TEAM AND SYSTEM PERFORMANCE: A CASE STUDY OF TWO ABC PROJECTS

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ABSTRACT

Recent literature has shown a renewed interest in implementation of information system implementation research. Current trends in the organisational deployment of IS tools have motivated new studies of Activity Based Costing (ABC) implementation efforts. This paper reports on two case study investigation of ABC system project. An interview schedule of 13 ABC team members' and users' experiences developing ABC systems and user perceptions of ABC performance is highlighted and compared.

A preliminary case of ABC implementation in the two ABC projects will be discussed. Engineers, accountants, and senior executives were interviewed across the 2 ABC projects in the organisation. Interview instrument, based on previously validated measurement of ABC team and user experience through questionnaires were adapted and validated to suit the interview questions.

The results revealed that both ABC projects had team members that were highly cohesive in nature, and with very high conflict resolution ability. ABC performance was deemed successful and effective as perceived by their users in areas of cost accuracy and increased dollar improvements. However, these effects were rather minimal and yet to be justified over time. Nevertheless, overall ABC users across the two ABC projects revealed that there were positive impacts of ABC felt by its implementation.

This paper is intended to share two ABC projects implementation experience in the organisation. It is hoped, to shed light on various team and performance problems that future consideration for ABC innovation.

INTRODUCTION

Understanding the factors that contribute to the success of management accounting systems efforts is a central concern in the field of accounting. Activity Based Costing (ABC) and its derivatives have now enjoyed over a decade of high profile within management accounting. Adoption rates in the West now run at approximately 20% of large companies. In addition to its application in a wide variety of commercial manufacturing business it has also been adopted by public utilities, by wholesale and retail organisations and by a range of service firms (Innes and Mitchell, 1995, Innes et.al. 2000, Drury and Tayles 2000). There is less research in the Far East though work has been recently undertaken to explore the technique and issues concerned with its take up in India (Joshi 1998) and Malaysia (Brewer, 1998).

Cooper *et al. (*1992) note that a key ABC implementation problem relates to ABC advocates who focus only on the technical issues involved. They suggest that implementation of ABC will be more effective when ABC advocates begin to focus on non-technical issues. This includes the early involvement of non-accountants who will be the primary users of ABC information, ensuring that the sponsor is a member of top management and a training programme emphasising the logic, design, implementation and use of ABC.

While individual studies by Shields (1995), Anderson and Young (1999), and Anderson *et al.* (2002) Bhimani (2003) have identified a number of organisational variables associated with ABC implementation success, there is no broad consensus in the field on an explanation of successful development and implementation.

One key factor to which many implementation problems have been attributed or other is team cooperation (Katzenbach and Smith, 1993). Drawing from this premise the study aims to:

1. Assess the perceptions of ABC development teams on team cohesion and conflict resolution ability among the two ABC models.
2. Explore the differences of perceptions between various users across the two embedded ABC models on team related factors and ABC performance.

The organisation chosen for this study is the largest provider of telecommunication products and services in Malaysia. Various cross-functional teams were engaged in the development of the ABC systems, each team including accounting specialists, engineers, and direct users.

The paper is structured as follows: the following section reviews the relevant organisational and behavioural literature on teams and ABC implementation and success. We next present the research methodology and interview results. Following a discussion of the results of the investigation, the paper draws conclusions and addresses some of the implications of the study and future research.

LITERARY CONTEXT OF STUDY

Importance of teams

Organisations increasingly rely on teams for project-based work. While a considerable amount of research in the areas of teams has been conducted, its application to the field of management accounting is minimal. Katzenbach and Smith (1993) argue that clarity and ownership of team goals are essential, while others suggest factors that contribute to teams increasing performance and effectiveness (for example, Ingram,1996; and Pagell *et al.*,2002). Launonen and Kess (2002) found that eight categories of functional skills are needed for reengineering teams to perform. These skills relate to innovation, resource investigation, organising, teamwork, meeting, finishing, evaluation and project work. This is supported by Tjosvold *et al.* (2003) where cooperation, interdependence and competition are prerequisites for effective team participation. Jiang *et al.* (2002) and Ingram (1996) also stress the credibility of teams to interact and communicate with one another thus encouraging tasks and promoting one another's success. There is insufficient evidence to suggest that many firms have adopted team working in the same way. Few studies on team working have been conducted in the service sectors (Ingram and Desombre, 1999).

Based on the literature, we identified 9 team-related factors deemed to be most relevant to our research aims. These are:

Team input: top management support, team rewards and recognition, current cost system, team training, team size, team heterogeneity, and external consultant.
Team dynamics: conflict resolution and team cohesion.

Team Input and Team Dynamics

Firstly, we consider factors that contribute to the significance of each of the team's task. Thompson *et al.* (1998) explains that groups that are highly cohesive in nature are more interested in accomplishing their tasks better. Furthermore, Kirkman and Rosen (2000) suggest that team members should believe in the team's capabilities, find meaning in team tasks and fully recognise the impact their team's work on customers. This is supported by Henderson and Lee (1992) and Hackman and Oldham (1980) who find that team member control is more effective when it is outcome oriented. Management accounting research, such as Anderson *et al.* (2002) and Anderson and Young (1999), discuss the relationship between team factors and task significance.

