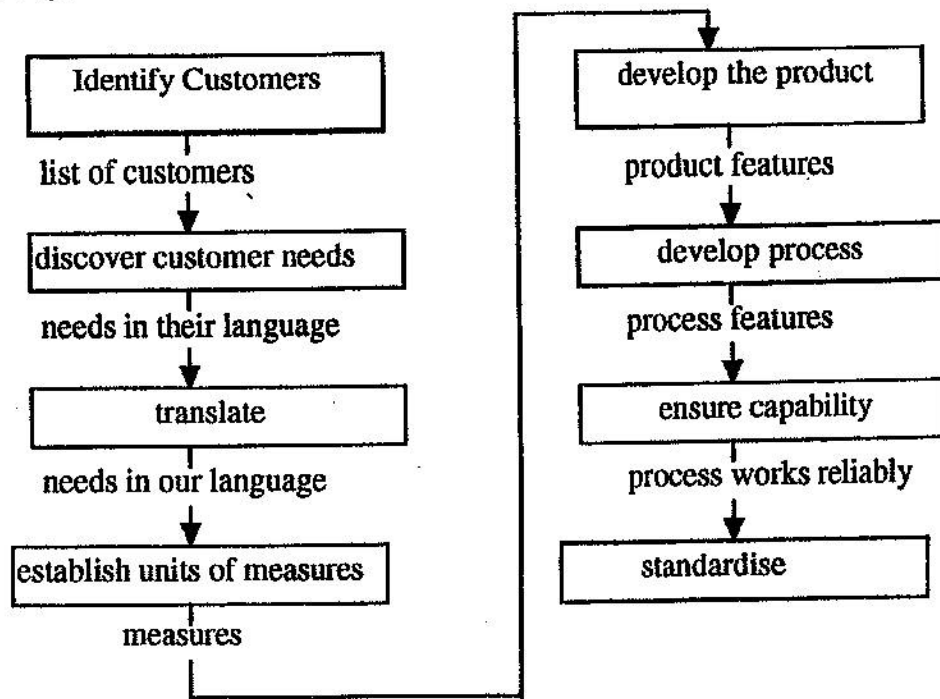
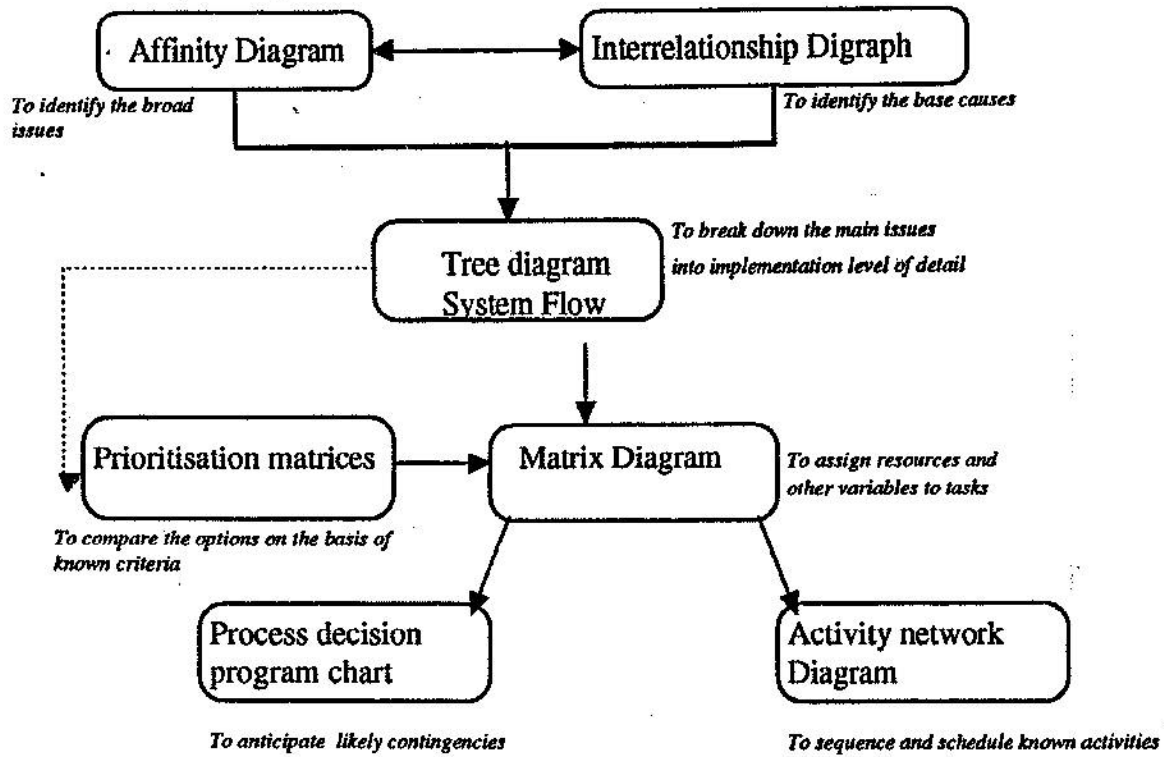


