VALUE MANAGEMENT WORKSHOP PROCESS

Lecture Contents

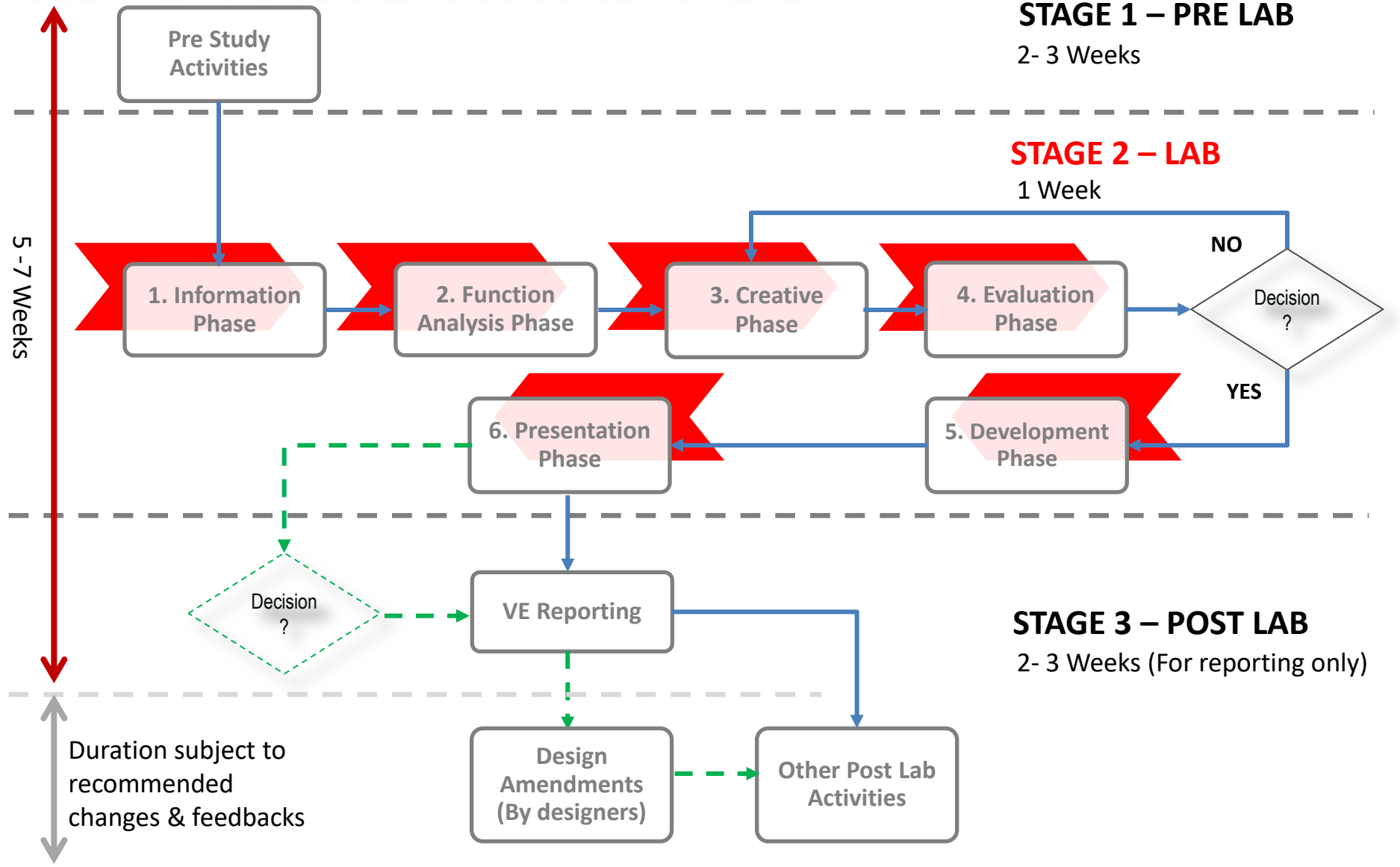
- **VM WORKSHOP PROCESS (FOCUS ON VE LAB PROCESS BY JKR) :**
  - **INFORMATION PHASE**
  - **FUNCTION ANALYSIS PHASE**

