or task forces which followed explicit procedures for reviewing decisions. These task forces reported to top level company officials who determined the outcome. In contrast, Firm A employed individuals or groups whose primary function was to help resolve conflicts between organizational groups. Typically they explain to each group the other group's view and push for an agreement by each side. Set procedures tended not to be followed therefore giving an impression of a more unstructured approach.

Management Accounting Systems. The FAQ indicates that, overall, Firm A had slightly less sophisticated control and information systems. Looking separately at the three groups of controls, viz. operational, management and strategic controls, only the strategic controls differed substantially between the two companies. **Operational controls**, which include the use of standard costs and statistical sampling are likely to be driven by the production technology employed. Given the similarities in the production technologies of the two companies, it is not surprising that they use similar operational controls. In view of the relative lack of delegation of authority in Firm B, one can question their extensive use of **management controls** such as profit centres. In such situations, subordinate managers may be accountable for decisions which they have little authority to make. Finally, given that **strategic controls** are likely to be driven largely by the external environment, Firm

B appeared to have relied on having a more sophisticated system of strategic controls while Firm A relied more on structural changes to deal with the external environment.

However, senior management of Firm A noted that more sophisticated controls were likely to be employed following completion of the process of decentralization. Although they did stress that this would not include making accounting-type controls more sophisticated. The evolutionary pattern of the development of controls is however worthy of note,

> *"...some of these are starting to evolve now from the decentralization...so the controls that are going to be required are only starting to be put in place now...the accounting side...is pretty regimented...there are certain laid-down controls that I think most organizations of our size would follow...the company's always held budgeting in pretty high regard...it didn't need to be much stronger."*
>
> (Financial Accountant - Firm A)

Firm Performance. At the time of the study, senior management of both firms were not satisfied with their firm's performance. In the case of Firm A, the average FAQ score on subjective performance was 4.6 (4.7 on financial dimensions and 4.5 on non-financial dimensions) on a scale of 1-7. The Managing Director of Firm A noted in the 1985 Company Profile that:

> *"...the trading return on shareholders' funds of 11% compared with 8.1% last year, is still not a competitive return."*

The average FAQ score for Firm B was also 4.6 (4.3 on financial dimensions and 5 on non-financial dimensions).

Despite these similar assessments of their respective performances each company pursued different measures to improve performance based on their very different perceptions of environmental uncertainty. The senior management of Firm B perceived a predictable competitor, a stable environment, and greatly increased external constraints. Consequently, the company had a structured, almost bureaucratic MCS with restricted delegation of authority. In contrast, the senior management of Firm A perceived unpredictable competitors, an unstable external environment and a reduction of external constraints. This perception of greater uncertainty coincided with the move by Firm A to restructure and decentralize control. This did enable the company to make more timely decisions which better reflected the demands of the market. It is interesting that this restructuring commenced in 1983, before the significant changes in the operating environment took place.

Based on profitability measures, Firm A outperformed Firm B over the period of the study. In addition, Firm A experienced considerable growth in size subsequent to 1986, and by 1990 was one of the largest public-listed companies in New Zealand. It also retained the same chief executive over the period, although an additional chief operating officer was appointed. In contrast, Firm B was acquired by a company with interests in the food, cigarettes and beverage industries. The chief executive was replaced in 1987, and again in 1990. That is, over the period of the study, Firm B experienced significant top management turnover which is at least indicative of some dissatisfaction by the board of directors with the company's performance.

DISCUSSION

We adapt the model proposed by Innes and Mitchell [7] to synthesize the foregoing results and to explain the relative effectiveness of the two companies' responses. Figure 1 highlights the motivators and catalysts associated with the process of MCS change, the nature of MCS changes, and the consequences of these changes.

Insert Figure 1 here

Changes in MCS in the two firms were **motivated** by economic, sectoral and firm factors. Both firms were faced with similar changes in the objective environment in terms of economic and sectoral factors. These include: the deregulation of overall economy, increasing competitiveness of the brewing industry, and changes in legislation governing the industry. The two firms differ somewhat in terms of the importance they assigned to different objectives. In particular, Firm A was more aggressive and growth-oriented than Firm B.

