

Proactive use of Risk Management in Consulting

VE is a really useful tool for work improvement

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😊 I am Japanese Dam Engineer

😊 I have worked as a consult for 40 years

😊 In Japan, construction of new dam is almost over Japanese Dam

😊 But, renewal of the existing dams has started.

😊 “Renewal” is to improve the function of the dam

😊 I have started working as a VE expert.



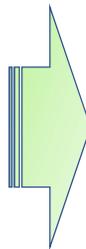
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and make use of this to opportunities
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1. Introduction

VE can be applied
in many fields



Business improvement

Business plan review

Design verification

Product development



VE solves various risks in consulting
and brings *many opportunities and returns.*

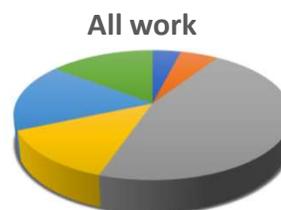
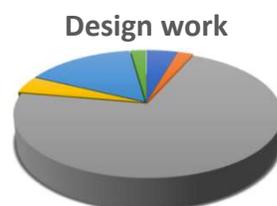
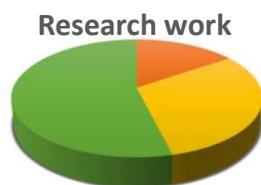


2. What is the Risk?

<Figure 1>

The number of *mistakes and complaints* that occurred in the company to which I belong to, analyzed by different types of operation.

The consultant's work can be divided into *research, planning and design*, and the percentage of mistakes and complaints occurred in each work are compared.



- ① Joint work
- ② Personality
- ③ Construction
- ④ Release
- ⑤ New Technology
- ⑥ Site work

Consulting work and mistakes

3. VE-Oriented thinking is useful

There are various risks in consulting services.

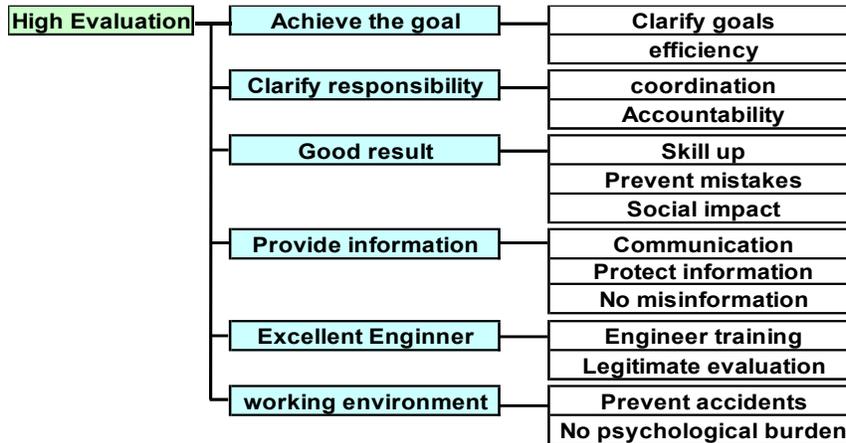
- ◆ Work process is delayed
- ◆ Instruction is confused
- ◆ Responsibility is unclear
- ◆ Rework occurs

*Solutions necessary to eliminate potential causes of risk for each task are defined as **required functions**.*

Function Definitions of Risk Causes and Solutions

Characteristics	Risk	Necessary functions
Person in charge of recognition problem	Difficult requests and instructions Confusion due to insufficient contact	Share recognition Communication aim
Publication work to the general public	Troubles of publication of misinformation Social impact of mistakes	Eliminate misinformation Consider social influences
Important information	Information leak Information processing mistake	Prevent information leakage Protect duty of confidentiality
New technology · Advanced technology	Difficulty dealing with client's request Low business appraisal point	Improve skills Get a high reputation
Large delivery term constraints	Delay in delivery due to difficulty in adjustment Increase psychological burden	Enhance efficiency Eliminate the psychological burden
Specification is unclear	Achievement goals Not achieved Increase in correspondence other than specifications	Clarify goals Clarify implementation policy

◆ Basic function = Obtain high evaluation
(from both the client and the citizen)



Functional diagram of risk management

- ☺ The functional diagram shows the action guidelines.
- ☺ That is, many hints for avoiding various risks.
- ☺ An important functional field in the functional diagram are

