

Management Accounting and Organisational Change: An Exploratory Study in Malaysian Manufacturing Firms

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Abstract

This study explores the changes as well as potential association among environmental factors, management accounting practices and organisational factors in Malaysian manufacturing companies in the Klang Valley.

Results of the study showed that the majority of the responding companies have reacted positively to changes in competitive business environment and advanced manufacturing technology. Increased changes are also reported in management accounting practices and organisational factors (namely structure, strategy and performance).

A positive significant association is found among all of the variables except for competitive environment and advanced manufacturing technologies with performance. This research provides useful insights into management accounting practises and organisational change in Malaysia.

Keywords

**Management Accounting
Organisational Structure
Strategy
Competitive Environment
Advanced Manufacturing Technology
Performance**

Introduction

In understanding management accounting in a competitive business environment, much research has increasingly focused on the change aspect. When business organisations respond to challenges by embarking on a change management path, they will face the choice of which one of the alternative management methods, techniques and systems would be most effective (Waldron, 2005). Even though much research in this area has been conducted, the focus to date has been on the business environment in a developed economy context; the business environment in a developing country differs from that within a developed country in many aspects. Therefore, this study extends previous research by examining changes in management accounting and organisational factors in a developing economic setting, i.e. for Malaysian manufacturing companies.

Business environment in Malaysia has rapidly changed as a result of globalisation. Globalisation has changed the environment surrounding organisations operating in developing countries with an increase in uncertainty, intensified industry competition and advanced technology. According to Kassim, Md-Mansur and Idris (2003) globalisation brings in new technology and makes a developing country open to greater competition. These changes may affect the choice of management accounting practice in an organisation and may also result in the firm needing to reconsider its existing organisational design and strategies in order to fit with the changing environment. This argument is supported by both Burns and Scapens (2000) and Shields (1997). They suggest that changes in the environment cause changes in organisations, which in turn cause changes in management accounting practices.

Malaysia's rapid move from a production-based economy (p-economy) towards a knowledge-based economy (k-economy) allows companies to do business in an environment that is geared towards information technology¹. The advance of technology through ICT and computerisation

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¹ Source: Malaysia Industrial Development Authority (MIDA), <http://www.mida.gov.my>.

has also made management accounting information flow within organisations in Malaysia more useful, timely, accurate, and relevant (Omar, Abd-Rahman, & Sulaiman, 2004).

Moreover, the introduction of a 'fast information technology' environment, within which firms in manufacturing industries in Malaysia operate, has greatly affected the associated technological environment. Much literature has identified technological advancement, active competitors and demanding customers as potential predictors of organisational and management accounting change (Baines & Langfield-Smith, 2003; Dibrell & Miller, 2002; Innes & Mitchell, 1990; Kaplan & Norton, 1996; Shields, 1997). This aspect is important because the management accounting system (MAS) requirements can vary significantly depending on how well known are the causes of change in the external environment, and their indicators are to the organisation. This argument is supported by Waweru, Hoque and Uliana (2004), who found that an increase in global competition and changes in technology were the two main contingent factors affecting management accounting change in South Africa.

As the firm strives to achieve a better fit with its environment, and to be more successful, sustaining, and improving current performance will become critical. However, very limited research has taken place into how changes in technological and competitive business environments have caused management accounting and organisational change in developing countries. Most empirical evidence in this area originates from research in developed countries (Baines & Langfield-Smith, 2003; Burns, Ezzamel, & Scapens, 1999; Chenhall & Euske, 2007; DeLisi, 1990; Innes & Mitchell, 1990; Libby & Waterhouse, 1996; Ling-Yee & Ogunmokun, 2007; Lucas & Baroudi, 1994; Luft, 1997; Macy & Arunachalam, 1995; J. A. Smith, J. Morris, & M. Ezzamel, 2005).

Unlike developed countries, management accounting practices (MAP) in developing countries may be gained through "importing" management accounting systems in the manner adopted by foreign companies establishing operations in developing countries

(Abdul-Rahman, Omar, & Taylor, 2002; Chow, Shields, & Wu, 1999). Furthermore, little research has been done in developing countries (see for example, Hoque & Hopper, 1994; Waweru, Hoque, & Uliana, 2004) and even fewer studies in Asian countries like Malaysia (e.g., Abdul-Rahman, 1993; Nor-Aziah & Scapens, 2007). These factors provide further motivation to carry out this research in Malaysia so that it can contribute to a better understanding of the adoption of organisational change and MAS in a developing country context.

Drawing upon the management accounting and organisational change literature, this study address the following research objectives:

- (1) To explore the level of change in competitive environment, manufacturing technology, structure, strategy, management accounting practices and performance in Malaysian manufacturing companies.
- (2) To investigate if there is any association among these variables.

Literature Review

The basic purpose of accounting information is to help users make decisions. Management accounting is the branch of accounting that produces information for managers and forms an important integral part of the strategic process within an organisation. It involves the process of identifying, measuring, accumulating, analysing, preparing, interpreting, and communicating information that helps managers fulfil organisational objectives (Horngren, Sundem, Stratton, Burgstahler, & Schatzberg, 2007). Chartered Institute of Management Accountants (UK) (2000) views management accounting as an integral part of management which requires the identification, generation, presentation, interpretation and use of information relevant to formulating business strategy, planning and controlling activities, decision-making, efficient resource usage, and performance improvement and value enhancement.

Management Accounting Change

Management accounting change is not a uniform phenomenon. Consequently one might expect the causal factors of change to be

varied and this has indeed been confirmed by management accounting researchers. It is evident that both the external factors (environmental) and internal factors (relating to the organisation concerned) have influenced the recent development of new management accounting systems and techniques. According to Shields (1997), the potential change drivers are competition, technologies, organisational design and strategies. These drivers of change also indicate the differing roles which causal factors can have in the process of change. Change in environment also implies uncertainty and risk which create a demand for further management accounting change in the form of 'non-financial' measures (Vaivio, 1999).

Many researchers have shown an interest in understanding management accounting change (Baines & Langfield-Smith, 2003; Chenhall & Langfield-Smith, 1998b; Innes & Mitchell, 1990; Libby & Waterhouse, 1996). For example Chenhall and Langfield-Smith (1998b) have explored the benefit of management accounting change, but less is known about the forces that induce this change (Laitinen, 2006). The reasons for management accounting change are termed "motivational factors" (Laitinen, 2006), and many researchers have suggested a substantial list of motivational factors (Baines & Langfield-Smith, 2003; Laitinen, 2001; Libby & Waterhouse, 1996). For example, Innes and Mitchell (1990) found a different set of circumstances linked with management accounting change, which they termed as follows:

- *Motivators* (e.g., competitive market, organisational structure, and product technology)
- *Catalysts* (e.g., poor financial performance, loss of market share, organisational change)
- *Facilitators* (e.g., accounting staff resources, degree of autonomy, accounting requirements)

The interaction between these variables promotes change not only in management accounting but also other related disciplines² (Innes & Mitchell, 1990; Laitinen, 2006). Laitinen (2001) classified these factors in six

² For example organisational factors

groups: information needs; changes in technology and environment; willingness to change; resources for change; objectives for change; and external requirements. Laitinen (2006), on the other hand, used four categories of factors to explain management accounting change: organisational factors; financial factors; motivational factors, and management tools.

