

VE AT THE CROSSROADS

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ABSTRACT

This paper is an analysis of Value Engineering's (VE) strengths and weaknesses, opportunities, threats, the measures that have so far been attempted by different countries around the world, and their results. The paper discusses a similar analysis made at different times by different organizations and individuals—McKinsey, New York; Eduard Sehr, Germany; later by R. J. Park; R. W. Siorek of the US Department of Defense; and by me, several times since 1983.

INTRODUCTION

The purely technical aspects of the performance of VE — its function, creative thinking, systematic evaluation procedures et al., are now well known around the world. Certainly, these procedures and techniques will be further refined, more and more papers will be written, and learned discussions will take place. They are all necessary too. Nevertheless, much more urgent now is, for all VE users, practitioners, benefiting organizations, and most of all, the VE consultants for whom VE means bread and butter to investigate why the need for VE is not automatically accepted in the same way as, say, the computer is today. There was a time not long ago when every company had to be sold the computer and convinced of its usefulness for the organization. But not any more! Its versatility and cost effectiveness are so well established and accepted that today many individuals and organizations, even if ignorant yet about the computer, decide to buy one and then think of all the uses it can be put to. The complexities of introducing VE are comparatively much less, quicker to solve, and greater results are possible through even a very limited number of personnel trained in the subject; company-wide awareness among hundreds of employees is not critical for good results, unlike the case of the computer where all these prerequisites are vital for it to prove its value. Still, we have to sell VE and we do not always succeed in doing so. We even have several cases of very successful VE studies conducted in an organization but it has failed to take root and survive. Even enlightened organizations have failed to be persuaded of VE in spite of good results on their first few VE projects. Is it not time for the VE profession worldwide to examine why this should be so? And what needs to be done to set matters right?

Individuals of course are responsible for the way they teach, practice or project VE. Sometimes we do not perform so well, after all. Regrettably, I have failed in more cases than I would like to admit. But even then, a dispassionate research showed that the successes were far more than failures, and that somewhere along the way, there did arise problems and weaknesses which we must address. What are they? We shall examine anon. What are the strengths and opportunities for VE and how can we exploit them more successfully? Do we have enough on the positive side to counteract the minus points? If not, what should we do? I am sure there are many answers in everybody's mind and what is really needed is to open a no-holds-barred discussion, sharing of ideas and then institution of efforts worldwide to establish VE more firmly and permanently wherever money is spent or resources input.

THE WEAKNESSES OF VE

I shall deal with the weaknesses, only because in my opinion, that is the priority area and the burden of this paper (VE's strengths are too well-known to need repetition):

1. Nobody comes with a prepared knowledge of VE. It is still not taught in schools and colleges nor even in seats of advanced technical learning except in rare cases. All other basic subjects such as mathematics, physics, mechanical, civil and electrical engineering, economics, management, commerce, et al. are all in the university syllabi for the kind of executives we wish to involve in VE. Most people hear of VE much later and since it was not in their college syllabus, their first reaction is that apparently it is not essential; otherwise, why wasn't it taught like the other "basic" subjects? So this is area No. 1 for our action.

2. Secondly, their actual working experiences for some years after graduation have contributed to a hardening of beliefs, attitudes and the NIH (Not Invented Here) syndrome. VE inducted at this stage has to force a break-in, almost like the taming of a wild horse! In the process, out of 20 to 30 executives exposed to VE (even including hands-on project work through a 40 hour workshop), at least half continue to be skeptics, continue to believe that VE is merely a formalization of what they already know or even are doing. In other words, the wild horse has not been tamed even if some of the projects may have succeeded beyond expectations. As luck would have it, in most cases, a few of the first dozen or so projects may also fail. After all, failure is part of ever human activity and VE is no exception. In this situation, weakness No. 2 also works against VE's survival, let alone its growth and expansion.

3. To perform VE, we have to form teams, pulling in existing personnel (often at senior levels, in unspareable job positions) from their normal day-to-day work, then motivate them to get totally involved in the VE activity. Their minds, however, are full of the daily problems they must solve or they are responsible for; in many cases, the team members, at the end of the VE workshop in the evening, go back for a one or two hour stint in their job areas. Sometimes, they do so early in the morning before they attend the VE workshop. Preoccupied thus with their daily job anxieties, VE must be powerful enough to grip their minds at the workshop. If there should be even a little fault or sense of futility in the VE effort due to any one of the several problems which a VE manager (or consultant) has to face in every project, the team members' interest and attention to the VE work will slacken. Weakness No. 3!