Diversity of team member background is another team factor (Mohrman,1995 and Jackson *et al.*,1995). Team heterogeneity encourages more solutions (Guzzo and Dickson,1996; and Maznevski, 1994). Team size is expected to play a significant role in creating effectiveness. Loch *et al.* (2000) found smaller teams resulted in increased status, competition and performance. Amason and Sapienza (1997) found that larger teams led to greater openness and conflict, thus limiting the ability of teams to perform effectively. While at the same time, when team members are heterogeneous, they are more creative (Guzzo and Dickson, 1996), and more open to new information and more effective decisions (Whitney and Smith, 1983; Maznevski, 1994). Furthermore

heterogeneity increases performance (Watson *et al.*, 1993) and encourages organisational innovation (Bantel and Jackson, 1989). More radical team members perform better when members are heterogeneous with respect to agreeableness, conscientiousness and extraversion (Reilly *et al.* 2002). Although we may regard heterogeneity as increasing conflicts within teams, the creativity, openness and interaction encourages members to explore new ideas while at the same time generating thought proving solution to problems.

Vadapalli and Mone (2000) found that team participation improved project outcomes. During project implementation, clarity and empowerment, reward and recognition, training and composition were found to be beneficial for projects to succeed. Management Information System (MIS) teams work successfully with other parts of the organisation when equipped with the correct skills, thus exceeding across all performance measures (Ford and Laughlin, 1992). Hunton and Gibson (1999) also found group discussion of their work increases team success, productivity and performance. Yeh and Tsai (2001) also found that when users are given the authority to initiate projects and be involved in exchanging information and ideas, system success improves. Performance can be improved by securing top management support at the early stages or project-launching phase. Where top management involvement is lacking, the possibility of having a positive working environment will decrease (Teo and Ang, 2001). This is similar to the investigation of Wang and Tai (2002) where in this case it relates to the planning of IS projects. It was found that integration mechanisms, such as participation of IS managers in strategic business planning, and interaction between IS and business planners help integrate business goals and IS plans. The importance of team inputs towards the dynamics of teams play a critical role in creating a positive approach to creating more team dynamics.

Our discussion in this paper considers many aspects of inputs and dynamics of teams in system development and implementation particularly concentrating on using literatures from the behavioural, organisational and accounting literature. It is our intention in this paper to shed light on how these team factors contribute to the success of ABC implementation in an organisation. The following discussion relates to empirical work on ABC development and implementation.

ABC Literature

Several studies have been undertaken relating to the success of ABC amongst adopting firms. Measuring the success of ABC is problematic and researchers have adopted different approaches. Success has been measured by management evaluation (Shields, 1995), use and satisfaction with ABC (Swenson, 1995) and employee satisfaction (McGowan and Klammer, 1997). Most of the studies relating to the factors influencing ABC success have been undertaken in the United States of Amerika. The findings of these studies have shown, among other things, that respondents' perceptions may vary depending on the role of the individuals involved (McGowan and Klammer,1997 and Swenson,1995) as well as on the implementation stage during which they are questioned (Krumweide, 1998). Studies have also shown that the degree of success with an ABC system may vary significantly across circumstances (e.g. Shields, 1995).

Shields (1995) drew off Shields and Young's (1989, 1994) theoretical model relating to the implementation of cost management systems. The assumption underpinning the Shields and Young model is that cost management systems (including ABC systems) are administrative innovations rather than technical innovations.

Shields (1995) acknowledges the difficulty in defining ABC success. He states:

> Providing a definition, however, was problematic, as the literature is vague about what constitutes success, and discussions with ABC experts during construction of the survey did not result in consensus about a tangible definition (pg.153)

That success is determined by:

> … the fate of ABC depends on how well it matches the preferences, goals, strategies, agendas, skills and resources of dominant or powerful coalitions of employees, particularly top management (pg.149)

Shields (1995) tested a model by identifying 17 variables and testing their impact on the successful implementation of ABC. He found that respondents' perception of success was linked to six behavioural and organisational variables: top management support, integration with competitive strategies, performance evaluation and compensation, non-accounting ownership of the ABC project, training provided for designing, implementing and using ABC and the provision of adequate resources. Technical characteristics of the systems, such as whether ABC systems represented stand-alone systems had no influence on ABC success in these findings.

Linkage to competitive strategy, performance and evaluation are important to motivate and reward employees and encourage them to focus on using ABC information to improve their firms' competitive position and profits. Training in designing, implementing and using ABC is important, firstly, it is an important way to integrate ABC into strategy, performance evaluation and compensation; and secondly, it provides an opportunity to achieve non-accounting ownership.