While, various factors have been associated with management accounting change, this study considers three factors, i.e., motivational factors, organisational factors and financial factors. Changes in environment and technology are used as motivational factors in explaining management accounting change and changes in organisational factors (i.e., structure and strategy). Besides that, organisational structure and strategy (organisational factors) are considered as contextual factors inside the firm that may have a connection to changes in management accounting (Moores & Yuen, 2001). Financial factors are used as outcomes of management accounting and organisational change. Grandlund (2001) suggested that low financial performance may put economic pressure on the firm to change its MAS to increase performance. Baines and Langfield-Smith (2003) suggested that if management accounting change is accompanied by a greater reliance on accounting information, it may result in improved performance. Thus, financial performance may be an antecedent or an outcome factor of management accounting change.

Management Accounting and Organisational Change in Malaysia

Many firms have experienced significant changes in their business environment with advances in information technology, highly competitive environments, new management strategies, and a greater focus on quality and customer services. Many relevant management accounting studies have highlighted the significant changes in these operating environments (e.g., Burns & Vaivio, 2001; Choe, 2004; Gomes, Yasin, & Lisboa, 2007; Haldma & Laats, 2002; Hopwood, 1990; Hussain & Hoque, 2002; Innes & Mitchell, 1995; Kaplan & Norton, 1996; Libby & Waterhouse, 1996; Scapens, 1999; Vamosi, 2003) which have influenced the choice of

which management accounting systems and techniques would be most effective (Waldron, 2005) and engendered the organisation to reconsider its design and strategy (Baines & Langfield-Smith, 2003) in maintaining and/or improving performance (Chenhall & Langfield-Smith, 1998a; Choe, 2004).

Environment can be broadly characterised as phenomena that are external to the organisation and which have either potential or actual influence on the organisation (Macy & Arunachalam, 1995, p.67). The external environment may thus relate to technology, law, politics, economics, culture and demographics. According to Chenhall (2007, p. 172), environment refers to “particular attributes such as intense price competition from existing or potential competitors”. Uncertain environment, which is impacted from high competition, is therefore an important contextual variable in contingency-based research.

Globalisation has changed external environmental factors in developing countries, which in turn affect the internal operations of organisations as well as their management accounting practices. This relationship is explained using contingent theoretic arguments, which suggest that changes in management accounting practices and internal operations of organisations are contingent on the “fit” with changes in the external environment that surrounds them (for a review, see Abdel-Kader & Luther, 2008; Haldma & Laats, 2002; Macy & Arunachalam, 1995). Competitive environment and technology advancement have generally been assumed, in the literature, to influence the manufacturing company to change its management accounting practices, as well as its organisational design and strategies. However, there is little empirical research to support such relationships and little, if any, research has been conducted in the context of developing countries, specifically in Malaysia.

Globalisation has changed the Malaysian economy tremendously in the last 30 years from its reliance on agriculture to the development of an industrialised economy. Malaysia is also categorised as an ‘uncertain’ country, with rapid pace of change and with the opportunity for economic growth. Fluctuating interest rates, inflation, exchange

rates and stock exchange indices, are evidence of a business environment in Malaysia which is volatile. Increased economic uncertainty is found as an important cause of changes in management accounting practices³.

Contingency researchers have argued that MAS and control systems, structures and processes are influenced by environmental uncertainty, production technology and strategy. There are various organisational factors that describe those contextual variable factors inside and outside the firm and which may have a connection to management accounting change (Laitinen, 2006; Moores & Yuen, 2001). These contextual variables such as uncertainty, strategy, structure, firm size, production technology, organisational capacity and intensity of competition are linked to management accounting change (Laitinen, 2001; Libby & Waterhouse, 1996; Simons, 1987).

Failure to rely on appropriate accounting information may contribute to ineffective resource management and a gradual decline in organisational performance. According to Omar, Abd-Rahman and Sulaiman (2004) the integration of traditional with new management accounting techniques could result in more effective management accounting systems. Such an integrated phenomenon is very commonly practiced by Japanese companies worldwide, including in Malaysia. In contrast with foreign companies, it is found that local manufacturing companies in Malaysia are still largely employing traditional management accounting systems to meet their need for both internal and external reporting (Omar et al., 2004).

Another view suggests that comparing traditional and advanced management accounting practices requires a more holistic view as both sets of practices tend to complement each other (Chenhall & Langfield-Smith, 1998b). This is explained by IFAC’s evolution of management accounting, where the traditional techniques developed in

³ Luther & Longden found that the mean response to the importance of increased uncertainty of the economic environment as a cause of changing management accounting practices in South Africa (high economic uncertainty) is higher than in the UK (more certain economic).

the early stage are continuously used in later stages. Calls for the development of strategic management accounting are based on the perception that traditional systems are inadequate in providing information to assist in developing manufacturing strategies that enable the firm to compete on quality, reliable delivery, flexibility as well as low cost (Moore & Mula, 1993). Thus, the issue of whether advanced management accounting practices should be used to complement or substitute for traditional management accounting practices in a changing environment is still not settled. As noted by Chenhall and Langfield-Smith (1998b, p. 257) "... contextual factors such as manufacturing technology (for example, robotics and automation) and product diversity may affect the potential usefulness of traditional management accounting practices. Clearly, the impact ... of combining traditional and contemporary management accounting practices could be considered in future research". Further evidence on this issue might result from this study.

Despite the unsettled issue of types of change in management accounting techniques, change in an organisation's environment imposes other demands on MAS, including the necessity of making suitable changes to maintain effectiveness. The effectiveness of using MAS as a platform for change can be explained by considering the extent to which the organisation develops temporal capacity that is required to manage the alignment of different modes of change (Chenhall & Euske, 2007). Burns et al. (1999) argued that changes in management accounting practices are not necessarily confined to the introduction of new systems (replacement of the existing system); changes can be made in the way management accounting is used (output or operational modification).

Sulaiman and Mitchell (2005) explored the forms which management accounting change can take by utilising a simple typology of MAS change derived from existing research literature. They found it to consist of addition, replacement, output modification, operational modification and reduction. They found that replacement of existing techniques and information output modifications are particularly significant as these types of change have both a relatively high frequency

and importance.

Management accounting change ranged from introduction of a comprehensive costing system, to tentative, partial and temporary change of a more modest type (see, Anderson & Young, 2001; Innes & Mitchell, 1990). The classification of management accounting change has also been studied by several researchers. For example, Vaivio (1999) provides instances of change involving the supplementation of information in existing performance measurement packages, whereas Granlund (2001) observed the replacement of a management decision support system with new techniques.

