

Adopting Soft System Methodology for Improving Learning Organisation

Key words : soft system methodology, action learning, action research, learning organisation, change program

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Abstract

This paper presents a proposal for undertaking action learning. The case of Australian Steel Company Limited (ASC) is used to illustrate the application of “soft” methodology to provide a new way of system thinking for creative problem solving. Interestingly, organisations face complex problematic situations, and there are influencing factors both internally and externally, which have effects to organisations operating in dynamic environments. To survive in rapidly changing environments, they need to continuously create a new way of system thinking to their people, and change them as a continual learner to adapt, flexibly respond, and effectively manage desirable change.

It initially examines definitions of soft system methodology (SSM). To gain insights on why organisations should be transformed and how. It discusses to transformation processes of an organisation. Before applying the SSM to the organization selected, it then explains an overview of ASC’s background, including problematic situations which the organisation facing.

Soft System Methodology (SSM) “Mode 1” is applied for the case; it then explains and discusses its general conceptual idea, before starting to examine the adoption of Change Program. Seven-stage learning system of Checkland (1975) is applied to guide and gain understanding and views more on the problematic situations of the organisation. Finally, after having applied the SSM “Mode 1” to the case, it led to development of complete Change Program, which the organization can adopt efficiently and effectively.

บทคัดย่อ

การศึกษานี้จะเป็นการนำเสนอแนวทางการแก้ปัญหาโดยประยุกต์ใช้เทคนิค Soft System Methodology (SSM) โดยเทคนิคดังกล่าวเป็นที่นิยมใช้มากกับบริษัทในประเทศสหราชอาณาจักร การศึกษานี้ได้ประยุกต์ใช้กับบริษัทกรณีศึกษาคือบริษัทออสเตรเลียน สตีล จำกัด (ASC) โดยเทคนิค SSM จัดได้ว่าเป็นระบบการคิดแบบใหม่เพื่อช่วยผู้จัดการในการแก้ปัญหาที่มีความซับซ้อนและมีปัจจัยต่าง ๆ ที่มีอิทธิพลต่อการแก้ปัญหานั้นเข้าร่วมอยู่ด้วย ดังนั้นเพื่อความสำเร็จและความอยู่รอดขององค์กร เทคนิค SSM ถือได้ว่าเป็นระบบการคิดแบบใหม่ที่จะช่วยผู้บริหารและพนักงานในการเรียนรู้และปรับตัว รวมทั้งสร้างความยืดหยุ่นให้เข้ากับสิ่งแวดล้อมได้อย่างเหมาะสมและมีประสิทธิภาพ

การศึกษานี้จะอธิบายความหมายของเทคนิค SSM ที่ได้รับการพัฒนาโดย Checkland (1975) และจะทบทวนงานวิจัยที่เกี่ยวข้องกับเทคนิค SSM เพื่อสร้างความเข้าใจว่าทำไมองค์กรควรมีการเปลี่ยนรูปแบบและปรับตัวให้สอดคล้องกับสิ่งแวดล้อมที่กำลังเปลี่ยนไป รวมทั้งองค์กรควรมีการเปลี่ยนรูปร่างอย่างไรให้ประสบความสำเร็จ นอกจากนี้จะอธิบายกระบวนการในการเปลี่ยนรูปแบบขององค์กร โดยประยุกต์ใช้เทคนิค SSM กับบริษัทกรณีศึกษาสุดท้ายภายหลังจากที่นำเอาเทคนิค SSM มาประยุกต์ใช้แล้ว ผลการศึกษานี้จะเสนอแนวทางการพัฒนาโปรแกรมการจัดการการเปลี่ยนแปลง ซึ่งจะช่วยให้องค์กรที่สนใจสามารถนำเอาเทคนิคดังกล่าวไปประยุกต์ใช้ได้อย่างสัมฤทธิ์ผล

Introduction

Generally, organisations face complex problematic situations. There are influencing factors both internally and externally which have effects to organisations operating in dynamic environments. To survive in rapidly changing environments, they need to continuously create a new way of system thinking, and change them as a continual learner to adapt, flexibly respond, and effectively manage desirable change.

As operating businesses, if problems are not a form of well-structured, clearly defined

objectives, using systems engineering methodology or “hard” methodology is not effective in dealing with the problematic situations. To overcome this, “soft” methodology is adopted; its aim is to produce a system methodology capable of intervening in soft problem situations and leads to action being taken.

The paper provides the application of “soft” methodologies (e.g. action research, soft system methodology), as a power tool to guide and assist the organisations to develop and

enhance their people in desirable direction. The methodology is applied to the Australian Steel Company Limited (ASC) as case study. It provides an overview of the organisation's business and problematic situations facing. It examines and discusses adoption of the change program.

However, before going into the ASC case, it explains transformation process as the most basic concept related to a model of a human activity system. Each component of transformation process will be discussed in details. Finally, the SSM "Mode 1" is applied to examine the formulation and adoption of the change program. It initially starts to briefly explain what soft system methodology would be.

Soft System Methodology (SSM)

Generally, if problems are not a form of well-structured, clearly defined objectives, using systems engineering methodology or hard methodology is not effective in dealing with the problematic situations. Checkland applied action research program, which was designed to extend the usefulness of systems ideas to ill-structured management problems (Checkland, 1976; 1981). This occurs in social science. The aim is to produce a systems methodology capable of intervening in soft problem situations, and when understandings of a complex and ambiguity situation which can lead to action being taken.

The SSM as an interpretive approach to organisational problem solving which can be used to provide a structure for action research in which desirable change and organisational learning are

the aims. (Checkland & Holwell, 1981). The SSM is a cyclical process of action learning to problem resolving in social systems (Jackson, 2000). It is a never-ending process of learning, in which participants' attitudes and perceptions are continually tested and changed, and they come to entertain new conceptions of desirability and feasibility.

The solution to the problem is not seen at first time, so the methodological cycle gradually provides insights to the problem. As having mentioned, the SSM a cyclical process of action learning, it commences by considering and expressing to problematic situation. It provides models and organised all stakeholders and their environments to relevant purposeful activity systems. It also provides conceptual models of relevant systems, which are used to compare with former models or real world to find out gap between them. When the real problem or the gap is identified and understood, then actions are taken for changing or improving the problematic situation. The process then will commence again and again. Checkland (1981) interestingly provided overall view of SSM

"The methodology will over a period of time yield of time yield a picture of the common structuring which characterize the social collectivities within which it works. Also given the analyst's complete freedom to select relevant systems which, when compared with the expression of the problem situation, embody either incremental or radical change, the area occupied must include some to the "subjective/radical" quadrant".

However, Checkland began to find that original seven stage presentation had limitation to solve dynamic and complex problems, because it was stressed that the learning cycle could be started at any stage and that the SSM is to be used flexibly and iteratively, but the 7-stage model still seemed for contributing to a systematic, step-by-step (rather than systemic). In an attempt to overcome this, new representation of the methodology was developed, to demonstrate to interrelationships between “situational logic” and “situational culture”, namely the “Two Strands” version of SSM (Checkland and Scholes, 1990). Checkland and Scholes (1990) later developed the “Mode 2 SSM”, they reasons that due to managers are absorbed by the pressures and concerns of their immediate environments. They are situation driven, rather than being methodology driven. In circumstances, if the SSM procedures are sufficient to identify and solve the problem, managers can adopt the approach for facilitating them to think through the situation they are experiencing and the possibilities that it open up. However, experienced practitioners of the SSM suggested that novices will tend toward mode 1, and more experienced users towards mode 2 (Jackson, 2000). However, this paper mainly focuses on Mode 1 SSM.