Shields concluded that the key to successfully implementing ABC is effectively dealing with specific behavioural and organisational variables. Success is likely to be increased when the six variables are used as part of an integrated implementation strategy. Top management support for ABC is very important because senior managers can focus resources on activities they deem worthwhile and sideline innovations that they think are not.

Swenson (1995) presented the results of a survey of 50 financial and operating managers at 25 firms relating to their satisfaction with ABC and their use of ABC information to support decision making. The results indicated that participants viewed ABC as an improvement over their old cost management accounting and that those participants who

were relatively more satisfied with their ABC systems were also more likely to use the ABC information to support strategic and operating decisions.

McGowan and Klammer (1997) examined the perceptions of users of ABC systems relating to factors influencing ABC success across four sites. Their findings suggested that three of the factors identified by Shields (top management support, performance evaluation links and adequacy of training and training resources) were significantly associated with ABC success. In addition, user involvement in implementation and their perception of the quality of information associated produced by the system was positively associated with ABC success.

Foster and Swenson (1997) identified four potential measures of ABC success: (1) the use of ABC information in decision making, (2) the decision action taken with ABC information, (3) the dollar improvement resulting from ABC and (4) management evaluation as to the overall success of ABC. Using survey data from a sample of 166 firms using ABC the authors examined the effect of using alternative success measures in models testing ABC success determinants. Broad-based ABC success measures were shown to yield the highest explanatory power.

Friedman and Lyne (1999) used longitudinal case studies to explore factors influencing ABC success. They found that ABC success was associated with a clearly recognised need for it at the outset, broad based support for it beyond the accounting function, and adequate resourcing. The survey by Innes *et al.* (2000) investigated the association between ABC success and top management support, the involvement of consultants, and user involvement in the implementation. In their view only top management support had a significant impact in explaining ABC success.

In a case study based in Malaysia, Brewer (1998) examined the relationship between national culture and factors influencing ABC success drawing off Hofstede's (1980) taxonomy of work-related cultural values, Brewer identified the need to encourage employees to work in groups as a factor influencing ABC success. He then applied the individualist / collectivist and power-distance perspectives to implementation of ABC in different cultures.

Much of the above shows the importance of ABC adoption and its relevance towards the changes that have occurred in organisations. The work closest to our own investigation is that of Anderson *et al.* (2002) who studied teams in the implementation of ABC in General Motors. Their work is a demonstratation of the shift from pure technical accounting to a more behavioural perspective of cost management changes. Bhimani (2003) emphasized cultural changes in the implementation of ABC. To date, the only investigation that stresses the work of teams in ABC implementation is by (Anderson, 1999) and Anderson *et al.* (2002). We have not been able to find previous studies that combine the effects of team factors with ABC effectiveness.

Anderson *et.al.* (2002) used group dynamics theory (Lewin, 1943) and composed several questions through guided statements from the interviews conducted. ABC was treated in several plants where each plant had its own teams that used the ABC system. The complexity of the investigation revealed the work of teams in the various plants and how these teams work the ABC systems. What it did not establish is the extent to which these ABC models are evaluated by the various users as being effective and meeting their business needs. Our research seeks to further the work of Anderson *et al.* (2002) by including five new team-related constructs to observe how the inclusion of team factors affect the effectiveness of ABC systems as perceived by ABC users.

Effectiveness of ABC systems has been examined by several authors as shown above. None of these studies have considered the link between team factors and ABC effectiveness. Therefore it is relevant for us to investigate the importance of teams and its relation to success and effectiveness of ABC.

RESEARCH METHODOLOGY

The research model for this paper is shown in Figure 1. We seek to examine the similarities and differences between team input, team dynamics and ABC performance in the 2 divisions in ATCOM, Malaysia, which agreed to have their engineers and accountants interviewed.