As suggested earlier, performance may be an antecedent or an outcome factor of management accounting and organisational change. Prior studies have shown that there may be a link between performance and change. Low financial performance is said to be one of the reasons for the firm to change its management accounting and internal organisational factors to improve performance (Granlund, 2001; Laitinen, 2006).

The contingency theory of management accounting suggests that if organisations implement MACS that suit their organisational and environmental factors, they are likely to perform better (Chenhall, 2003; Otley, 1980). This approach asserts that neither the MACS, nor the organisational configuration will affect performance; it is the fit between MACS and its contextual variables which is the most important determinant of performance (Jermias & Gani, 2002).

Much research on management accounting and organisational change focuses on performance in relation to its measurement (e.g., Andon, Baxter, & Chua, 2007; Chenhall & Langfield-Smith, 1998, 2003; Feurer & Chaharbaghi, 1995; Gomes, Yasin, & Lisboa, 2007; Hoque, 2005; Hoque, Mia, & Alam, 2001). Even though some past research has examined the impact of management accounting and organisational change on organisational performance (see for example, Baines & Langfield-Smith, 2003; Choe, 2004; Hoque, 2004; Sisaye, 2003; Waclawski, 1996), these studies examine the impact of performance from one point of view only, either as a result of organisational change or management

accounting change (e.g., Waclawski, 1996), and most of this research shows an indirect relationship between organisational change or management accounting change on performance (e.g., Baines & Langfield-Smith, 2003).

Hoque (2005) used non-financial performance measures in evaluating organisational performance operating in an uncertain environment. He argued that traditional performance measures are unable to satisfactorily reflect firm performance affected by today's changing business environment. Traditional measures which focus mainly on financial criteria such as return on investment or net earnings are narrow in focus, historical in nature and in many cases are incomplete (Hoque, Mia, & Alam, 2001). It is argued that non-financial performance measures may enable a firm to address environmental change by clearly monitoring core competencies of the organisational process as well as creating greater efficiency throughout the organisation and help managers to assess changes in their business environment, determine and evaluate progress towards the firm's goals, and affirm achievement of performance (Kaplan & Norton, 1996). This argument is supported by findings from Baines and Langfield-Smith (2003) which indicate that organisational performance is significantly associated with an increased reliance on non-financial management accounting information.

Hoque, Mia and Alam (2001) suggest that in today's environment of computerised manufacturing and fierce competition, organisations need a multidimensional performance measurement system that should provide continuous signals as to what is most important in their day-to-day activities and where efforts must be directed. Thus, for this study, multiple performance measures are used to measure performance in manufacturing companies because the use of traditional performance measurement alone is not enough to measure performance for organisations operating in highly competitive and advanced technology environments.

From the literature, it is suggested that organisational performance tends to be dependent upon the existence of fit between the use of organisational systems and the situational factors (Baines & Langfield-Smith,

2003; Chenhall & Morris, 1986; Haldma & Laats, 2002; Hoque, 2004; Hyvönen, 2007). Langfield-Smith (1997) provides evidence that a good match among the organisation's environment, strategy and internal structures, and MAS may result in high organisational performance.

Prior research in management accounting has also examined the various relationships between the environment, organisational and management accounting system (see for example, Albright & Lee, 1995; Chenhall, 2003; Gurd & Thorne, 2003; Kloot, 1997; Lapsley & Pallot, 2000; Rowe, Birnberg, & Shields, 2008). Some types of information provided by management accounting systems can give rise to organisational learning (Chenhall, 1997) which in turn increase organisational performance (Choe, 2004). Although numerous studies have been undertaken into management accounting and organisational change (e.g., Andon, Baxter, & Chua, 2007; Baines & Langfield-Smith, 2003; Chenhall & Euske, 2007; Choe, 2004; Ezzamel, Robson, Stapleton, & McLean, 2007; Gomes, Yasin, & Lisboa, 2007; Haldma & Laats, 2002; Jarvenpaa, 2007; Kaynak & Hartley, 2006; Laitinen, 2001; Lapsley & Pallot, 2000; Matt, Chenhall, & Euske, 2007; Naranjo-Gil & Hartmann, 2007; J. Smith, Morris, & Ezzamel, 2005; Soin, Seal, & Cullen, 2002; Waweru, Hoque, & Uliana, 2004) none has been carried out in Malaysia. In addition, the literature on the adaptation of management accounting to the environments of developing countries is limited; thus findings from this study may shed light on the role of management accounting in companies in developing societies undergoing rapid change.

Research Method

Sampling and Data Collection

The sample of 500 manufacturing companies incorporated before 2003 was randomly selected from Federation of Malaysian Manufacturer (FMM) Directory 2008. This is congruent with the research objective to analyse the level of changes in MAP and organisational factors for a five year period from 2003 to 2007 inclusively. The questionnaire was mailed to the companies in November 2008, together with a covering

letter and replied paid envelope. The covering letter explained the detail of the survey, contact information and also instructions for completion of the survey; respondents were also informed that all the information provided would be treated in the strictest confidence and that only aggregated findings would be reported. Two weeks after the initial mailing, a reminder letter was sent to the respondents. Within one month of the questionnaires being mailed to respondents, out of 500, 117 companies had replied (response rate of 23.4%). According to Smith (2003, p. 125), a response rate of less than 25 percent is now common in accounting research; thus, this rate is considered sufficient for statistical analysis and inferences. A comparative analysis between the early and late respondents was conducted to assess for any response bias. The test (mean score) indicated no significant differences between them. This result suggests no evidence of response bias in the study's data.

Research Instruments

The variables measured in this study cover the six areas in the conceptual framework. An 11-point Likert scale was adopted from the study by Baines and Langfield-Smith (2003), to capture decreased change (-5 to -1), no change (0) and increased change (+1 to +5). Where relevant, respondents were given the opportunity to indicate if the various practices or items had never been used or adopted (indicated as N/A). For the purposes of analysis, this scale was coded 1 to 11, where 6 was the point for 'no change'. Any item which was not applicable was treated as a missing value. The list of items asked in the questionnaire is presented in Appendix Three.

Data Analysis

In order to enhance the validity and reliability of the measures, the instruments used in this study are adopted from previous studies in this field (Askarany & Smith, 2008; Baines & Langfield-Smith, 2003; Hoque, Mia, & Alam, 2001). However, since there is no innovative statistical analysis performed in this study; the measure of reliability for the overall items is deemed appropriate. In this case, Cronbach's alpha is used to test the internal consistency reliability.

From the analysis, a Cronbach's alpha of 0.97 is obtained, which is deemed 'good'. The lenient cut-off of 0.60 is common in exploratory research, but, alpha should be at least 0.70 or higher in order to retain an item in an "adequate" scale. However, many researchers require a cut-off of 0.80 for a "good scale". Thus, an alpha of 0.97 obtained by this study is considered as a good outcome.

Results

A profile of responding companies is presented in Table 1 below.