THE QUALITY ROAD MAP

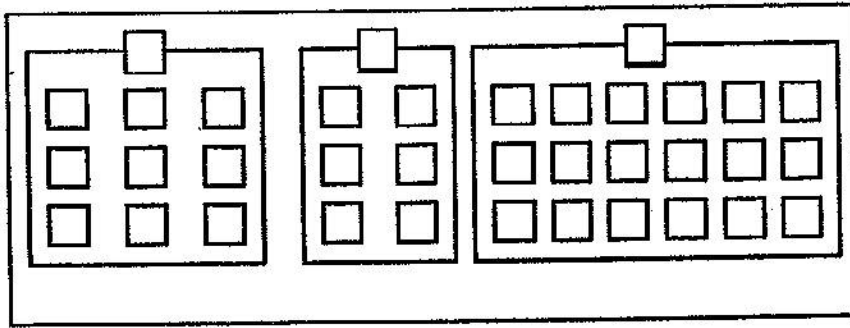


THE SEVEN MANAGEMENT AND PLANNING TOOLS TYPICAL FLOW

The following is simply a typical flow to demonstrate how the tools usually flow.



THE AFFINITY DIAGRAM



This tool gathers large amounts of language data (ideas, issues, opinions etc) and organises it into groupings based on the natural relationship between each item. It is largely a creative rather than a logical process.

CONSTRUCTION OF AN AFFINITY DIAGRAM

Assemble the right team

4 - 6 people - varied perspective - creative - open minded

Phrase Issue to be considered

Broad neutral statement - clearly stated, well understood

Generate and record ideas

Follow guidelines for brainstorming. Record ideas and flip charts - no "one word ideas".

Randomly lay out completed cards

On wall - table - flip chart

Sort cards into related groups

In silence - gut reaction - quick process - if disagree move cards - don't discuss

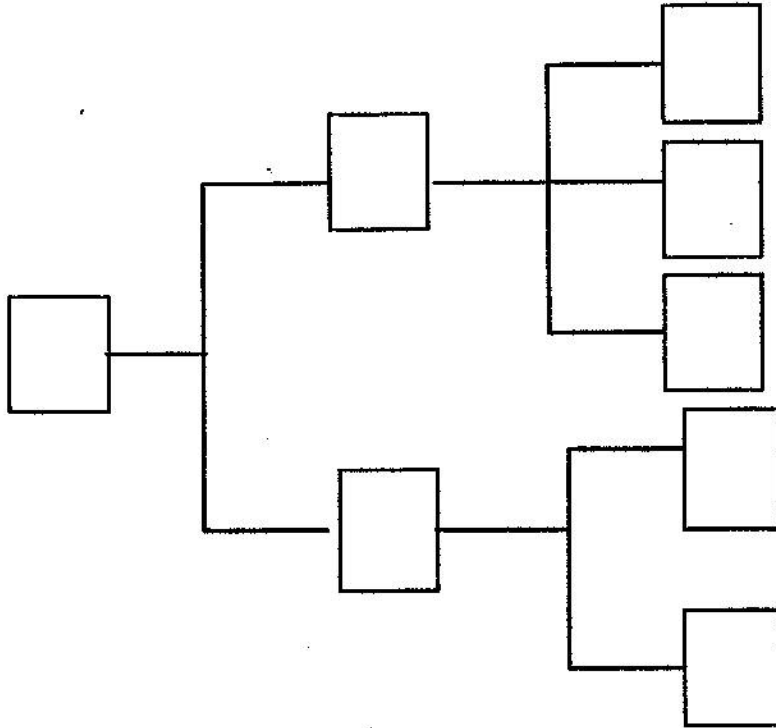
Create the header cards

Concise but complete - no one word headers - make sense standing alone - captures essential link in all ideas beneath it as well as what the cards are saying about that link - place at the top of each grouping - turn - sub - themes into sub-headers.