Further, the point is how SSM should be used. Someone might be familiar with the methodology, it seems to be used in rather different ways (Atkinson, 1986). However, some examples are illustrated that they are simply not proper uses of SSM, due to they might be just dressed in soft language (Jackson, 2000). There-

fore, the SSM would be carefully paid attention by the novice. The next section provides a seven-stage learning system, in detail with applying to the ASC’s case.

An Organisation, as a Black Box

Problem solving in social systems needs to deal with complex and complicated situations, due to it concerns to dynamic environments. In addition, attitudes, beliefs, and behaviors of human being are very difficult to predict and understand, for example, what people are expecting to do, or why they did in that way. Especially, in an organisation, people think in different way with their own goals. When they are working together and there is a problem, how they have the way of thinking to the problem. Their decision-making would subjectively base on their thinking on the problematic situation. Therefore, it is critical point to build a mindset or model to help people to rethink, understand and eventually manage the problem.

A problem situation, which can be described as ‘hard’, may be analysed as a designed system of the physical variety when the modeling language may be mathematics. A “soft” problem situation system can be analysed as a set of interacting human activity systems where the modeling language consists of activities. (Wilson, 1993)

The application of research methodology would tend to encourage and motivate people to learn and properly respond to the problem. The key issue is that how the methodology would encourage and guide learning a new way of

thinking to problems, how its outcomes provide improvement and enhancing to the organisational effectiveness.

The application of action research or soft system methodology is a power tool to assist people to understand and rethink to problem occurring. As having mentioned that an organisation as an black box, if we can not know or identify that what is real problem, or what environments effecting to the organisations, it then is difficult to appropriately provide corrective action.

Learning Organisation

It is generally recognised that environments (technological change, complex and sophisticated need of customers) are rapidly changing. Therefore, to create and maintain competitive advantage, efficiency, effectiveness, an organisation needs to appropriately provide a thinking system to its people to problems, including to making them to adapt and respond to dynamic environments. One of best way to do is that it needs to transform the organisation as a learning organisation. Because it can learn and effectively and efficiently manage changes.

Learning organisation is an organisation that has developed the continuous capacity to adapt and change. (Robbins, 1998) It is an organisation where people put aside their old ways of thinking, learning to be open with each other, understand how their organisation really works, form a plan or vision that everyone can agree upon, and then work together to achieve that vision. (Blank, Weitzel, and Green, 1998) The five basic characteristics of a learning organisation are summarised

below by Senge (1990).

1. There exists a shared vision, which everyone agrees on.
2. People discard their old ways of thinking and the standard routines they use for solving problems or doing their jobs.
3. Members think of all organisational processes, activities, functions, and interactions with the environment as part of a system of interrelationships.
4. People openly communicate with each other (across vertical and horizontal boundaries) without fear of criticism or punishment.
5. People sublimate their personal self-interest and fragmented departmental interests to work together to achieve the organisation's shared vision.

Field and Ford (1995) explain that a learning organisation has three components as follows:

1. There is a well-developed capacity for double-loop learning;
2. There is ongoing attention to learning how to learn; and
3. Key areas of organisational functioning-in particular, employee relations, work organisation, skill formation, and technology/information systems-support learning.

The key point is that how to change an organisation to make it into a continual learner, and how to put organisational learning ideas into practice. The organisation needs to establish a strategy, redesign the organisation's structure and then reshape the organisation's culture (Robbins, 1998). The methodology and processes however would be discussed again in the ASC's case study.

Before applying a form of research methodology to ASC's case, it discusses concerning to transformation process of an organisation, after applying the form (e.g. action research or soft system methodology) to assist the organisation

to dealing with problems occur in social science (Checkland, 1981). The ASC's case mainly emphasises and applies on the SSM, so it provides information about the SSM in much more details.

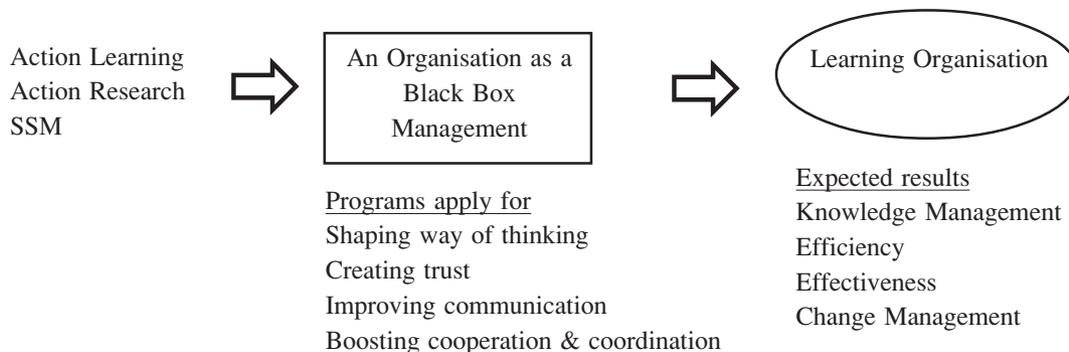


Figure 1. Transformation process

Action Learning

Incidentally, some people may question how different between “action research” and “action learning”. They are not taken to be the same thing, although they are very similar. According to Revan, he said that there are two types of knowledge; that are, programme (P) knowledge (in form of lectures, textbooks), and questioning (Q) knowledge (gaining when group reflect and question P knowledge in light of their own experience and actions) (Revan, 1983). Action learning therefore, consists of both type of knowledge (P+Q=L), and can only be achieved when group solve practical problems by doing something. Interestingly, how to balance of P and Q is a challenge.

As mentioned above, action learning may be applied to three types of situations as follows:

- familiar problem in a familiar work setting;

- familiar problem in an unfamiliar setting
- unfamiliar problem in an unfamiliar setting, the most risky situation and therefore the one where most learning could occur.

Action Research

Action Research is a form of research that focuses on the improvement of practices in a group or organisation, rather than theories that are abstract enough to apply in several organisations or situations (Bawden, 1990). Their importance lies in providing a scientific methodology for managing planned change (Robbins, 1998).

Action research provides at least two specific benefits for an organisation (Robbins, 1998). First, it is problem focused. The change agent objectively looks for problems and the type of problem determines the type of change action. Secondly, because action research so heavily

involves employees in the process, resistance to change is reduced. In fact, once employees have actively participated in the feedback stage, the change process takes on a momentum of its own, and when they have been involved, they become an internal source of sustained pressure to bring about the change. There are four components of an action research as follows: (Kemiss and McTaggart, 1982)

- using a spiral plan of act, observe, reflect
- trying to improve workgroup processes of action;
- solving complex, practical problems about which little is known;
- having at least one report of what had been found.

The Company’s background

- **Company History**

The **Australian Steel Company Limited (ASC)** has been established on June 9, 1985 to produce Prestressed Concrete Wires (PCW) and Galvanised Wires. The initial registered capital of 1 million baht was soon increased to 25 million baht. The company set up a plant on 8-rai piece of land in Navanakorn Industrial Estate, Pratum Thani, in Thailand, and has moved the plant to Rayong Industrial Estate, in Rayong, Thailand.

- **Products and Services**

The ASC manufactures and sells PC Wires for application in various kinds of construction work demanding strength and durability. Some of the pre-tensioned and post-tensioned construction applications include prestresses concrete piles used in building, elevated highways and bridges, prestresses concrete electric poles, and prefabricated concrete slabs for walls and bridges.