As can be seen from Table 1, the majority of the respondents are from the electrical and electronics industry (26.5%); followed by basic metal products (11.1%); food processing (9.4%); machinery and equipment (7.7%); petrochemical and rubber products (both are 6.8%); Information technology (3.4%); paints and coatings, Fertilisers, plastics, and cosmetics and toiletries (2.6% respectively). Companies which categorised in other sectors are those who have less than 1% in terms of their level of responses.

Out of various industries engaged in this study, 66% of them are local companies; only 34% of the respondents are foreign companies operating in Malaysia. Out of 117 companies participating in this research, 51% produce mainly for industrial supply, 40% for consumer products, and another 9 percent for both consumers and the industry suppliers.

The sample in this study embraces both small and large companies. The Small and Medium Enterprise Corporation Malaysia (SME Corp. Malaysia) defines small companies as those companies having 50 or less employees, whereas those companies with between 51 and 150 employees are designated as medium size. Companies having more than 150 employees are considered to be big companies. According to Table 1, the number of employees for these participating companies ranged from below 50 to in excess of 1,000 employees. The majority (68%) indicated that the total number of employees ranged from 50 to 150, thus designated as medium-sized organisations. 12% of the responding companies were small companies (with fewer than 50 employees), and the balance are considered as big

companies, with 14% of these having more than 1,000 employees.

Table 1: Descriptive Statistics of Responding Companies

	Freq- uency	Perce- ntage
Manufacturing Sector:		
Electrical & Electronics	31	26.5
Basic Metal Products	13	11.1
Food Processing	11	9.4
Machinery & Equipment	9	7.7
Petrochemical & Polymer	8	6.8
Rubber Products	8	6.8
Automotive	5	4.3
Information Technology	4	3.4
Paints & Coatings	3	2.6
Fertilisers	3	2.6
Plastics	3	2.6
Cosmetics and Toiletries	3	2.6
Others	<u>16</u>	<u>13.6</u>
Total	117	100.0
Type of Companies:		
Local	77	66
Foreign	<u>40</u>	<u>34</u>
Total	117	100
Type of Product:		
Consumer	47	40
Industrial	60	51
Both	<u>10</u>	<u>9</u>
Total	117	100
Number of Employees:		
Less than 50	14	12
50 – 150	56	48
151 – 500	19	16
501 – 1,000	12	10
More than 1,000	<u>16</u>	<u>14</u>
Total	117	100

Respondents were asked whether changes had occurred in the competitive environment, manufacturing technology, management accounting practices, organisational structure, strategy and performance of the firm during the five year period from 2003 to 2007. The data in Table 2 shows the overall mean of changes in competitive environment, advanced manufacturing technology (AMT), management accounting practices (MAP), organisational structure, strategy and

performance (9.09, 7.83, 8.48, 8.55, 8.94 and 8.00 respectively). These results indicate that Malaysian manufacturing companies have placed a greater emphasis on competition and technological advancement. A high mean value also indicates that management accounting practices, organisational structure, strategy and performance in these companies have increasingly changed. Details of the results for each of the variables are discussed in the following subsections.

Competitive Environment

The descriptive statistics for all predictors' variables in competitive environment are presented in Table 3 below.

As shown in Table 3, more than 80% of the respondents have an increase in competition over the five year period (2003-2007). Only a minimal number of respondents (less than 8%) report a decrease in competition, and the same percentage indicates that there were no changes in their organisation. Overall, the results indicate that manufacturing companies in Malaysia responded positively to the change in competitive environment (overall mean = 9.09).

Technological Development

Table 4 presents descriptive statistics for all variables in AMT. The results show that most of the respondents have responded positively to the changes in manufacturing technology. However, the result indicates an almost 50-50 split between those respondents who adopted AMT and those who do not. Few respondents reported a decrease in adoption, or no change in the adoption, of new AMT (decreased change <8%; no change <15%).

Even though the majority of the respondents report an increase in the used of AMT, the result shows the extent to which the use of particular AMT are not really high during the past five years (overall mean = 7.83). Furthermore, the results also indicate that 20% to 49% of the respondents do not use a particular AMT in their organisation. Computer aided engineering (CAE) and numerical control (NC) were the most unpopular technologies in Malaysian

Table 2: Descriptive Statistics of Main Variables

Variable	Average Mean	SD
Competitive Environment	9.09	1.23
Advanced Manufacturing Technology (AMT)	7.83	1.14
Management Accounting Practices	8.48	1.00
Organisational Structure	8.55	0.99
Organisational Strategy	8.94	1.17
Organisational Performance	8.00	1.57

(Likert scale of 1 to11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

Table 3: Change in Competitive Environment

Change in Competition	Decreased Change (%)	No Change (%)	Increased Change (%)	Mean	SD	N/A (%)
Price	7.3	2.4	90.3	9.29	1.75	-
New product development	4.8	4.9	83.0	8.71	2.22	7.3
Marketing/distribution channels	-	4.9	95.1	9.05	1.43	-
Markets/revenue share	-	2.4	97.6	9.56	1.18	-
Competitors' action	2.4	7.3	90.3	9.15	1.67	-
No. Of Competitors	4.8	-	92.8	8.80	2.09	2.4
Average	-	-	-	9.09	1.23	-

(Likert scale of 1 to11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

Table 4: Change in Advanced Manufacturing Technological

Technological Change	Decreased Change (%)	No Change (%)	Increased Change (%)	Mean	SD	N/A (%)
Robotics	7.2	7.3	48.8	7.62	2.43	36.6
FMS*	4.9	12.2	51.2	7.82	1.72	31.7
CAM*	4.8	12.2	56.2	7.87	1.99	26.8
CAD*	4.8	12.2	46.4	7.92	1.35	36.6
CAE*	7.2	7.3	36.7	7.14	2.22	48.8
CAPP*	7.2	2.4	58.7	7.68	2.12	31.7
Testing machine	2.4	7.3	63.3	8.67	1.90	26.8
JIT*	2.4	2.4	75.7	8.39	1.60	19.5
Direct NC*	-	14.6	41.5	7.83	1.43	43.9
CIM*	4.8	7.3	51.3	7.65	1.89	36.6
NC*	2.4	14.6	34.2	7.52	1.91	48.8
Average	-	-	-	7.83	1.14	-

(Likert scale 1 to11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

*FMS = Flexible Manufacturing System; CAM = Computer Aided Manufacturing; CAD = Computer Aided Design; CAE = Computer Aided Engineering; CAPP = Computer Aided Process Planning; JIT = Just-in-time System; NC = Numerical Control; CIM = Computer Integrated Manufacturing

