




# **Problem Solving Best Practices**




# **DO READ !**



- a 10-years-old boy who decided to study judo despite the fact that he had lost his left arm in a devastating car accident.
- The boy began lessons with an old Japanese judo master , but in all of the lessons, he learned only one move . the boy was not only doing good, but wining battles as well ,the thing made him wondering and seek for clarifications from his master.
- the master answered. “First, you’ve almost mastered one of the most difficult throws in all of judo. And second, the only known defense for that move is for your opponent to grip your left arm.”



# What is the point

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- **We don't have the same reading speed, it's a skill , problem solving is a skill to !**


# Rules are Rules

- Make no preconceptions or prejudices ,it's a skill not a knowledge ,but still it's a fact that knowing the thing is a starting point to master and gain the skill.●



# Outline

- **What is a Problem .**
- **What is Problem Solving.**
- **Problem Solving in Steps.**
- **Tools .**
- **Tips.**




# What is a Problem



# **A problem**

- a problem is a situation which should concern somebody.
- It refers to a situation, condition, or issue which makes it difficult to achieve a desired goal, objective or purpose.

- "under the gun" problems  
stress and very short time, Sometimes its an urgent sudden event where a decision or an action needs to be taken .
- a significant difference between what actually is and what is desired.
- a problem exists when an individual becomes aware of such a difference.
- a problem is a sometimes a puzzle ,a target once achieved ,an intellectual satisfaction is obtained .

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- Problems are unresolved state of uncertainty and conflicts.
  - Decision to make.
  - Problem simply could be emotions ,A very worrisome situation for you, may not be considered a problem for others.





# **Why Problem Solving**


# Problem Solving

- Problems can be **elusive** “hard to be described or grasped” ,very unique or related to emotions . in such cases a dedicated **tools** need to be utilized and a **systematic** approach should be conducted where the usual way of thinking is simply not enough .



# **What is Problem Solving**



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- Problem solving is a tool, a skill and a process.
  - It is a tool because it can help you solve an immediate problem or to achieve a goal.
  - It is a skill because once you have learnt it you can use it repeatedly.
  - It is also a process because it involves taking a number of steps, as follows.



# **Problem Solving in Steps**

# Step 1

## **Define the problem**

Assessing the problem in terms of

- Magnitude “Size” and scope
- Urgency Vs Importance
- Impact



# Problem Magnitude

- a problem is so **big** and **overwhelming** that you don't know where to start in such a case you have to break it down into smaller workable problems and attack each small problem first.

# **"important" VS "urgent" problems.**


- Important problems deserve more attention and priority than urgent problems, but some times we got confused .
- example, when continually replay to "urgent" emails but deferring other important ones .


# Step 2

## Analyze the problem “a mental picture”

- to understand any situation, we must develop a clear mental picture of the series of causes that produced it.
- see what is the **real bottom line root cause**.
- Often people get caught up in effects of a problem and never get down to the real cause.
- The 5 Whys Tool. Starting from an outsider effect.



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- Analyzing means gathering new information and investigating the available .
  - Start from a fact and, **DIFFERENTIATE THE FACTS FROM THE INTERPRETATIONS!**
  - The Appreciation tool .

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- After this investigation, it is often good to **go back one** step to reconfirm that your problem definition is still valid.
  - Frequently after the investigation people discover that the problem they really want to answer is very different from their original interpretation of it.