- **Organisational Structure**

Organisation chart ASC

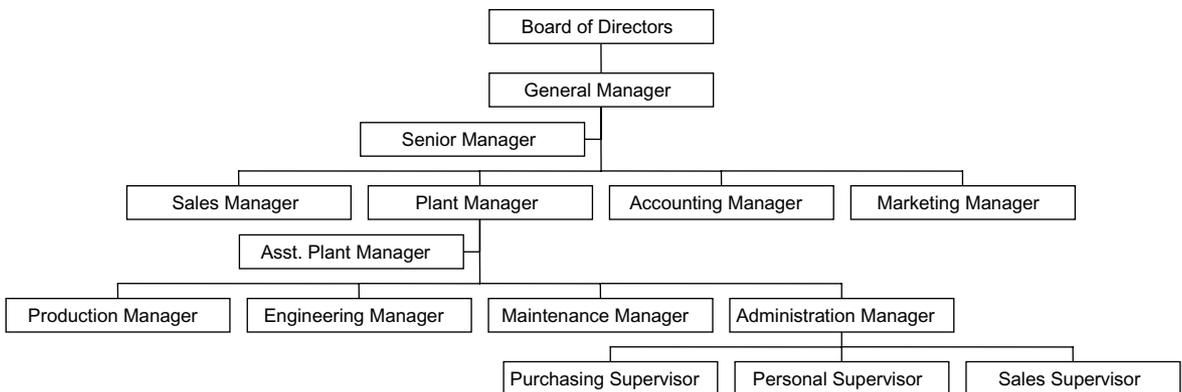


Figure 2. Organisation chart of the ASC

Overview of Problem Statement

Generally it is very useful to provide a view of problematic situations which the organisation (ASC) is facing in dynamic environments both internally and externally. The situations are catalyst for the organisation to find out and identify the real problems and then provide proper problem solving.

The following situations are briefly explained to provide a reader views to the problems. It also introduces of change program, which the organisation has been developing and adopting. The problems primarily concern with higher operational costs with low productivity in production department. Second, inefficiency of logistics management is caused to high costs of products and leads to inability to compete with other manufacturers (Figure 3. shows the ASC Process Mapping).

In addition, conflicts among departments which often causes to lack of cooperation and coordination. An untrustfulness and lack of communication are also major factors which seriously affect to ineffectiveness of the organisation.

The organisation needs to adapt and respond flexibly to external changes, such as foreign steel dumping, including to expiration of surcharge from foreign steel importing in September 2002, which local steel industry may confront to intense competition from foreign steel manufacturers. Countries face a long wait for the WTO ruling and with business uncertainty for the world steel industry and its customers (The Nation, September, 18, 2001).

Domestic demand for hot and cold rolled, wire steels dropped from a peak of 110,000 tones in 1998 to 65,000 tones two years later. The steel industry is one of Thailand's most troubled. Thai steel plants are running at an average 34 percent capacity utilization rate (the Bangkok Post, 12 September 2002). The occurring changes expose that the organisation urgently needs to do something to appropriately adapt and effectively manage to the changes.

The organisation has discussed with consultants about how to solve the above problems. On several meeting, they thought that causes which the organisation could not compete with other competitors because the ASC's people lack of trust to each other, including having different goal of each department which inconsistently with the organisational objective. They also move very slowly to external changing environments, with old way of thinking. However, the consultant advised that the organisation would adopt the Change Program to reshape the organisation culture. The objective is to prepare people to recognise the importance of change, then adapt and manage it. The paper discusses and criticises issues for formulating and implementing of the Change Program.

Soft System Methodology “Mode 1”

As having mentioned above, problematic situations are dynamically complex and unclear. The application of the SSM would be appropriate, as the SSM can yield significant advances in

social theory (Jackson, 2000). The paper applies “Mode 1 SSM” to the ASC case (Checkland, 1975). The representation of SSM is a seven-stage learning system as follows (Figure 3.)

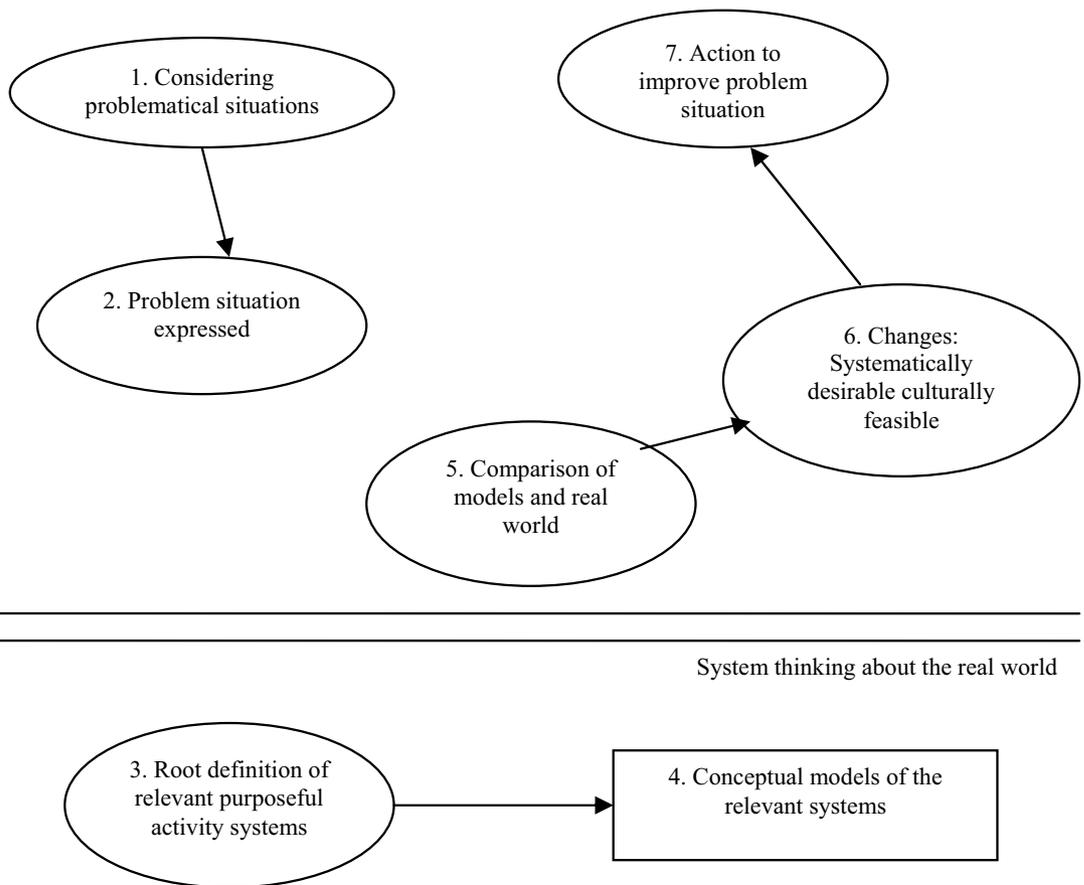


Figure 3. The learning cycle of the SSM

Source : Adapted from Checkland, 1989 : 84

- Stage 1 : Rich picture building
- Stage 2 : Problem theme development
- Stage 3 : Root definitions
- Stage 4 : Conceptual model building
- Stage 5 : Comparison of the models with real world
- Stage 6 : Debate over systemic desirability and cultural feasibility
- Stage 7 : Take action to improve the problem situation. This produces a new problem situation, the cycle begins again.

