

Organizational Self-Assessment for Six Sigma Initiative

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Abstract

Six sigma is much less of a technical program than it is a leadership and cultural change program. Nevertheless, most of literatures on six sigma have mainly focused on technical and tactical aspects. This paper introduces a self-assessment for six sigma initiative in a major Korean software company. The self-assessment gives a valuable clue to how to manage leadership and cultural aspects of six sigma initiative.

Key Words: Six Sigma, Self-Assessment, Cultural Acceptance.

1. Introduction

Six sigma is much less of a technical program than it is a leadership and cultural change program as David Cote, chairman and CEO of Honeywell, stated. Nevertheless, most of literatures on six sigma have mainly focused on technical and tactical aspects. This paper introduces a case study on self-assessment for six sigma initiative in a major Korean software company in order to get a clue to how to manage leadership and cultural aspects of six sigma initiative. The followings are the company profile:

- Main Business Area - Consulting, Business Integration, Packaged Software, IT Outsourcing, Data Center Services, e-Training.
- Revenue - \$1.42 billion USD (2003)
- Employees - 7,080 (Domestic 6,460 Oversees 620)

For the purpose of balancing between cultural and technical changes, the case study adopted the assessment process provided by George Eckes in his book, Making Six Sigma Last. The basic framework of the assessment is as follows:

$$Q \times A = E$$

Q: Quality of the six sigma initiative

A: Cultural Acceptance of six sigma

E: Extent of performance

2. Self-assessment questionnaire design

The following list of statements in Table 1 is presented for the self-assessment. The first statement, "I have a good knowledge of six sigma," is used for grouping the respondents according to the knowledge level. Statements for assessing the quality of six sigma initiative include project selection, black belt selection, education and training, consulting works, project management. Statements for assessing the acceptance of six sigma include management leadership, champion's role playing, reward and recognition system, organizational awareness of six sigma, secretarial staff's role playing.

The respondents were asked to circle the number that best indicates the extent of agreement with the statement. The values in the questionnaire are as follows: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

The total number of respondents was 490. The respondents were composed of 25 champions, 52 black belts, 80 managers, and 333 front-line employees.

3. Analyzing the self-assessment questionnaire

Self-assessment score for each statement is summarized in Table 2. Management leadership won the highest score and the reward & recognition system won the lowest score. The current CEO introduced six sigma in the company, since he experienced a great success through six sigma initiative in other company before. He is confident that six sigma is a powerful breakthrough strategy.

The respondents are divided into three groups according to the knowledge level of six sigma. For the statement that "I have a good knowledge of six sigma," the respondents who circled 'agree' and 'strongly agree' were classified as Group A. Similarly, 'neutral' classified as Group B, and 'disagree' and 'strongly disagree' as Group C. As it can be seen in Table 3 and Figures 1, 2, the more knowledgeable about six sigma, the quality and acceptance level of six sigma are higher. This shows that education is a critical success factor of six sigma initiative.

Table 1. Self-assessment questionnaire for six sigma initiative.

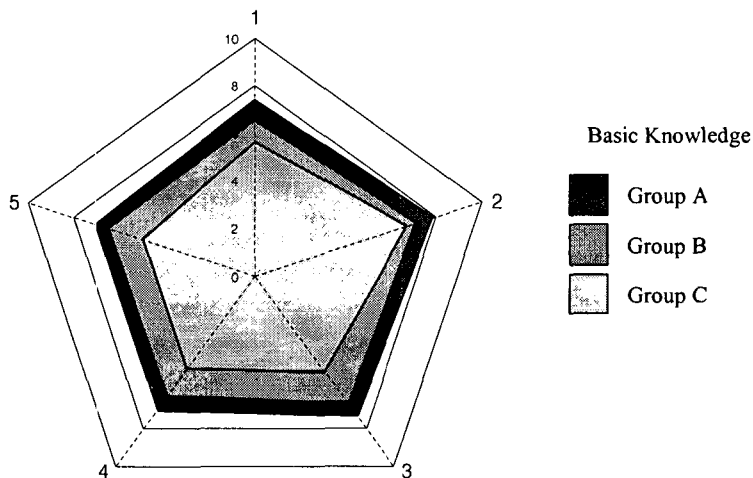
Basic Knowledge	Strongly Disagree			Strongly Agree	
	1	2	3	4	5
- I have a good knowledge of six sigma	1	2	3	4	5
Quality of Six Sigma Initiative					
1. Project Selection					
- Selected projects are strategically important.	1	2	3	4	5
2. Black Belt Selection					
- Selected BBs are competent.	1	2	3	4	5
3. Training					
- Education & training have been satisfactory.	1	2	3	4	5
4. Consulting					
- Consulting works have been satisfactory.	1	2	3	4	5
5. Project Management					
- Project management has been efficient and effective.	1	2	3	4	5
Acceptance of Six Sigma					
6. Management Leadership					
- Top management's commitment and passion are very strong.	1	2	3	4	5
7. Champion's Role					
- Champion's role playing has been satisfactory.	1	2	3	4	5
8. Reward & Recognition					
- Reward & recognition system is satisfactory and well-operated.	1	2	3	4	5
9. Awareness					
- Organizational awareness of six sigma is high.	1	2	3	4	5
10. Secretarial Staff's Role					
- secretarial staff's role playing has been satisfactory.	1	2	3	4	5

Table 2. Self-assessment score for six sigma initiative.