4. A corollary to this is for team members or leader to be called away either on the phone or physically to their work spot—either by the boss or other key people, even juniors working under them. This interruption has the effect of loss of attention, often at sensitive, crucial stages of the study. It is only when such problems are overcome by sheer tenacity on the part of the VE cell or manager, as well as by patience and understanding on the part of the CEO, that results will start flowing. Even then, the problems are not over!

5. Implementation of accepted VE proposals is far from easy. Often the tendency is to expect the VE team itself to carry out the implementation. The VE manager, the team, or the consultant must be ready to undertake a considerable effort to make the concerned departments carry out the implementations as they should. Frequently, the CEO or top level people just below him may have to be requested to direct, advise, guide or persuade action by the concerned departments and individuals. This situation occurs whenever the implementation work involves people from the design, production, R&D or purchasing departments, and to them the work may not seem to be part of their critical path, priorities, or objectives.

6. Creation of a full-time VE unit can be helpful in this regard. However, only when the CEO has seen substantial results flowing in regularly, with promise of more to come, will he agree to create such a VE unit in the organization. Even then, the responsibilities for implementation must rest with the concerned departments and the VE cell will continue to face problems in ensuring action by those departments—both human and technical-oriented.

7. Assuming that we have overcome most of the above and also that a full-time VE unit (however small) is established in the company, then comes the question of training and equipping a unit to help obtain recurring bottom line results year after year. Every so often, a company fails to pay attention to this all-important aspect and when the VE unit fails to deliver (which is inevitable), the blame is put on VE!

8. Now for manning the VE cell with the right people. Career opportunities for the staff in the VE unit can again be a poser from the VE angle, as only “unspareable” personnel can guide several VE teams with confidence and later on, gradually, head the VE cell. Such individuals naturally are of exceptional brilliance, well respected in the organization and therefore ambitious people usually on the fast track for upward movement in the company hierarchy. Clearly, we can get them for the VE cell only with difficulty, and then only till they move up the ladder. If we were to succeed even to this extent, it would be a great shot in the arm for VE. However, there is no alternative to this important requirement if VE is to survive and grow in a company. So problem No. 8 is how to make VE so attractive to these livewire individuals as to make them wish to enter or head the VE cell at least for a two or three-year spell.

DIFFERENT VIEWS OF THE EXPERTS

I have so far reviewed only the problems and difficulties, the weaknesses and lacunae in our present efforts toward VE’s survival and growth. Certainly, VE has some strengths, and I shall take up a little later how to exploit them. Let us meanwhile take a quick look at different views of these same problems as expressed by others who have also investigated or researched VE at length in Europe and the USA in the last 10 years.

1. Europe - Eduard Sehr of Germany, with his rich experience in VE work in AEG plants especially at Ulm, Germany, has made a significant contribution. I have extracted the points I considered relevant from his paper in the SAVE Conference of 1982.¹

- VE initiated in AEG—1985
- Early successes, but later failures!
- Why? Because of early Utopian claims, poor VE knowledge, no incentive, low management support, fear, and status or departmental differences, VE seen as an interloper, and poor VE leadership.

2. UK. In the construction area, fragmentation of the construction activity is the number one problem. Second is the sense of complacency and glib assurance in the mind of the construction industry that they have all the answers to their problems—whether of cost or project time, quality, or performance. Clive Barker² of the UK. has brought out:

- The need for a new up-to-date book on the basic principles of VA and how they are to be applied in a wide range of opportunities particularly in the public services field by local authorities and metropolitan agencies and drawn from experience worldwide.
- The desirability of an international standard on VE application and utilization.

3. Others in the UK. Several universities I have worked for have indicated the need for more clear-cut case examples, especially in construction VE and an assured, never-will-fail, step-by-step VE methodology which will be not too difficult to learn and apply.

4. Dolf DiBiasio³ of McKinsey & Company, Inc., NYC carried out a research of VE claims vs. facts for his company’s clients and I have summarized his points below:

- Top management are usually keen on organizational strategy, marketing strategy, corporate strategy, value to the customer, and cost reduction. They are not, however, sure that VE will deliver these goods.
- Lower management levels are often apathetic, angry and confused. This is because of VE’s control orientation and VE is not selective.