Lecture Objectives

- **UNDERSTAND THE WORKSHOP PROCESS - INFORMATION PHASE & FUNCTION ANALYSIS PHASE**
- **IMPROVE COMPETENCY AND COMPETITIVENESS IN PRACTISING VM**

VM
WORKSHOP (LAB)
PROCESS
BY JKR

VE STUDY PROCESS



Sumber: VE application Guideline for Public Projects, JKR(2013)

VE Lab Process

1. Information Phase
2. Function Analysis Phase
3. Creativity Phase
4. Evaluation Phase
5. Development Phase
6. Presentation Phase

SUMBER :

PANDUAN PELAKSANAAN PENGURUSAN NILAI DALAM PROGRAM/PROJEK KERAJAAN

UNIT PERANCANG EKONOMI (UPE) JPM

VERSI 1 TAHUN 2011 (BERTARIKH 24 MEI 2011)

(1) Information Phase (VE)

PURPOSE:

- DEVELOP UNDERSTANDING OF PROJECT AND REQUIRED DETAILS THAT INFLUENCED PROJECT DECISIONS.

- GATHER, SYNTHESIZE AND VERIFY PROJECT INFORMATION

(1) Information Phase (VE)

IF I WAS GIVEN ONE HOUR TO SOLVE A PROBLEM ON WHICH MY LIFE DEPENDED,

I WOULD TAKE ;

- **40 MINUTES TO STUDY IT**
- **15 MINUTES TO REVIEW IT**
- **5 MINUTES TO SOLVE IT**

ALBERT EINSTEIN

(1) Information Phase (VE)

PROCESS FLOWCHART

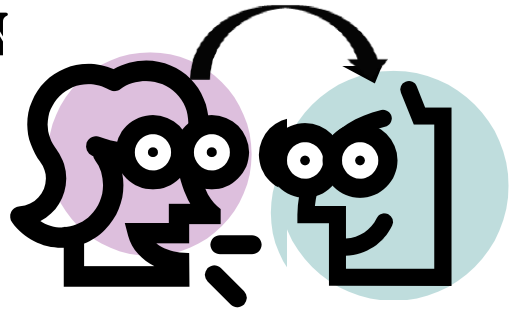
S.O.W. DEFINITION

COST

DRAWINGS

ISSUES

TEAM MEMBERS



CLIENT NEEDS

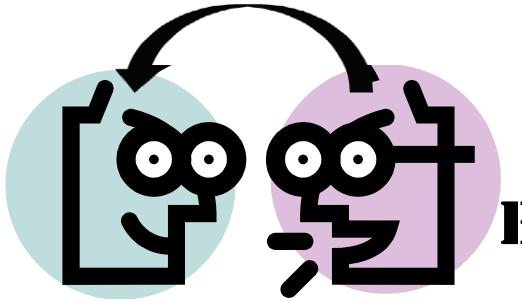
STAKEHOLDERS

CLIENT WANTS

QUANTITIES

SPECIFICATIONS

BUDGETARY LIMITS



TIME

PROJECT CONSTRAINTS

VA REPORT

CURRENT MARKET VALUE

PROJECT DRIVERS

(1) Information Phase (VE)

GATHER, SYNTHESIZE & VERIFY ?

To Identify the functions of the project

- **As seen by the client organization**
- **In clear unambiguous terms**

(1) Information Phase (VE)

assumption

Best possible source

corroborated

Tangible evidence (if possible)

(1) Information Phase (VE)

THE QUALITY OF

DECISION MAKING

CANNOT RISE ABOVE

THE QUALITY OF

THE INFORMATION

UPON WHICH

THE DECISION

IS TO BE MADE

1. INFORMATION PHASE

ACTIVITIES	TECHNIQUES	OUTPUTS
REGISTER LAB PARTICIPANTS	• Listing of participants	• Confirmed list of participants
HOLD LAB OPENING SESSION	• Participants' introduction, • ice breaking" / Team building techniques	• Team building
BRIEF & VERIFY VE LAB AGENDA	• Briefing / presentation • Discussion / feedback	• Verified VE Lab Agenda & process • Explaination of Information Phase Activities
BRIEF & VERIFY VE STUDY OBJECTIVES	• Briefing / presentation • Discussion / feedback	• Verified VE Study Objectives

