


**BEST RESULTS IN GLOBAL INDUSTRY  
VE TQM PM  
AN OUTSTANDING COMBINATION OF MANAGEMENT TOOLS**

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Axel Peter Ried studied in Germany, Switzerland and the U.S.A. and obtained Masters Degree in Business Administration and Applied Psychology. He also holds a Masters Degree of Machine Engineering. During his early career, he worked as a Director of the Berlitz School of Chicago and as an Assistant VP of the Singer Corporation N.Y. In 1962, he started his technical consulting company, RMM-Ried Management Methods. In 1989, he founded a design and engineering company, Berner + Ried GmbH. Mr. Ried has introduced Value Management, Value Analysis + Engineering in Germany starting in 1961. He has applied VM/VA/VE in several hundred companies of all branches of industry.

During the past 35 years, RMM has trained about 350.000 Managers in VM/VA/VE, and coordinated about 5.000 project teams. Besides VM/VA/VE, Mr. Ried also is an expert in TQM. Mr. Ried has written 15 books on various subjects and has presented numerous papers at international Value Management Conventions in Europe, the US, Japan, India and Singapore.



ABSTRACT

Globalization in Industry requires the application of a combination of successful Management Tools especially of Value Engineering (VE), Total Quality Management (TQM) and Project Management (PM)

More than ever before world wide acting Companies are confronted with very strong competitors and very demanding clients in all markets. Many challenges have to be met. Products and / or services must meet very high standards at lowest possible cost. And they must be made available to worldwide customers within extremely short periods of time. This means that products and / or services must be developed by using the above mentioned combination of Management Tools in worldwide acting teams.

Companies will be as successful as they know, understand and systematically apply these tools.

INTRODUCTION

The globalization in all areas of industry requires drastic changes in company strategies and operations.

Compared to years ago more and more projects are no longer restricted to national markets.

As a consequence of this development companies must think and act global in regard to

- Product/Service Development
- Manufacturing of Products / Services
- Markets and Sales
- Suppliers

Many challenges have to be met and require the intensive and professional use of combined Management Tools.

VALUE MANAGEMENT TOOL KIT

The extreme competition in all markets of the world and the growing demands of customers result in a combination of high class requirements for practically all product/service areas.

Due to the modern communication possibilities technical advanced knowledge is available to all countries and all companies around the world. Therefore it is necessary to supply top

function solutions at reasonable cost to the very demanding markets and the customers.

Success of world wide competing companies can only be achieved if the management and the company experts around the world know about and make use of a combination of proven Management Tools.

**VE/VA/VM**

created by L. D. Miles in 1947, is a tool which was, is and will be one of the most successful **Management Tools**.

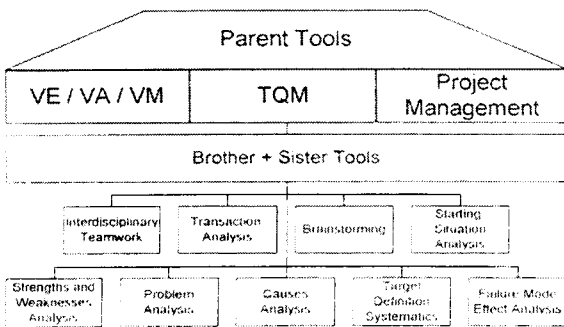
But in our days it must be applied systematically in combination with two other main tools.

- TQM - Total Quality Management
- Project Management.

We call these three tools the Parent Tools.

**Picture 1**

Value Management Tool Kit



Parent, brother and sister tools are being applied in a close combination according to the specific requirements and targets of each global or national project.

