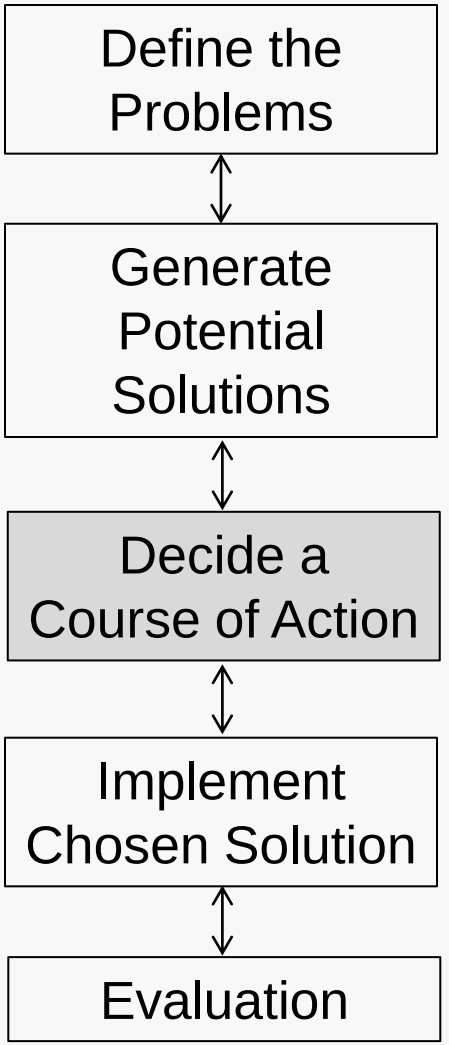
Deciding the Course of Action

Assume we have managed to define a collection of real problems, and we have also generated some potential solutions for each of those problems.

Now, we must decide what course of action to follow:

- decide which problem to address first
- decide which actions to take vs this problem
- select the best solution from our possible alternatives
- decide how to avoid additional problems as we implement our chosen solution