Draw the finished Affinity Diagram

Draw lines connecting headers, subheaders, with all the cards beneath them - bring together related groups - review by the team - review by important "non team" members.

THE TREE DIAGRAM



This tool systematically maps out in increasing detail the full range of paths and tasks that need to be accomplished in order to achieve a primary goal and every related subgoal. Graphically, it resembles an organisation chart or family tree.

HOW TO CONSTRUCT THE TREE DIAGRAM

Choose the tree diagram goal statement

Three possible sources - box from ID - header card from Affinity Diagram from discussion

Assemble the right team

Action planners with detailed implementation knowledge

Generate the major headings

Two options - do an Affinity on the goal statement - or statement - or brainstorm, and sort cards into broadest level of detail

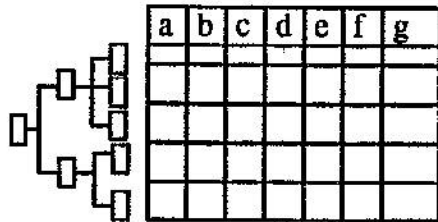
Complete the tree Diagram

Ask of each level "what needs to happen /be addressed to resolve this statement?"

Review the completed diagram

Work down with the question "How", work up with the question "why" - "will these actions lead to these results?" - To accomplish these results, do I really need to do these tasks?"

PRIORITISATION MATRIX



These tools take tasks, issues, or possible actions and prioritise them based on known, weighted criteria. They utilise a combination of tree and matrix Diagram techniques, thus narrowing the options to those that are the most desirable or effective

TECHNIQUES FOR CONSTRUCTION

Full analytical criteria method

Evaluate with which criteria have been ranked against one another

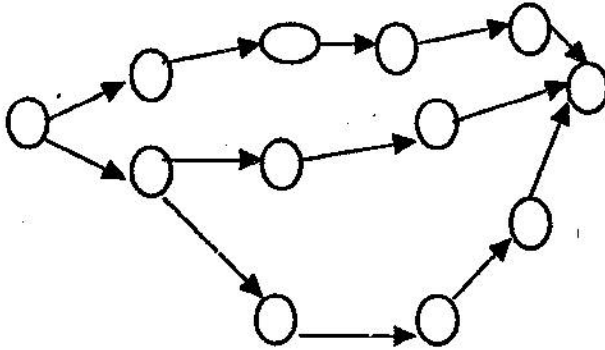
Consensus criteria Method

Evaluate with criteria which have been weighted by team vote

Combination ID/Matrix

Compare all options to themselves, using ID technique

ACTIVITY NETWORK DIAGRAM



This tool is used to plan the most appropriate schedule for any complex task and all of its related subtasks. It projects likely completion time and monitors all subtasks for adherence to the necessary schedule. This is used when the task at hand is a familiar one with subtasks that are of a known duration

CONSTRUCTION STEPS

Assemble the right team

Most detailed knowledge of the issue - employee input where possible

Generate and record all of the necessary tasks to complete the project

use brainstorming, review past implementations, record each job on a card, divide card with space for job name and duration

Sequence all of the identified activities

Create the "sequential flow" by placing in a row those cards that form the longest path of sequential tasks

Give a time duration to each job

Calculate the shortest possible implementation schedule using the critical path method