Several factors acted as **catalysts** which intensified the need for change, and directly led to changes in MCS in the two firms. Two major catalysts resulting directly from the changes in the economic and sectoral environments were the threat of loss of market share and the launch of new products. Other catalysts for MCS change relate to the appointment of new CEOs, and the dissatisfaction of these new CEOs with their firms' financial performance.

This changing context increased the level of environmental uncertainty prevailing by altering the complexity and the rapidity of change of the environment. The introduction of more competitors and products along with changing customer preferences added to the complexity of what had been a relatively stable environment. The speed of change in the economy generally, and in particular industries such as brewing, further added to the levels of uncertainty managers confronted. Reading these changes accurately became a necessary prerequisite to implementing appropriate company changes.

While Firm A appears to have accurately assessed both dimensions of environmental change Firm B tended to only recognise the loss of stability and not the increased complexity. Accordingly, Firm B managers, unlike their counterparts in A, added sophistication to their MAS but did not delegate authority to managers consistent with such a system. That is, they continued to operate as a relatively centralized company despite intentions to do otherwise.

In particular, senior management of Firm A perceived the marketing activities of competitors as becoming less predictable, the economic and technological environments as becoming less stable and fewer legal, political and economic constraints confronting the company. Consequently, it moved from a centralized structure to a highly decentralized one, with these changes in delegation being largely anticipatory in nature. In contrast, senior management of Firm B perceived quite the reverse and continued to operate with a more centralized structure. We conclude that Firm A has been more successful than Firm B when success is measured as financial performance and growth. The fact that Firm B has replaced its CEO on two occasions over the last five years reinforces this inference.

Based on their different readings of economic and sectoral changes, each firm adopted different control strategies. The more successful Firm A appears to have more accurately assessed the external environment and adapted its structure in anticipation of these changes. It then evolved other aspects of its MCS to achieve fit with the demands of the new structure and environment. Therefore, while it sought to ultimately to develop a consistency between its structure and systems, clearly the requirement to fit structure with environmental demands dominated. In contrast, Firm B not only misread the environmental changes leading to a structure less suited to the demands of a rapidly changing environment but it also appeared as though Firm B's MAS was inconsistent with its more centralized structure. In this sense it appears as though the rate and trajectory of change in the New Zealand brewing industry were much faster than the sensing and adjustment pathways of Firm B.

CONCLUDING COMMENTS

Despite the intuitively appealing nature of the proposition that organizational effectiveness (success) is the product of an appropriate matching between internal organizational characteristics and the demands created by external environments, such contingency notions have attracted persistent criticism ([8], [16], [17], [18], [19] [20]). Several researchers have argued that **internal consistency** among organizational sub-systems may be more important to organizational performance than the fit between organization design characteristics and contingent variables (eg. [21], [22]). Khandwalla [21] argued that internal consistency may better explain organizational performance than contingency fit. Child [22] noted the possible conflict between the contingency fit and internal consistency notions. He added that: *"The importance of the consistency factor is still to be researched, but given the limitations of the contingency argument it may prove to be quite significant"* (p. 233). Others too have questioned the implicit assumption of contingency theory that organizations adapt to situational factors in an evolutionary manner (eg. [23], [24], [25], [26]). Miller [23] argued that: *"Incremental structural changes may create severe and costly disharmonies as they destroy an integral structural configuration"* (p.131). Mintzberg [27] (p.115) specifies two choices available to an organization:

> *"It can adapt continuously to the environment at the expense of internal consistency - that is, steadily redesign its structure to maintain external fit. Or it can maintain internal*

consistency at the expense of a gradually worsening fit with its environment, at least until the fit becomes so bad that it must undergo sudden structural design to achieve a new internally consistent configuration."