# Step 3

- **Identify alternatives that'll resolve the problem**





# Do Imagine

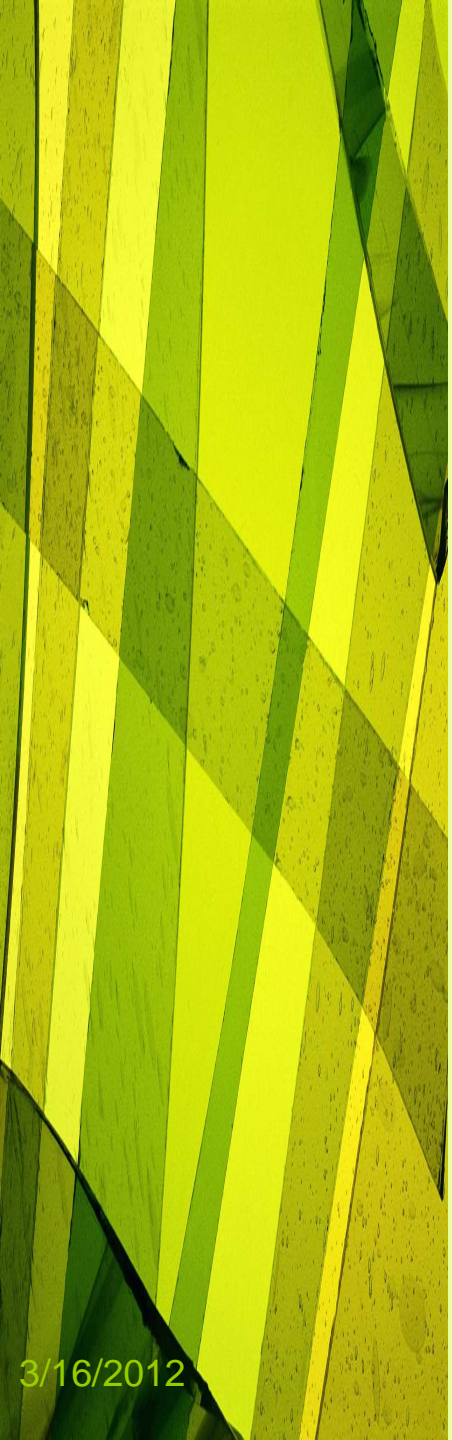


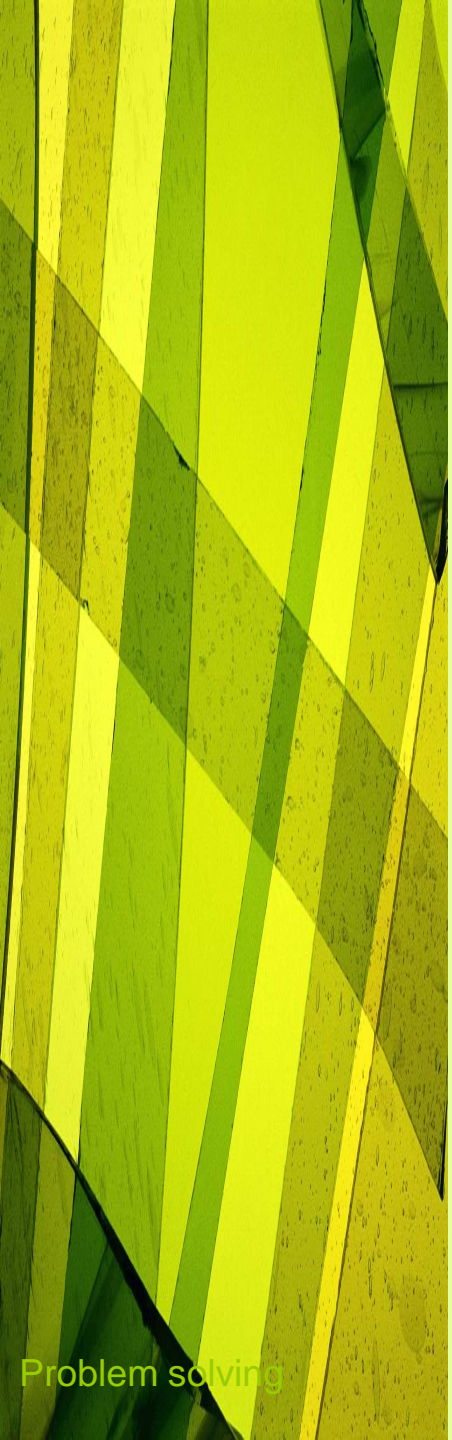
Problem solving




Problem solving



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- If you 'relocked in that dirty dark room I guess you'll be happier if you had 50 keys than having one , what if that the only key you had did not open the door !

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- **Brainstorm for having multiple solutions for the problem.**
  - **collecting as many ideas as possible.**
  - **Experience from previous similar problems as well as taking others opinions increase your alternatives .**

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- It's critical when collecting the ideas :
    - not to evaluate the ideas, just write them all down .
    - you should not pre-judge or have any emotions (Egos, uncomfortable ) regarding any potential solutions .
    - treat each idea as a new idea in its own right and worthy of consideration.
    - it's useful to keep others involved (unless you're facing a personal problem).



