CHAPTER 5

DISCUSSION

This study modified the Balanced Scorecard used in business organizations as a measurement approach to knowledge management for generating team performance indicators for Thai health-promoting teams. Teams' vision, missions and outcomes were identified at the beginning. Five perspectives for balancing performance at team level were clarified simultaneously. Three resources for formulating the indicators included (1) teams' missions and outcomes, (2) the techniques of how Thai health-promoting teams perform and (3) the techniques of how Thai health-promoting teams learn. The first set of 35 team performance indicators were developed by following the conceptual framework described in Figure 2.7. Finally, the verification and selection step revealed 11 critical team performance indicators which were specific for Thai health-promoting teams. The previous chapter presented the results from four steps of this study.

The chapter is organized into three parts. The first part is four steps of the research process as action research. The second part discusses the Balanced Scorecard's roles in developing team performance indicators and proposes a model for the development of team performance indicators as an innovation. The third part describes the relationships between the critical team performance indicators and (1) teams' missions and outcomes, (2) teams' "how-to" knowledge, (3) team learning, (4) types of knowledge, (5) other team performance indicators.

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Part 1: The four steps of the research process as action research

The research process of this study consisted of four steps.

Step 1: Clarification of the missions and outcomes of Thai health-promoting teams;

Step 2: Identification of team knowledge, which included how teams perform and how teams learn;

Step 3: Generation of team performance indicators for Thai health-promoting teams;

Step 4: Verification and selection of team performance indicators for Thai health-promoting teams.

These steps constituted the systematic process for enhancing and increasing the effectiveness of health-promoting teams. Steps 1, 2 and 4 used a systematic process of collecting data, feeding the data back into the system and taking actions based on the data. These steps followed the action research concept and were based upon an organizational development concept. These steps illustrated that the people who took action in teams were involved and participated in the process.

In Step 1, the data referred to teams' vision, missions and outcomes. The process for developing the provincial health-promoting teams' vision, missions and outcomes showed that the data were collected and fed back to team leaders and team members. The process enabled team leaders' and team members' involvement. Team leaders and team members took actions based on the data. Finally, teams' missions and outcomes were clarified.

In Step 2, the data referred to team knowledge in terms of the techniques of how teams perform and how teams learn. Team knowledge was identified and

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captured from team leaders. During this step, the data were reflected back to the team leaders and team members to help them reconsider their performance.

In Step 4, the data referred to the first set of team performance indicators. Three methods: (1) questionnaire, (2) interviews and (3) focus group discussion fulfilled the feedback system and enabled team participation. Finally, critical team performance indicators were selected.

The research process showed that team leaders and team members were involved and participated in each step. Team leaders and team members in each team also learned together. New ideas and new actions emerged. The research process confirmed that Steps 1, 2 and 4 constituted the systematic process of change for enhancing and increasing team effectiveness, and directly affected team performance.

The research process also enhanced the learning of teams. In the beginning, teams learned together to identify, develop and adjust the vision, missions and outcomes. The techniques of how teams perform and how teams learn illustrated the learning process of teams. The feedback from the verification and selection step emphasized that teams reconsidered their actions through indicators, baseline data and targets. Based upon the knowledge management approach, Steps 1, 2 and 4 also represented knowledge sharing, knowledge generation and knowledge integration (Fong, 2003).

The research process additionally pointed out and reflected that Thai health-promoting teams were different from business and health-care teams in terms of (1) the focal point of the team, (2) the team's achievements and (3) the environment for team learning, as shown in Table 5.1.

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Table 5.1 Substantial analysis for three types of teams from the research process

	Business teams	Health-care teams	Thai health-promoting teams
Focal point of team	Tasks	Tasks	People's relationships
Team's achievements	Financial-oriented	Disease-oriented	Health-oriented
Learning environment	Uncongenial environment via formal communication	Uncongenial environemnt via formal communication	Congenial environment via informal communication

The terms of (1) the focal point of the team, (2) the team's achievements and (3) the environment for team learning are described as follows:

The focal point of the team is traced back to the meaning of team which refers to "pulling together" (Senge, Kleiner, Roberts, Ross & Smith, 1994, p. 354). Two significant parts of a team are comprised of (1) tasks and (2) people. Most of the teams in business and in health-care organizations are formed and developed by emphasizing the tasks; they are task-oriented. Tasks pull people to work as teams. Meanwhile, the focal point of forming and developing Thai health-promoting teams in this study was the relationships among people who worked together as friends and partners. People worked together to accomplish tasks. The relationships pulled people to work as teams.

As the most important outcome in business is how to increase finance, teams' achievements give priority to financial-oriented achievements. Because health care is more concerned both with sickness (or morbidity) and with mortality, including an orientation towards patient care (Hogarth, 1975, p. 3), health-care teams highlight how to decrease and eliminate disease so their achievements focus on disease-oriented achievements. Thai health-promoting teams emphasize how to increase health and

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quality of life in the population. Their achievements turn to health-oriented achievements.

In terms of task-oriented achievements, the environment for team learning in business and health-care teams is an uncongenial environment resulting from formal communication. The environment in Thai health-promoting teams was different. Team leaders in Thai health-promoting teams created a congenial environment via informal communication for team learning.

These three different aspects correlate with the critical team performance indicators. Table 5.2 presents the critical team performance indicators and the substantial analysis of Thai health-promoting teams in terms of (1) the focal point of the team, (2) the team's achievements and (3) the environment for team learning. The details of the correlation are discussed as follows.

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Table 5.2 Critical team performance indicators and the substantial analysis of Thai health-promoting teams

Substantial analysis of Thai health-promoting teams		Perspectives	Sub-perspectives	Critical indicators
Focal point of team	People's relationships	Team effectiveness perspective	Financial opportunity	P11: Percentage of budget contributed by partners
		Partner perspective	Partner relationship	P21: Number of old partners
				P22: Number of new partners
		Team efficiency perspective	Strengthening team building	P31: Percentage of team members that completely understands vision, missions and tasks
				P32: Percentage of activities/ planning process generated by team
		Team member perspective	Team members' relationship	P51: Number of old team members
			Team members' participation	P54: Number of team members involved in each activity / task/ planning process
Team's achievements	Health-oriented	Team effectiveness perspective	Target group behavior change	P14: Target group behavior identified by survey
Learning environment	Congenial environment via informal communication	Team learning and growth perspective	Knowledge management for team	P41: Number of learning fora per team
				P43: Number of best practice models

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The focal point of Thai health-promoting teams in this study showed that people's relationships were prominent features rather than tasks. Seven critical team performance indicators reflected people's relationships. The correlations between these indicators and people's relationships are illustrated as follows:

In the team effectiveness perspective, indicator P11 (Percentage of budget contributed by partners) represented the financial opportunity sub-perspective. This indicator was formulated from teams' mission in terms of creating demands and participation of alliances and partners.

In the partner perspective, indicators P21 (Number of old partners) and P22 (Number of new partners) referred to the partner relationship sub-perspective. Both indicators also illustrated teams' mission in terms of creating demands and participation of alliances and partners.