- 1) Achievement of goal
- 2) Clarification of responsibility
- 3) Good result
- 4) Information sharing
- 5) Training of technicians



☹ *It is a shortcut for business improvement to think how to improve these functions.*

4. Resolve risks and make use of this to opportunities

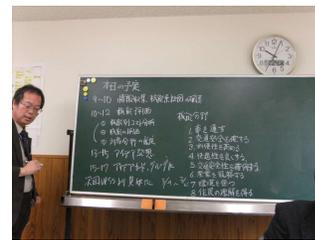
4-1 Think about the principle of value improvement

$$\text{Value} = \frac{\text{Function}}{\text{Cost}} = \frac{\text{Opportunity}}{\text{Risk Management}}$$

Here, opportunities and returns are as follows.

- 1) Opportunities for **new orders** can be expanded
- 2) Acquire **profits and achieve goals**
- 3) **Earn trust** from customers
- 4) **Business results** and **Technical assets** can be secured
- 5) Gain opportunity to **improve technology**

😊 A consultant is a career requiring a **challenging spirit** to acquire opportunities by solving various risks of business.



4-2 Acquire opportunities and returns

Risk management is strategic actions to be taken before the crisis occurs.

- ☺ It is important to know
the cause of the risk early
and anticipate
the effects of various measures.



【Example-1】 ◆ *Short delivery period*

The following risk measures are taken:

- ☺ Prioritize important items
- ☺ Increase the number of staff
- ☺ Produce results before the delivery period
- ☺ Carry out additional work in the remaining period
- ☺ Gain approval of revised contract at an increased price.

Gain trust of the client

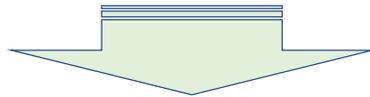
Increase contract price

Improve technical skills

【Example-2】 ◆ *Project with unclear specifications*

The following risk measures are taken:

- 😊 Propose a clear business practice policy
- 😞 Propose a sustainable implementation policy with a view to future developments.



Gain trust of the client

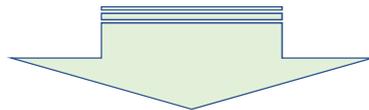


Expand business opportunities

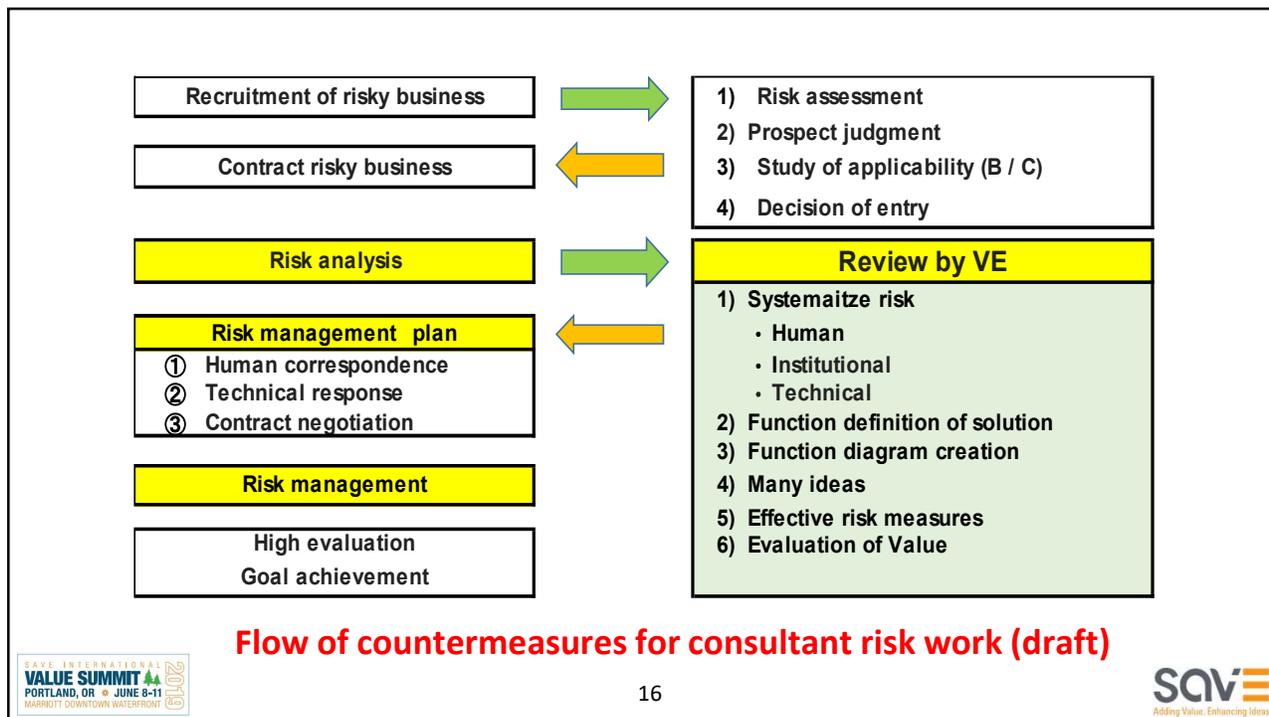
【Example-3】 ◆ *"Monster client"* *(Over-demanding client)*