Quality of Six Sigma	Score	Acceptance of Six Sigma	Score
1. Project Selection	6.91	6. Management Leadership	8.40
2. Black Belt Selection	7.45	7. Champion's Role	6.36
3. Training	6.78	8. Reward & Recognition	5.61
4. Consulting	6.54	9. Awareness	7.87
5. Project Management	6.64	10. Secretarial Staff's Role	6.53
Average	6.86	Average	6.88

Table 3. Self-assessment score by group.

Assessment Criteria		Assessment Group		
		Group A	Group B	Group C
Basic Knowledge		8.31	6.00	3.93
Quality of Six Sigma	1. Project Selection	7.41	6.57	5.64
	2. Black Belt Selection	7.82	7.19	6.72
	3. Training	7.30	6.58	4.97
	4. Consulting	6.97	6.31	4.82
	5. Project Management	7.06	6.46	4.90
	Average	7.31	6.62	5.41
Acceptance of Six Sigma	6. Management Leadership	8.36	7.88	7.35
	7. Champion's Role	6.79	6.22	4.50
	8. Reward & Recognition	6.00	5.49	4.06
	9. Awareness	8.24	7.61	7.33
	10. Secretarial Staff's Role	6.97	6.24	5.38
	Average	7.27	6.69	5.72

**Figure 1.** Self-assessment score for quality of six sigma initiative by group

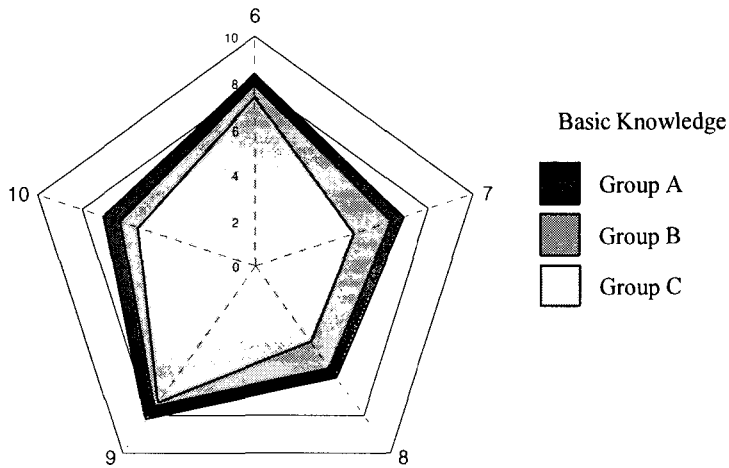


Figure 2. Self-assessment score for acceptance of six sigma by group

Figure 3 shows self-assessment score by position and role. It is notable that black belts give high scores to the quality of six sigma initiative, where as champions give good scores to the acceptance of six sigma.

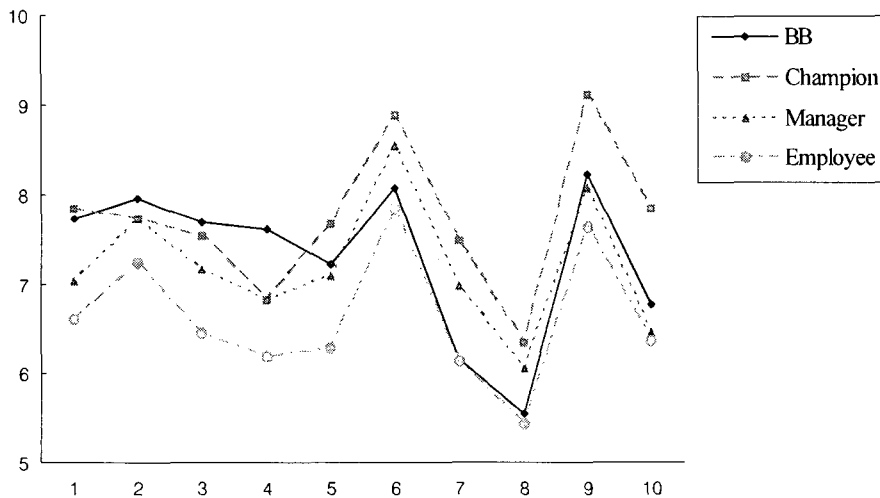


Figure 3. Comparison of self-assessment score by position and role

As it can be seen in Table 4, the majority of black belts and champions belongs to Group A. Thus they give high score values for all the statements. Managers and employees

are relatively not knowledgeable and they give low score values. Since the company has thousands of employees and further to that most of the employees are in the customers' sites, it was difficult to provide them six sigma education.

Table 4. Percentage of group A, B, C by position and role.

Items	BB	Champion	Manager	Employee
Group A	98%	72%	55%	30%
Group B	2%	28%	39%	54%
Group C	-	-	6%	16%

4. Summary and concluding remarks

Major findings from the self-assessment are summarized as follows:

- The more knowledgeable about six sigma, the quality and acceptance level of six sigma initiative are higher.

This shows that education is a critical success factor of six sigma.

- Since the majority of black belts and champions belongs to Group A (knowledgeable group), they give high score values for all the statements. On the other hand, managers and employees are relatively not knowledgeable and they give low score values.
- It is notable that black belts give high scores for the quality of six sigma, whereas champions give good scores for the acceptance of six sigma.

It is a well-known golden proverb that there is no improvement without measurement. This is the same in the management of six sigma initiative. In order to manage innovation, we should answer for the following three questions:

- Where are we now? (Baseline)
- Where do we want to be? (Goal)
- How much are we closing to the goal? (Progress review)

Without measurement, we cannot give answer to any of the above three questions. The self-assessment gave a valuable insight into the future direction of six sigma initiative, and the management decided to conduct the assessment periodically.

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