Table 5: Change in Organisational Structure

Structural Change	Decreased Change (%)	No Change (%)	Increased Change (%)	Mean	SD	N/A (%)
Multi-skilling	4.8	7.3	87.9	8.32	1.86	-
Worker training	4.8	4.9	90.3	8.83	1.53	-
Cross-functional teams	2.4	2.4	87.9	8.87	1.23	7.3
Establishing participative value	-	7.3	85.4	8.47	1.29	7.3
Management training	4.8	4.9	90.3	8.73	1.83	-
Flattening of formal organisational structure	2.4	12.2	83.0	8.25	1.51	2.4
Work-based teams	-	9.8	85.3	8.62	1.39	4.9
Employee empowerment	2.4	7.3	90.3	8.68	1.67	-
Manufacturing cells	-	7.3	78.1	8.20	1.28	14.6
Average	-	-	-	8.55	0.99	-

(Likert scale of 1 to 11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

Table 6: Change in Organisational Strategy

Strategic Change	Decreased Change (%)	No Change (%)	Increased Change (%)	Mean	SD	N/A (%)
On time delivery	-	2.4	95.2	9.55	1.52	2.4
Dependable delivery promise	-	2.4	97.6	9.32	1.37	-
High quality products	-	2.4	95.2	9.93	1.21	2.4
Low costs	7.3	4.9	87.8	8.63	1.88	-
Unique product features	2.4	7.3	78.1	8.61	1.92	12.2
Low price	7.3	2.4	87.9	8.40	1.66	2.4
Broad range of products	4.8	9.8	80.5	8.31	1.93	4.9
Effective after sales services	2.4	9.8	82.9	9.13	1.89	4.9
Change in design and introduce quickly	2.4	14.6	70.8	8.33	1.82	12.2
Customise products to customer need	2.4	2.4	87.9	9.11	1.61	7.3
Product availability	-	2.4	85.4	9.17	1.23	12.2
Rapid volume/product mix changes	-	7.3	75.6	8.82	1.38	17.1
Average	-	-	-	8.94	1.17	-

(Likert scale of 1 to 11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

manufacturing companies, while just-in-time (JIT) systems are the most popular (76%).

Organisational Structure

Table 5 provides details of the descriptive statistics for variables in organisational structure:

There is a high incidence of increase in change being reported here. The result shows that more than 80% of responding organisations have increasingly changed to a flatter structure within the five year period. This evidence shows that manufacturing companies in Malaysia have changed towards a horizontal structure (decentralisation). Worker training, management training and employee empowerment were reported as the most important variables in the organisation's structure (90.3%).

Less than 5% of respondents indicate a decreased change in their organisational structure and less than 13% of them reported that there is no change. Furthermore, except for manufacturing cells (14.6%), less than 8% of responding organisations indicated that particular organisational structures are not in practice in their organisation (cross-functional teams, establishing participative value, flattening of formal organisational structure and work-based teams). Overall, organisational structure in sample manufacturing companies in Malaysia has positively changed towards a flatter structure within the past five year period (average mean score = 8.55).

Organisational Strategy

The literature has identified strategy as the most important aspect in any organisation for survival. This is evident with the results presented in Table 6. The majority of respondents reported an increased emphasis in their organisational strategy. The very high percentages in the increase in change column below are indicative of the high use of differentiation strategies in manufacturing companies. The results also indicate that the customer focus strategies are emphasised more in these organisations (e.g., on time delivery = 95.8%, dependable delivery promise = 97.6%). Fewer than 8% of respondents reported a

decrease in change and less than 10% (except for 'change in design and introduce quickly' of 14.6%) indicates no change in their strategic emphasis.

Except for rapid volume/product mix changes (17.1%), fewer than 13% of respondents reported that certain strategic items are not emphasised at all in the organisation. Among these items, dependable delivery promise and a low cost strategy are seen as the most important strategies, since they are applicable to all responding companies. All in all, strategic change in manufacturing companies in Malaysia is increasingly emphasised in the past five year period (average mean score = 8.94).

Management Accounting Practices

Descriptive statistics for change in management practices are presented in Table 6 and a frequencies table for changes in technical level in management accounting techniques is presented in Table 7. The average mean score of 8.48 shows that the manufacturing companies in Malaysia used most of the management accounting techniques listed in table. The results presented in Table 6 show a higher percentage of use of traditional management accounting techniques. Budgetary control which is used in all responding companies shows an increase in use relative to others (92.7%). The result is consistent with Omar et al. (2004), who found that manufacturing companies in Malaysia, especially local companies, were still largely focused on the use of traditional management accounting techniques.

Furthermore, the results also show that, the most popular traditional management accounting techniques used are standard costing (N/A=4.9%) and variable/ marginal costing (N/A=17.1%), where as full/ absorption costing indicated a contradictory result (N/A = 22%). The most popular advanced management accounting techniques used are product profitability analysis and benchmarking; 95.2% and 80.5% of the respondents respectively, reported an increased used in these two techniques. Interestingly, ABC and ABM showed the highest decrease in change with 12.2%. Only 46.4% of responding companies report an

increased use in ABC. This is potentially inconsistent with the literature, where ABC is suggested as an important accounting innovation in a changing organisation (for example, Chenhall & Langfield-Smith, 1998a; Gosselin, 1997).

Cross-tabulations of the results between MAP and size of companies are presented in Appendix One; these show that both small/medium and large companies are increasingly changing their MAP. Together with the increased change in both external and internal organisational factors, results show that these companies are increasingly using

both traditional and advanced management accounting techniques. These results show that all of the responding companies, regardless of size, have positively changed their MAP in response to increased change in external and internal organisational factors.

The literature has identified local companies as largely relying on traditional management accounting techniques as compared to foreign multinational companies, which used more advanced techniques. However results for the changes in MAP among local and foreign companies show an interesting finding (see Appendix Two).

Table 7: Change in Management Accounting Practices

Change in MAP	Decreased Change (%)	No Change (%)	Increased Change (%)	Mean	SD	N/A (%)
Budgetary control	2.4	4.9	92.7	9.17	1.58	-
Full/absorption costing	2.4	9.8	65.8	8.84	1.74	22.0
CVP* analysis	2.4	7.3	78.1	8.47	1.54	12.2
Variable/marginal costing	4.9	4.9	73.1	8.82	1.66	17.1
Standard costing	-	14.6	80.5	8.79	1.66	4.9
TQM*	2.4	9.8	63.4	8.81	1.85	24.4
Target costing	2.4	9.8	61.0	8.17	1.53	26.8
ABC*	12.2	14.6	46.4	7.47	2.14	26.8
ABM*	12.2	12.2	36.6	7.24	1.98	39
Value chain analysis	2.4	17.1	53.7	7.70	1.46	26.8
Product life cycle analysis	2.4	17.1	48.8	7.86	1.67	31.7
Benchmarking	-	7.3	80.5	8.75	1.57	12.2
Product profitability analysis	-	2.4	95.2	9.50	1.15	2.4
Customer profitability analysis	2.4	9.8	70.7	8.91	1.67	17.1
Shareholder value analysis	-	9.8	73.1	8.68	1.53	17.1
Average	-	-	-	8.48	1.01	-

(Likert scale of 1 to 11: 1-5 = increased change, 6 = no change, 6-11 = decreased change)

*CVP = Cost-volume-profit; TQM = Total Quality Management; ABC = Activity Based Costing; ABM = Activity Based Management.