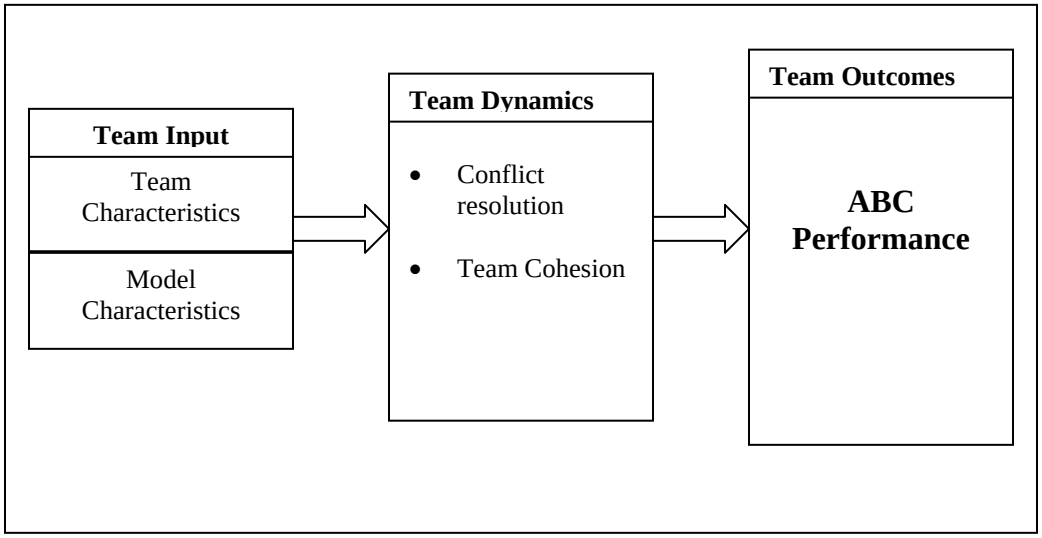

Figure 1: Simplified Research Model: Association of Team Input, Team Dynamics and ABC Performance

The nature of the study is both exploratory and descriptive. While a mixture of prior studies on ABC implementation applied questionnaire surveys and case interviews for data collection, this study uses semi-structured interviews.

The two divisions were chosen because of their prior experiences in implementing ABC on a wider scale in the company, and were known as using embedded ABC models.

The interviews were conducted during the month of January 2003, comprising both accountants and engineers. The 2 divisions were EMA1 (Embedded model for Division A1) and EMA2 (Embedded model for Division A2), where both divisions were the core businesses in the organisation. Thirteen interviews were conducted (i.e. 4 ABC developers and 4 users from EMA1, 3 ABC developers from EMA2 and 2 users).

Research Interviews

The interviews results will be divided and discussed according to the divisions representing the ABC model. The discussion of the interviews will describe firstly the EMA1 division for the ABC developers related to team input and team dynamics. This is followed by EMA1 user interviews relating to their perceptions on ABC performance. The second case study involves interviews with the EMA2 division respective to the three aspects mentioned.

INTERVIEW RESULTS

Case 1: EMA1 Division (Network Management)

Division Background

The core business for this particular division is related to provision and maintenance of networking facilities in ATCOM. The ABC model represented by EMA1 involves maintenance and operation of the telecommunication network (the backbone) throughout Malaysia. The cost management department in ATCOM drove the ABC initiative in EMA1, with 3 accountants initiating the implementation. Due to a restructuring process in ATCOM, the division was required to look into its business processes, while at the same time using ABC mainly for operational excellence.

Determinants of Conflict Resolution

Top management provided support at early stages and this revealed to be major reason for lesser ability to resolve conflicts. Although team members had not been confronted with problems, they somewhat feel that if more strength are put in by top management, they would have more ability to work well. As one accountant noted, EMA1 had support

that was initiated only at the beginning of the ABC initiative. Rather it could have made the development process much easier had top management provided the necessary support - launching ceremony, incentives of rewards when systems produced desired results, fulltime consultants and etc. These were some of the criterions that would deem to make the project work better.

> Top management gave support in a small portion but they were there to help start the innovation. Nevertheless, they play a big role in making things work, as they are the initiators of the project. We are only here to work out the solutions…

In this study, the accountants and engineers represent the team members. There are no IT divisions involved in the model development. However, an IT specialist was only present during the integration stage of ABC. The team members accepted and were comfortable working with accountants, and they helped in making the work worthwhile. It seems that having heterogeneity in the teams increased the likelihood of a better working environment. Regardless of whichever area they represented themselves, the feeling of comfort with one another increased their ability to resolve conflict when it did occur.

Accountant 1 noted that external consultants were used at just the initiation stage before the model development took place. This was in providing information to the ABC team members about the concept of ABC and its importance. Consultants played no role in the development process in this particular division, as they provided only the ABC software. He commented

> We had to do it all own our on, learning to use the software… of course with the help of accountants that have been previously trained in ABC development in prior ABC studies.

In relation to size of team, it was not an issue. There were thirteen team members in the team representing this division, and this encouraged the work to be pursued. It was never an issue of size of the team, as it was only important that each member contributed to the development process. That was all that was important to them. Besides, each engineer that represented EMA1 had his/her own operational responsibilities that he/she had to abide to, no matter where he/she was. It did not matter what the tasks were. He/she still acted as a full-time working team member in ABC model development. Simultaneously, the division had its own operational responsibilities.

Determinants of Team Cohesion

The idea of conflict arose in some situations of model development. Comfort in working with one another was reflected in the way team members engaged in model development. A comment by an accountant stated was that,

> There were times when one team member was requested to discuss issues of business process and the flow of information from this process…sometimes

> the engineers seemed to be too detailed in explaining their processes. With the software that we were using, there is a situation that we need not be too detailed…. We the accountants know the way the software works, and with the way some were moving, it could not have supported it.

Further, an engineer commented,

> I like working with the accountants… they seem to know what they were doing,… sometimes we do not agree with one another…well, that is very normal, as we think we know all that we are supposed to know…I myself sometimes feel a bit uncomfortable…. Not always, but there were some situations…However, we pulled through, and we managed to work it out, even though it was out of the meeting and discussions.

