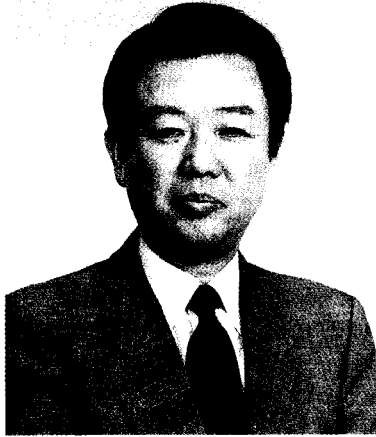


## MANAGEMENT AND SUPPORT FOR SUCCESSFUL VE APPLICATION



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### ABSTRACT

This paper focuses on the aspects of management of and support for VE to accomplish meaningful results from its application. Based on the results of a survey of how effectively VE is being applied, managed and yielded in Japanese companies, factors that contribute to greater VE accomplishments are examined and identified in this paper.

### INTRODUCTION

The survey was conducted in 1992 over the "member-firms" of the SJVE to identify all potential factors of VE promotion and management in the actual VE utilization within Japanese industries. Valid responses were collected from a total of 190 members.

The focus of analysis was set on the following two aspects:

- How VE accomplishments are actually related to the "phases of VE application" where these organizations were found.
- How VE is actually being managed and supported as related to the "phase of VE

application."

### STATUS OF VE APPLICATION BY PHASES

In analyzing how VE accomplishments are related to the actual application phases, certain "Categories of results" and "Application phases" were used in collecting and classifying the data.

As for the "results," data were collected in terms of the number of VE proposals adopted and the amount of resultant savings, as classified by the following four categories:

Category 1. The status is highly fluctuating year to year.

Category 2. Whereas the number of proposals is fluctuating, the savings appear to be rather steady.

Category 3. Steady status in proposal number and savings amount, with figures going up notably when special Ve projects were undertaken.

Category 4. Both the number of proposals and the savings amount, either keep steady or go up year to year.

The actual phases of VE application in this survey are defined as:

Introduction: The phase where VE has begun to be used.

Partial application: The phase where VE is being used in some part of the organization but not throughout the company.

Total application: The phase where VE is being used in each and all units of the company.

Stabilized application: The phase where VE is being regularly used, deriving some good results.

The following table shows the categorized status, analyzed by the VE application phases in the responding organizations:

planning, no positive results to or over an expected level, management and support aspects of VE application need to be well considered.

The word "management" in this paper means all such activities as establishing basic policies and target-setting for VE application plans, and evaluation and following up the "Application results." The word "support" here means such activities as realistically supporting the VE application in the form of concept promotion/enlightening, VE education/training, and collected and providing information.

This paper will analyze and identify factors in the VE management and support that would contribute to expanding the results of VE application,

TABLE 1

[Application status]	Phases of VE Application			
	Introduc- ing	Partial ap- plication	Total ap- plication	Stabiliz- ing
1. Fluctuating year to year	20.0	36.0	5.3	8.9
2. Fluctuating in number but steady in savings results	0	18.7	31.6	5.3
3. Steady status with better figures on special projects	10.0	34.7	44.7	55.4
4. Status steady or upward	0	5.3	15.8	28.6

[Response percentages]

It is notable from this table that the percentages under Category 1 are higher at the earlier two phases while the ratios under Category 4 are higher at the later two phases. This tendency reflects that there is a clear cut difference in VE application results between the earlier phases and the later phases. Steady results from VE application become more realistic where VE application is corporate-wide and/or stabilized.

MANAGEMENT AND SUPPORT FOR VE APPLICATION

To accomplish results from VE application, it is necessary that a VE task-team must endeavor to develop alternative problem solving proposals.

If VE Job Plan is applied without any prior

by primarily comparing the situation in the earlier phases as contrasting to the later phases of VE application.

MANAGEMENT OF VE APPLICATION

Management factors to be analyzed here as contributing to VE application are: Establishing VE policies, Establishing VE targets, Planning for VE application, and Evaluation of VE accomplishments.

1. Top management policies established on VE application.

TABLE 2

[Top management's policies]	Phases of VE Application			
	Introduc- ing	Partial ap- plication	Total ap- plication	Stabiliz- ing
1. No particular interest	0	10.7	0	1.8
2. Needs expressed but no clear policies	50.0	53.3	28.9	14.3
3. Policies clarified and division heads well informed	30.0	32.0	57.9	42.9
4. Policies clarified and all personnel well informed	20.0	4.0	13.2	41.0

[Response percentages]

The survey data reveals how clearly top management policies are established and how well such policy information is disseminated through all concerned personnel.

The data reflects a clear tendency that "No particular interest" and "Needs are expressed but no policies clarified" are remarkable in the earlier two phases of VE implementation, and that "All managers or personnel are well informed under clear policies" is remarkable in the later two phases of VE implementation. Evidently, clarifying top management policies on VE and thorough dissemination of such policy information to all concerned people are important factors that contribute to expansion of VE Application results.

2. Targets setting for VE application

Two key questions were asked in the survey: 1) Where the targets are established or not? and 2) What kind of targets are used?

Over 50% of the respondents answered "Targets are established periodically." throughout all four phases of VE application. In the earlier two phases, higher percentages of the respondents answered "Objectives are not established," while the percentages of "Targets are established" are notably higher in the later two phases of VE application.