These three indicators reflected the relationships among partners of Thai health-promoting teams in the partners' perceptions. As stated in Chapter 4, the provincial teams dealt with their partners to advocate and mobilize society depending on their interrelationships. The good relationships from the past between the provincial teams and their partners were considered to help the provincial teams to recruit the proper partners. Each provincial team also worked together with their partners in other projects before convincing them to join the network. The health issue of reduction of sugar consumption also matched with the partner interests and was integrated into the partners' tasks by pointing out the mutual benefits. Everybody could gain benefit from working together.

In the team efficiency perspective, indicators P31 (Percentage of team members that completely understands vision, missions and tasks) and P32 (Percentage

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of activities/ planning process generated by team) implied the strengthening team building sub-perspective. These indicators were associated with the commitment to work as a team. These indicators also illustrated the specific team type of Thai health-promoting teams in this study. The teams managed themselves autonomously as self-directed teams by taking responsibility for the whole process from planning to evaluation. The self-directed teams increased team members' sense of relationships.

In the team member perspective, indicator P51 (Number of old team members) represented the team members' relationship sub-perspective, whereas indicator P54 (Number of team members involved in each activity/ task/ planning process) was considered in the team members' participation sub-perspective. Both indicators confirmed the focal point of Thai health-promoting teams in terms of the relationships among team members.

These four indicators reflected that the team leaders and team members of Thai health-promoting teams were concerned about the relationships among people who worked together. As stated in Chapter 4, the provincial team leaders reflected that they were persuaded to join the network by the core team managers. As the core team managers worked at the Dental Public Health Division in the Ministry of Public Health, they worked together with the provincial teams in other projects before persuading the provincial teams to join the network. The good relationships from the past helped the core team managers to recruit the proper provincial teams for this study. Also, the provincial teams were challenged to confront the health issue of reduction of sugar consumption. Each team leader volunteered to join the network as an extra task beyond their routine duties. Each team leader also gave many reasons why they considered joining the network, and each provincial team elected to work

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with different partners, depending on their relationships in their provinces, as shown in Table 4.6.

Furthermore, the people's relationships in Thai health-promoting teams in this study were shown in Step 1. The process of developing Thai health-promoting teams' vision, missions and outcomes illustrated that team members participated in the process. The core team and the provincial teams worked together based upon their relationships. The research process was in accordance with the concept of the Ottawa Charter for health promotion (World Health Organization, 1986) and the Bangkok Charter (World Health Organization, 2005) which emphasize participation and partnerships.

The achievements of Thai health-promoting teams in this study highlighted health-oriented achievements. One critical team performance indicator that reflected health-oriented achievements showed in the team effectiveness perspective. In this perspective, indicator P14 (Target group behavior identified by survey which referred to the behavior change in the target group) represented the target group behavior change sub-perspective. This indicator showed an improvement in health rather than a decrease in the incidence or prevalence of disease.

This critical indicator in terms of teams' achievements was clarified by the vision of Thai health-promoting teams. Teams expected (1) to protect children from illnesses, (2) to promote healthy eating lifestyles and (3) to foster understanding and realization of the effects of excess sugar consumption. The outcome of teams was also to "change…people's behavior and health, (with emphasis) on reducing sugar consumption." Teams emphasized health-oriented rather than disease-oriented

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achievements. Before joining the network, team leaders and members were health personal who used to work towards decreasing the incidence and prevalence of disease. However, they learned that their work on disease-oriented achievements failed to decrease the incidence or prevalence of disease in the target group. They also realized that the disease and health were in the same line but on different sides. The unsuccessful achievements led them to turn to the health side to concentrate on health-oriented achievements. They desired to improve people's health by using health promotion concepts.

The achievements of Thai health-promoting teams also followed the World Heath Organization's definition of health promotion (1986): "the process of enabling people to increase control over and to improve their health…" In Step 2, Thai health-promoting teams promoted health by (1) building healthy public policy, (2) creating supportive environments, (3) strengthening community action and (4) developing personal skills (World Health Organization, 1986). They also developed strong political action, broad participation and sustained advocacy for all sectors and settings (World Health Organization, 2005).

In terms of the environment for team learning, Thai health-promoting teams were concerned with a congenial environment via informal communication rather than an uncongenial environment resulting from formal communication. The critical team performance indicators that reflected learning environment showed in the team learning and growth perspective. In this perspective, two indicators in the knowledge management for team sub-perspective that reflected learning environment were

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indicator P41 (Number of learning fora per team) and indicator P43 (Number of best practice models).

The results in Chapter 4 illustrated that most team leaders believed in the relationships between people in their teams. Team leaders and team members had worked together for a long time. They were very well acquainted with each other. Team leaders perceived that a congenial environment in the team was essential for team members to work together. The creation of a congenial environment depended on communication. They also realized that informal communication helped to generate sympathetic situations and to close the gap between team leader and team members. Team leaders always informally communicated with team members and created a sociable environment. They facilitated a congenial environment by creating happiness and fun as concepts for teams. Team members also felt comfortable to consult the team leader and were able to contact team leaders after working hours. Furthermore, there was always a "give and take" situation between team leaders and team members. The congenial environment also occurred during the learning fora for sharing knowledge. Team leaders also communicated informally to lead participation and empower team members and partners. Innovations and best practice models emerged from this environment.

The congenial environment via informal communication was consistent with the idea of knowledge creation by Nonaka (1991). People interacted and learned in a congenial environment via informal communication (Nonaka, Toyama & Konno, 2000). In addition, the process for team learning in Thai health-promoting teams conformed to the definition of team learning by Senge, which is defined as "the

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process of aligning and developing the capacity of a team to create the results its members truly desire" (Senge, 1998, p. 236).

Part 2: The Balanced Scorecard

The Balanced Scorecard represents the new performance measurement systems that help managers measure and improve business processes. It has been proposed that the Balanced Scorecard plays four roles: (1) a strategic measurement system (Kaplan & Norton, 1992; Niven, 2003), (2) a communication tool (Kaplan & Norton, 1992; Niven, 2003), (3) a performance measurement system (Kaplan & Norton, 1992; Niven, 2003) and (4) a learning system (Kaplan & Norton, 1996a). This study modified the Balanced Scorecard used in business organizations for use with health-promoting teams. The Balanced Scorecard is also used as a tool to generate team performance indicators. Similarities and differences between the Balanced Scorecard used in business organizations and the one modified for use in this study are discussed as follows.

The Balance Scorecard as a strategic measurement system and a communication tool

Since the first two roles took place in the same process, they are here discussed under the same heading.

To use the Balanced Scorecard as a strategic measurement system in business organizations, vision and strategy are identified. In business, the executive managers identify and clarify their organizational vision and strategy. The decision-making in selecting the appropriate vision and strategy in business occurs at the executive or

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management level. The vision and strategy are also proposed at the establishment of the business (Kaplan & Norton, 1996b; 1996c). The Balanced Scorecard at this stage of the business development is used as a strategic management system.

In this study, the vision of the health-promoting network, the 'Sweet Enough Network,' was controversial at the beginning. The managers of the core team worked together to recognize and clarify the first vision for the network after four years of implementation. They used the participation approach as the process for identifying and clarifying the vision of the network. Team leaders and team members from the provincial health-promoting teams shared their visions and helped the core team managers to adjust the first vision of the network via a learning forum. Missions and outcomes for teams were identified simultaneously. After that, the core team managers reconsidered the missions and outcomes, and proposed the final vision, missions and outcomes for the provincial health-promoting teams.