This implies that accountants as sole contributors to teams being able to work. Accountants are more familiar and experienced with ABC tools and have more ability to understand the tool compared to engineers agreeing that accountants are knowledgeable about the work. Team members were able to work with one another, and when conflicts did occur, they were able to resolve them, indicating a high level of cohesiveness. There was no indication that these situations made them uneasy with one another, thus affecting the ABC models being built.

One of the areas of concern in EMA1 development was that ABC would create great conflicts. This is reasoned from team members having divergent backgrounds, although they were actually accountants and non-accountants. Their maturity and experience of working together as a team enabled them to work to solve conflicts when they did occur. There were situations that some members were not satisfied with. Indeed, they handled these situations in a professional way in finding solutions. As one accountant commented,

> I had an experience once with an engineer. They tend to be too detailed in providing cost drivers and business activities. Using the software, there are limitations to its capabilities. We had to tell them that this was not possible even though it was practical. The system itself could not manage such data and we proposed to delete some activities. The engineer was taken aback. The disagreement resulted in a breakthrough of silence, as everyone had to adjourn to make matters better. We then met the next day and looked for solutions to integrate some of the business activities that were seen as not important.

In some instances, it was informed that the team members' ability to resolve conflicts was a situation that they had to ascertain. Conflict is seen as a situation that will exist in any project. It is up to the individuals to understand its effects on the project if not resolved. In this case, team members assured that they did not want this situation to arise. They wanted to work together as a team.

This division had a high participation level and team members encouraged each other to contribute during model development. Participation comes in the form of giving ideas, new views, brainstorming, and discussions. Each team member contributed to the development process, and this created a feeling of comfort.

Team member participation requires each team member to feel that he/she can contribute to the model development process. The status of participation is indeed existent in this ABC team. Participation in this division involves both accountants and engineers. They contribute in terms of providing information to the business process, understanding business process flow and all aspects of costing. They would divide between the accountants and non-accountants on the respective familiarity of a particular task.

According to an engineer,

> We were requested to do the task. The involvement from each of us is required. There was no force by any parties. I myself feel I need to work hard in making ABC work. I was flexible and progressed in my work. This involved being able to provide information and requests from other team members when they were requested. When the need to contribute to the model development, I participated and provided all the relevant information needed… especially to accountants. I wanted and was willing to do the job.

According to an accountant, the act of participation between accountants and engineers was very transparent. They knew that they had to work together and to provide all the relevant information. It therefore seems that participation of team members was built in then came voluntarily. Members of the ABC team wholeheartedly felt easy to involve themselves – without pressures from any others to make ABC work.

Team members were exposed to the work and they have great understanding on the aspects of ABC. There was a great feeling of relevancy of ABC, as it was a new innovation not just in the division, but known to be implemented fully in the whole of ATCOM. Accountants understood the work well. They were familiar with the ABC concept. The task was significant to all three representatives. It was easy to work, as everyone felt the task was relevant to him or her. As one accountant commented,

> I can say on behalf of this division that we all understood that the task was relevant to us and that we must do the work right. I feel a sense of ownership and relevance of the work and I am sure that all feel the same way. Team members are comfortable with the work and I can say that they enjoy it. I understand the task given to me and it works well in doing ABC. We are a good working group.

Another accountant commented,

> The team members understand the task that they have to perform. They are well versed in the area as we have briefed them. How significant the task depends very much on whether they wanted the work done.

The divisional heads chose the team members with the thought that they were the best, to their knowledge, in performing the work. It was rather a situation that they had to be with. In some situations, the task was seen important, as this ruled they understood the importance of accomplishing ABC initiatives. This implies great flexibility and knowledge in the task. There was no need for more encouragement.

One engineer observed that ABC training leads to a better understanding of the task itself. The divisional heads' account in that the success of ABC is dependent upon the team members' contribution. In order to show such a contribution, task knowledge, understanding, patience and flexibility are essentials.

Determinants of ABC Performance

The environment for team members to work with each other with the aid of consultants made things and tasks easy to be done. Accountants and engineers were always there to assist each other. There was a feeling of togetherness, flexibility in accommodating with tasks of one another, giving and accepting thoughts and ideas among the team members. One of the accountants indicated,

> We were all so fond of each other and we like to work things out when they go wrong. I feel a sense of togetherness and I like them a lot. Even up till now, with those that have left the division, we still talked about the times that we went through, as this is the first EMA1 project on ABC. We want to show good examples to future innovations in ATCOM. I enjoyed working with the team members.

As one engineer commented,

> We are like good buddies and we want to make things work. I provide what I feel will help the task and they provide whatever information to make it work. It is a two-way communication process. We all share the same feelings of whether by working together will make matters better or not.

This team has commitment to one another, and they sense a feeling of wanting to work with one another to make things better. There is an indication that they work well together and are able to compliment one another when they do the work. There is a strong cohesion in this team.