Besides the increase used of traditional management accounting techniques, local companies also show an increased use of advanced management accounting techniques, such as product profitability analysis (100%), TQM (93.7%) and customer profitability analysis (92.4%). These results indicate that local companies are adopting more advanced techniques together with an increased use of AMT with increases in business competition. The results also show that both local and foreign companies increasingly used budgetary control (96.2% and 89.5% respectively) as one of their MAP. This implies that budgetary control is an important management accounting tool in any situation. Other than that, findings for MAP in both local and foreign companies show that these companies

are increasingly using both traditional and advanced techniques. These results support the argument that traditional and advanced techniques complement to each other.

Table 8 presents frequencies for management accounting change dimensions in each of the respondents' company. The result shows that a majority of the responding companies have not changed in their use of management accounting techniques (42.9%). Excluding this group, the most commonly occurring change is as replacement (18.3%) and as information output modification (18%). This result is consistent with Sulaiman and Mitchell (2005). The fourth rank is introduction of new techniques (11.3%). Changes occurring in modification of technical operation and removal with no replacement show the lowest percentages (5.3% and 4.2% respectively).

Table 8: Management Accounting Change Dimensions

Dimensions of Change	Responses (%)	Rank
No change	42.9	1
Introduction of new techniques	11.3	4
Introduction of new techniques as replacements	18.3	2
Modification of the information/output of the MAS	18.0	3
Modification of technical operation of the MAS	5.3	5
Removal with no replacement (abandonment)	4.2	6
Total	100.0	

Organisational Performance

Details of the changes in organisational performance variables are presented in Table 9. The result shows that financial and non-financial performance measurements are both employed by sample companies (range of increase in performance from 73% to 78%, except for R&D=63.4%). This result is consistent with the arguments that multiple performance measures are needed because the use of traditional (financial) performance measures alone are not enough to measure performance in organisations operating in highly competitive and advanced technology environments (Hoque, Mia, & Alam, 2001). Only 2% to 5% of the responding companies indicate that a certain performance

measurement is not being used in the organisation. Interestingly, 19.5% of the respondents reported a decrease in the use of operating income as one of their performance measurement indicators. This might be due to the reduced relevance of this measurement in a highly competitive environment. Overall, respondents indicated that their performance has increased as compared to their competitors over the past five year period (average mean score = 8.00).

Correlation Matrix for Operational Measures

Other than descriptive statistics the correlation coefficient is used to test the potential association among the variables, to meet a

second research objective. Pearson correlation coefficients (and associated levels of statistical significance) are presented for pairs of variables in Table 10. In order to analyse association among the latent variables, a composite score for each variable is calculated. As can be seen from the table, changes in organisational structure, strategy and management accounting practices were positively and significantly associated with the changed competitive environment ($r = 0.55$, $p < 0.01$; $r = 0.72$, $p < 0.01$; $r = 0.47$, $p < 0.01$). These three variables also had a positive significant association with changes in manufacturing technology ($r = 0.53$, $p < 0.01$; $r = 0.58$, $p < 0.01$, $r = 0.59$, $p < 0.01$). Furthermore, changes in organisational structure and strategy were positively and significantly associated with changes in management accounting practices ($r = 0.58$, $p < 0.01$; $r = 0.73$, $p < 0.01$).

The correlation coefficients for changes in organisational strategy and organisational

performance showed a positive significant association ($r = 0.41$, $p < 0.01$). Additionally, changes in organisational structure and management accounting practices were marginally significant and related with organisational performance ($r = 0.33$, $p < 0.05$; $r = 0.36$; $p < 0.05$). The correlations between changes in competition and manufacturing technology with performance were positive but not significant.

These results are consistent with the literature review presented earlier. In response to the changes in competitive environment and manufacturing technology, organisations are tending to change their design, strategy and MAP in maintaining and/or improving performance. Thus, the alignments between these three organisational factors (structure, strategy and MAP) are perceived to be essential in order to achieve a superior outcome.

Table 9: Change in Organisational Performance

Change in Performance	Increased Change (%)	No Change (%)	Decreased Change (%)	Mean	SD	N/A (%)
Operating income	19.5	4.9	73.2	7.83	2.42	2.4
Sales growth	12.1	7.3	78.2	8.30	2.13	2.4
ROI	14.7	7.3	73.1	7.59	1.84	4.9
CF from operations	17.1	9.8	68.2	7.69	2.18	4.9
Market share	12.2	12.2	70.7	8.08	2.18	4.9
Market development	9.7	9.8	78.1	8.02	1.76	2.4
New product development	9.7	12.2	75.7	7.75	1.96	2.4
R&D	9.7	22.0	63.4	7.72	2.08	4.9
Cost reduction program	9.7	9.8	78.1	8.00	2.01	2.4
Personnel development	2.4	4.9	87.8	8.18	1.39	4.9
Workplace relations	2.4	12.2	80.5	8.26	1.55	4.9
Employee health	-	9.8	85.3	8.54	1.45	4.9
Average	-	-	-	8.00	1.57	-

(Likert scale of 1 to 11: 1-5 = decreased change, 6 = no change, 6-11 = increased change)

Table 10: Correlation Matrix

Variables	COMP	AMT	STRUC	STRAT	MAP	PERF
COMP	1					
AMT	0.32*	1				
STRUC	0.55**	0.53**	1			
STRAT	0.72**	0.58**	0.68**	1		
MAP	0.47**	0.59**	0.58**	0.73**	1	
PERF	0.14	0.18	0.33*	0.41**	0.36*	1

*Significant level at $p < 0.05$ (1-tailed).
**Significant level at $p < 0.01$ (1-tailed).

Definitions of Variables:
COMP = change in competitive environment; AMT = change in advanced manufacturing technology; STRUC = change in organisational structure; STRAT = change in organisational strategy; MAP = change in management accounting practices; PERF = change in organisational performance.

Discussion

The findings from this study confirm that there has been a significant increase in the competitive environment faced by Malaysian manufacturing industries over the past five years. The use of advanced manufacturing technology (AMT) has also increased significantly. Results also show a significant increase in strategy, the use of flatter organisational structure practices and management accounting practices (MAP). These outcomes are particularly important for companies wishing to compete in a globalised environment.

Globalisation has opened manufacturing industry in Malaysia to greater competition, and application of advanced manufacturing technology in Malaysia has also increased. Companies have placed more emphasis on strategy and significantly used a flatter organisational structure. An increased use of MAP is also evident. It has been found that both traditional and advanced management accounting techniques appeared to be almost equally important. These findings show that manufacturing companies in Malaysia rely on both techniques in order to cope with significant changes in their internal as well as external environmental factors. An increase in organisational performance is also witnessed in this study. Therefore, it is concluded that the level of changes in competitive environment, AMT, structure, strategy, MAP and

performance have significantly increased in Malaysian manufacturing companies in the five year period from 2003 to 2007.