**Global Industry Facts**

The facts of global industry can be briefly described as follows:

- Products/Services will be marketed in all countries
- Function requirements, duty books, cost/profit market targets have to be analyzed and defined on the basis of interna-

tional Market Analysis, Benchmarking and Patent Analysis

- R + D work will be done around the world and around the clock by experts working and living in different countries
- Manufacturing/Assembly / Service will be done in different countries around the clock
- Suppliers will be used worldwide around the clock, integrating their skills, / knowledge and expertise
- Suppliers will be empowered and participate considerably in R + D work as part of their contract, up to 100 %
- Companies may become dependent on global development activities and their experts in different countries
- Companies may become dependent on systems supplied around the world and the suppliers
- Companies must develop the people working for them and build up empowerment
- Companies must learn and accept the drastic changes and their challenges
- Companies must built up knowledge, skills, expertise, i.e. companies must structure, organize and implement highly sophisticated employee training programs
- All management members as well as all employees must especially be trained intensively in:

- **VE/VA/VM**
- **TQM**
- **Project Management**

and must also know all the other tools of the VM Management Tool Kit.

**Picture 2**

Value Management Tool Kit - Training Program

| Training Subject           | Minimum Training Time |
|----------------------------|-----------------------|
| VE / VA / VM               | 1 week                |
| TQM                        | 1 week                |
| Project Management         | 3 days                |
| Interdisciplinary Teamwork | 1 day                 |

|                                   |         |
|-----------------------------------|---------|
| Transaction Analysis              | 1 day   |
| Brainstorming                     | 1 day   |
| Starting Situation Analysis       | 1 day   |
| Strengths and Weaknesses Analysis | 1 day   |
| Problem Analysis                  | 1 day   |
| Causes Analysis                   | 1 day   |
| Target Definition Systematics     | 1 day   |
| Failure Mode Effect Analysis      | 1 day   |
| Total                             | 26 days |

**Best results**

Best results of VE/VA/VM technical or organizational projects actually represent a combination of the following items:

- Correct definition of a complete market and customer oriented duty book, including specifically defined Unique Selling Points (USP's)
- Clear and understandable description of all functional requirements including calculable advantages for the customers
- Definition of all quality targets (by using experiences of products/services which are part of the companies present program)
- Definition and implementation of a number of specific targets:
  - Function performance
  - Manufacturing and assembly cost
  - Quality specifications
  - Service and maintenance functions and cost
  - Overhead cost
  - Sales and manufacturing cost
  - Profit margins
  - Investment in machines, tools etc.
  - Pay back period
  - Time schedule
  - etc.
- Drastic reduction of the average development time by 50-60%
- Reduction of lead time by 50 %
- Development cost reduction/prevention up to 50 %

- Development of solutions which can be protected by patents
- Definition and implementation of a profit-oriented spare-parts strategy and operation
- etc.

If applied correctly and systematically, Value Management in combination with TQM and Project Management will guarantee best results in all types/branches of industry.

Our experience gained during the past 35 years shows that all in all VE/VA/VM is actually the most effective proven tool around the world. And this really is a phantastic experience everytime on every project.

**Organization of Global Projects**

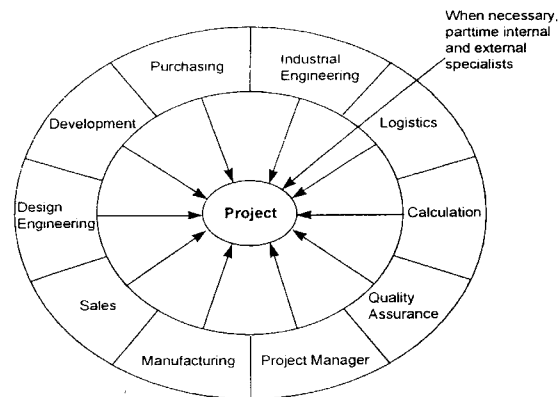
Besides the systematic and well prepared application of VM in combination with TQM and Project Management it is of significant importance that global projects have to be very well organized. The organization can be structured as follows:

1. Installation of a Project Steering Team (PST) at the companies head quarters.

This team represents basically all important functions.