1. INFORMATION PHASE

ACTIVITIES	TECHNIQUES	OUTPUTS
BRIEF PROJECT INFORMATION	• Briefing / presentation • Discussion / feedback	• Clarified project information • Identified compliance/ deviation from VA
BRIEF & VERIFY PROJECT OBJECTIVES AND PROJECT OUTCOMES	• Briefing / presentation • Discussion / feedback • S.M.A.R.T approach	• Verified project objectives • Verified project outcomes
CONFIRM PROPOSED VE STUDY MODEL(S)	• Brieffing / presentation • Discussion / feedback	• Confirmed VE Study Model (s)
INFORM CLIENT VALUE SYSTEM (CVS)	• Brieffing / presentation • Discussion / feedback	• Accepted CVS

1. INFORMATION PHASE

ACTIVITIES	TECHNIQUES	OUTPUTS
CONFIRM LAB WORKING GROUPS AND SELECTED VE STUDY SCOPES	Briefing / presentation Discussion / feedback	Lab working groups formation
ESTABLISH PROJECT PARAMETERS TO BE STUDIED	Briefing Discussion / feedback Information Phase Template Presentation	Completed Information Phase Template

(1) Information Phase (VE)

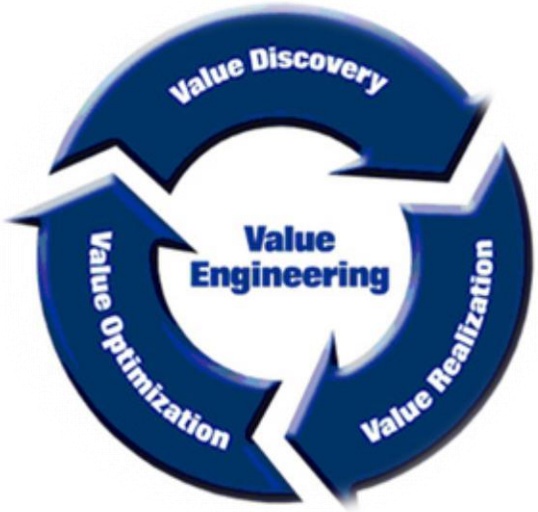
OUTCOME:

- DETAIL & COMPREHENSIVE UNDERSTANDING OF THE PROJECT
- OBTAIN AS MUCH POSSIBLE ACCURATE PROJECT INFORMATION & DATA
- BASE CASE TO IDENTIFY AND BENCHMARK ALTERNATIVES AND MISMATCHES
- SET AGENDA FOR INNOVATION.