TABLE 3

[Target-setting]	Phases of VE Application			
	Introduc- ing	Partial ap- plication	Total ap- plication	Stabiliz- ing
(1) (Target-setting)				
1. Established Periodically	50.0	66.7	92.1	89.3
2. Not Periodically established	40.0	33.3	7.9	10.7
(2) (Kinds of targets)				
1. Number of subjects to be studied	20.0	40.0	22.9	30.0
2. Potential accomplishments by VE Alternatives	60.0	48.0	28.6	36.0
3. Actual accomplishments by VE alternatives	20.0	52.0	65.7	74.0

[Response percentages]

As for the kinds of VE targets used, percentages of "Potential accomplishments" is higher in the Introducing phase, while "Actual accomplishments" is higher in the Total application and Stabilized application phases. Also, these two kinds of targets used in the Partial application phase rendered their percentages very close to each other. The data here indicated that "Actual accomplishments" is more important than "Potential accomplishments" in realized greater VE accomplishments.

3. Planning for VE application

The following data reflects the result of the survey as to how the VE plans are being formulated.

TABLE 4

[VE Planning]	Phases of VE Application			
	Introduc- ing	Partial ap- plication	Total ap- plication	Stabiliz- ing
1. Not specially formulated	30.0	10.7	0	0
2. Made as deemed necessary within the division	30.0	33.3	15.8	14.3
3. Plans formulated but unrelated to corporate busi- ness plans	20.0	36.0	34.2	12.5
4. Plans formulated & related to corporate busi- ness plans	20.0	18.7	50.0	71.4

[Response percentages]

The data indicates that, with the exception in the Introductory phase, some VE application plans are being made. Specifically, percentages of "Plans are made as deemed necessary" and "Plans are formulated but unrelated to business plans" are higher in the "Partial application" phase while percentage of "Plans are formulated and related to business plans" is higher in both the "Total and Stabilized application" phases, especially over 70% in the latter case.

These results imply the importance of having VE closely incorporated in the company's business plans as a thrust toward their accomplishment.

4. Evaluation Accomplishments

The survey here examined how VE application results are being evaluated.

The percentage in the VE evaluation is such that "Up to concerned divisions" is higher in the earlier two phases of VE accomplishments, and that "Criteria and procedure are formulated and maintained" is higher in the later two phases.

This result indicates the need for establishing some formal criteria and procedure to maintain a system of evaluating VE accomplishments.

Support for VE Application

For the survey to identify what factors are needed for the promotion of VE application, 15 pre-selected factors were shown to survey respondents, each of whom was requested to check up to five "most important factors."

Largely four of the 15 factors showed higher percentages, that is, "VE education/training," "Collecting/providing information and technical support," "corporate-wide VE planning," and "corporate-wide VE enlightenment," each providing to be an important factor for effective VE application.

"VE education /training" showed a higher

table 5

[Evaluating accomplishments]	Phases of VE Application			
	Introduc- ing	Partial ap- plication	Total ap- plication	Stabiliz- ing
1. Not regularly scheduled	20.0	13.3	5.3	0
2. Up to concerned divisions as needed	50.0	46.7	31.6	12.5
3. Formal criteria & procedure followed but informal factors considered	10.0	26.7	26.3	33.9
4. Formal criteria & procedure formulated and maintained	10.0	13.3	36.8	51.8

[Response percentages]

percentage in each of the four VE application phases. VE results can be expanded only when the concerned personnel are competent in VE application. Thus, VE education and training proves to be the most essential if the organization wants to live up to promoting VE at a high level.

"Collecting/providing information and technical support" proved to be higher in the latter three phases of VE application. Since the VE results depend on both the quality and quantity of information being utilized, timely collection and furnishing of usable information is a key factor of efficient VE application.

"Planning for corporate-wide VE application" is higher in the later two VE application phases. This implies that planning for company-wide VE application and promotion always requires a generalistic standpoint, through which an organized setup for VE promotion can be efficiently done.

"Diffusing and enlightening in VE disciplines company-wide" shows higher percentages on all four phases. The task of promoting VE needs a company-wide awareness of the significance of VE as a nursing bed for the people. Thus, this is another important factor for VE promotion.

Organizations for the Promotion of VE Application

Many of the member companies have VE-promoting organizational units. The survey

examined the types of such VE promoting organizations as used in various organizations.

Many of the member companies have such VE-Promoting organizations as "a full-time exclusive staff," "an inter-departmental committee" "one of the functional divisions assigned for VE promotion (Design/Material/Production Engineering, etc)".

Conclusive Summary

Elements contributing to higher VE application results have been identified by the study of the survey results, as examined from the management and support of VE-related undertakings.

It has been generally observed that VE application yields higher and steadier results in the later two phases of VE implementation within respective companies as contrasted to the earlier two phases.

It can be concluded after all that, while these basic factors, as summarized in the table, are every practitioner's common-sense; it is important that these promoting factors must be untiringly pursued at all times throughout each organization.

Through comparative examination of the status of management and support of VE application within the responding organizations, factors contributing to expansion of VE accomplishments have been

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identified: in companies where VE application has reached a company-wide or stabilized status, such "management" practices as establishment and dissemination of top management's VE policies, establishment of VE targets, planning for VE application and evaluation of VE results, etc. are being steadily performed, and also such "support" activities as VE education and training, information

and technical support, promotion of company-wide VE application, wide diffusion of VE knowledge, etc. are emphatically pursued.

It can be concluded after all that, while these basic factors, as summarized in the table, are every practitioner's common-sense; it is important that these promoting factors must be untiringly pursued at all time throughout each organization.