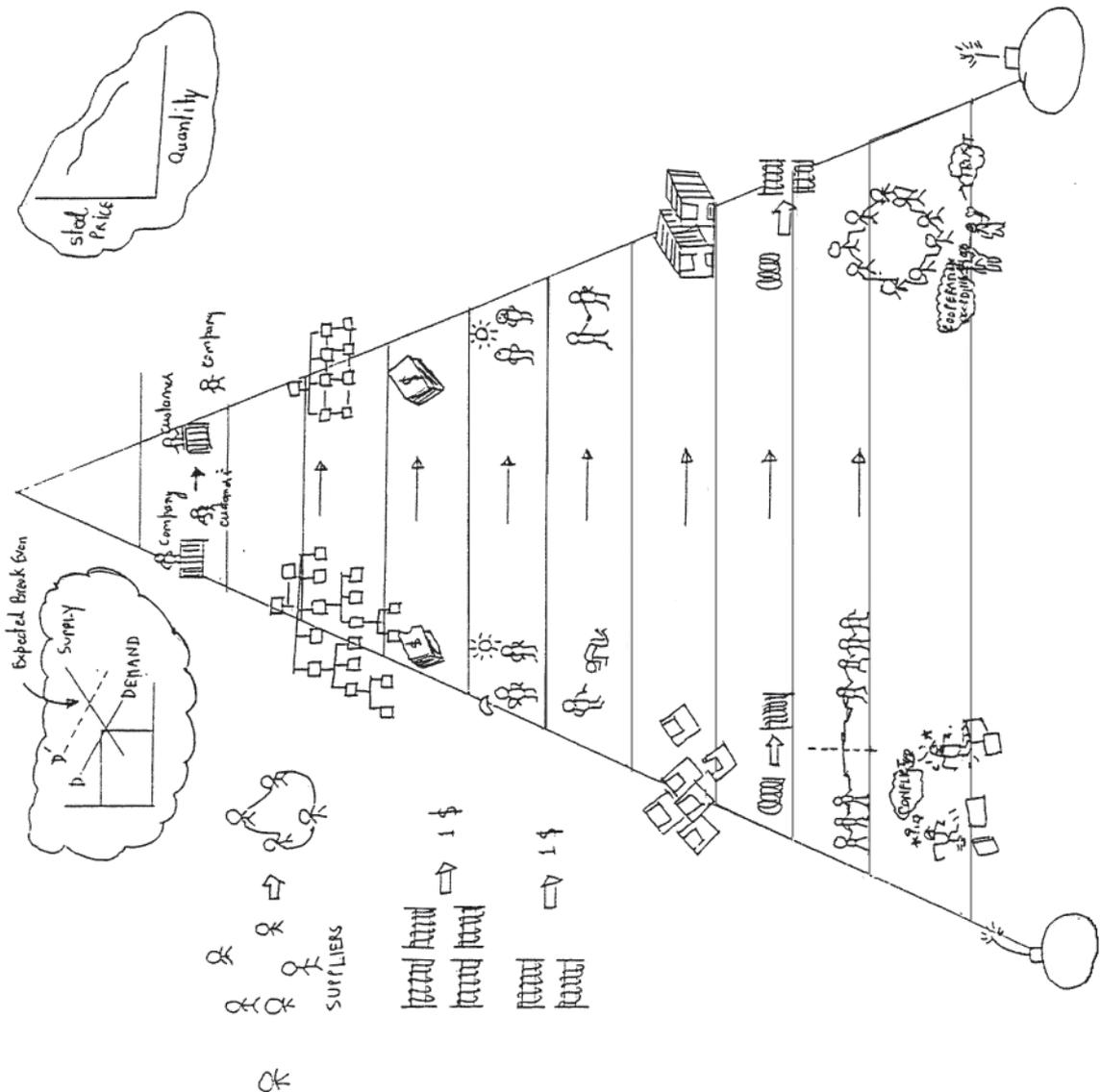


Figure 4. Rich picture of the ASC

Soft System Methodology and its Implication

The plan for undertaking action learning is provided by following seven-stage learning

system. ASC process mapping is initially given to present production processes and related activities.

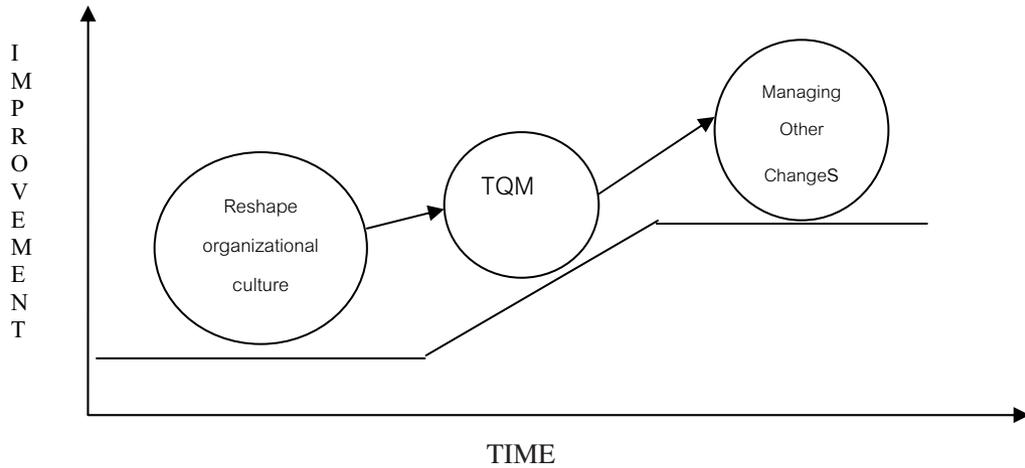


Figure 5. Learning processes of the ASC

The organisation has decided for adopting the change program. The program provides activities, which focus mainly on top and middle management. Time duration is 4 weeks. The program is also divided in three loops of learning process. First, its aim is to reshape the organisational culture, which is a new way of thinking. People would understand to changes, and they can work more cooperatively and effectively. Additional to reduce or eliminate negative conflicts among them, and eventually leads to work adaptively and responsively to changing environments.

Secondly, after finished the first loop, people have rationally changed a way of thinking, it then starts to implement to second loop. The loop’s objective is to gain high quality of products with lower costs. The policy of the TQM and the Zero Defects is adopted. Finally, the third loop is provided to prepare the people to become a continual learner, and the organisation for managing

desirable change and eventually, become learning organisation.

Stage 1 & 2 - Rich Picture Building & Problem Theme Development

To appreciate and express a problematic situation, the plan provides a “rich picture” (Figure 4. shows Rich Picture), which emphasises finding out about “structure” and “process” and thinking about the relationship between them as the “climate” (Jackson, 2000). The drawing of Rich Pictures has proved to be one of the most successful and frequently used of the methods and techniques that have come to be associated with SSM. From the rich picture, problematic situations are pictorially drawn to gain understanding of a situation more.

From rich picture, it can roughly view situations both internal and external environments of organisation as follows:

Table 1. Environment Scanning

Internal Environments	External Environments
Lack of cooperation and coordination among staff and management	Foreign steel dumping which seriously impacts to local steel industry
Lack of good management	Demand in using steel decreases, as a result of over supply and high competition
Lack of good information management	Fluctuating of Thai currency, compared with US currency

Stage 3 - Root Definition of Relevant Purposeful Activity System

Root definition is a way to define what and who are involved in the situation including to various viewpoints and relevant systems. Checkland (1989) states the meaning of root definition, as “a professionally-manned system in a manufacturing company which, in the light of market forecasts and raw material availability, makes

detailed production plans for a defined period”. Therefore, root definition (Figure 7.), is drawing out of the analysis a range of systems relevant to improving the problem situation, each expressing a particular viewpoint of it. The root definition is summarised by reference to a set of letters, which can be remembered in the mnemonic CATWOE (Smyth & Checkland, 1976).

Table 2. The CATWOE and its Definitions

Consideration	Amplification
1. Ownership (O)	Ownership of the system, control, concern or sponsorship; a wider system which may discourse about the system.
2. Actor(s) (A)	The agents who carry out, or cause to be carried out the transformation process or activities of the system
3. Transformation (T)	The core of the RD; A transformation process carried out by the system
4. Customer (C)	Client (of the activity), beneficiary, or victim, the sub-system affected by the main activity; the indirect object of the main activity verb.
5. Environmental and wider system constraints (E)	Environmental imposition; perhaps interactions with wider systems other than that included in (1) above
6. Weltanschauung (W)	The outlook or taken-for-granted framework which makes this particular RD a meaningful one.