Besides the changes in MAP, this study also analysed the dimensions of change in MAP. It is found that most of the responding companies have not changed in the way in which they use management accounting techniques. The majority of the respondents who had made changes chose to replace their existing techniques, modify the information output or introduce new techniques; very few of them reported changes in their technical operations or abandonment of techniques. These results support the findings of Sulaiman and Mitchell (2005), who found that replacement of existing techniques and information output modifications have a relatively high frequency and importance in Malaysian manufacturing companies.

In order to manage different modes of change especially an increased change in AMT, changes to a more effective MAT are a vital decision. As technology becomes more advanced, current MAT needs to be replaced with new techniques that can cope with the change in production process as well as cost structure. As many of the local companies still rely on traditional techniques, adoption of new technology requires companies to introduce new techniques to deal with the new changes.

The results from the analysis of correlation coefficients show that association among MAP, structure and strategy are positive and significant. A positive significant relationship is also found among MAP, structure and strategy with competitive environment, AMT as well as performance. In order to achieve maximum effectiveness, organisational elements like structure, strategy and MAP have to change simultaneously.

As firms persistently search for new market opportunities, they have to compete through new products and market development which subsequently impact the organisations' learning strategy. Customer oriented aspects such as quality, flexibility, innovative products and dependability of supply could be achieved through a greater emphasis on effective strategy. With the implementation of AMT, MAS should be designed to support the introduction of innovative processes and technologies. Moreover by adopting a flatter organisational structure, employees will be given the opportunity to make the best decision in the light of current changing conditions. Changing to a flatter structure with a team-based focus and employee empowerment will result in an increased access to relevant information, which is a key in such decision making. A better alignment among competition, AMT, structure, strategy and MAP will allow business operations to be more successful and help managers to manage their resources more effectively. Therefore, the design of MAS should depend on the context of the organisational setting in order to achieve competitive advantage and superior performance.

Conclusions

This paper provides evidence to shed additional light on management accounting change in the context of developing economies. By exploring this topic, the current study provides valuable insights into the level of changes in organisations and management accounting practices in Malaysian manufacturing companies. The results obtained in this study are consistent with those previous studies which suggest that competitive environment and technology are associated with organisational and accounting change (for example, Baines & Langfield-Smith, 2003; Hoque, Mia, & Alam, 2001).

This study also provides evidence that even though the variables used are adopted from a study in a developing country; they are also applicable to the Malaysian manufacturing environment. Indirectly this result supports an argument that, although Malaysia is a developing country, its manufacturing industries are more concentrated than those most of other developing countries (Bhattacharya, 2002).

There are a number of limitations to these research findings. First, due to the relatively small sample size, any generalisation of the study's results to non-manufacturing organisations or beyond cannot be made without considerable caution. The relatively low response rate is consistently a major limitation in recent accounting research. Second, the findings from this quantitative study do not capture an in-depth understanding of the subject phenomena. Thus, a different approach such as qualitative case study research may shed further light on this issue. In order to gain more understanding on how a proper alignment among MAS and other organisational factors take place in developing economic setting, an in depth study on how the contextual variable in this study should be aligned together to achieve maximum effectiveness, should also be conducted. Despite these limitations, this study makes a significant contribution not only to the theoretical knowledge in this area, but also provides a useful guideline to organisations to make decisions in light of the current changing conditions.

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Appendix One: MAP and Company size

Management Accounting Practices	Small/Medium (69)			Large (48)		
	Decreased Change (%)	No Change (%)	Increased Change (%)	Decreased Change (%)	No Change (%)	Increased Change (%)
Budgetary control	1.4	4.4	94.2	2.1	4.2	93.7
Full/absorption costing	4.4	13.0	82.6	4.2	10.4	85.4
CVP analysis	4.4	10.1	85.5	4.2	6.3	89.5
Variable/marginal costing	7.2	8.7	84.1	4.2	8.3	87.5
Standard costing	4.4	14.5	81.1	2.1	22.9	75.0
TQM	1.4	8.7	89.9	6.3	10.4	83.3
Target costing	1.4	10.1	88.5	2.1	12.5	85.4
ABC	15.9	10.1	74.0	10.4	16.7	72.9
ABM	14.5	7.2	78.3	8.4	20.8	70.8
Value chain analysis	4.4	13.0	82.6	6.3	18.7	75.0
Product life cycle analysis	4.4	14.5	81.1	6.3	16.7	77.0
Benchmarking	1.4	5.8	92.8	2.1	12.5	85.4
Product profitability analysis	0	1.4	98.6	0	2.1	97.9
Customer profitability analysis	4.4	7.2	88.4	2.1	10.4	87.5
Shareholder value analysis	5.8	7.2	87.0	0	10.4	89.6

Appendix Two: MAP and Type of Companies

Management Accounting Practices	Local (79)			Foreign (38)		
	Decreased Change (%)	No Change (%)	Increased Change (%)	Decreased Change (%)	No Change (%)	Increased Change (%)
Budgetary control	2.5	1.3	96.2	0	10.5	89.5
Full/absorption costing	6.3	7.6	86.1	0	21.1	78.9
CVP analysis	6.3	2.5	91.2	0	21.1	78.9
Variable/marginal costing	6.3	5.1	88.6	5.3	15.8	78.9
Standard costing	5.1	13.9	81.0	0	26.3	73.7
TQM	2.5	3.8	93.7	5.3	21.1	73.6
Target costing	2.5	11.4	86.1	0	10.5	89.5
ABC	12.7	13.9	73.4	15.8	10.5	73.7
ABM	10.1	13.9	76.0	15.8	10.5	73.7
Value chain analysis	5.1	15.2	79.7	5.3	15.8	78.9
Product life cycle analysis	5.1	12.7	82.2	5.3	21.1	73.6
Benchmarking	2.5	7.6	89.9	0	10.5	89.5
Product profitability analysis	0	0	100	0	5.3	94.7
Customer profitability analysis	0	7.6	92.4	10.5	10.5	78.9
Shareholder value analysis	5.1	7.6	87.3	0	10.5	89.5

Appendix Three: Questionnaire Survey on Management Accounting and Organisational Change

*This is an anonymous questionnaire. Please read the Information Letter carefully as it provides details of the project. By completing the questionnaire, you are consenting to take part in this survey. You are not required to provide your name as part of the survey. **Your reply to the survey will be strictly confidential.** You have a chance to give any comments or suggestions at the end of this questionnaire. Should you be interested in the results of this survey please email to me your name and contact details **separately** from this questionnaire, in order to maintain confidentiality.*

Email: z_tuan@yahoo.com or ttuanmat@student.ecu.edu.au

This questionnaire has five sections (Section A to E). Please answer all the questions.

SECTION A

This section seeks general information about your organisation.

Please choose a relevant box by double click at it.