The process showed that identifying the vision, missions, and outcomes for teams in this study was achieved differently from the way it was achieved in business. A top-down process is used in business at the organizational level, whereas a participative process was used in the health-promoting network in this study at the team level. The roles of the Balanced Scorecard illustrated that it acted as a strategic management system.

Regarding its roles as a communication tool, it served to clarify and propagate the vision, missions and outcomes to every team and to all level within the teams (Kaplan & Norton, 1996b; Niven, 2003: p.22). The manager therefore could utilize it to gain consensus (Kaplan & Norton, 1996a; 1996b; 1996c: p. 10) and thereby enhance team performance.

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The Balance Scorecard as a performance measurement system

In terms of performance measurement systems, the Balanced Scorecard used in business organizations measures performance from four perspectives, financial, customer, internal business process, and learning and growth (Kaplan & Norton, 1992; 1996a; 1996c: pp. 21-41). The most important outcome in business is the financial perspective.

As health-promoting teams are nonprofit organizations, the perspectives and the most important outcome in health-promoting teams are different. Kaplan (2001) stated that "Most nonprofits (have) difficulty with the original architecture of the Balanced Scorecard, which place(s) the financial perspective at the top of the hierarchy." Financial success is not the primary objective for a nonprofit.

The conceptual framework of this study proposed five perspectives that were specifically re-labeled for teams (MacBryde & Mendibil, 2003; Mendibil & MacBryde, 2005). These perspectives were (1) team effectiveness, (2) partner, (3) team efficiency, (4) team learning and growth and (5) team member. As well, the most important outcome of teams was the team effectiveness perspective. These specific perspectives and this outcome were different from the original perspectives in business. The results confirmed that all of the five perspectives were appropriate and that every perspective was important, but the significance of each perspective was unequal in each team, depending on the teams' contexts and experience.

Because the Balanced Scorecard is used as a measurement system, it should mix and balance between lagging and leading indicators of performance (Kaplan & Norton, 1996c: p. viii; Niven, 2003: p. 23). Lagging indicators, or outcome measures, focus on results at the end of a time period, whereas leading indicators, or

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performance drivers, measure intermediate processes and activities (Kaplan & Norton, 1993, 1996a; Niven, 2003: p 293-297). Several criteria for selecting performance indicators should be considered, such as (1) be linked to strategy, (2) be easy to understand, (3) be linked in a chain of cause and effect, (3) be accessible, (4) be resistant to date-related measures and (5) be quantitative (Niven, 2003: p. 204-206).

This study formulated both lagging and leading indicators, which were mixed and grouped to simplify them. All of the indicators were quantitative. Some tacit knowledge and qualitative indicators were indirect measures (Lee, 2002: p. 407-408), for example, number of old partners, which referred to the relationships between team and partners, and referred to the participation of partners as well. The first set of 35 team performance indicators were categorized into 18 lagging and 17 leading indicators. These indicators were prioritized and selected to reflect team performance in real situations. Finally, critical indicators consisted of six lagging and five leading indicators.

Is the number of indicators reasonable or excessive? In 1993, Kaplan & Norton specified that “the Balanced Scorecard is not a template that can be applied to business in general, or even industry-wide. Different market situations, product strategies and competitive environments require different scorecards.” The appropriate number of measures, from the 15 to 20 scorecard measures, should be able to evaluate business unit’s competitive strategy. Kaplan & Norton also claimed that each perspective required between four and seven separate measures, thus creating a scorecard with up to 25 measures for four perspectives. They also proposed that “companies can indeed formulate and communicate their strategy with an integrated system of approximately two dozen measurements” (Kaplan & Norton,

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1996a). Each indicator was associated with one or more measures and assigned to one of four perspectives (Lawrie & Cobbold, 2004).

In this study, the first set of indicators consisted of 35 indicators. The number of indicators was more than Kaplan & Norton's suggestion. In the verification and selection step, critical team performance indicators consisted of 11 indicators. The team effectiveness, partner, team efficiency and team learning and growth perspectives were reflected by two indicators for each perspective. Meanwhile, the team member perspective was reflected by three indicators. These indicators were practical for health-promoting teams because they were formulated from evidenced-based data. As well, they were verified by every level within the teams and their appropriateness in real situations was, similarly, confirmed.

The Balance Scorecard as a learning system

As the Balanced Scorecard is used as a learning system (Kaplan & Norton, 1996a), it enables organizations to modify strategies to reflect real-time learning (Kaplan & Norton, 1996b). The learning and growth perspective is an important perspective to reflect learning. This perspective is created for answering the crucial question: "Can we continue to improve and create value?" (Kaplan & Norton, 1992) The learning and growth perspective identifies the infra-structure that organizations must build to create long-term growth and improvement (Kaplan & Norton, 1996a; 1996c: p. 126). The feedback and learning process gives organizations the capacity for strategic learning, which consists of (1) gathering feedback, (2) testing the hypotheses on which strategy is based, and (3) making the necessary adjustments (Kaplan & Norton, 1996b). Reinhardt (2002: p. 195) claimed that "Behavior in

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business organizations is strongly shaped by measures" and the key for organizational learning is based on the team-learning process (Reinhardt, 2002: p.191). Both executives and team members learn from the team learning processes.

The Balanced Scorecard used in business at the organizational level indicates that learning specifically shows in the learning and growth perspective. Meanwhile, learning at the team level in this study was directly revealed through two perspectives: (1) the team learning and growth perspective and (2) the team member perspective. As well, other perspectives indirectly reflected team learning. For example, in the team efficiency perspective, team learning showed via the knowledge for strengthening team building and for developing innovations. In the team effectiveness perspective, team learning occurred in the techniques of how to deal with the local government and the methods of creating healthy public policy. The approaches to retaining old partners and to acquiring new partners also reflected team learning. The results uncovered that health-promoting teams learned from their experiences. The researcher then transferred the teams' knowledge to reflect and measure their performance.

These results show that the processes of developing team performance indicators by modifying the Balanced Scorecard fulfilled four roles: (1) the strategic measurement system, (2) the communication tool, (3) the performance measurement system and (4) the learning system. However, Hudson, Smart & Bourne (2001) and Pun & White (2005) pointed out that the Balanced Scorecard lacked (1) an evaluation of the existing performance measurement system to highlight areas of deficiency and indicate a need for improvement, (2) a maintenance structure and (3) the participation

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of the stakeholders who were the key users of the performance measures. In this study, the existing performance measurement system was evaluated before using the Balanced Scorecard, whereas every key user was included in the process by a participation approach. A maintenance structure was not developed in this study because the researcher was not in a position of authority to authorize the network.

Hudson, Smart & Bourne (2001) and Pun & White (2005) also indicated three weakness characteristics of the Balanced Scorecard. First, it did not provide fast and accurate feedback, nor did it quickly respond to changes in internal and external contexts. Second, it was not easy to maintain. Third, it did not link operations to strategic goals. The process of this study showed the linkage between operation at the team level and strategic goals, but did not extend to the response to changes in internal and external contexts nor to the maintenance phase.