Source: Adapted from Wilson B., 1993

The CATWOE is used to make sure that root definition is well formulated. The plan defines “root definition” as follow;

“A system owned by ASC management and employees to create cooperative and trustful cultures among them, and providing a way of flexibly and effectively working to respond to dynamic environments. The objective is to build the organisation with competitive advantage and organisational effectiveness”.

CATWOE

C = General Manager/ Board of Directors

A = ASC people

T = Need of reshaping attitudes, behaviors of

ASC people to adapt and respond to dynamic environments.

W = The outcome is to motivate ASC’s people to change their old thinking into a new way, including changing in attitudes, beliefs, and behaviors more responsively to the world’s change.

O = General Manager

E = Environmental changes; conflicts within the organisation, more complex and sophisticated of customers’ needs, intense competition, oversupplying, etc.

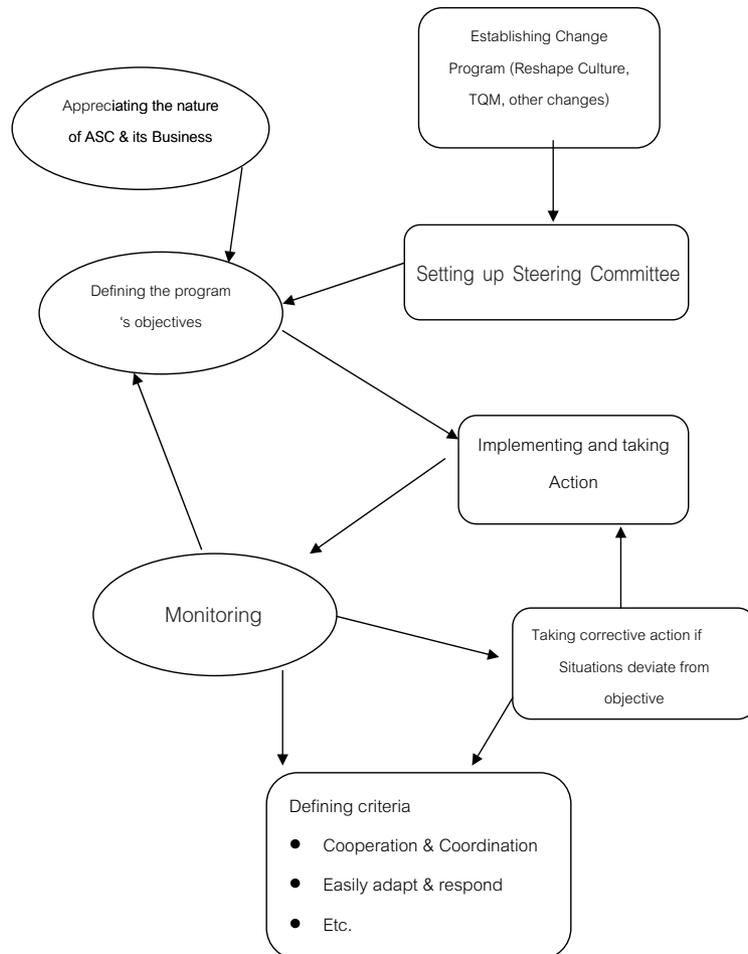


Figure 6. Root definition of the loop

Root Definition of the Loop “A system owned by ASC management and employees to create cooperative and trustful cultures among them, and providing a way of flexibly and effectively working to respond to dynamic environments”.

CATWOE

C = General Manager/ Board of Directors

A = ASC people

T = Need of reshaping attitudes, behaviors of people

people to adapt & respond to dynamic environments.

W = The outcome provides people with more adaptively & responsively to change

O = General Manager

E = Environmental changes; intense competition, etc.

Stage 4 - Conceptual Models

Figure 8. shows conceptual models of planing and implementing change program. The root definition expressing what the system is, but the conceptual model what is does. Conceptual models do not seek to describe the real world or some ideal system to be engineered, but are merely

accentuated, one-sided views of possible, relevant human activity systems (Jackson, 2000).

According to the ASC case, the organisation has decided to implement Change Program, as the root definitions (see Figure 8.) show whatever the organisation plan to do, or what the system is. On the other hand, the conceptual models provide a model or pattern for what the system should be.

Stage 5 & 6 - Comparison of the models with real world & Debate over systemic desirability and cultural feasibility

The conceptual models then are compared with the root definitions, which provide materials for debating about possible change among those, concerned with the real situations, additional to reveal improvement opportunities.

After a gap between conceptual models and root definitions are revealed, it then is developed to provide a possible change both desirable and feasible. Desirable changes may not be feasible. Therefore, influencing factors should be carefully considered for example culture or politic in the organisation. It compares the loops between conceptual models and root definitions as follows;