## On the fly :

- Many sophisticated books handle the power of generating new ideas ,most of them regards the power of focus ,and the brain power ,thinking process and simplicity ..
- **Concentration :**  
Distraction reasons are **unique** for each person ,so **self-observation** is crucial What distracts each of us, or doesn't, is personal and somewhat unique. find them and get rid of them.
- **Boosting your brain power:**
  - Take three deep breaths.
  - Sit up straight.
  - Breath with your mouth closed.
  - Walk for ten minutes.
  - Think about something you love

# Step 4

## **Select an approach to resolve the problem**

- Eliminating process : considering the pro's and con's in a list for the alternatives.
- no problem solution is perfect, compromising .
- Select the solution that is an extreme ,in terms of :
  - Feasible :doable with the available expertise, time...
  - Suitable :solve the problem ,reach expectations and goals .
  - Flexible: for future change ,unintended consequences or openness to new possibilities

# Step 5

## **Plan and implement the best alternative**

- While doing so you should watch the progress in solving the problem ,and monitor indicators of success.



# Step 6

## Evaluate the Solution

- Did the solution work?
- If not step back because this means one of two things
  - either that the alternative were not enough or accurate ,
  - or that the problem was not identified correctly .
- Whether or not you achieved your goals, it is important to consider what you have learned from your experience.

# Problem Solving Skill

- You get better at solving problems by trying to do so, and you often learn your best by doing your worst.
- a skill is mastered by practicing it .
- Habits are buildable ,it take couple of weeks to build your own habits

# Problem Solvers

- Mainly in tow general Styles:
- INNOVATORS:
  - Intuition and Feeling
- ADAPTORS:
  - Logic and Analysis



- **Adaptors seek solutions in tried and accepted ways...**
  - Focused on resolving problems
  - Rarely challenge .
- **Innovators seek solutions in creative ways...**
  - Question current practice and promote change
- **Organizations in stable steady state of maintenance may not prefer innovators!**
- **There is no preferred style , the situation determines the need .**

# Tools

- Emphasizing the golden rule saying that ‘if you can explain it then you know it’, most of the simple techniques and tools used in problem solving relies on asking yourself a particular question repeatedly ,in addition to gathering and investigating information .

# Tools

- **Drill Down**  
breaking complex problems down into progressively smaller parts.
- [Sample](#)
- **How to Use the Tool:**
- write the problem down on the left-hand side of a large sheet of paper.
- write down the next level of detail on the problem(factors contributing to the problem, information relating to it, or questions raised by it )a little to the right of this.
- repeat the process. Keep on drilling down into points until you fully understand the factors contributing to the problem.




## **Importance of the Drill Down :**

- Breaking problem into a smaller ones.
- In case you have no further info to drill down it shows you which points you need to research in more detail.
- recognize and understand the factors that contribute to a problem ,by prompts you to link in information that you had not initially associated with a problem.

# Tools

## **The 5 Whys Tool:**

- Quickly Getting to the Root of a Problem
- Made popular in the 1970s by the Toyota Production System.
- How to use it :
- start at the end result “effect” and work backward (toward the root cause), continually asking: "Why?" This will need to be repeated over and over until the root cause of the problem becomes apparent.

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- Can lead to causes in hidden levels.
  - Too Simple :
  - the more complex things get, the more likely it is to lead you down a false trail. if it doesn't quickly give you an answer that's obviously right, then you may need more sophisticated technique.
  - Example: The unpleasant client.



# Tools

- **The Appreciation tool:**
- Asking 'so what?' repeatedly helps you to extract all important information implied by a fact.
- Appreciation is a technique used by military planners, usually to know the implication of each step.



Sample :

Fact: It rained heavily last night

So What?

- The ground will be wet

So What?

- – It will turn into mud quickly

So What?

- If many troops and vehicles pass over the same ground, movement will be progressively slower.


So What?

- a search for paved roads should be added to the plan ,or otherwise the scheduled movement probably would be postponed.

# Tips

- Do something else that 'll relax your brain and get back to it later with a fresh mind and eye .
- talk about it to somebody .
- Don't worry about solving the whole problem while implementing. Start with what you know and keep it simple to begin with.
- consult with others, Google, Google, Google 😊
- Don't go for the first solution you got, be armed with alternatives.



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- Most of the time it takes longer to solve the problem though dedicated - stressed - work than it does by taking a break, so divide the solution into multi steps and take a break or drink something in between .
  - Sketch the problem using so many color pencils to motivate the brain when solve a problem.

# Q.A

Figure 1: Drill Down Into Problem of Improving Quality of Sea Water