The development process of team performance indicators followed the conceptual framework described in Figure 2.7. Team performance indicators were formulated through the modification of the Balanced Scorecard. The significance of the modifications included four aspects. First, organizational vision and strategy were replaced by team missions and outcomes. Second, four perspectives from the Balanced Scorecard used in business organizations were represented by five perspectives for use with health-promoting organizations at the team level. The four perspectives in the business context consisted of (1) financial, (2) customer, (3) internal business process, and (4) learning and growth, whereas the five perspectives for health-promoting teams were comprised of (1) team effectiveness, (2) partner, (3) team efficiency, (4) team learning and growth and (5) team member. Third, team knowledge in terms of the techniques of how Thai health-promoting teams perform

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and how Thai health-promoting teams learn was identified and captured from team leaders. The techniques of how Thai health-promoting teams perform were classified into five categories: (1) team tasks, (2) team work design, (3) team composition, (4) team process and (5) team support systems. The techniques of how Thai health-promoting teams learn included two types of learning and leadership challenge. The two types of learning were (1) intelligence gathering, which includes search, inquiry and observation, and (2) experience, which refers to reflection and review. The leadership challenge involved (1) creating opportunity, (2) setting the tone and (3) leading the discussion. Fourth, team performance indicators were formulated from three resources: (1) teams' missions and outcomes, (2) the techniques of how Thai health-promoting teams perform and (3) the techniques of how Thai health-promoting teams learn. Finally, the model for the development of team performance indicators by modifying the Balanced Scorecard is proposed as an innovation of this study, as presented in Figure 5.1.

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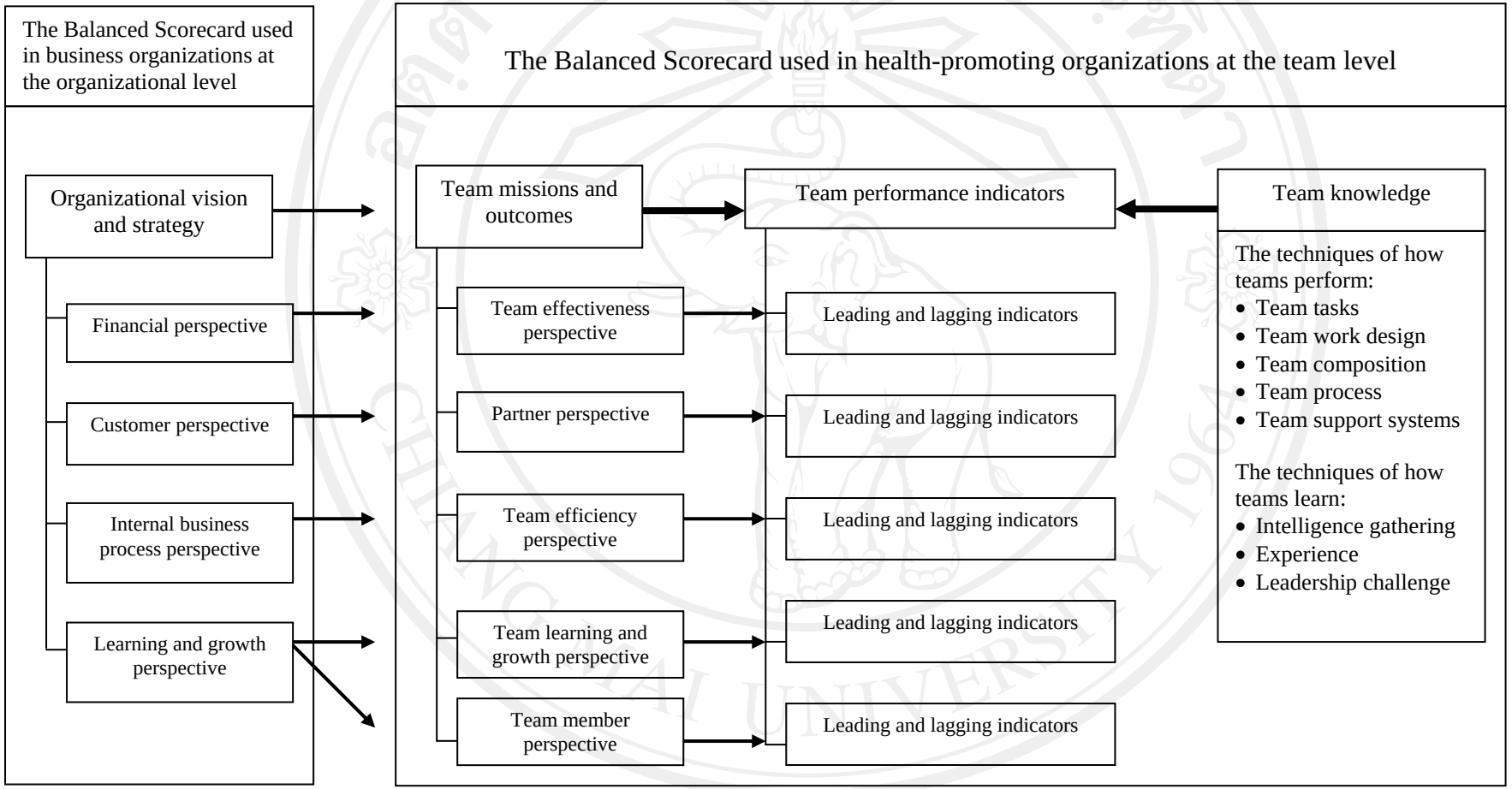

Figure 5.1 Model used in this study for the development of team performance indicators by modifying the Balanced Scorecard

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Part 3: Critical team performance indicators

The first set of 35 team performance indicators, which included 18 lagging and 17 leading indicators, were verified and selected in the final step. Eleven indicators were selected as critical team performance indicators, which consisted of six lagging and five leading indicators. These indicators demonstrated that some indicators reflected more than one technique, whereas some techniques were reflected by more than one indicator. To comprehend these critical team performance indicators, the relationships between critical team performance indicators and five aspects are proposed to discuss these indicators. These five aspects involve the relationships between the critical team performance indicators and (1) teams' missions and outcomes, (2) teams' "how-to" knowledge, (3) team learning, (4) types of knowledge and (5) other team performance indicators as follows.

Critical team performance indicators and teams' missions and outcomes

Critical team performance indicators were traced back to teams' missions and outcomes. In Table 4.5, seven indicators reflected teams' missions, whereas two indicators reflected team outcomes. Meanwhile, critical team performance indicators indicated that only three indicators that reflected teams' missions and one indicator that reflected team outcomes were selected. These indicators were (1) P11: Percentage of budget contributed by partners, (2) P14: Target group behavior identified by survey, (3) P21: Number of old partners and (4) P22: Number of new partners (Table 5.3).