VM Study Models

SPACE MODEL

COST MODEL



QUALITY MODEL

LIFE CYCLE COST MODEL

Cost Model for VM Study

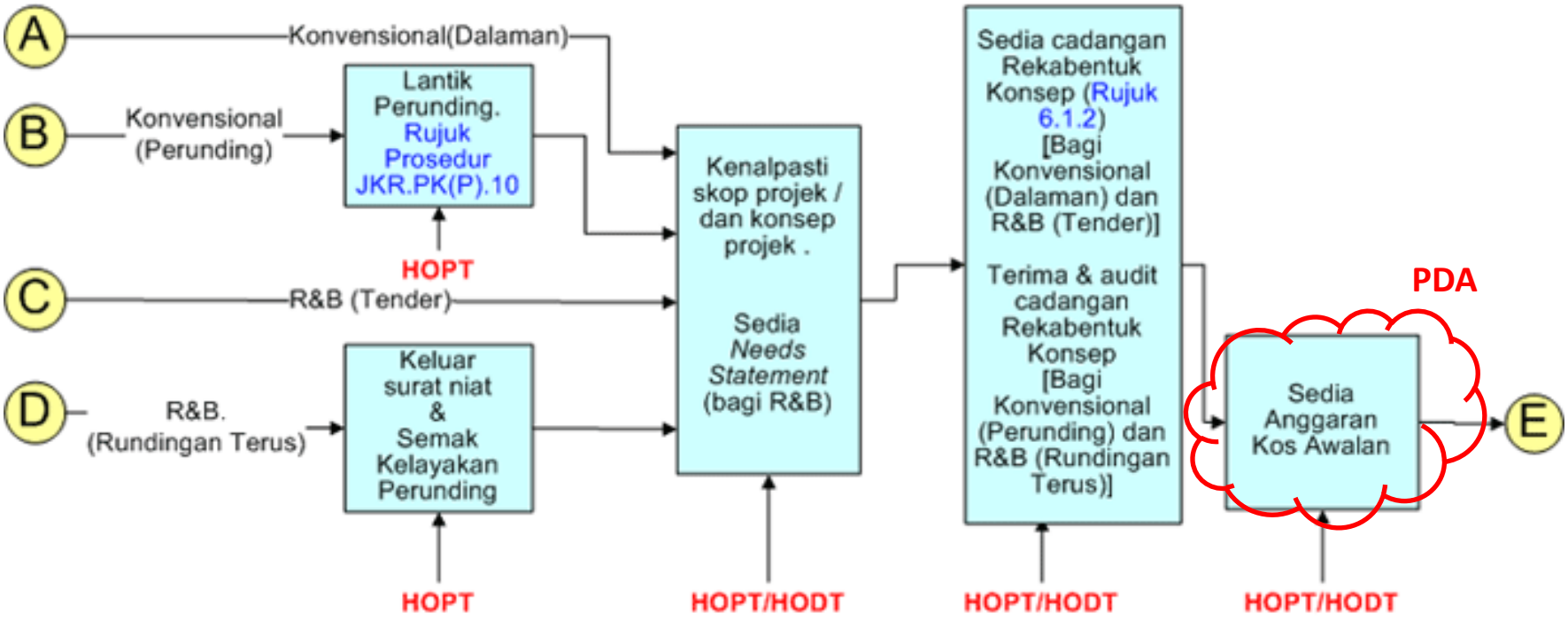
COST MODEL (SAVE definition):

"A diagramming technique used to illustrate the total cost of families of systems or parts within a total complex system or structure"

PDA FORMAT

Cost Model for VE Study (JKR)

PROSES SPK (JKR)



Cost Input at VM Study Levels

PRE- BRIEF	BRIEFING	SKETCH PLANS	WORKING DRAWINGS	SITE OPERATIONS

LEVEL 1 : CONCEPT

VA STUDY:
- Function Unit Cost (eg. bed)
- Cost per m2
- Project Cost (Overall)
- Life Cycle Cost (LCC)

VE I STUDY:
- Cost per m2
- Elemental cost
- Built-up cost
- Itemised cost
- Project Cost
- LCC

LEVEL 2 : SPACES

VE II STUDY:
- Elemental cost
- Built-up cost
- Itemised cost
- Project Cost
- LCC

LEVEL 3 : ELEMENTS

LEVEL 4 :COMPONENTS

Tools Kit at Information Phase

- PROJECT ISSUES / PROJECT DRIVER ANALYSIS
- PAIRED COMPARISON PRIORITY MATRIX:
    - PRIORITISED CLIENT VALUE SYSTEMS
- VM LAB (WORKSHOP) TEMPLATE

CLIENT VALUE SYSTEMS

HEART OF THE GOAL DEFINATION

FACTORS OR INFLUENCES IMPACTING CLIENT'S VIEW ON VALUE AND ON THE JUDGEMENT OF ALLOCATING RESOURCES IN ACHIEVING A MISSION OR OBJECTIVES

BRAINSTORMING OF CLIENT VALUE SYSTEMS

TIME

- TIME

COST

- CAPITAL COST (CAPEX)
- OPERATING COST (OPEX)

QUALITY

- SAFETY / SECURITY
- ENVIRONMENT
- POLITICS/ COMMUNITY / POPULARITY
- COMFORT
- FLEXIBILITY / EXPANDABILITY
- AESTHETICS / ESTEEM
- EXCHANGE

PAIRED COMPARISON PRIORITY MATRIX

A:Capital Expenditure CAPEX

0.5A/0.5B	**B:Operational Expenditure OPEX**						
1C	0.5B/0.5C	**C:Time**					
1A	1B	1C	**D:Flexibility/Expandable**				
1A	1B	1C	1E	**E:Comfort**			
1F	1F	0.5C/0.5F	1F	1F	**F:Safety&Security**		
1G	1B	1C	1G	1G	1F	**G:Popularity (Users)**	
1A	1B	1C	1H	1H	1F	1G	**H:Asthetic**