Cohesion exists, as accountants and engineers are found to be comfortable working with each other. Although they come from very diverse backgrounds, they are able to work

together as a team. They are working collaboratively in understanding the activities and business processes of the model. Cohesion existed every time they worked together. There were instances ABC increased cohesion between accountants and engineers. As another accountant commented,

> We work collaboratively together as a team and we made it work. There was no situation where I thought ABC was not a positive situation. I was always comfortable with ABC and always knew the team members felt comfortable with every situation.

In all aspects of ABC evaluation, users of EMA1 have expressed that ABC has shown them better ways of calculating cost in the divisions. It was deemed important that they understood the various measures that the system was performing well.

Firstly, ABC was seen showing improvements in cost accuracy especially in reducing manpower usage. There were situations where ABC was improving the way they conduct their work, i.e. reducing the number of manpower. There was an indication that it was proving to be accurate in this situation. In many situations, ABC has shown its users its capabilities for working. ABC has shown the correct way of diagnosing cost analysis in the costing structure. Before, it was obvious when it relates to outsourcing decisions. When the teams were working hard collaborating with one another well, they looked deeply into aspects of outsourcing decisions.

Secondly, there was a slight improvement in dollars. Team members worked hard to make the model development process produce good ABC models. The users acknowledged and were familiar with the ABC team members and their capabilities. Besides, the team members were chosen from the best divisional representatives. Dollar improvements were all dependent on the ISO9002 documentation. Team members worked on this relevant information to better understand the cost calculation.

Other evaluations of ABC were related to the impact that ABC has brought. The cohesion within the team members increased the level of ABC impact that users felt. There was a high ABC impact in the division, where ABC was seen to show positiveness in the division implementation.

An overall management evaluation indicated that ABC was an innovation much looked forward to. There was a positive atmosphere to ABC, and this was relevant to its being applied.

Summary of Findings from EMA1 Model

This is a division where team members felt that top management only supported the initiation and start-up stage of ABC. However, they encouraged ABC innovation at the earlier stages of model development. There is a clear indication that team members worked and felt that working on ABC increased the dynamics level of within the team. They worked well with each other and it seems they are a good working team. They feel

that although rewards are not provided at all or their effort even to be acknowledged of their effort, they still felt that the ABC task was significant to them. In terms of performance, ABC seems to improve its usage in the decision-making process, however, in terms of monetary, it was not very visible. Therefore, this division indicates that, although team input and dynamics are present, there is still no strong indication that in terms of dollar improvements, ABC achieved it in many areas of their business. The only source of improvement was in outsourcing decisions.

One of the accountants in the division revealed that ABC was a good thing for the company. There were situations where the division had defaults in their calculation of resource utilisation. There is an indication that the division engineers positively accepted ABC. In some circumstances, ABC was used widely for increasing decision actions. In terms of dollar improvements, they could not see much of ABC making these changes. However, they think ABC calculated cost accurately and was very useful in learning about the costing procedures, and they felt that ABC was a positive sign for improvement in their cost calculation methods. At the same time, they felt that ABC was accepted and would like to use it more in future cost calculation exercises.

Increased training and exposure to its capabilities will provide them with better results. As one engineer commented,

> I feel it is a good thing. We tried our best to produce the best results. We indeed are comfortable with the situation that ABC has provided us with the best of all that we can have. I am indeed satisfied with the innovation. I see an increase in more detailed input of ABC information into the system. ABC information opened our eyes to some aspects of our processes that we feels are incorrectly calculated. I learned a lot from ABC… I wished that we were taught more on this.

Case 2: EMA2 Division (Customer Network)

Division Background

The core business for this particular division is related to installation, restoration and maintenance of ATCOM's core products and services. EMA2 is at the frontline, interfacing with the customers. EMA2 has a high number of staff of nearly 8,000 due to the nature of the work, which is very labour-intensive. Coupled with the fact that the group is assigned with stringent Key Performance Indicator (KPIs) and productivity targets in order to ensure total customer satisfaction, it is almost inevitable for them to totally eliminate its overtime cost. Instead, EMA2 has to continuously look for ways and means of improving efficiency level that will help to curb the increasing trends of overtime costs.

Determinants of Conflict Resolution

An accountant mentioned that the support of top management enabled them to work together well as a team. In the case of EMA2 team, there were not many problems as they were a team able to work well in achieving the intended objectives. Top management gave guidance and motivation for the teams to realise and understand that this was the first ABC innovation in the organisation and that they must make it work.

The team members were from diverse backgrounds, but they were able to work well as a team that enabled them to enjoy working with one another. Diversity of background and ideas enabled them not only to contribute new issues and suggestions, but also it was an innovation for them to work out problems when they occurred. An engineer mentioned,

> I gave what I thought was helping out the system. There were not many problems that occurred during model development. Being diverse enabled us in understanding and accepting each other's differences. It was never a problem.

In addition, the existence of the external consultant enabled them to discuss issues well, and they were there to guide the team through the whole development process. Besides playing a role of a supervisor and mentor, they encouraged members to work together well. This also means that team members were able to accommodate to each other's differences.