5. R. J. Park⁴, USA, one of the world’s most respected authorities on VA/VE, bemoans that “there are those who feel that VE is good but is out of date and has been superseded by new, more useful systems such as Taguchi Methods, Quality Function Deployment, Continuous Quality Improvement, and a host of others. The fact is that these are excellent systems which are producing major benefit for those who use them. However, do they satisfy all of our needs, or is there something missing?” Park obviously implies that there is and that VE can provide the needed things to meet the unfulfilled needs.

6. Some statistics: As shown below, the statistics summarize the results of over 200 VE projects studied during 1976-1991 and the degree of successes and failures in this assessment. Failure has been defined as any project where the main recommendations have not been implemented; it does not mean that there was no R.O.I. on that failed project. In fact, it was never less than 5:1 in any project, but nevertheless the organization (and often, the team) did not perceive it as successful because the major proposals raised hopes but ultimately could not be made practicable, or enthusiasm for it waned, no team member being willing to nurture, develop and champion the proposal until it could sell itself. On the other hand, the successful projects were those which elicited both interest and concern for their early implementation and even though, in a few cases, the final results fell short of expectations, the team (and management) rated them excellent! Each of these projects and their fate had been studied at length by me and discussed with the key people concerned in the organizations they related to.

VE PROJECTS STUDIED UNDER MY GUIDANCE DURING 1975-1991

Total Projects	275
Successful	142
Partially Successful	37
Failed	67
Inadequate Data	29

My analysis of the subject also featured in international conferences^{5 - 11} and the points arising out of the discussion have been taken into account in the remedies suggested below. But before dealing with the remedies, I would like to draw attention to the objectives of this paper: to share my experience, to receive the benefit of other people’s experience, and to jointly arrive at various steps possible either to prevent the problems from arising or to remedy them if prevention is not possible.

Towards this end, the remedies that I have tried and the extent to which they proved partially or wholly successful are listed below:

POSSIBLE REMEDIES

1. Early teaching in schools and colleges.
2. Being aware of the “Not Invented Here” (NIH) syndrome.
3. Involvement of working personnel.
4. Training of a full time VE Cell.
5. Creating career prospects for the VE Manager.

THINGS NOT TO DO

Most of the remedies I have so far suggested are in the nature of "Do's", but there are some "Don'ts" as well:

1. We should never allow the VE cell or the VE activity to become or seem to have become a super-audit. In other words, neither VE nor the VE cell should be seen as an interloper or as a tool of management to question or control all the other departments. Should this be allowed to happen, VE's fate will be sealed.

2. Do not insist on implementation or development of proposals which have failed to generate enthusiasm in anyone. Even if you think the VECP is a most reliable one, abandon it—at least temporarily. It is better to lose a battle or two on the way rather than the whole war. If the proposal is a really good value, then somebody or other will sooner or later get back to it for implementation.

3. Do not step on anyone's toes, deliberately or otherwise—especially a key member or a key departmental head. No matter how wrong his attitude, approach or opinion, VE has too much at stake; if he were to lose face in one case, chances are that VE has lost his support (or impartiality) forever.

4. Do not claim for VE more credits than it deserves; in fact, it would be better not to claim any at all. Good work invariably wins recognition, sometimes early, others a little later, but it would be advisable to bide our time rather than insist on recognition too early even if implementation might have been complete and results already audited and the final report is ready. A dignified, factual report on the project findings and results will be adequate to make the management aware of the benefits realized. When the benefits happen again and again, on project after project, you may be sure management will sit up and take notice.

5. Do not fail to achieve the projected benefits within the time deadlines set. Or, if delay is unavoidable, indicate the vital need and reasons well in advance. Do not burst the deadline first and then offer an explanation.

6. Do not claim for the VE cell or department an equality of status with the recognized key departments such as production, marketing, engineering or finance. Let each of these departments recognize the work of the VE cell as a strong contributory factor to their own achievements. Recognition for VE will come automatically.

7. Lastly, I cannot do better than to close this paper with Dolf DiBiasio's quote of Larry Miles "Remember VE is 75% a people problem and only 25% a technical problem"!

I hope that everyone who hears or reads this paper will try out these (and their own) methods and then share their experience, hopefully in the near future with all of us, the rest of the VE community.

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