What is Value Engineering?

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A Way to Do Things with Teams

Since the late 1940's, managers and engineers using the name "Value Engineering" (VE) have been leading cross functional teams improving the designs of products, processes, services, organizations, and strategies.

Components of Value Engineering
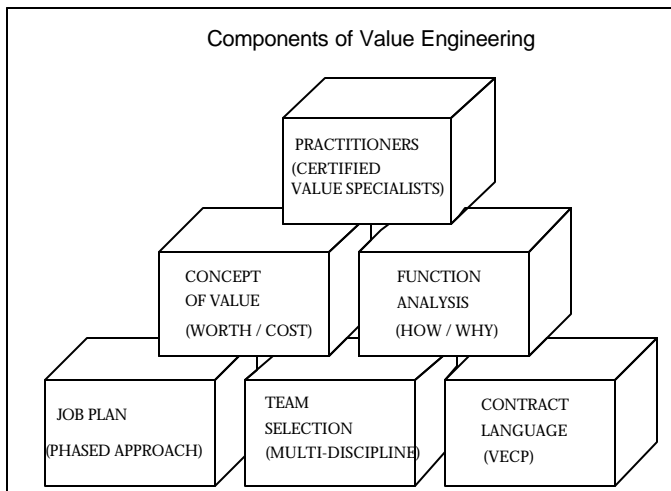
The tool kit of methods, strategies, and activities developed and tested by these real world managers dealing with real problems and real organizations in every possible technology and industry can help any team utilize its expertise and knowledge more effectively and creatively.

A team which covers all the relevant aspects of a problem or design and follows the Value Engineering process can:

- ☐ Develop better products with lower prices
- ☐ Develop the marketing plan for those products
- ☐ Reduce overhead and administrative costs
- ☐ Get more value for the construction dollar in production and office facilities.
- ☐ Find ways to better serve customers at lower cost.

Why Teams?

In the past, organizations succeeded by getting each problem or question to the individual or department best qualified to understand it.

Now the competitive advantage goes to the firm which can design solutions which take into account several disciplines and perspectives. Products are designed not just to sell, but to be easy to assemble, and easy to operate, and easy to fix, and so on...

Only in rare cases are individuals available who understand enough relevant aspects of a problem or design situation, so it is necessary to assemble teams which encompass the needed expertise.

VE enables an organization to maximize the productivity of such teams.

Partnering and VE

Teams are now multi-organizational. Value Engineering institutionalized collaboration between customers and suppliers with the Value Engineering Change Proposal (VECP) process in US Government procurement which allowed suppliers to submit ideas and share more than half the savings. Today many firms in manufacturing and

AN EXAMPLE

A VE team studying the design of a corporate headquarters focused part of their effort on the circular staircase which was to ascend ten stories in the open atrium at the core of the building. After thirty minutes the five person team suggested replacing the staircase with a pendulum. This would seem like a less than useful idea, but surprisingly:

- ☐ The owner loved it and would be willing to pay twice as much for it!
- ☐ The original designer loved it!
- ☐ The estimators found that it saved two thirds of the cost, or $500,000.

The team focused on the fact that the staircase was there to impress visitors, and felt that a ten-story brass pendulum was a lot more impressive, for a lot less money. Looking at the function led them to a solution which could never have been reached by trying to make a cheaper staircase.

construction collaborate creatively across contractual boundaries. Representatives of different organizations come together to share their perspectives and knowledge and develop ideas for producing a better output at lower cost.

Consumer oriented firms as well as commercial suppliers are involving customers in the design of new products and improvements.

Successful partnering is even more necessary as firms adopt the strategy of shrinking to a more focused size, contracting for non-core services as needed. Therefore, almost every project and process is a multi-organizational collaboration.

Value Engineering, which has deliberately crossed the same inter-organizational boundaries for almost fifty years, can effectively guide the interaction and creativity of partnering efforts whether they are building new factories or designing the products to be made in them.

Why is There a VE Opportunity?

VE is not a design review process to find errors and omissions. It assumes that designs work and meet the needs of the user. However, VE assumes opportunities exist which are hidden by:

- ☐ Organizational boundaries
- ☐ Incorrect assumptions
- ☐ Changes in the state of the art
- ☐ Standard methods which are not the best in this case

A competent, well-managed design organization trying to get a design completed on time, with no errors, at minimum cost, rarely has the resources to seek out these opportunities.

VE assembles the relevant resources and has the luxury to only look for opportunities for improvement. With proper leadership and the luxury of time, the same design team can find the opportunities, generally more productively than outsiders.

VE = Team + Facilitator

The word "facilitator" means one who "makes it easier". It is extremely inefficient to attempt to train team members and then expect them to utilize the VE process effectively. Trained, experienced team leaders can give team members "just-in-time" training in the skills they need and lead them in the use of the appropriate elements of the VE tool kit.

The second, and often more important function of the facilitator is to overcome tension and non-productive conflict between the various players. Without a skilled facilitator, attempts at team meetings can turn into finger pointing and attempts to shift responsibility and cost onto the other parties. Old issues and wounds prevent people from cooperating, collaborating, and co-creating. But a skilled VE facilitator can make it happen.

AND THE NAME IS...?

Some people apply the name Value Engineering to every kind of cost reduction effort, many of which do not work well. It is generally agreed that in VE a multi-discipline team must follow a structured problem solving method and take time to define the functions of the project and its elements. Adding to the confusion are people who follow the same process, but use a different name, such as Value Management or Value Analysis.