**Picture 3**

VM Project Steering Team (PST)

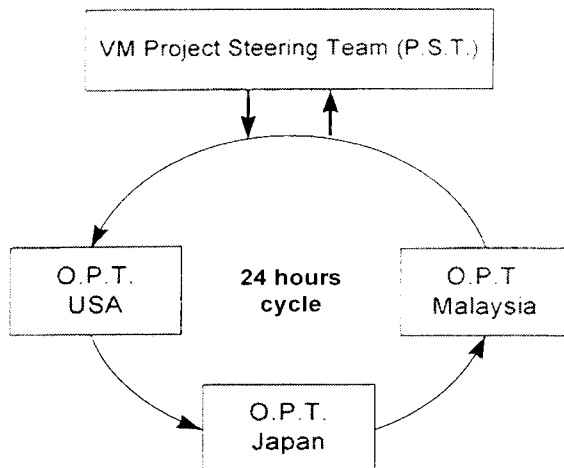


2. Installation of Operational Project Teams (O.P.T.) in different countries around the world. These teams basically include the following functions:

- Design and engineering experts
- Manufacturing experts
- Quality experts

**Picture 4**

Cooperation of a P.S.T. and its O.P.T.'s



All teams, the Project Steering Team and the different Operational Project Teams are directly connected online 24 hours a day, so that a permanent communication is guaranteed.

The work is organized in a way that starting with the Project Steering Team the development design and engineering activity goes on 24 hours a day.

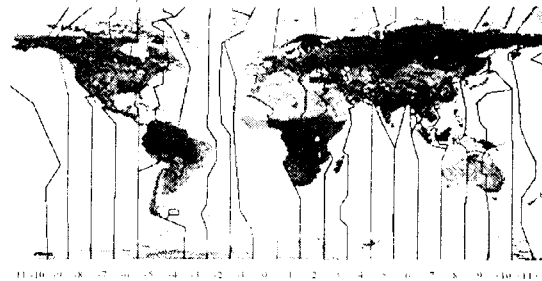
This means for example, that the designers in Germany start the project 8 am. After 5 p.m. it will be continued in the US and later on in the Far East.

It is quite obvious that this procedure must drastically shorten the regular development lead times.

Not only because the work is done 24 hours a day worldwide but especially because all experts in the different countries are using the same excellent tools, especially VM, TQM and Project Management.

**Picture 5**

Global Project Coordination 24 Hrs. / Day



## Success Factors

### 1. Management

Success and best results with the Management Tools VM/TQM/PM are only possible, if the management

- knows everything about the VM Tool Kit
- is trained in these tools
- wants to use the tools consequently
- integrates the tools into the companies strategy and operational planning
- establishes a controlling system
- trains all managers and employees involved in the global VM projects to apply the tools worldwide around the clock.

### 2. Tools

The following management tools must be trained by using well experienced experts:

- Interdisciplinary Teamwork
- Transaction Analysis - Development of Attitude
- Brainstorming
- Situation Analysis
- Strengths and Weaknesses Analysis
- Problem Analysis
- Causes Analysis
- Target Definition Systematics
- Failure Mode Effect Analysis
- Value Management/Value Engineering

### 3. Empowerment

Another also very important success factor is to train all members of a company in empowerment.

Empowerment of each manager and employee is one of the most significant basic factors for the continuous development and improvement of motivation, creativity and managerial courage

### 4. Suppliers

One more success factor is to train and integrate suppliers around the world.

Suppliers are very valuable business partners as they represent a tremendous amount of knowledge, skills and expertise. Their ideas and know how very often are the base for quick and successful development and engineering solutions.

To empower suppliers means to trust them and supply them with all the modern Management Tools, especially VM/TQM/PM.

It also means, to be fair and let them participate on an incentive basis in the successes of the company VM-Projects.

### 5. Language

All partners around the global business world, who are participating in global VM Projects, must not only know and practice the above described management tools, but they also must be able to speak English quite well.

Amazingly there are many managers outside of the English speaking countries, who are not educated and trained well enough in English.

This is an area, where companies will have to accept the challenge, that a real good investment in at least English Language training is inevitable.

### 6. Change

As business has become more global than ever before, the companies must accept and meet the requirements of change how to organize and implement global VM projects.

Investment in modern communication means must be done immediately.

No longer a project is owned by one designer or engineer. **The projects are now owned by global acting teams.** The only important facts are that projects will be completed within :

- very short periods of time
- at much lower cost levels
- and at the same time with very improved function solutions.