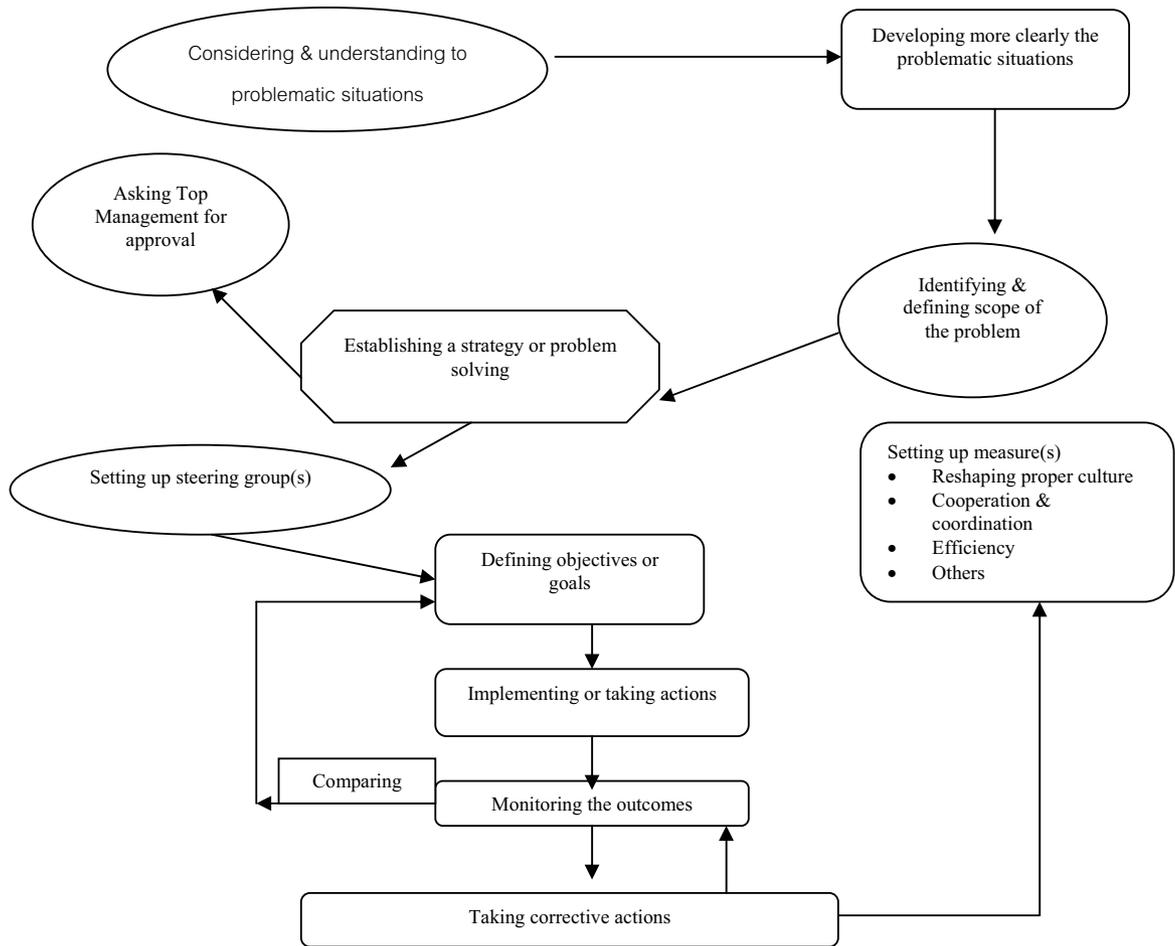


Figure 7. Conceptual model of the loop

Considering to the first loop, it is seen that there are several interesting issues would be considered. First, the organisation is still not clear that what is the real problem, the Change Program has been now adopted, as a problem solving method. Actually, the organisation would find out and exactly identify that what is the real problem. The organisation perceived that the problems occurred from conflicts both individuals and between groups, so they can not work productively and efficiently, and the organisation eventually can not compete with competitors.

The key point is that the organisation needs to primarily find out and identify what is the real problem.

Secondly, the root definition shows that the change program has not been approved by top management, so it may lack of commitment and participation from top management. The program is not successful if top management does not support or participate to the program's activities. Therefore, it should seek cooperation and participation from top management.

Thirdly, situational logic and situational culture have not been considered as the organisation is finding out and identifying the problem. It is recognised that the existing organisational culture, norms or politic have effects to formulating and implementing a strategy. To achieve the strategy, the organisation needs to integrate the influencing factors into the program, including to providing a strategy, which properly matches or fits to the organisational environments.

Finally, all of steering committee is managers. It is recognised that people are not interested to participate any activity or lack of commitment, if they are not part of the program or they have not participated to the program. Therefore, the program would provide participation of all levels of management and employees.

Stage 7: Take action to improve the problematic situation.

From below Figure (Figure 10.), the change program can achieve the objectives through considering and adding to following points. First, considering and finding the problematic situations, including to identifying what the real problem is. Secondly, situational logic and situational culture should consider as part of the system. Recognition of culture and political aspects of the problematic situation can assist the task of choosing suitable relevant systems and the process of arriving at recommendation that are feasible (Jackson, 2000).

Thirdly, if the problematic situation is still not clear, it recommends that the organisation should apply a way or methodology for finding out to improve the situation, and then identify what

is the real problem. After comparing the root definitions and conceptual models, it found that complex and ambiguity situations are not verified and clarified. In the case, the processes would be repeated again and again, until the problem is identified clearly.

Fourthly, when implementing the change program, monitoring and evaluating would consider outcomes compared with objectives. The measures would be identified clearly. Finally, the participation of all levels of employees and management are critical for success to the program. Therefore the program should not be only confined to the managers. It should be participated and involved to all people in the organisation.

However, after having comparing the root definitions and conceptual models associated with considering to influencing environments, it found that there are several weaken points for adopting of the previous Change Program. After considering and analysing through the soft system methodology, the final flow chart now is developed to close the gaps (based on considering of internal and external environments) (Figure 9. Final Plan of Formulation and implementation of Change Program), including to developing much more details of the Change Program (Appendix 1: Details of Change Program), which provides more flexibly and effectively guidance and actions.

The company had appointed the consultant to establish system thinking as facilitator. It is recognised that facilitators plays a significant role to provide a new way of system thinking to people. Methodologies and process consulting techniques are also seen as a power tool to help people and

the organisation to improve and develop learning process and skills. Their responsibility is to provide methodologies and techniques which

assist people and the organisation to have competence of self-learning and self-managing.

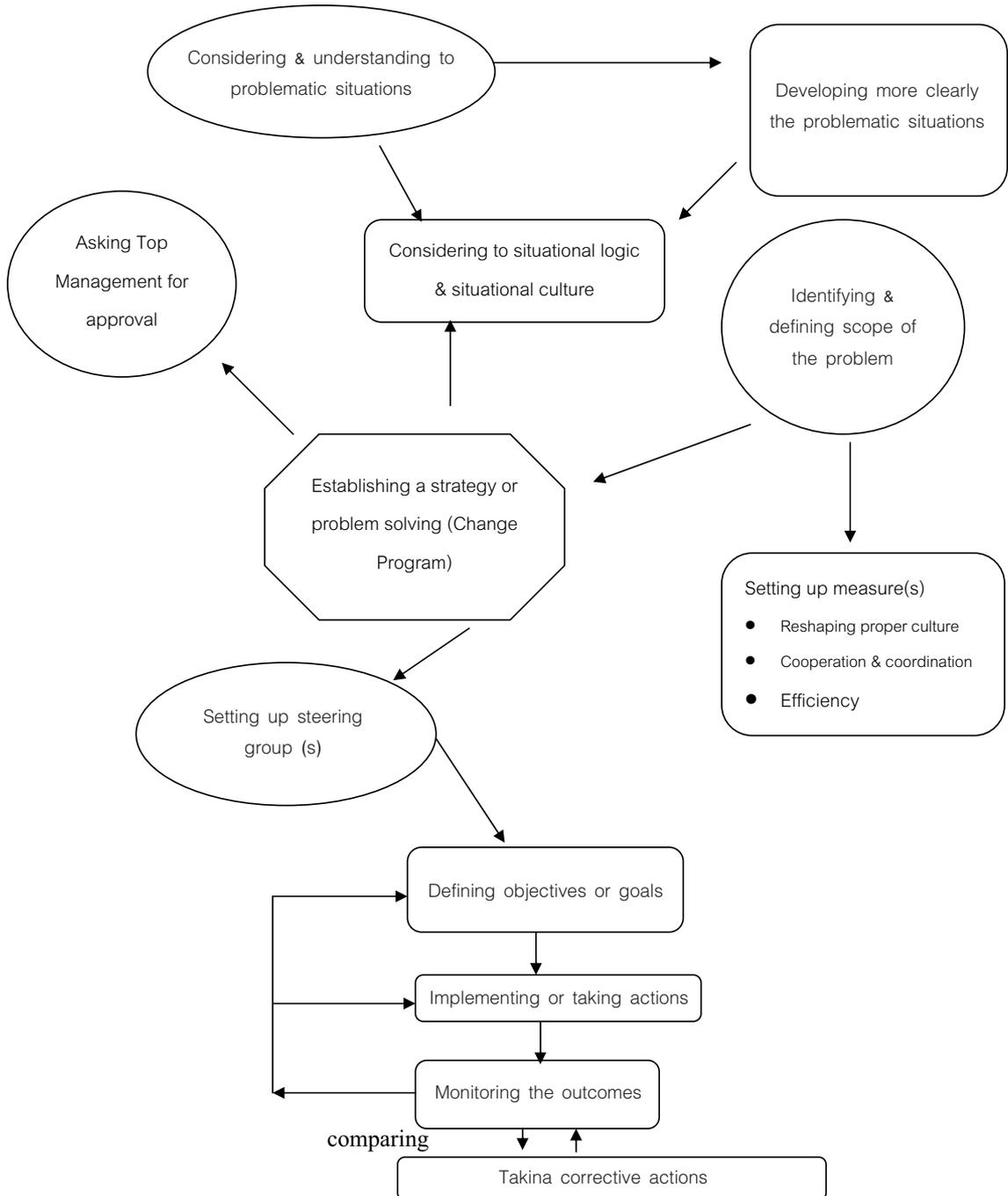


Figure 8. Final plan of formulation and implementation of change program

Conclusion

It provides views more clearly, after having examined and discussed on the issues, concerning to the methodology (SSM) which applying to the ASC's case. It applied the SSM"Mode 1", as a power tool to find out and develop the problematic situations, and it then examined the adoption of change program which the organisation has been planning and preparing

to apply for creating and maintaining the organisation with competitive advantage and organisational effectiveness. The program's objective is to primarily reshape the organisational culture, and change a new way of system thinking. However, it found that there are weaken points, which

weaken points had been discussed to find out and identify gaps.