The following risk measures are taken:

- 😊 I can satisfy your requirements under "**Such conditions**".
- 😊 Can you accommodate "**Such conditions**" in order to respond to your request?



VE is very useful to find "Such conditions".



5. Application

Theme ; **Construction road for Dam**

There was a danger of collapse everywhere due to the geological cause of the slope of the construction road from the material rock to the dam site.

Extension distance ;	L = 4 Km
Collapse spot ;	all sections
Expenses ;	10 million USD
Construction vehicle ;	Large dump truck

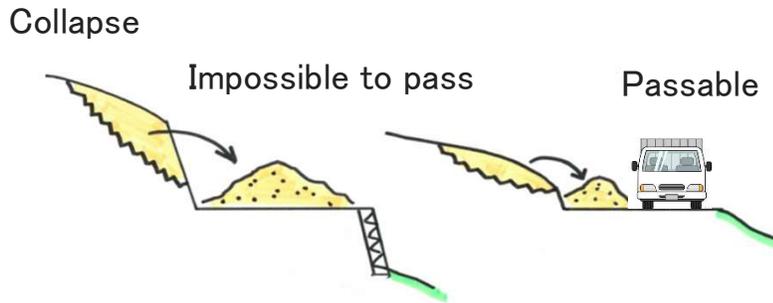
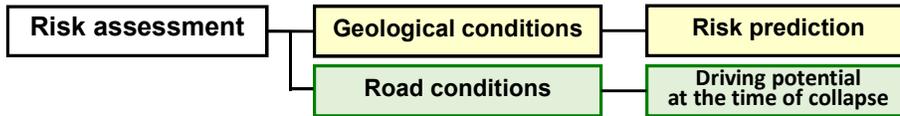
Overview drawing of construction road

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In a small-scale collapse, the truck can run if it is one-way.



Collapse of road slope and dump truck passable possibility

The basic function is **"Stabilize the slope"**

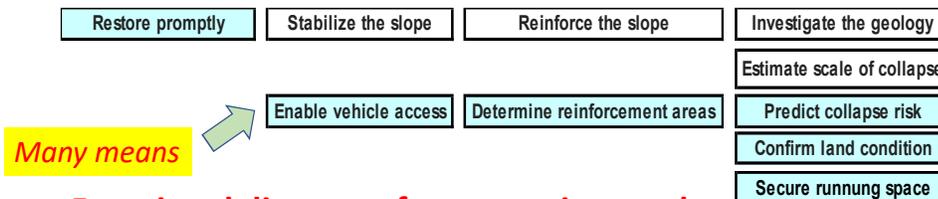
- The means to achieve are limited.

The basic function is **"Restore promptly"**

- The range of means to achieve is much larger.



- There were 52 dangerous slopes.
- According to the VE proposal, only 18 measures were taken.
- We achieved about 50% cost reduction.



Many means

Functional diagram of construction road

6. Recommendations

- 1) Consider the occurrence and impact of risks *from the time of the contract to the completion.*
- 2) Understand *the essence of the purpose* and focus on expanding the scope of means and strive to make proposal to achieve them.
- 3) Analyze the risk and make organizational efforts to deal with priority issues *using VE-oriented thinking.*

Thank you for your attention



VE is a very useful tool for risk management.



Good / bad of risk management is an important indicator to evaluate a consultant.



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