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Table 5.3 Relationships between the critical team performance indicators and teams' missions and outcomes

Perspectives	Sub-Perspectives	Critical team performance indicators	Details	Themes
Team effectiveness perspective	Financial opportunity	P11: Percentage of budget contributed by partners	Create demands and participation of alliances and partners	Teams' missions
	Target group behavior change	P14: Target group behavior identified by survey	Emphasize change in people's behavior and health , focused on reducing sugar consumption	Teams' outcomes
Partner perspective	Partner relationship	P21: Number of old partners	Create demands and participation of alliances and partners	Teams' missions
		P22: Number of new partners		

The results show that Thai health-promoting teams followed the teams' vision, which emphasized "working with partners." Two missions of teams were (1) to create demands and participation of alliances and partners and (2) to set up healthy public policy/regulation. The critical indicators reflected that the second mission was less significant than the first mission. No indicator was selected to indicate the second mission, whereas three indicators were selected to measure the first mission. These three indicators were P11: Percentage of budget from partners, P21: Number of old partners and P22: Number of new partners. These indicators also confirmed that Thai health-promoting teams followed the health promotion concepts of the Ottawa and Bangkok Charters (World Health Organization, 1986; 2005). The concepts emphasized that partners were key persons to promote health, whereas the most significant roles of health-promoting personnel were to empower people and to create partners' participation.

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The comments from the questionnaire in the verification and selection step indicated teams' outcomes that reflected change in people's behavior and health. Indicator P14 (Target group behavior identified by survey) was more practical in real situations than Indicator P15 (Percentage of target group who consume 6 teaspoons or less of sugar per day), and also made data collection easier.

These relationships confirm that four critical team performance indicators are related to Thai health-promoting teams' missions and outcomes.

Critical team performance indicators and how-to knowledge of teams

Critical team performance indicators represented the "how-to" knowledge, or technical knowledge, of teams and referred to the techniques of how Thai health-promoting teams perform and the techniques of how Thai health-promoting teams learn (Table 5.4).

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Table 5.4 Relationships between critical team performance indicators and "how-to" knowledge of teams

Perspectives	Sub-Perspectives	Critical team performance indicators	"How-to" knowledge of teams	Categories or Themes
Partner perspective	Partner relationship	P21: Number of old partners	Convince partners to join team by pointing out the benefit of joining the team by using evidence and negotiating with a "win-win situation" strategy	How to deal with partners
			Create a congenial environment with partners via informal communication	
			Be interdependent on mutual benefits, or help partners to do the job by taking and giving an advantage of tasks	
			Empower partners by showing respect for their initiatives and listening to their voices	
			Lead participation by posing questions and listening to partners' voices	Leaders' tasks
		P22: Number of new partners	Convince partners to join team by pointing out the benefit of joining the team by using evidence and negotiating with a "win-win situation" strategy	How to deal with partners
			Lead participation by posing questions and listening to partners' voices	Leaders' tasks

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Table 5.4 (continued) Relationships between critical team performance indicators and "how-to" knowledge of teams

Perspectives	Sub-Perspectives	Critical team performance indicators	"How-to" knowledge of teams	Categories or Themes
Team efficiency perspective	Strengthening team building	P31: Percentage of team members that completely understands vision, missions and tasks	Clarify teams' tasks, vision, missions and strategies before the launch and during the implementation of the program	Team tasks
		P32: Percentage of activities/plan-ning process generated by team	Manage their teams autonomously as self-directed teams by taking responsibility for the whole process from planning to evaluation	Team work design
Team learning and growth perspective	Knowledge management for team	P41: Number of learning fora per team P43: Number of best practice models	Create a learning environment for sharing knowledge by setting up learning fora regularly	Team process and Leaders' tasks
			Search relevant documents to help team learning	Learning from present experience
			Inquire and ask experts outside the teams to help team learning	
			Observe other teams within province	
			Observe other teams from other provinces	
			Use "After Action Review" technique in team	Learning from past experience
			Use other techniques in team, for example, outcome mapping, on-the-job training and appreciative inquiry	

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Table 5.4 (continued) Relationships between critical team performance indicators and "how-to" knowledge of teams

Perspectives	Sub-Perspectives	Critical team performance indicators	"How-to" knowledge of teams	Categories or Themes
Team member perspective	Team members' relationship	P51: Number of old team members	Convince people to join team by pointing out the benefit of joining the team by using evidence and negotiating with a "win-win situation" strategy	Team composition
			Create a congenial environment via informal communication	Team process
			Be interdependent on mutual benefits, or help each other to do the job by taking and giving an advantage of tasks	
			Manage team members' competence by understanding and employing their competence to put the right man in the right job	
			Empower team members by showing respect for their initiatives and listening to their voices	
			Lead participation by posing questions and listening to team members voices	Leaders' tasks
	Team members' participation	P54: Number of team members involved in each activity / task/ planning process	Create team members' participation by setting up the opportunity for them to present how to accomplish team tasks and activities	Team process
	Team members' skills improvement	P56: Number of training courses for team members	Develop personal skills by setting up training courses	Team support systems and Leaders' tasks

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The techniques of how teams perform were classified into five categories, (1) team tasks, (2) team work design, (3) team composition, (4) team process and (5) team support systems. In this study, each category was specifically defined, and uncovered ten techniques of how Thai health-promoting teams perform as follows:

- Team tasks referred to the particular activities that teams must accomplish. Thai health-promoting teams clarified teams' tasks, vision, missions and strategies before the launch and during the implementation of the program by "setting up meetings regularly."
- Team work design was defined as how team leaders design their teams for accomplishing the tasks. Thai health-promoting teams in this study managed their teams autonomously as self-directed teams by "taking responsibility for the whole process from planning to evaluation."
- Team composition represented the components of teams. Teams in this study convinced people to join the teams by "pointing out the benefit of joining the team" and by "using evidence and negotiating with a 'win-win situation' strategy."
- Team process represented how team members work together and how teams achieve their tasks. Teams used six techniques for processing their teams:
  - Create a congenial environment via informal communication;
  - Be interdependent on mutual benefits, or help each other to do the job by taking and giving an advantage of tasks;
  - Empower team members and partners by showing respect for their initiatives and listening to their voices;

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- Manage team members' competence by understanding and employing their competence to put the right man in the right job;
- Create team members and partners' participation by setting up the opportunity for them to present how to accomplish team tasks and activities;
- Create a learning environment for sharing knowledge by setting up learning fora regularly.

- Team support systems pinpointed the support systems for driving teams. These systems involved feedback, especially positive feedback. To develop personal skills by "setting up training courses" for both team members and partners was important for supporting teams.

Ten techniques of how Thai health-promoting teams perform were reflected in seven critical indicators. These seven indicators are (1) P31: Percentage of team members that completely understands vision, missions and tasks, (2) P32: Percentage of activities/planning process generated by team, (3) P41: Number of learning fora per team, (4) P43: Number of best practice models, (5) P51: Number of old team members, (6) P54: Number of team members involved in each activity/task/planning process and (7) P56: Number of training courses for team members. In addition, the ten techniques were used to deal with partners and were represented by two indicators; (1) P21: Number of old partners and (2) P22: Number of new partners.