### Potentials of VM/TQM/PM, the outstanding combination of Management Tools

The potentials of a planned and consequent global continuous application of the above mentioned parent tools are:

- Best possible function requirement identification and definition
- Clearly defined detailed targets
- Systematic application of the VE/VA Job Plan and the VE/VA techniques
- Cost reduction/cost prevention
- Investment effectiveness
- Customer and competitor benchmarking
- Patent Benchmarking
- High degree of empowerment and as a result of this motivation and creativity
- Inventions
- Outstanding solutions
- Drastic reduction of lead times for design and engineering, production, testing and market availability
- Implementation of unbeatable Unique Selling Points
- Reengineering and simplification of all procedures and company processes,
- Dramatic reduction of process steps and work load
- Full customer satisfaction around the world
- Global synergy effects and results which never were achieved before.

## Examples of successful strategic Value Management

### 1. Siemens Semiconductors

A Strategic Value Management concept was developed to increase the worldwide competitiveness. The main target of this program was to supply the market with customized semi-conductors of extreme high quality.

The very complex competition situation in this market required a very special training program for:

- the top management
- and the middle management at different locations of Siemens in Germany, Austria, Singapore, Malaysia and the US.

Also 20 task force teams were established in the above mentioned plants. Altogether approximately 2000 people participated in this global program.

The total time of implementation was 18 months. All targets were completely accomplished, so that Siemens semiconductors division could increase its market share and profit quite considerably.

### 2. Studer Switzerland, manufacturer of high precision grinding machines

Studer company is the leading manufacturer of extreme precise grinding machines. The goal of Strategic Value Management was to develop a complete new product program of 10 different machine types with several hundreds of different customer oriented options and functions.

The specific targets were:

- integration of TQM and ISO 9000
- development of highest quality machines
- cost reduction / prevention of 40 %
- market share increase worldwide from 40 - 60 % within a time span of 3 years

On the basis of intensive Value Management training and consequent application of the

Value Management success tools described in this paper 10 teams worked simultaneously. The targets of this project were totally accomplished.

### 3. SMTCL - Shenyang Machine Tool Company Ltd., Shenyang, China

SMTCL is one of China's largest machine tool manufacturers. More than 10.000 different machines tools are being produced per year.

This project of Strategic Value Management is being funded by the World Bank. The key target is to enhance the product design capabilities of SMTCL and its engineers for the future. SMTCL products shall become competitive for worldwide markets.

The structure of this program is as follows:

Phase 1: Intensive 4 week training of 30 top engineers in Value Management and all the tools to be used.

Phase 2: Worldwide market-, competitor- and patent analysis for seven completely different machine programs.

Phase 3: Definition of the duty-books for these 7 machines.

Phase 4: The 30 SMTCL engineers will stay in Germany for 6 months. During this time period we will manage, coach, supervise and train 7 product development teams. The machine concepts and the design work for the seven machines will be accomplished by applying Strategic Value Management and its tools.

Phase 5: The SMTCL engineers return to China and do the detail design work under our supervision.

Phase 6: Prototype manufacturing and testing takes place. We are supervising this phase and will develop the complete marketing concept for the new 7 ma-

chine programs in close cooperation with SMTCL.

Phase 7: At the end of this program a Final Completion Report including lessons learned while integrating practical Strategic Value Management will be prepared and approved.

This program is conducted and implemented in China, Germany, Europe and the United States, and takes 21 months in total.

## **Conclusion:**

### **VM Tools go global**

The excellent continuous result of the consequent application of the outstanding combination of

#### **VM/TQM/PM**

around the world and around the clock („rock around the clock“) proves that it is definitely possible for every company around the world to participate in the success of these tools.

Each company can get the knowledge and can arrange professional training and systematic implementation.

But amazingly enough, many companies and managers just do not want to know about the success chances and the ways how to get there. This really seems to be somewhat pretentious. don't you think so.

More than 35 years of practicing especially VE/VA/VM and more than 20 years of applying the combination of tools in all areas of industry around the world really are a remarkable success story.

### **Best Results and Success**

are possible every day and every where.