A	B	C	D	E	F	G	H
3.5	5	6	0	1	6.5	4	2

CLIENT VALUE SYSTEM	COMPARISON CONTINUUM
A: Capital Expenditure - CAPEX	1 - Tight budget fixed 0.5 - Fair 0 - Flexible budget
B: Operational Expenditure - OPEX	1 - Operating cost to be controlled to the minimum 0.5 - Fair 0 - Flexible operating cost
C: Time	1 - Time is the essence 0.5 - Fair 0 - Time is at large
D: Flexibility / Expandable	1 - High ability to accommodate changing functions 0.5 - Fair 0 - Unlikely to change to any extent
E: Comfort	1 - Highly impacting human performance 0.5 - Fair 0-Unlikely to impact
F: Safety / Security	1 - Highly required in supporting business 0.5 - Fair 0 - Less required
G: Politics (Users)	1 - Highly required to make popular decision 0.5 - Fair 0 - No concern towards popularity
H: Esteem (Aesthetic)	1 - Highly needed to attract admiration 0.5 - Fair 0 - No significant need

PAIRED COMPARISON PRIORITY MATRIX

PRIORITISED RANKING	
1	SAFETY/SECURITY
2	TIME
3	OPEX
3	POPULARITY
5	CAPEX
6	AESTHETIC/ESTEEM
7	COMFORT
8	FLEXIBILITY/EXPANDABLE

- **HOW CAN WE TRANSLATE THE FINDINGS?**

SISTEM NILAI KLIEN – KETERANGAN:

- Adalah menjadi keutaman untuk projek ini mengambilkira aspek keselamatan pengguna terutama bagi mengelakkan kemalangan***. (SAFETY/SECURITY)***

- Kesegeraan untuk melaksanakan projek ini menurut kehendak pengguna/komuniti adalah agak utama bagi mengurangkan isu bergantung kepada pekerja asing dan seterusnya meningkatkan bilangan pekerja mahir tempatan. ***(TIME & POLITICAL/COMMUNITY).***

- Kos projek ini perlu mengambilkira kos senggara. ***(OPEX).***

- Kos projek ini perlu dioptimumkan kepada peruntukan dan skop yang telah ditetapkan semasa Lab VA. ***(CAPEX).***

- Akhir sekali, estetik ***(AESTHETIC/ESTHEM),*** keselesaan ***(COMFORT)*** dan pembangunan masa hadapan ***(FLEXIBLE/EXPANDABLE)*** adalah minimum dan kurang keutamaan berbanding dengan nilai yang lain. Selanjutnya hanya diberi penekanan yang minimum (memenuhi kod & standard) dalam rekabentuk.

VE Lab Process

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(2) Function Analysis Phase (VE)

DEVELOPMENT OF THE FUNCTIONAL REQUIREMENTS OF A PROJECT

ARE KEY TO ASSURING

A STAKEHOLDER THAT THE FACILITY WILL MEET THE STATED CRITERIA.

(2) Function Analysis Phase (VE)

PURPOSE:

- UNDERSTAND THE PROJECT FROM A FUNCTIONAL PERSPECTIVE; WHAT MUST THE PROJECT DO , RATHER THAN HOW THE PROJECT IS CURRENTLY CONCEIVED. (project/ elelments/components/systems)

- IDENTIFY MISMATCHES & POTENTIAL VALUE IMPROVEMENT

(2) Function Analysis Phase (VE)

ANALYSIS OF:

$$\frac{\text{FUNCTIONS}}{\text{ACTUAL COST}} \Rightarrow \text{IMPROVE PROJECT VALUE}$$

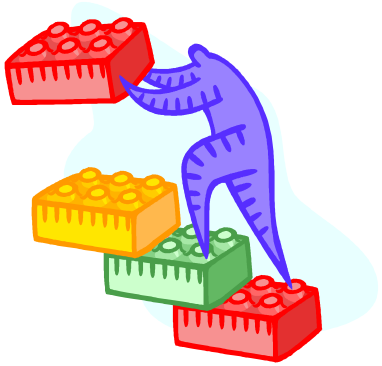
WITHOUT REMOVING /COMPROMISING

NECESSARY REQUIREMENTS

(2) Function Analysis Phase (VE)