The present study, by exploring how firms adapt to economic and sectoral change, provided evidence on the contingency fit and internal consistency notions on MCS design. It also allowed an assessment of whether organizational adaptation occurs in an evolutionary or revolutionary manner.

This study adopted an in-depth approach to data collection using structured questionnaires, interviews and archival information sources. The study examined how two New Zealand brewing companies, Firm A and Firm B, responded to significant changes in their operating environments. These two companies were selected because they dominated the brewing industry, faced similar objective environmental uncertainties and as it transpired, had similar configurations of other contingencies. During the time of the study, the industry was faced with a dismantling of trade barriers enabling overseas companies freer access to the domestic beer market, significant overall deregulation of the economy, impending relaxation of sale of liquor and changing social attitudes towards alcoholic products. This led to the industry shifting from an oligopoly in which co-operative behaviour occurred to one in which more market-based competitive action is evident.

The major differences between the two companies which emerged in our study were in how senior management perceived the changes in the operating environment and the extent to which they delegated authority to lower levels of the company. Specifically, it would appear that Firm A's management had more accurately assessed the uncertainties emerging from macro-economic change than had Firm B's. A recognised the *new ball game* whereas B seemed to be preparing for the *same game played faster*. Given the nature of the environmental changes the particular package of controls implemented by Firm A's management was more successful than that of Firm B. A's decentralized structure with a consistent MAS was a better fit than the inconsistent package in Firm B based on what was still a largely centralized structure.

A limitation of the present study is that the financial success of the changes observed are likely to be felt more in the longer term and may well be very difficult to detect as noted by Otley [8]. In addition, although the use of field studies is consistent with recent exhortations by management accounting researchers to study accounting in the contexts in which it operates (eg. [28]), the methods used have inherent weaknesses which limit the conclusions which can be drawn. We did not employ participant observation methods which could have yielded richer and probably more reliable insights in the processes of organizational adaptation. Further, our conclusions are derived from analysing only two companies and may not be generalizable to other companies and situations. Finally, the study focused only on formal control systems although informal controls may be equally or more important to the process of organizational control.

In summary, the less successful Firm B exhibited **both** a lack of fit between its structure and the environment, and inconsistencies between the structure and other aspects of its MCS. The former can be attributed to senior management's misreading of the nature of the changes in the external environment. In contrast, Firm A was faster in adapting to environmental changes. The speed and appropriateness of these responses by Firm A were facilitated by their **anticipation** of the need to change. This was achieved by first changing its structure while other aspects of its MCS gradually **evolved** to fit the newly developed structure. This implies inconsistency between different aspects of the MCS during its transitory phases. This reaffirms central notion of contingency theory in that the MCS of organizations should fit the external environment **at the expense of maintaining internal consistency among various organizational sub-systems**. However, existing characterizations of organizations changing their structures in response to changes in the external environment, while valid, may be somewhat incomplete. Our findings suggest that environmental uncertainty "drives" structure but that structure changes in anticipation of changes in uncertainty.