The size of the ABC team was quite similar to EMA1. The team size played no role in their ability to resolve conflict. It was not a concern to them.

Determinants of Team Cohesion

The accountant commented,

> Team members have the ability to resolve conflicts in all situations. Our team is a well cohesive team that always share their problems. There was no need to not resolve matters. I myself felt our ability to work with one another and supporting one another in conflicts or disagreement increased our level of trust with one another. We were a good team who were together always in all decision matters.

Conflict is not an issue in this team. The team members were able to resolve problems when situations arose. No matter under what conditions, each problem was dealt with in a mature manner. There existed a great ability to solve problems when they occurred. It is the norm that they try to sort out instances such as conflicts in decisions, designing aspects, process design and business options, in the way they service their customers.

The team had very high commitment for the model development. Team members were seen engaging in a deep discussion when matters of process flow arose. Accountants, engineers and IT specialists worked well, and were always willing to contribute in their meetings. The external consultants assisted in the whole process, enabling a more participative atmosphere to exist. Indeed, an IT specialist commented,

> I loved to be an ABC team member. It was very tedious work to do costing matters, as that is not my specialisation. We did it anyway and that was how it should be. Committing ourselves enabled us to contribute and produce the best of what we have this situation existed in my team.

A sense of contribution and willingness enabled them to know that each team member is always ready to make things work. Their capabilities of being flexible in situations enabled them to produce higher cohesive feeling. The contribution aspects enabled all team members to feel comfortable with one another throughout the whole process of model development.

According to the accountants, task was very relevant to team members. Engineers and IT specialist were exposed to work in ABC which they hardly knew of. The engineers were somewhat reluctant at first, not in the sense of 'not wanting to contribute', but the feeling of non-familiarity deterred them in the early stages. However, the feeling of task relevance was always present, and this could be felt in the team.

Determinants of ABC Performance

This division shows that ABC has provided them with new information that they felt could not have been justified by the traditional cost method. However, the users are already satisfied with the traditional ways of calculating cost in their division. Nevertheless, they realised that ABC has shown them a more detailed way of cost calculation, based on their consumption and activities performed. However, they have not yet seen that ABC at this time could change many of the decisions made in the division. Perhaps in some situations like budgeting and transfer pricing, it was more obvious. A statement by an accountant,

> I feel that we had a good working team that was able to work to meet the desired targets. It was up to the individual to know or not know. We worked together well in building the models and we have tried our best. I feel by our working well and having a feeling of friendship and cohesion, we therefore see an increase in better situations of ABC for changing our decision actions.

In terms of ABC providing better-cost accuracy, there is an indication that ABC achieved this. ABC users in EMA2 were able to see it when they studied reducing EMA2 operating cost. This dealt with reducing staff overtime. These situations enabled ATCOM to see that by using ABC there was a reduction of overtime cost, that they could have saved, as this was not transparent in the traditional cost method. Team members were

working with one another to eliminate overtime staffing in operational faults. This was very difficult for EMA2 at first, but some still feel that good working teams had a high tendency of generating better ABC results.

Another aspect of performance is dollar improvements. ABC has shown an improvement, especially when the team wanted to reduce cost for staff overtime. There were situations when ABC was being used for outsourcing decisions which enabled them to know that there were some situations that their work and operations cost could have been reduced if only they had applied ABC earlier. When team members go through the system development process, they will contribute to reduce costs. Teams that are seen to be working well together create a sense of wanting to give and provide the relevant information when needed.

As one engineer commented,

> I know that ABC has shown us improvements in our budgeting process, especially when we looked at reducing staff overtime. We sure messed up on that. ABC has shown that we could have reduced a vast amount of our expenditure and manpower when we had operational faults. We did not see this before ABC. There was also a situation that we were better off in outsourcing rather than doing the task internally. ABC was able to detail all the cost that changed our decisions to outsource or do it in-house.
>
> This brings us back to when we relate to the teams itself. Without being able to work together in providing the relevant information to the ABC system, it would have been difficult. I feel being cohesive increased our understanding and commitment in developing the model, therefore increasing its outcomes with producing better costing models.

Another engineer commented,

> I like what ABC has shown us. In some situations, we were unable to see its relevance but overall we have seen what it is capable of. I want to continue using ABC. I feel that the team members are a good team, especially they had the help of the accountants and external consultants.

The implementation of ABC outweighs the cost of installing a new system. The users felt that ABC had a positive aspect in to dealing with costing procedures in the division. Team members were found to aid in the process of making this work. There was a big impact of ABC in their division, as many users are still trying to familiarise themselves better with the process. Indeed, ABC innovation created a feeling of making more changes in the way they did their work, but this was for the better.

In relation to overall management evaluation, a user commented,

> ABC has shown us better ways of managing cost in this division. We were reluctant at first but we knew that the organisation wants this change. I know that the team members invested a lot of effort to make ABC work. They worked hard for it together.