Meanwhile, nine significant techniques for how teams learn were specific for Thai health-promoting teams. Six techniques represented two types of learning and three techniques signified leadership challenge as follows:

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- Teams in this study learned from present experience by using these techniques:
  - "Search relevant documents" to help team learning
  - "Inquire and ask experts" outside the teams to help team learning
  - "Observe other teams within province"
  - "Observe other teams from other provinces"
- Past experience was used for team learning through these techniques:
  - Use "After Action Review" technique in team
  - Use "other techniques" in team, for example, outcome mapping, on-the-job training and appreciative inquiry
- Team leaders used three important techniques to drive their team for learning:
  - Create a learning environment at the provincial level for sharing knowledge by "setting up learning fora regularly for team members and partners"
  - Lead participation by "posing questions and listening to both team members and partners' voices"
  - Develop personal skills by "setting up training courses"

Critical indicators that showed nine techniques of how teams learn were (1) P21: Number of old partners, (2) P22: Number of new partners, (3) P41: Number of learning fora per team, (4) P43: Number of best practice models, (5) P51: Number of old team members and (6) P56: Number of training courses for team members.

The results show that "how-to" knowledge of teams demonstrates people empowerment and participation, which are the most important concepts in health

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promotion (World Health Organization, 1986, 2005). Team leaders played a major role in pulling and pushing teams. They attempted to promote health in team members and partners by advocating people, empowering people, expanding participation and building capacity. They also created and supported a learning environment for team learning and growth. Meanwhile, each team managed itself autonomously as a self-directed team by "taking responsibility for the whole process from planning to evaluation". Each team started by selecting its own partners and dealt with them by "pointing out the benefit of joining the team" and by "using evidence and negotiating with a 'win-win situation' strategy." The same techniques were used to convince people to join their teams. After that, each team clarified its missions and tasks for both team members and partners before the launch and during the implementation of the program by "setting up meetings regularly." Each team achieved the tasks and worked together through six techniques which emphasized the empowerment and participation concepts. The emergence of networks confirmed that health promotion was not just the responsibility of the health sector (World Health Organization, 1986). To promote health also required capacity building. The results illustrated that capacity building for team members and partners was developed through all of the techniques of how teams learn. These results show that the critical indicators formulated from the techniques of how Thai health-promoting teams learn are related to health promotion concepts.

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Critical team performance indicators and team learning

Senge (1998: p. 236) defined team learning as "the process of aligning and developing the capacity of a team to create the results its members truly desire."

Critical indicators that illustrated this process were (1) P31: Percentage of team members that completely understands vision, missions and tasks and (2) P32: Percentage of activities/planning process generated by team. These indicators represented the techniques to align and develop teams' capacity by (1) setting up meetings regularly for clarifying teams' tasks, vision, missions and strategies before the launch and during the implementation of the program and (2) taking responsibility for the whole process from planning to evaluation to manage their teams autonomously as self-directed teams (Table 5.4). As well, other indicators that uncovered team learning included P41: Number of learning fora per team and P43: Number of best practice models. Many techniques were used for learning (Table 5.4). These indicators were in accordance with the intelligence of teams and the need for innovation (Senge, 1998: pp.236-249).

The research process of this study also facilitated team learning. The systematic process of collecting data, feeding the data back into the system and taking actions based on the data helped teams to rethink and reconsider their past implementation and to consider and design their future performance. Teams learned via a collective discipline, which involved dialogue and discussion as the important tools for teams to learn (Senge, 1998: pp.236-249). The example of the research process that indicated the collective discipline included the clarification of teams' missions and outcomes in Step 1 and the verification and selection of team performance indicators in Step 4. The research process was also consistent with the learning discipline of team learning (Senge, 1998: pp. 373-377), for instance, (1) suspending their assumptions through teams' tasks and missions (2) acting as colleagues and (3) integrating dialogue and discussion. Moreover, everyone involved

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in the teams surfaced their own defensiveness by sharing and negotiating their needs. This study revealed that “win-win situation” strategies, mutual benefits, participation and empowerment of people in teams were techniques to use for surfacing defensiveness and decreasing their defensive routines. All of these techniques were represented by critical indicators (Table 5.4).

Furthermore, critical team performance indicators were formulated from the experiences and actions of team leaders and team members. These experiences and actions were the most important keys of learning. These experiences and actions were associated with the principle of learning that was proposed by Argyris & Schön (1978: p.29), who believed that members of the organization, who were the team leaders and team members in this study, played three roles: (1) acting as learning agents, (2) taking action to make changes in both the internal and external environments by detecting and correcting errors and (3) establishing and sharing the results of their inquiry. Critical team performance indicators reflected the roles of team leaders and team members in developing the teams’ “how-to” knowledge (Table 5.4) as follows.

Team leaders acted as learning agents by leading participation by posing questions and listening to both team members and partners’ voices. These actions were reflected in critical indicators such as (1) P21: Number of old partners, (2) P22: Number of new partners and (3) P51: Number of old team members. As well, team leaders reflected other actions through (1) creating a learning environment for sharing knowledge by setting up learning fora regularly and (2) developing personal skills by setting up training courses. These actions were reflected in critical indicators such as

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(1) P41: Number of learning fora per team, (2) P43: Number of best practice models and (3) P56: Number of training courses for team members.

Double-loop learning occurred at the same time. Double-loop learning adds follow-up steps by turning the question back on the questioner to understand the reasons and motives behind the facts and actions. It is based on an analysis and the change of actual organizational "theory-in-use" and includes assumptions and rules that guide action, contrary to the espoused theory of the organization (Argyris & Schön, 1978: p.8-29; Argyris, 2001, Reinhardt, 2002). The critical indicators showed that teams in this study learned from both present and past experience by the six techniques identified in Table 5.4. These techniques reflected how teams manage their knowledge as indicated by P41: Number of learning fora per team and by P43: Number of best practice models. Teams changed their actions by adding follow-up steps to understand the reasons for actions, analyzing their actions and including new assumptions and rules for teams. All of these actions were reflected as double-loop learning of teams.

The results confirm that the teams in this study showed their learning through critical indicators.

Critical team performance indicators and types of knowledge

The consideration of the relationships between the critical team performance indicators and types of knowledge helps to understand how team knowledge is managed through team performance indicators. This study used two types of knowledge; explicit and tacit knowledge, to discuss critical team performance indicators. The definitions of tacit and explicit knowledge, as used in this study, are

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based on the classification in Nonaka & Takeuchi (1995: p. 59) and Nonaka, Toyama and Konno (2000). In addition, the model in Kidwell, Linde & Johnson (2000) was used as a guideline for understanding tacit and explicit knowledge (Figure 2.2 in Chapter 2).

Explicit knowledge is knowledge that can be expressed in formal and systematic language and shared in the form of hard data, scientific formulae, manuals and such like. Meanwhile, tacit knowledge is highly personal and hard to formalize and is deeply rooted in action, procedures, routines, commitment, ideals, values and emotions (Nonaka & Takeuchi, 1995: p. 59; Nonaka, Toyama and Konno, 2000). The model in Kidwell, Linde & Johnson (2000) explains that explicit knowledge involves (1) strategies, (2) methodologies, (3) processes, (4) patents, (5) products and (6) services, whereas tacit knowledge refers to (1) skills and competencies, (2) experiences, (3) relationships within and outside a team, (4) beliefs, (5) values and (6) ideas .