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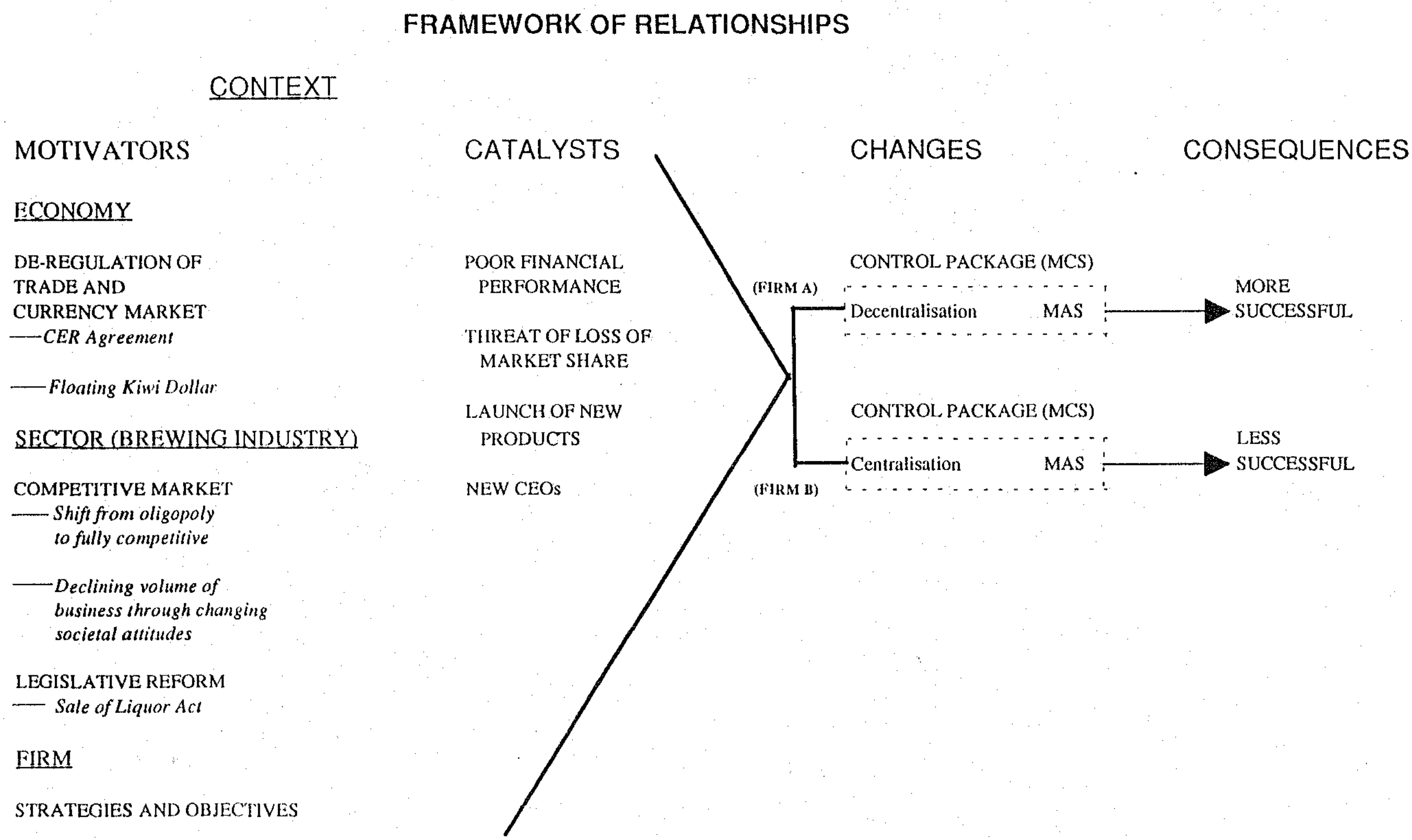
FRAMEWORK OF RELATIONSHIPS
CONTEXT
MOTIVATORS
ECONOMY
DE-REGULATION OF TRADE AND CURRENCY MARKET
— CER Agreement
— Floating Kiwi Dollar
SECTOR (BREWING INDUSTRY)
COMPETITIVE MARKET
— Shift from oligopoly to fully competitive
— Declining volume of business through changing societal attitudes
LEGISLATIVE REFORM
— Sale of Liquor Act
FIRM
STRATEGIES AND OBJECTIVES
CATALYSTS
POOR FINANCIAL PERFORMANCE
THREAT OF LOSS OF MARKET SHARE
LAUNCH OF NEW PRODUCTS
NEW CEOs
CHANGES
(FIRM A)
CONTROL PACKAGE (MCS)
Decentralisation
MAS
(FIRM B)
CONTROL PACKAGE (MCS)
Centralisation
MAS
CONSEQUENCES
MORE SUCCESSFUL
LESS SUCCESSFUL

FIGURE 1