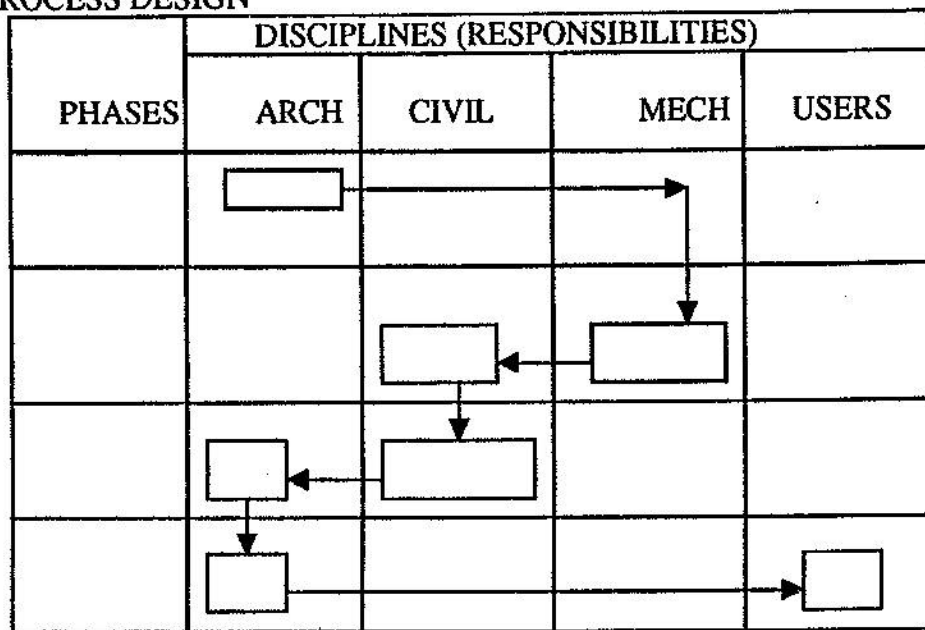
Find the path with the longest cumulative duration - mark the path with bold arrows to distinguish it.

Calculate the earliest starting and finishing times and the latest starting and finishing times for each job

Locate job with slack time and calculate total slack

Review and revise Activity Network Diagram

PROCESS DESIGN



The process starts with the identification of the process to be used in the project. All project members and users of the project are then identified. A process map is then constructed to link activity boxes with responsibilities.

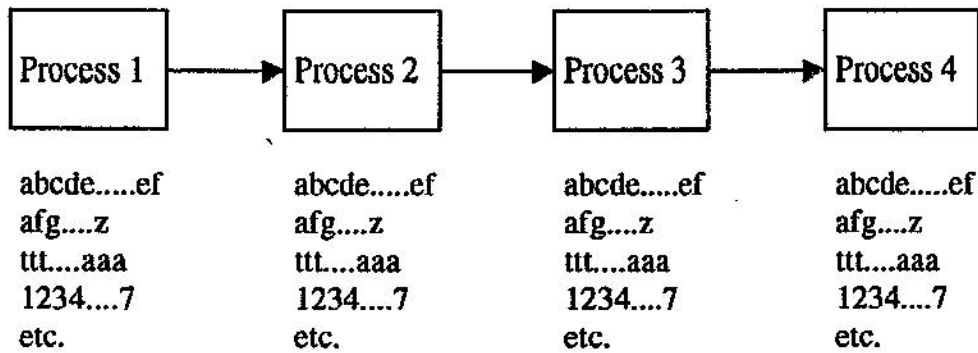
ASSURING THE CAPABILITY OF THE PROJECT PROCESS

- 1 Chart the intended project management process, or process stage
- 2 Identify customers (principals, users, operators, government agencies)
- 3 List the project outputs that impact customers
- 4 Find out how customers will use (respond to) the outputs, and which are critical to them
- 5 Identify the Quality characteristics of the critical outputs
- 6 Set performance targets for each quality characteristics

Output		Quality characteristics	unit of measure	performance target
standardise Report	customer requirement	Accuracy	Number of errors	0 errors
	customer requirement	Timeliness	Processing time in days	3 days

- 7 Decide which project steps will be critical to meeting QC performance targets

FLOW CHART



CONSTRUCTING A TOP DOWN FLOW CHART

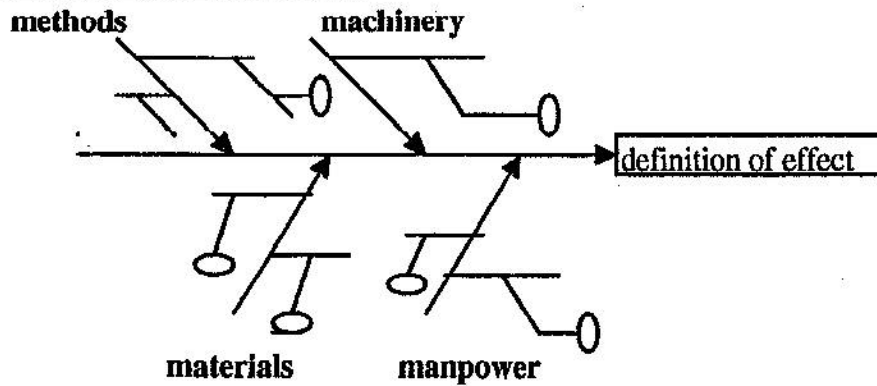
List the most basic steps in the project being planned