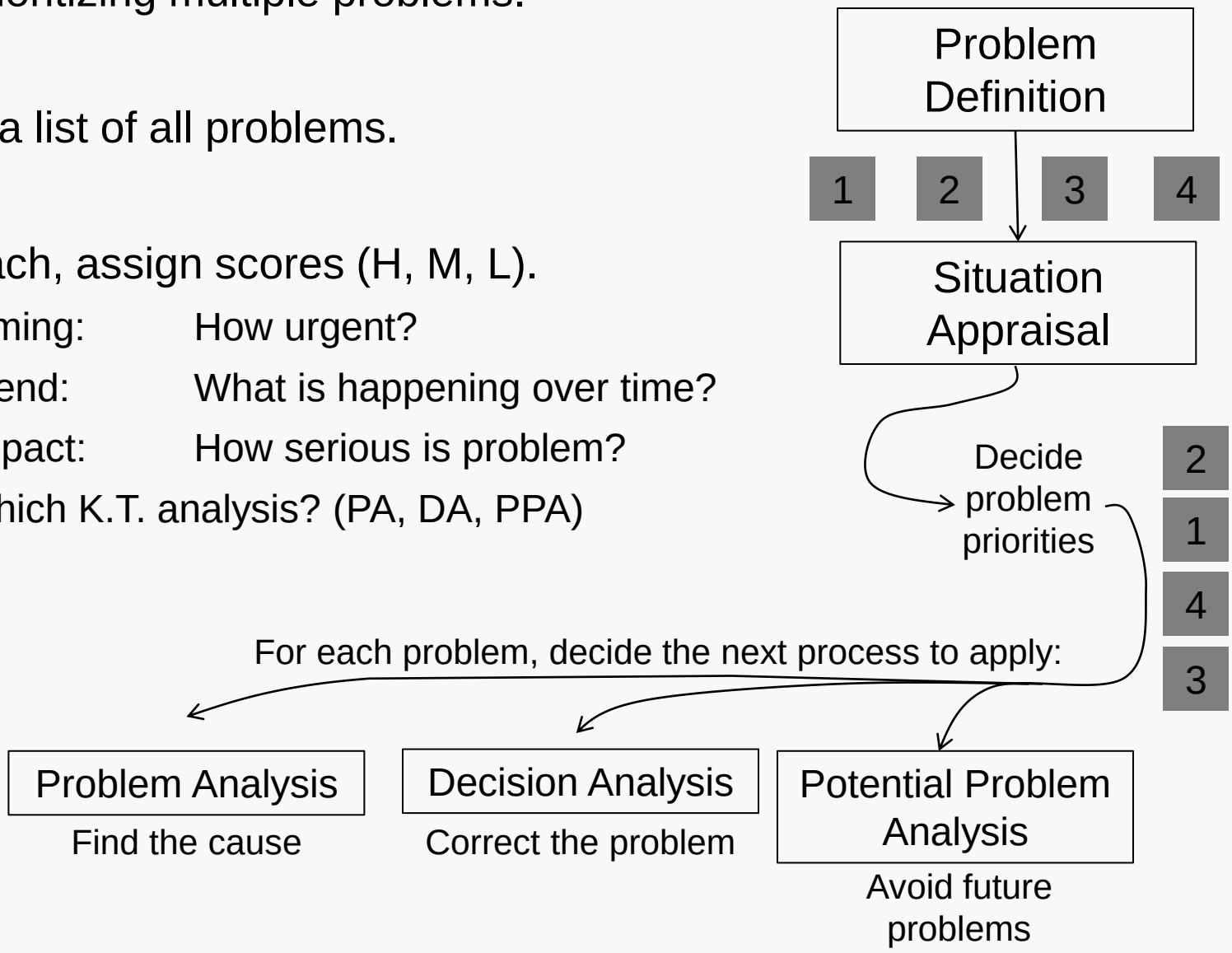
K.T. Situation Appraisal

For prioritizing multiple problems.

Make a list of all problems.

For each, assign scores (H, M, L).

- Timing: How urgent?
- Trend: What is happening over time?
- Impact: How serious is problem?
- Which K.T. analysis? (PA, DA, PPA)

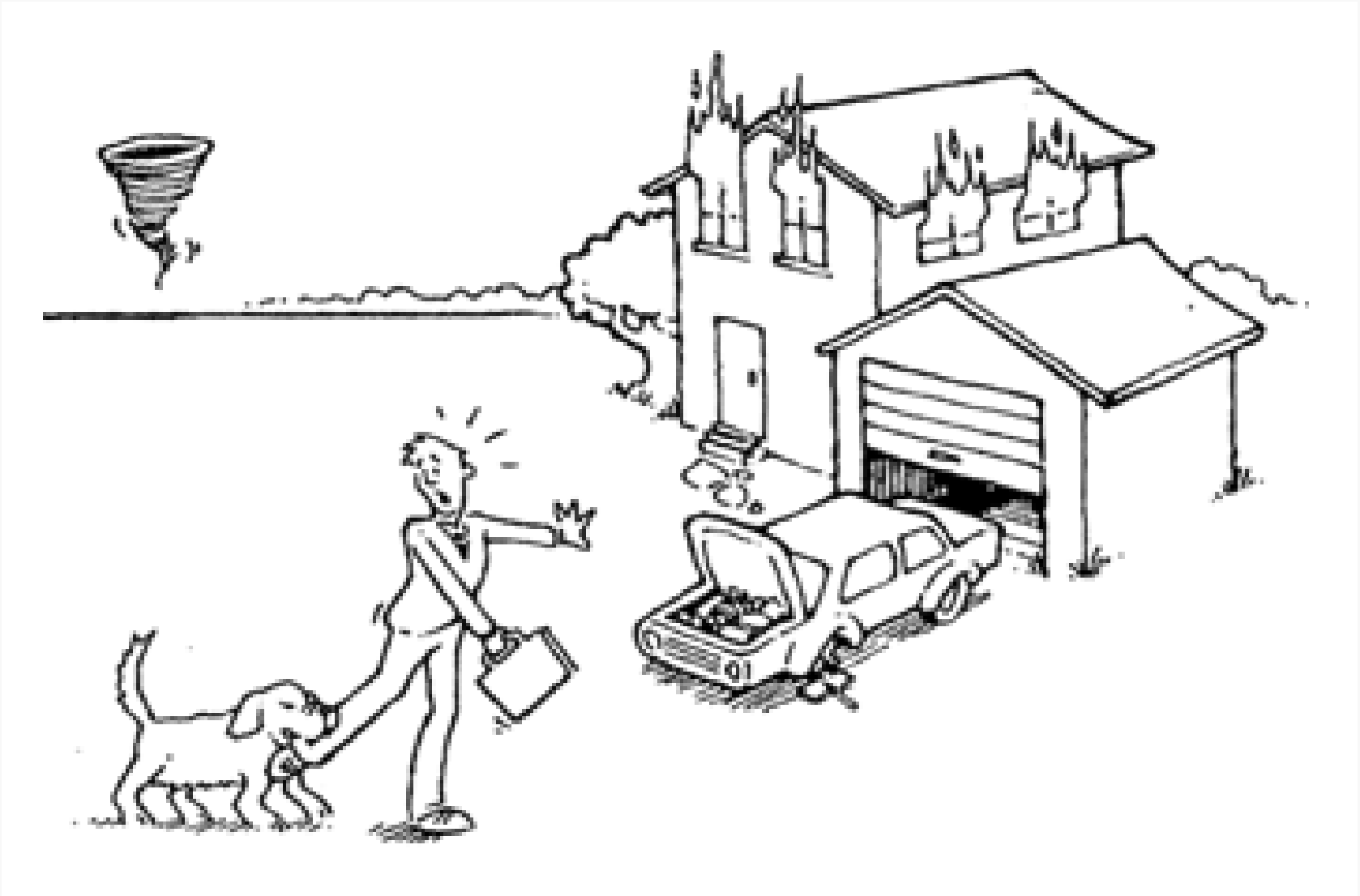


K.T. Situation Appraisal

Deciding the Priority for each Problem

timing	How urgent is the problem?
trend	What is the problem's potential for growth?
impact	How serious is the problem?