Summary of Findings from EMA2 Model

There is a clear indication that top management provided considerable support throughout model development and implementation. It was the first ABC project and they were determined that it should work. Rewards and recognition were not present for being an ABC team member. The division was comfortable with the traditional method of costing but it was open to innovation. The team members worked well with one another and were always comfortable in sharing ideas, although they were from different divisions. It was a source of inspiration for them to be chosen as a team member for the first ABC project.

Indeed, the team members worked well together. They understood significantly the task given, and were able to solve misunderstandings under great supervision of the external consultants. There was a high level of participation from each team member. Overall, it was a good working team that with high team dynamics for ensuring project implementation success.

In relation to ABC performance, ABC has proved clearly that in terms of reducing staff overtime, it was visible. It helped change the decision for outsourcing certain tasks, had this increased their confidence in ABC effectiveness. However, there lie backlogs and deficiencies in its application.

When making an overall evaluation of ABC, ABC was seen to be favourable. ABC has proven to be an innovative project in this division put in by management to be rolled-out in the whole organisation. The organisation depended on this implementation in EMA2 to pilot show to other divisions that it can bring its benefits. EMA2 users evaluated and perceived ABC to be positive in changing the way they had calculated cost till then. There is support for more changes and improvement to some areas which have not been explored (i.e, product development strategies and product management decisions). EMA2 users feel that ABC was worth the effort. As a result of this, future innovation of ABC in other divisions can be corrected and improved for generating better ABC results.

CONCLUSION

Similarities and Differences Among Two ABC Model Implementation

Conflict Resolution

There exist similarities in all aspects of the ability to resolve conflicts. Heterogeneity and size of team were not a problem. External consultants were not used in EMA1 model development, while EMA2 had external consultants' involvement throughout, which

triggered higher ability to resolve conflicts. Top management involvement and support in EMA2 was better.

Team Cohesion

The two teams have quite similar level of team cohesion. Team members across the two teams were able to work well with one another creating high levels of camaraderie. Both felt that the ABC task was significant to them, very participative and handled conflict well, thus encouraging better cohesion.

ABC Performance

Both ABC teams had high support from management. However, the form of top management support differed. EMA1 had support in the initiation stage of ABC. EMA2 had support throughout the model development, as this was the first ABC project. It is however known that top management puts more effort towards new innovations in the company. Top management support in these divisions comes in the form of explaining the innovation, getting to know the team members, and making them familiar with the whole concept of ABC innovation.

The common form of ABC performance obvious in both models was that both were seen giving changes on their actions in decision-making. ABC information was useful and created a sense of wanting to learn more about it. However, users of the EMA1 model requested that they were given more training for future innovations. EMA2 users had not much problem, as they worked all the way through with external consultants. The external consultants were the role models in EMA2 ABC development.

In monetary terms, EMA1 users did not feel there was much. However, EMA2 users felt they had seen some improvement. This related to the reduction to overtime and outsourcing decision costs. This was seen very clearly. Both sets of users felt that they liked ABC and wanted to learn more for future innovations. Furthermore, there was still a lot to learn, and setbacks, deterrents and constraints that needed to be diminished first. ABC therefore was given a ‘thumbs up’ in both divisions. However, the problems mentioned need to be addressed first in future innovations.

SUMMARY

This paper has provided a detailed description and discussion of the qualitative primary data collected from the two divisions involved. In general, the paper provides an assessment of various issues relating to ABC team input, team dynamics and ABC performance. It summarises important findings on the above issues found in the two ABC models. The similarities and differences in relation to the issues are also summarised.

The findings indicate that the two teams of ABC model development are quite similar in relation to their team dynamics. This shows that team input is seen as a requirement for team members to want to succeed in achieving the ABC objectives. Team members

regard top management support as an important criterion for ABC to work. Both teams expressed existence of reward and recognition in neither the division nor the organisation.

The findings also show that both teams emphasise team dynamics. They feel that the ability to resolve conflicts made them better working teams with increased participation. This indeed led to more cohesive teams where members are seen working collaboratively with one another. Both teams had high participation level that enabled them to work together and have a feeling of camaraderie. In both situations, team members were seen contributing ideas and thoughts that enabled a better ABC model to be built.

Both of the divisions' users felt that ABC was something that they looked forward to and encouraged future ABC innovations. Users of EMA1 voiced their requests and voiced for more structured training in ABC concepts and with knowledge to enable them to work better in future innovations. The other users of EMA2 fully understood ABC capabilities and wanted more of its innovation. Overall, ABC was supporting their changes in decisions and had useful information to be used in many situations. Monetarily, ABC at present still lacks its visibility of dollar improvements. Both sets of users reported a slight improvement in dollars; however, there were situations in which dollar improvements were very obvious, such as in overtime cost-cutting and outsourcing decisions, especially obvious for EMA2 models.

It is hope that these differences allow for future organisations to work towards creating ABC teams that are of more team dynamics which is expected to lead to better forms of ABC performance.

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