No more than six or seven steps

List across the top of the page

Below these steps, list the major substeps, (again, no more than six or seven)

THE FISH BONE DIAGRAM

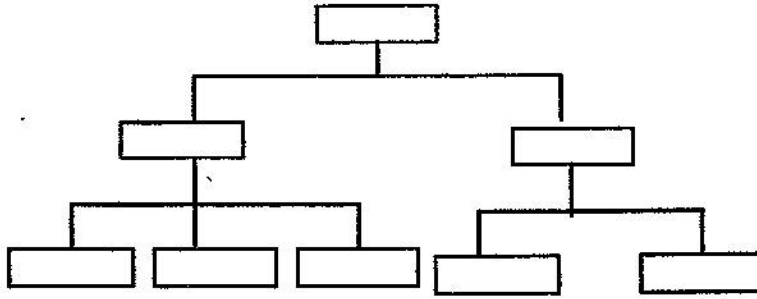


This is normally referred to as the ISHIKAWA DIAGRAM OR THE CAUSE AND EFFECT DIAGRAM. In this example the most basic cause is in each "bone" within the 4M's (Manpower, Materials, Machinery and Methods).

The technique consists of defining an occurrence, the effect, and then reducing it down to contributing factors, the causes. The factors are then critically analysed in the light of their probable contribution to the effect. There are essentially four steps to the construction of the diagram.

- 1 Identify the problem area and simplify it.
- 2 Set specific targets and objectives
- 3 Construct the diagram with the project team.
- 4 Contemplate on the ideas that will emerge.

PROCESS DECISION PROGRAM CHART (PDPC)



This tool maps out every conceivable event and contingency that can occur when moving from a problem statement to the possible solutions. This is used to plan each possible chain of events that needs to happen when the problem or goal is an unfamiliar one.

HOW TO CONSTRUCT

Assemble the Right Team

Intimate knowledge of entire process flow and specifics of each step

Determine Basic flow of proposed Activities

Stay - basic - stay broad

Choose the Chart format

Modified Tree Diagram (Chart or intended list)

Construct the PDPC

Tree with first level in sequential order - go no further than the second level - then ask "what could go wrong?", "what unexpected path could this step take?" - tree answers to questions off each step - find possible counter measures and tree off the identified problems - evaluate and select reasonable measures to take.

INSTRUCTIONS ON HOW TO USE ID

4-6 people - intimate knowledge of issue

Various sources

Draw relationship arrows

Redraw and photocopy

Select key items

Draw Final ID

Double box the key factors/base causes

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	

This versatile tool shows the connection (or correlation) between each idea/issue in one group of items, and each idea/issue in one or more other groups of items. At each intersecting point between a vertical set of items and horizontal set of items a relationship is indicated as being either present or absent. In its most common use the matrix Diagram takes the necessary tasks (often from the Tree Diagram) and graphically displays their relationships with people, functions, or other tasks. This is frequently used to determine who has responsibility for the different parts of an implementation plan.

HOW TO CONSTRUCT THE MATRIX DIAGRAM

Choose key considerations for successful implementation

Relates tasks from the tree Diagram to people, functions or other tasks

Assemble the right team

Individuals who can influence

Select appropriate Matrix

L (2 sets of items) - T (3 sets of items showing indirect and direct relationships) - Y (3 sets of items showing direct relationships) - X (4 sets of items showing direct and indirect relationships)

Decide on Symbols

CHECK LIST

This is a list of items to be refereed to for identification or verification. This serves as measurement of compliance to project requirements and standards. Another reason to generate checklist is to make sure that there are no surprises for the customer downstream.

The following example demonstrates how checklist can be used in the first phase to improve the process.

project stages	action required								
	1	2	3	4	5	6	7	8	9
client needs determination									
generate alternative solutions									
appraise alternative solutions									
test optimum solution									
document optimum solution									
develop project plan									
define project									
confirm project team									

Check list numbers

- 1 Is the project of strategic importance ?
- 2 Will the project have visible and demonstrable results ?
- 3 Can a visible result be achieved in a reasonably short time
- 4 Is the customer identifiable?
- 5 Are quality policies addressed?
- 6 Is someone responsible for maintaining quality control?
- 7 Are project team members aware of quality procedures?
- 8 Does the project have the opportunity for "top down" involvement of people?
- 9 Is the technology associated with the project easily understood and/or well established