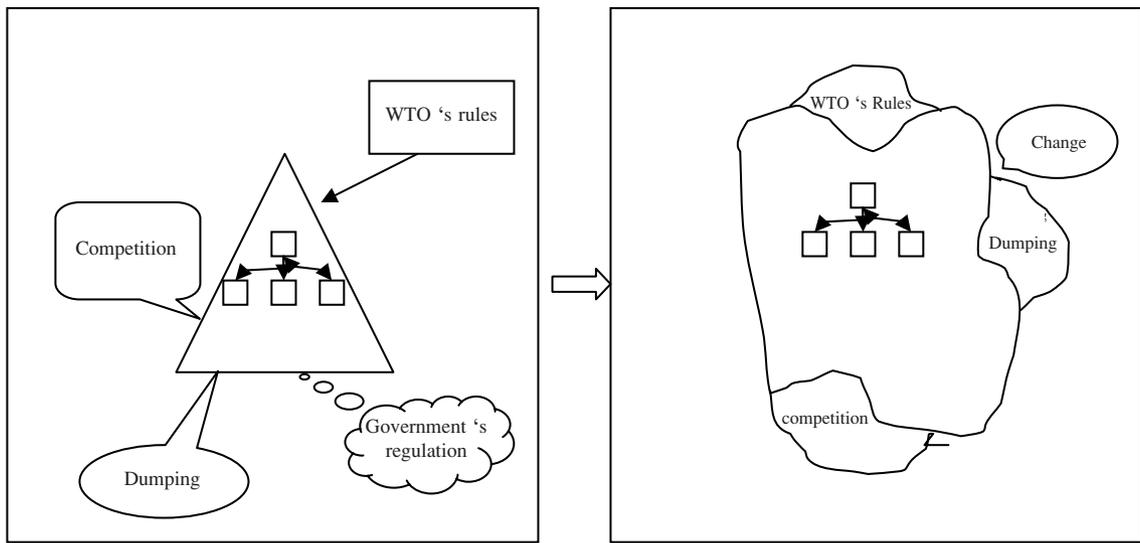


Figure 9. Impacts of changes to an organisation as a learning organisation

After the organisation has applied the methodology to provide the new system thinking to people, and then they change their attitudes and behaviors to adapt, learn and manage to the organisation's problems. Figure 10., represents situations before and after respectively, which the organisation adopted the methodologies to manage desirable changes, as its people are becoming a continual learner, and the organisation is becoming to a learning organisation.

On left side, is seen that before implementing the program, the organisation's problematic situations are chaotic and complex, as the organisational structure is rigid. People have their own way of thinking. If there are some changes arise (e.g. technological change, intense competition), the organisation can not adapt and properly respond to the changes. As a result, it may not be able to growth and survive in the business world in which rapidly changing environments.

On right side, provides insights after implementing the program. After implementing the program, it is expected that people and organisation can continuously learn to understand and analyse to change, and lead to adapting and appropriately responding the change. When they have learning experiences and skills at the first time, they can develop their learning process to improve further problematic situations with more clearly, and provide action taking to improve and effectively manage the situations in desirable way. When people in the whole organisation can create their self-learning and self-managing, the organisation is now more flexible and adaptive to change.

References

- Atkinson, C.J. 1986. **Towards a Plurality of Soft System Methodology**. *J. Appl. Sys. Anal.*, 13:19.
- Bawden, D. 1990. **Toward Action Research Systems**. in *Action Research for Change and Development*, ed. O. Zuber-Skerritt, Griffith University, Brisbane.
- Brennan, F.F. 1994. **Adding Value: A Systematic Guide to Business-Driven Management and Leadership**. Jossey-Bass Publishers, San Francisco.
- Checkland, P. & Holwell, S. 1998. **Information, Systems and Information Systems: Making Sense of the Field**. John Wiley & Sons.
- Clare, J.C. & Paul, J.C. 1992. **Adding the Values System to Soft Systems Methodology**. Second World Congress on Action Learning, University of Queensland, Australia.
- Dick, B. 1987. **Helping Groups to be Effective: Skills, Processes and Concepts for Group Facilitation**. ISBN 0958900817
- Dick, D. 1984. **Helping Groups to be Effective: Skills, Processes and concepts for Group Facilitation**. Palatino and Avant Garde.
- Edmondson, A. & Moingeon, B. 1998. **From Organizational Learning to the Learning Organization** Sage Publications. 29 (January): 5-20. London.
- Edward, D.B. 1993. **Serious Creativity: Using the Power of Lateral Thinking to Create New Ideas**. Harper Collins Publishers, Hammer-smith, London.
- Ellinor, L. & Gerard, G. 1998. **Dialogue: Rediscover the Transforming Power of Conversation**. John Wiley & Sons.
- Emery, M. & Purser, R.E. 1996. **The Search Conference: A Powerful Method for Planning Organizational Change and Community Action**. Jossey-Bass Publishers, San Francisco.
- Farnham, A. 1996. **In Search of Suckers**. *Fortune*, 14(October): 81.
- Jackson, M. 2000. **Systems Approaches to Management**. Kluwer Academic/Plenum Publishers.
- Jenkins, M. & Johnson, G. 1997. **Entrepreneurial Intentions and Outcomes: A Comparative Causal Mapping Study**. Blackwell Publishers.
- Kemmis, S. & McTaggard, R. (eds). 1998. **The Action Research Reader**. Deakin University, Geelong.
- Morgan, G., 1993. **Imaginization: the Art of Creative Management**. Sage Publications INC, California.
- Limerick, D. & Cunnington, B. 1994. **Managing The New Organization : A Blueprint for Networks and Strategic Alliances**. Business & Professional Publishing.
- Paul, C. 2000. "What Can We Learn From a Theory of Complexity?" **Emergence**. 2(January): 23-33. Lawrence Erlbaum Associates.

- Pedigo, S. 1991. "Diversity in the Workforce: Riding the Tide of Change" **The Wyatt Communicator**. Winter : 4-11.
- Perry, C. 1995. **Action Research in Management Education and Research**. In working together for quality Management, eds T. Carr & O. Zuber-Skerritt, Tertiary Education Institute, the University of Queensland, Australia.
- Perry, C. & Zuber-Skerritt, O. 1994. **Doctorates by Action Research for Senior Practicing Managers**. *Management Learning*, 25 (February): 341-64.
- Polanyi, M. 1962. **Personal Knowledge: Towards a Post-Critical Philosophy**. Routledge and Kegan Paul, London.
- Revan, R. 1983. "Action Learning, its Terms and Characters" **Management Development**, 21, 1: 39-50.
- Rittel, H.W.J & Webber, M.M. 1973. **Dilemmas in a General Theory of Planning**. Elsevier Scientific Publishing, Amsterdam, Scotland.
- Robbins, S. 1998. **Organizational Behavior: Concepts, Controversies, Applications**. 8 ed. Prentice-Hall, Upper Saddle River, New Jersey.
- Rodriguez, M.V.R. & Ferrante, A.J. 1996. **Information Technology for the 21st Century: Managing the Change**. Computational Mechanic.
- Smith, N.C. & Dainty, P. 1991. **The Management Research Handbook**. London and New London.
- W. Blank, J.R. Weitzel, & Green, S.G. **A Test of the Situational Leadership Theory**.
- Weisbord, M.R. 1992. **Discovering Common Ground**. Berrett-Koehler Publishers, San Francisco.
- Whyte, F.W. Greenwood, J.D. & Lazes, P. 1991. **Participatory Action Research**. Sage Publications, London.
- Wilson, B. 1993. **Systems : Concepts, Methodologies, and Applications**. 2nd ed. John Wiley & Sons.
- Winter, R. 1989. **Learning from Experience**. the Falmer Press, London.
- Zand, D.E. 1993. "Managers and Consulting: A Total Quality Perspective". **Journal of Management Development**, 12, 7: 51-59.
- Zuber-Skerritt, O. (ed.). 1991. **Action Research for Change and Development**. Gower Aldershot.
- Zuber-Skerritt, O. (ed.). 1996. **New Directions in Action Research**. The Falmer Press, London.