SA Example: Really Bad Day



SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg				
2. Repair car				
3. Put out fire.				
4. Protect contents of briefcase				
5. Prepare for tornado				

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car				
3. Put out fire.				
4. Protect contents of briefcase				
5. Prepare for tornado				

1. Get dog off leg:

   Timing: Must do this NOW --- high!

   Trend: Wounds are getting worse --- high!

   Impact: Can't do anything else before this is accomplished --- high!

   Next: Decision Analysis --- how does he accomplish this?

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car	L	L	M	PA
3. Put out fire.				
4. Protect contents of briefcase				
5. Prepare for tornado				

2. Repair car:

Timing: This can wait --- low

Trend: It isn't getting any worse --- low

Impact: Might impact my job --- moderate

Next: Problem Analysis --- what's wrong with the car?

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car	L	L	M	PA
3. Put out fire.	H	H	H	DA
4. Protect contents of briefcase				
5. Prepare for tornado				

3. Put out fire:

Timing: high

Trend: high

Impact: high

Next: Decision Analysis --- use hose?

call fire department?

evacuate house?

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car	L	L	M	PA
3. Put out fire.	H	H	H	DA
4. Protect contents of briefcase	M	M	H	PPA
5. Prepare for tornado				

4. Protect contents of briefcase:

Timing: moderate --- can't do it before dealing with dog, less important than putting out the fire

Trend: moderate --- not currently getting worse

Impact: high --- don't want to lose work and affect job performance

Next: Potential Problem Analysis

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car	L	L	M	PA
3. Put out fire.	H	H	H	DA
4. Protect contents of briefcase	M	M	H	PPA
5. Prepare for tornado	M	H	H	DA/PPA

5. Prepare for tornado:

Timing: moderate --- don't know it's headed this way (yet)

Trend: high --- unknown, but this is vital information

Impact: high --- don't want to die

Next: Decision Analysis or Potential Problem Analysis

SA Example: Really Bad Day

Problem	Timing (H,M,L)	Trend (H,M,L)	Impact (H,M,L)	Next Process
1. Get dog off leg	H	H	H	DA
2. Repair car	L	L	M	PA
3. Put out fire.	H	H	H	DA
4. Protect contents of briefcase	M	M	H	PPA
5. Prepare for tornado	M	H	H	DA/PPA

So, what's the prioritized ranking of the problems?

Two problems have three H ratings.

Compare the two problems in each category…

… dog wins on impact and probably on trend as well

After that, it would seem we'd rank them in the order 5, then 4 and then 2.

K.T. Decision Analysis

1. Write a concise decision statement about what it is we want to decide.
   - Use first four problem-solving steps to gather information.
2. Specify objectives of the decision, and divide into **musts** and **wants.**
3. Evaluate each alternative against the musts:
   - "go" vs. "no go".
4. Give a weight (1-10) for each want.
   - Pairwise comparison can help with relative weights.
5. Score each alternative.

K.T. DA Example

Alternative		Distract dog with food	Pry dog's jaws open	Stun dog, then confine him
Musts	Quick Have means	go no go	go go	go go

K.T. DA Example

Alternative		**Pry dog's jaws open**		**Stun dog, then confine him**	
Musts	Quick Have means	go go		go go	
Wants	Weight	Rating	Score	Rating	Score
Painless to me Painless to dog Keep pants	8 2 5	3 7 7	24 14 35	9 1 8	72 2 40
			73		114

K.T. Potential Problem Analysis

Analyse potential solutions to see if there are potential problems that could arise.

Ones not analysed in prior steps.

Particularly appropriate for analysing safety issues.