1) Industry Classification:

- Electrical and electronics
- Engineering supporting
- Food processing
- Life sciences
- Machinery and equipment
- Petrochemical and polymer
- Rubber products
- Textiles and apparel
- Transport equipment
- Basic metal products
- Wood-based
- Other (please specify: _____)

2) Type of Company:

- Local company
- Foreign company

3) Type of Product:

- Consumer product
- Industrial product
- Other (please specify: _____)

4) Total number of employees:

- Less than 50
- 50 - 150
- 151-500
- 501- 1,000
- Over 1,000

SECTION B

This section seeks information on environmental and technological changes in your company over the past five years (2003-2007 inclusive).

5) Please indicate the extent to which you believe the competitive environment of your business unit has changed over the past 5 years.

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Competitive Environment:Significantly less
competitiveSignificantly more
competitive

	-5	-4	-3	-2	-1	0	1	2	3	4	5	N/A
a) Price competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Competition for new product development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Marketing/distribution channels competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Competition for markets/revenue share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Competitors' action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) No. of competitors in your market segments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6) Please indicate the extent to which the use of particular advanced technologies has changed in your business unit over the past 5 years.

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Advanced Manufacturing Technology:	Used significantly less	Used significantly more
	-5 -4 -3 -2 -1 0 1 2 3 4 5 N/A	
a) Robotics	<input type="checkbox"/>	<input type="checkbox"/>
b) Flexible manufacturing system (FMS)	<input type="checkbox"/>	<input type="checkbox"/>
c) Computer aided manufacturing (CAM)	<input type="checkbox"/>	<input type="checkbox"/>
d) Computer aided design (CAD)	<input type="checkbox"/>	<input type="checkbox"/>
e) Computer aided engineering (CAE)	<input type="checkbox"/>	<input type="checkbox"/>
f) Computer aided process planning (CAPP)	<input type="checkbox"/>	<input type="checkbox"/>
g) Testing machines	<input type="checkbox"/>	<input type="checkbox"/>
h) Just-in-time (JIT)	<input type="checkbox"/>	<input type="checkbox"/>
i) Direct numerical control	<input type="checkbox"/>	<input type="checkbox"/>
j) Computer integrated manufacturing (CIM)	<input type="checkbox"/>	<input type="checkbox"/>
k) Numerical control (NC)	<input type="checkbox"/>	<input type="checkbox"/>

SECTION C

This section seeks information on organisational changes in your company over the past five years (2003-2007 inclusive).

7) Please indicate the extent to which the use of a range of organisational design practices below had changed over the past 5 years.

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Organisational Design Practices:	Used significantly Less	Used significantly more										
	-5	-4	-3	-2	-1	0	1	2	3	4	5	N/A
a) Multi-skilling of workforce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Worker training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Cross-functional teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Establishing participative culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Management training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Flattening of formal organisational structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Work-based teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Employee empowerment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Manufacturing cells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) Please indicate the extent to which your business unit has changed its strategic emphasis for the following differentiation aspects, during the past 5 years.

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Organisational Strategy:	Emphasized significantly less	Emphasized significantly more										
	-5	-4	-3	-2	-1	0	1	2	3	4	5	N/A
a) Provide on time delivery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Make dependable delivery promises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Provide high quality products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Provide low costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Provide unique product features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- f) Low price
- g) Broad range of products
- h) Provide effective after sales service & support
- i) Make changes in design & introduce quickly
- j) Customise products & services to customer need
- k) Product availability (broad distribution)
- l) Make rapid volume/product mix changes

SECTION D

This section seeks information on changes in management accounting practices in your company over the past five years (2003-2007 inclusive).

- 9) Please indicate the extent to which the use of a range of management accounting techniques has changed over the past 5 years

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Management Accounting Techniques:

Used significantly less

Used significantly more

- | | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | N/A |
|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Budgetary control | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Full/ Absorption costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Cost-volume-profit (CVP) analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Variable/ Marginal costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Standard costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Total Quality Management (TQM) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Target costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Activity Based Costing (ABC) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Activity Based Management (ABM) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Value chain analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- k) Product life cycle analysis
- l) Benchmarking
- m) Product profitability analysis
- n) Customer profitability analysis
- o) Shareholder value analysis / EVA

10) For each of the management accounting practices below indicate the technical level changes occurring in your company for the past 5 years in accordance to the given categories.

Please choose the appropriate category as listed below:

0	No change
1	Introduction of new techniques where no management accounting techniques previously existed (e.g. the first time introduction of a new management accounting techniques).
2	Introduction of new techniques as replacements for an existing part of the management accounting system (e.g. the replacement of any traditional techniques with more advanced techniques or of a fixed budgeting system with flexible budgeting).
3	Modification of the information or output of the management accounting system (e.g. the preparation of monthly as opposed yearly budget or the re-presentation).
4	Modification of technical operation of the management accounting system (e.g. The use of pre-determined as opposed to actual overhead rate in existing costing system).
5	The removal of management accounting technique with no replacement (abandonment).
N/A	Management accounting technique is not practiced in the organisation.

Management Accounting Techniques:

Please choose one of the types of change as defined in the above box by double click at relevant boxes

- | | 0 | 1 | 2 | 3 | 4 | 5 | N/A |
|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Budgetary control | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Full/ Absorption costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Cost-volume-profit (CVP) analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Variable/ Marginal costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Standard costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Total Quality Management (TQM) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Target costing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Activity Based Costing (ABC) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | | | | | | |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| i) Activity Based Management (ABM) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j) Value chain analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k) Product life cycle analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l) Benchmarking | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m) Product profitability analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| n) Customer profitability analysis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o) Shareholder value analysis / EVA | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SECTION E

This section seeks information on changes in your company's performance over the past five years (2003-2007 inclusive).

- 11)** Please compare the change of your business unit's performance with that of its competitors over the past 5 years.

Please choose your response on a scale of -5 to +5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Organisational Performance:	Significantly lower performance than competitors					Significantly higher performance than competitors					N/A	
	-5	-4	-3	-2	-1	0	1	2	3	4		5
a) Operating income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Sales growth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Return on investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Cash flow from operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Market development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) New product development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Research and development (R&D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Cost reduction programs/ cost control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Personnel development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Workplace relations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Employee health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 12) Please indicate the extent to which the following performance indicators are important to your business unit.

Please choose your response on a scale of 1 to 5, or N/A if the items are not applicable in your organisation; by double click at relevant boxes.

Organisational Performance:	No Importance					Extremely important
	1	2	3	4	5	N/A
a) Operating income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Sales growth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Return on investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Cash flow from operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Market development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) New product development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Research and development (R&D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Cost reduction programs/ cost control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Personnel development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Workplace relations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Employee health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you have any comments or suggestion on the questionnaire, please provide it on the space below:

- 1)
- 2)
- 3)
- 4)
- 5)

“End of questionnaire”

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