In accordance with the above definition of tacit and explicit knowledge, each critical team performance indicator reflected different types of knowledge as shown in Table 5.5. Critical team performance indicators in each perspective were categorized into explicit and tacit knowledge. Seven indicators were characterized as tacit knowledge, whereas four indicators corresponded to explicit knowledge. The details of each indicator are described as follows.

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Table 5.5 Critical team performance indicators and types of knowledge

Perspective	Sub-perspectives	The critical team performance indicators (11)		Type of knowledge	
		Lagging indicators (6)	Leading indicators (5)	Explicit	Tacit
Team effectiveness perspective	Financial opportunity	P11: Percentage of budget contributed by partners		/	
	Target group behavior change	P14: Target group behavior identified by survey			/
Partner perspective	Partner relationship	P21: Number of old partners			/
			P22: Number of new partners		/
Team efficiency perspective	Strengthening team building	P31: Percentage of team members that completely understands vision, missions and tasks			/
			P32: Percentage of activities/ planning process generated by team		/
Team learning and growth perspective	Knowledge management for team		P41: Number of learning fora per team		/
		P43: Number of best practice models		/	
Team member perspective	Team members' relationship	P51: Number of old team members			/
	Team members' participation		P54: Number of team members involved in each activity / task/ planning process	/	
	Team members' skills improvement		P56: Number of training courses for team members	/	

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- Indicator P11 (Percentage of budget contributed by partners) represented the financial opportunity sub-perspective, which reflected teams' mission in terms of creating demands and participation of alliances and partners. This indicator could be expressed in formal and systematic language and shared in the form of hard data. Thus, this indicator signified explicit knowledge.

- Indicator P14 (Target group behavior identified by survey) explained teams' outcomes, which emphasized change in people's behavior and health, focused on reducing sugar consumption. How to change people's behavior and health was derived from the teams' "know-how" and from people's perceptions. Accordingly, this indicator denoted tacit knowledge.

- Both Indicators P21 (Number of old partners) and P22 Number of new partners) referred to the partner relationship. The relationship required the techniques of how to deal with partners. Both indicators illustrated teams' mission in terms of creating demands and participation of alliances and partners. "How-to" knowledge was more important than the data for teams' mission. So, these indicators characterized tacit knowledge.

- Indicator P31 (Percentage of team members that completely understands vision, missions and tasks) was based on how to strengthen team building. The leaders should establish the meetings regularly to achieve teams' tasks. This indicator related to the perceptions of team members and the commitment to work as a team. As a consequence, this indicator corresponded to tacit knowledge.

- Indicator P32 (Percentage of activities/planning process generated by team) implied team work design. This indicator described the specific team type of Thai health-promoting teams in this study. The teams managed themselves autonomously

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as self-directed teams by taking responsibility for the whole process from planning to evaluation. This indicator was context-specific, so it symbolized tacit knowledge.

- Indicators P41 (Number of learning fora per team) and P43 (Number of best practice models) were related to (1) team process, (2) leaders' tasks and (3) learning process from present and past experience. Best practice models were the results of learning which were shared in the form of manuals. Thus, Indicator P43 (Number of best practice models) signified explicit knowledge. Meanwhile, learning fora per team were established to share skills and experiences. The fora also created the relationships and ideas for the teams. Therefore, Indicator P41 (Number of learning fora per team) denoted tacit knowledge.

- Indicator P51 (Number of old team members) referred to team members' relationships, which was highly personal and hard to formalize, and was deeply rooted in action. For this reason, this indicator corresponded to tacit knowledge.

- Indicator P54 (Number of team members involved in each activity/task/planning process) was considered as team members' participation. Team leaders created team members' participation by giving team members the opportunity to present how to accomplish team tasks and activities. This indicator implied how team members participated. Consequently, this indicator symbolized explicit knowledge.

- Indicator P56 (Number of training courses for team members) indicated how to develop personal skills by setting up training courses. This indicator also illustrated the support system for team members. As a result, this indicator characterized explicit knowledge.

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Critical team performance indicators and other team performance indicators

Team performance indicators in this study were different from those in the current literature in terms of the process and concept to develop team performance indicators.

Many scholars have proposed models and tools to measure team performance. In some of those models, team performance indicators were developed by using a psychological concept and the role of each person in the team. Examples of these models include Belbin's team role model (Belbin, 1981), the team management systems model (Margerison, McCann & Davis, 1995), Millward and Ramsay's team survey (Millward & Jeffries, 2001) and the team reflexivity measure (Schippers & Den Hartog, 2007). These models focus on people with different types of personality, experience, etc., that interact in different ways and play different roles in the team. Team members should assume various roles that need to be played for the team to be successful. The indicators in these models emphasize only the composition of each role in the team and are appropriate and useful during team building (Tuckman, 1965).

Meanwhile, some models were designed to measure team performance by relating some team factors, such as team size, leadership, outputs and outcomes, to team performance. Examples of these models are the team questionnaire (Higgs & Dulewicz, 1998), the self-report inventory (Rickards, Chen & Moger, 2001), the Profile Package (Nabitz & Walburg, 2002), key performance indicators for measuring construction success (Chan & Chan, 2004) and the team performance diagnosis (Ahmed, Siantonas & Siatonas, 2007).

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These models propose indicators for specific teams, but, they lack a system to develop the indicators. Neither the models based on psychology and roles, nor those based on team factors show systematically how to develop team performance indicators in detail. None of the indicators in these models are linked to strategy or to team objectives. The dimensions of the learning and growth of teams and the feedback about strategic management are not key concepts of these models.

The process and concept to develop team performance indicators in this study illustrated differences from previous models and indicators. The process for developing team performance indicators in this study were based on organizational development. It was a systematic process of collecting data, feeding the data back into the system and taking actions based on the data. Team performance indicators in this study were formulated for reflecting team performance from (1) teams' missions and outcomes, (2) the techniques of how Thai health-promoting teams perform and (3) the techniques of how Thai health-promoting teams learn. The Balanced Scorecard used in business organizations was modified as a tool to generate the first set of team performance indicators. Five specific perspectives were proposed and were balanced for reflecting team performance. Each perspective and indicator reflected and represented the management approach. Each perspective and indicator was also supported by empirical reasons, which were considered in detail as follows.

Based on the team effectiveness perspective, Indicator P14 (Target group behavior identified by survey) explored the relevant behavior in terms of tangible data. These evidenced-based data were used as baseline data for mobilizing society and used as evaluative data for measuring team performance. As well, these data were used to convince the partners to contribute financial support. In real situations, many

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health-promoting projects were initiated to improve people's health. The partners, such as local administrations and schools, had to prioritize the projects and select appropriate projects for their contexts. To compete with other health-promoting projects, these data helped the partners in their decision-making process, while the financial risk of the project was reduced. Thus, both Indicators P14 (Target group behavior identified by survey) and P11 (Percentage of budget contributed by partners) were shown as critical indicators for the team effectiveness perspective.

In relation to the partner perspective, the partners' participation and relationships was reflected from the number of old and new partners. Indicators P21 (Number of old partners) and P22 (Number of new partners) responded to teams' mission, which was to create demands and participation of alliances and partners. The concepts of working together and participation generated the sense of belonging between teams and their partners. The use of a "win-win situation" strategy and negotiation emerged during the creation of participation. To convince the partners to join the teams, the overlapping of work and numerous burdens were discussed and shared with empathy and sympathy. The most specific characteristic of health-promoting teams in this study was congeniality with partners. Teams and old partners supported each other and dramatically developed the relationships and expanded this congeniality to new partners.