ACTIVITY:

- BRAINSTORM FUNCTION
- CREATING A FUNCTION LOGIC DIAGRAM (FAST)
- DEVELOP 'COST – FUNCTION RELATIONSHIP'
- FUNCTION – COST- WORTH ANALYSIS



2. FUNCTION ANALYSIS PHASE

ACTIVITIES	TECHNIQUES	OUTPUTS
BRIEF ON FUNCTION ANALYSIS PHASE	• Briefing / presentation	• Explaination of Function Analysis Phase Activities.
VERIFY PROJECT FUNCTIONS	• Briefing / presentation • Discussion / feedback • Strategic FAST diagram or Technical FAST Diagram • Goal and System Technique • Cost Worth Index	• Verified project functions • Identified value mismatches
ANALYSIS FUNCTIONS OF SPACE / ELEMENT / COMPONENT / SYSTEM	• Briefing • Discussion / feedback • Function Analysis Phase Template • User Flow Diagram • Adjacency Matrix • Presentation – sharing information	• Completed Function Analysis Phase Template • Identified value mismatches

Tools Kit at Function Phase

- F.A.S.T. DIAGRAMMES (STRATEGIC / TECHNICAL FAST)
- REQUIRED GOALS AND SYSTEMS
- USER & PROCESS FLOW ANALYSIS
- SPATIAL ADJACENCY MATRIX
- VM LAB (WORKSHOP) TEMPLATES

Value Mismatch

- FUNCTION MISMATCH
- COST MISMATCH
- QUALITY MISMATCHE

(2) Function Analysis Phase (VE)

FUNCTON ANALYSIS SYSTEMS TECHNIQUE (FAST DIAGRAM):

(DESIGNED BY CHARLES W. BYTHEWAY-1963)

- BETTER UNDERSTANDING THE FUNCTIONAL RELATIONSHIP OF THE PROJECT

- ALIGN FUNCTIONS WITH OBJECTIVES AND DELIVERABLES

- IDENTIFY VALUE 'MISMATCHES'

- DIRECT TEAM TO THE FUNCTIONS WHERE THEY SHOULD FOCUS THEIR EFFORTS.

(2) Function Analysis Phase (VE)

•TYPES OF FUNCTION

BASIC FUNCTION:

The primary purpose or most important action performed by a product or service. The basic function must always exist, although methods or designs to achieve it may vary.

SECONDARY FUNCTION:

A function that supports the basic function and results from the specific design approach to achieve the basic function. As methods or design approaches to achieve the basic function are changed, secondary functions may also change.

Source: Dell 'Isola

(2) Function Analysis Phase (VE)

•TYPES OF FUNCTION

REQUIRED SECONDARY FUNCTION:

A function that must be achieved to meet codes, standards or mandatory other requirements.

Source: Dell 'Isola

(2) Function Analysis Phase (VE)

•LEVELS OF FUNCTIONS:

PROJECT LEVEL :

- Defining the function as a Whole

- **SPACE LEVEL :**

  - Defining the function of the spaces within the projects

- **ELEMENTs LEVEL :**

  - Defining the function of Elements

- **COMPONENTs LEVEL :**

  - Defining the function of components

(2) Function Analysis Phase (VE)

VERIFY LAB STUDY SCOPE:

- PRESENT ALL ANALYSIS FINDINGS (IDENTIFIED VALUE MISMATCHES)
- CONSENSUS TO VARIFIED STUDY SCOPE

(2) Function Analysis Phase (VE)

OUTCOME:

- FULFILL CLIENT'S NEEDS AND OBJECTIVES
- CLARIFIES EXPECTED PROJECT PERFORMANCE FOCUSING ON WHAT THINGS MUST DO RATHER THAN WHAT IT IS
- IDENTIFICATION OF VALUE MISMATCHES TO BE RESOLVED AND/OR TO IMPROVE PROJECT PERFORMANCE

THANK YOU