Appendix 1 - Change Management

Change Program		
General		
Objective		
The basic objective is to provide activities and methodologies to encourage and motivate management and all managers to adapt and respond to change.		
Management Philosophy		
To achieve and maintain the required level of quality and management, a new approach (such as TQM) must be applied. Management has an obligation to provide an environment in which each person has freedom to develop and to use all his or her capacities.		
Management		
All levels of management will be expected to operate on a team basis and to support an integrated approach within and among teams, while encouraging personal initiative and responsibility.		
PERSONNEL POLICY AND PROGRAMS		
The company designs a way to reshape the organisational culture in productive way, and provide activities to improve and develop in the issues of ;		
<ol style="list-style-type: none"> 1. Respect for people. 2. Trust and support 3. Power equalization 4. Confrontation 5. Participation 		
Training Schedule for Change Program		
Opening Day	Activities	Participant(s)
First week	Introduce to the program Introduce to training techniques Establish program objectives & goals Develop trust and cooperatively work	all managers
Second week	Team Building Understand business and influencing factor Introduce to TQM Workshop	group of managers
Third week	Improve & develop communication Develop leadership skills Workshop	all managers
Fourth week	Knowledge Management Understand Change & how to manage Workshop	all managers
<p>The organisation has decided for adopting <i>change program</i>. The program provides activities, which focus mainly on top and middle management. Time duration is 4 weeks. The program is also divided <i>in three loops of learning process</i>. First, its aim is to reshape the organisational culture, which is a new way of thinking. The ASC's people would understand to changes, and they can work more cooperatively and effectively. Additional to reduce or eliminate negative conflicts among them, (I personally prefer to create a positive conflict because it can generate diversification of creative and innovative idea) and eventually lead to work adaptively and responsively to changing environments.</p> <p><i>Secondly</i>, after finished the first loop, people have rationally changed a way of thinking, it then starts to implement to second loop. The loop's objective is to gain high quality of products with lower costs. The policy of <i>TQM</i> and <i>Zero Defect</i> is adopted. Finally, the third loop is provided to prepare people to adapt and respond to other changes.</p>		

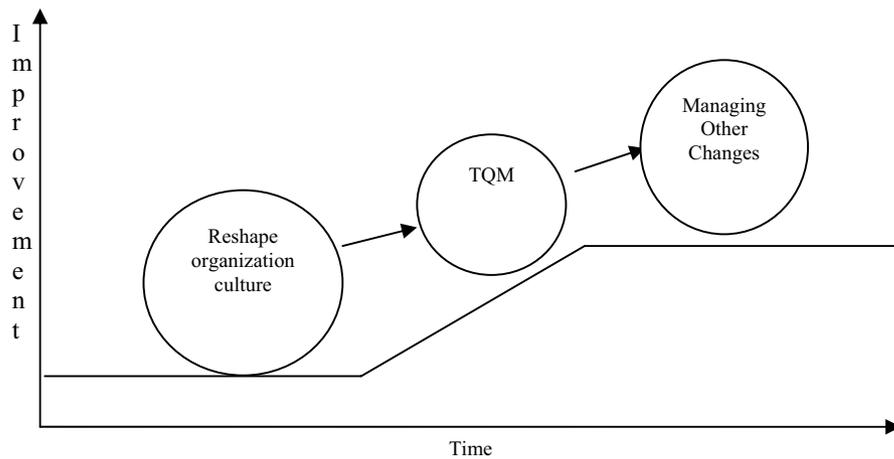


Figure 1. Learning cycles of ASC

To develop for first and third loop, the program focuses on the change of;

- The way work is done
- The management techniques
- The managers and the employees
- The values and beliefs
- The control procedures

Expected benefits

- Reshape organisational culture in a productive way
- Better adapt and respond to change
- More trust and cooperative working
- Starting point to develop for further steps

To develop for second loop, the program provides the following procedures;

- ◆ Prepare a table for every function (which indicates all goods and services produced by the function)
- ◆ Analyse the existing macro flows between processes
- ◆ Define the quality characteristics of the products
- ◆ Define control and verification items
- ◆ Define requirement to establish or review standards
- ◆ Prepare a flow diagram of each process
- ◆ Establish the process technical standard
- ◆ Elaborate operational procedure and training manuals
- ◆ Audit the use of procedures
- ◆ Define the treatment of non-conformities
- ◆ Apply a methodology for the solution of problems

Expected benefits

- Reduction in the time to satisfy the users' needs
- Better quality of services supplied to the customers
- Reduction in the final operational costs

Additional Techniques may be applied

MASP : The method for the solution of problems

The MASP has been conceived for application to critical tasks or processes, which are not working properly. The MASP methodology is as follows; (Rodriguez & Ferrante, 1996)

- A. Problem Identification
- A. Observation
- B. Analysis
- C. Action Plan
- D. Action
- E. Verification
- F. Standardisation
- G. Conclusion

The following important actions must be taken, to implement TQM in a solid and consistent way;

1. Define the long term vision of the company
2. Find out how to turn the vision into reality
3. Define the values and beliefs of the company
4. Define the business
5. Define the mission of the organisation
6. Define products and services
7. Define the quality of products and services
8. Define the productive processes
9. Implement management by routine

Factor about change which would be considered

1. Change takes time, lots of it
2. Initial stages of change involved anxiety, stress, concern
3. Ongoing support, physically, socially and psychologically was critical
4. Change involves learning by discovery, problem solving and using an action-research approach to consultancy.
5. Cultural breakthroughs occurred when individuals and small groups through dialogue, values analysis and questioning of actions developed alternative thoughts and view points
6. Success depended upon readiness conditions such as norms of collaboration, leadership styles, management structure, milieu.
7. Positive pressure - through organised change tasks, involving interaction helped the change process.
8. For changes to happen, it had to be participative
9. Training of facilitators was crucial
10. Symbols of eventual ownership of the change by clients were a sign of success by a consultant.

After implementing through a whole change program, the organisation would have a characteristic as follows;

- Data gathering processes and instruments ensures :
 - a) an overview scan; and
 - b) indepth pursuit of specific organisational traits that recurred.
- Data feedback involved the total organisation through representative groups.
- Change teams are established
- Total organisational decision making processes occur.
- All stakeholders are crucial allies in the process.
- Constant opportunities for dialogue, feedback mechanisms kept the organisation self-renewing
- Facilitative leadership of change teams was crucial to allow people in the organisation to 'own' the change and feel empower, commit and motivate
- Open, democratic communication is a useful political tool for change
- Skills of listening, responding, planning, and small group facilitation and leadership among many others were crucial to project success.

Factors for success

1. Personal synchronisation with a process oriented consultancy role.
2. Facilitative ideology
3. Power
4. Group techniques
5. Leadership support
6. Consultant's skills and behavior and attitudes
7. Shared goals with other consultants
8. Group development understanding

Appendix 2 Framework of this research paper