Meanwhile, the team efficiency perspective was indicated through the strengthening of team building. Because health-promoting teams in this study were non-profit teams, the concept of voluntarism and participation of team members were particular characteristics in accordance with the International Classification of Non-profit Organizations (Salamon and Anheier, 1996). The network created the

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participative process for communicating and clarifying vision, missions and goals to every level within the teams. At the team level, each team generated their plans and activities based upon their contexts and their partners, autonomously. These processes confirmed that health-promoting teams were self-directed teams. Each team also used the participative process to strengthen their teams. Therefore, Indicators P31 (Percentage of team members that completely understands vision, missions and tasks) and P32 (Percentage of activities/ planning process generated by team) proved to be significant indicators for the team efficiency perspective.

Moreover, knowledge management for teams, which involved Indicators P41 (Number of learning fora per team) and P43 (Number of best practice models), was important in specifying team learning and growth. The results revealed that teams required new knowledge to enhance their performance through a variety of learning types and methods. Teams selected different learning types and methods according to their needs, independently. The learning methods which were popular involved learning from past experience by establishing learning fora and from the best practice models which emerged during their implementation. The need to share their knowledge and the need to capture new ideas from other teams were significant for team learning. As well, the knowledge gained from these learning methods helped the teams to avoid some errors and to enhance their performance through practical actions in real situations. Regular learning opportunities also supported knowledge management for the teams.

The team member perspective revealed that the commitment of team members, participation in tasks and team members' empowerment were significant for team performance. These results were reflected as team members' relationships and

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participation. Indicator P51 (Number of old team members) reflected the relationships, whereas Indicator P54 (Number of team members involved in each activity / task/ planning process) referred to team members' participation. Indicator P56 (Number of training courses for team members) also showed the requirement of team members to improve their skills in terms of human resource development.

These empirical results show that critical team performance indicators are specific and different from other team indicators in the current literature.

Summary

The discussion is divided into three aspects. First, the four steps of the research process were discussed in terms of action research, which was based upon the organizational development concept. The results found that Steps 1, 2 and 4 revealed the systematic process for enhancing and increasing the effectiveness of health-promoting teams. The research process also illustrated the differences between business, health-care and Thai health-promoting teams, in terms of (1) the focal point of the team, (2) the team's achievements and (3) the environment for team learning. These three aspects showed the correlation with the critical team performance indicators. Second, the model for the development of team performance indicators by modifying the Balanced Scorecard was proposed. The modification of the Balanced Scorecard was used as a measurement approach to knowledge management in helping teams to measure team performance and to enhance team capability. Finally, the relationships of critical team performance indicators were discussed in terms of representation, reflection and difference. Critical indicators represented (1) teams' missions and outcomes and (2) the teams' "how-to" knowledge. The indicators

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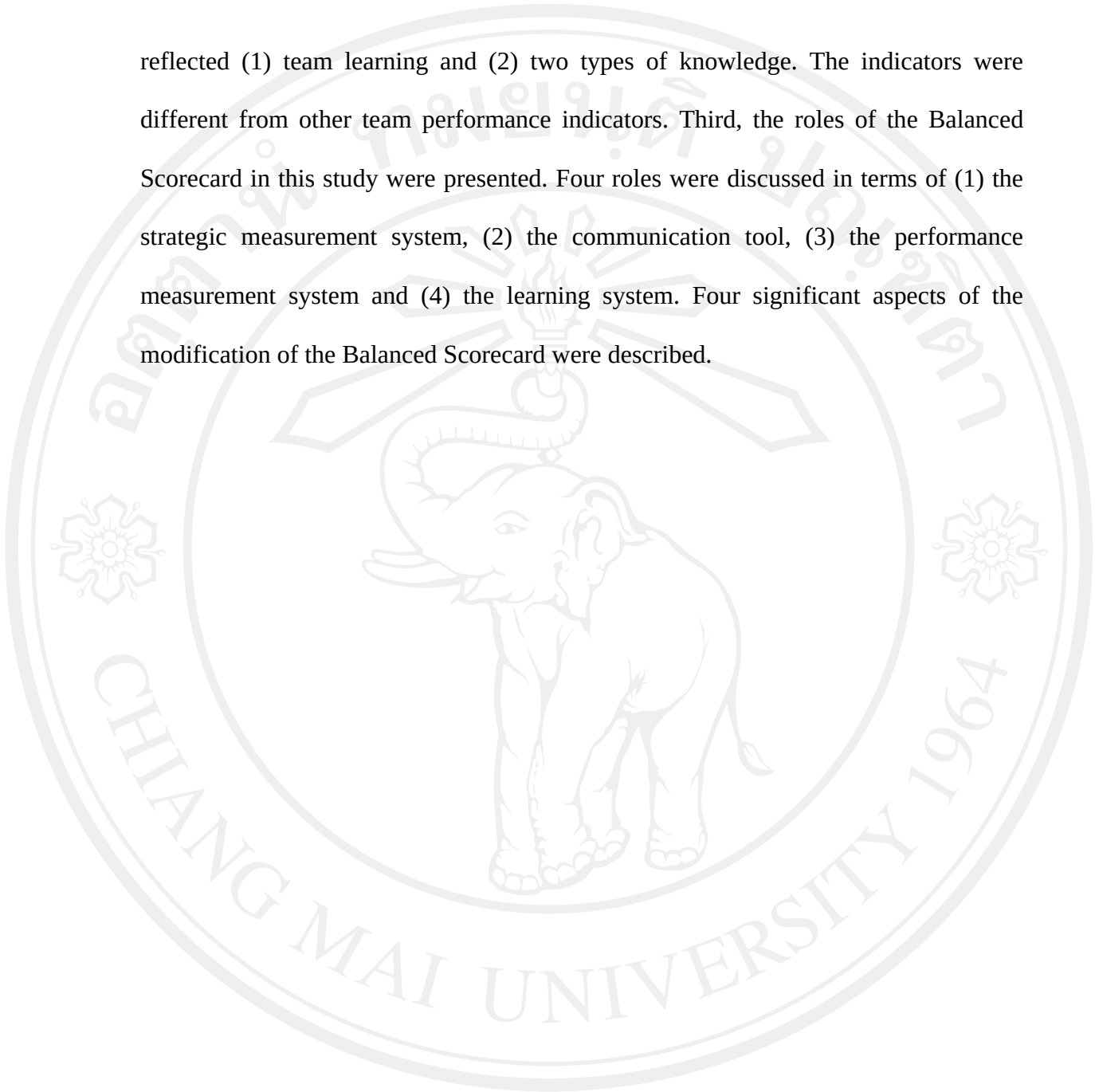
reflected (1) team learning and (2) two types of knowledge. The indicators were different from other team performance indicators. Third, the roles of the Balanced Scorecard in this study were presented. Four roles were discussed in terms of (1) the strategic measurement system, (2) the communication tool, (3) the performance measurement system and (4) the learning system. Four significant aspects of the modification of the Balanced Scorecard were described.



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