K.T. PPA Example: Buying a Car

Problem	Possible Cause	Preventive Action	Contingency Plan
Improper alignment	Car in accident	Check alignment	Don't buy
Body condition	Car in accident; body rusted out	Inspect body for rust	Offer lower price
	Car in flood	Check for mold/ hidden rust	Offer lower price
Suspension problems	Hard use, poor maintenance	Check tires	Require fixes
Leaking fluids	Poor maintenance	Inspect	Require fixes
Odometer incorrect	Tampering/broken	Look for signs, check title	Offer lower price
Car ready to fall apart	Poor maintenance	Look for signs	Don't buy

Implementing Solution

Approval

Planning

Carry through

Follow up

Approval

From authorities or clients

Make a proposal

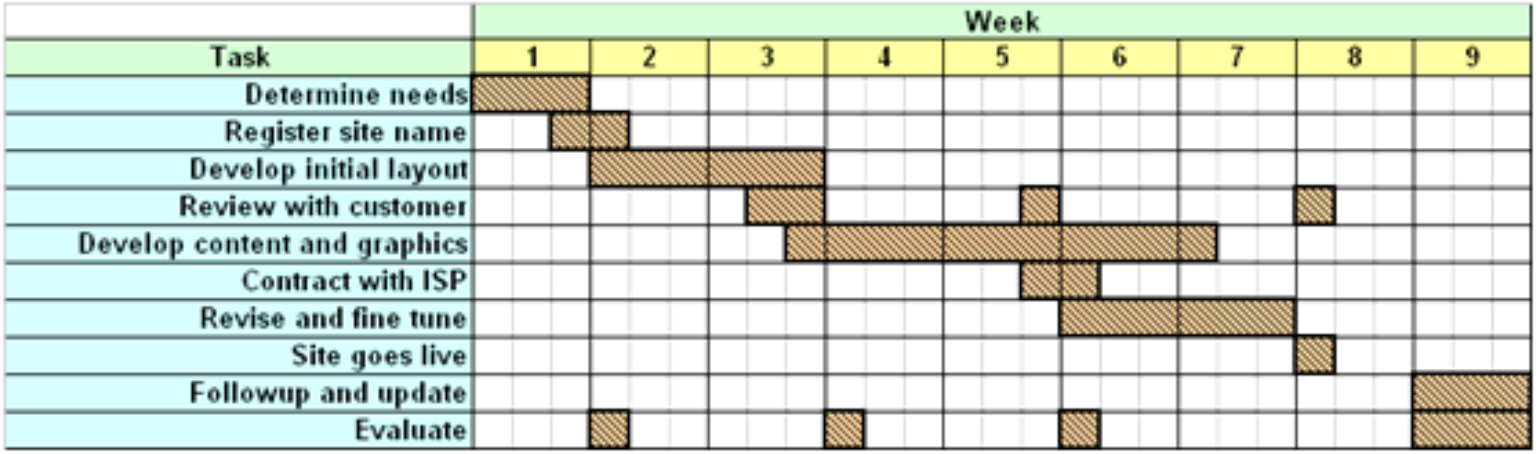
- All of the presentation issues apply
- Must especially focus on the client's goals

Planning Techniques (1)

The Gantt Chart

	MONTH											
TASK	J	F	M	A	M	J	J	A	S	O	N	D
Problem Definition												
Generate Solutions												
Decide Course of Action												

Web Site Development Gantt Chart



The Gantt Chart graphically shows the progression of work required to complete the project.

Gantt chart for allocating resources, time

Planning Techniques (2)

Deployment Chart for the Website Development Project

Task	Team Member		
	Melinda	John	Web Programmer
Determine needs			
Register site name			
Develop initial layout			
Review with customer			
Develop content and graphics			
Contract with ISP			
Revise and fine tune			
Site goes live			
Followup and update			
Evaluate			

Deployment chart

Critical path analysis

Allocating/budgeting resources

Carry Through

Actual management of the implementation.

- Estimate what finished project will look like.
- Ensure coordination of tasks and personnel.
- Steadily monitor Gantt Chart, etc.
- Evaluate each completed step along the way.
- Continue to learn about solution.
- Continue to test assumptions about solution.
- Test the limits of the solution.
- Carefully plan test simulations.

Follow Up

Follow Up

- This refers to monitoring the implementation process and adjusting as necessary.
- Following the plan?
- Proceeding on schedule?
- Staying within budget?
- Maintaining quality?
- Relevant to (original? changing?) problem.

Evaluation

Evaluation should be an ongoing process throughout life of the project.

Each phase of the project should have a review to verify that goals of the phase were accomplished.

This might cause adjustments to future plans.

For each decision, carry out a PPA before implementing the solution.

Evaluation Checklist

Have you challenged the information and assumptions?

Does the solution solve the real problem?

Is the problem permanently solved? Or is this a patch?

Does the solution have an impact on the problem?

Have all consequences of the solution been considered?

Have you argued both sides, positive and negative?

Has the solution accomplished all that it could?

Is the solution economically efficient and justifiable?

Have the “customers” bought in?

Does solution cause problems (environmental, safety)?

Ethics Checklist

Is it legal? Does it violate the law, or organizational policy?

Is it balanced? Is it fair to all concerned in short and long term? Is it a win-win solution?

How will it make me feel about myself? Will it make me proud? How would I feel if it were published in the newspaper? If my family knew?

