



**ARE YOU SOLVING THE RIGHT  
PROBLEMS?**

-Yesoda Bhargava

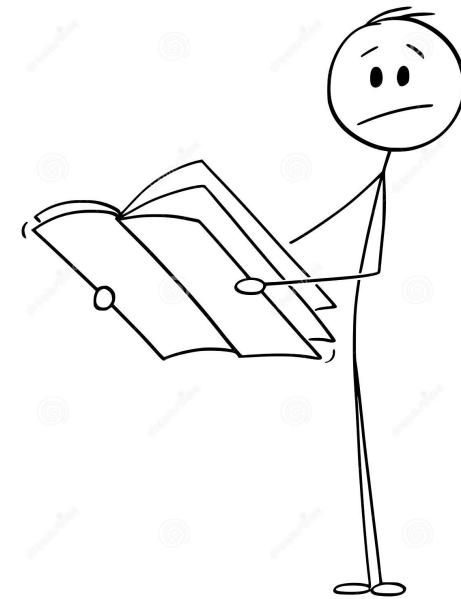


Most companies  
struggle not with  
problem solving but  
figuring out what  
problems are.



In surveys of 106 C-suite executives who represented 91 private and public-sector companies in 17 countries, it was found that a **full 85% strongly agreed or agreed that their organizations were bad at problem diagnosis**, and 87% strongly agreed or agreed that this flaw carried significant costs

The pattern is clear  
Engineers often switch quickly into solution mode without checking whether they really understand the problem.



# WHY ORGANIZATIONS STRUGGLE TO GET IT RIGHT?

Over-engineering of the diagnostic process.

Creative solutions always come from an alternative definition of problem.

Example: The Slow Elevator Problem.

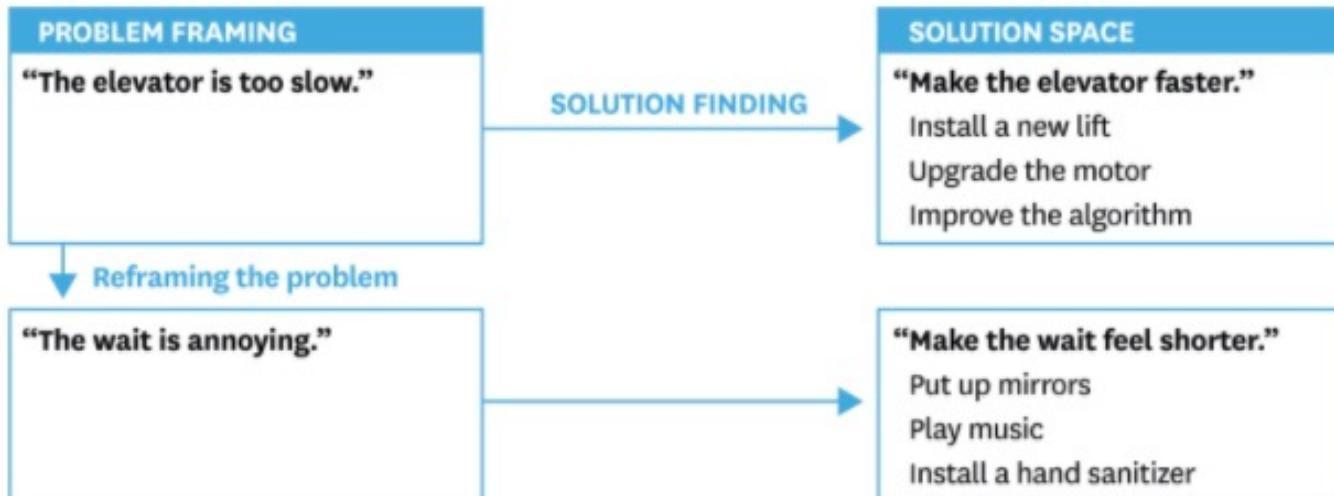


Angry tenants complaining of the slow elevator in the building they live in.

## Tenant give a solution



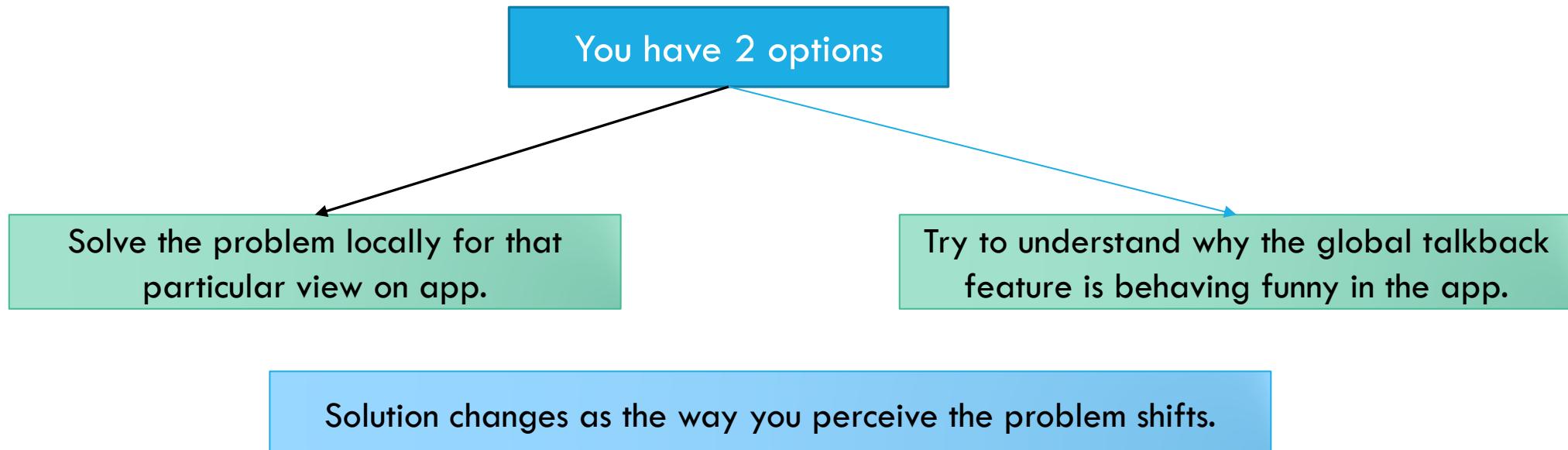
## Building manager solution



# THE ANALOGY IN THE SOFTWARE PLACE....

Number 1 reason in high rate of software project failures : Poor understanding and identification of the problem.

Example : You are working on an app, and a customer raises an issue with the talkback feature in your app. It is not working.



Repeated problems of same kind can lead to loss of faith in the reliability of your application/solution.

Hence, problem analysis is critical to long-term software sustainability and its reliability.

Naturally, this also influences a company's market value.

# IDENTIFYING DIFFERENT ASPECTS OF A PROBLEM



# AMERICA'S DOG ADOPTION PROBLEM



1. More than 40% of US households have dogs.
2. More than 3 million dogs enter every shelter every year and are put up for adoption.
3. Animal welfare organizations work hard to raise the awareness on this issue.
4. The system is under-funded but 1.4 million dogs get adopted each year.
5. But a lot many remain.....s



Is adoption the  
only way to solve  
the problem?

Not really according to her.....

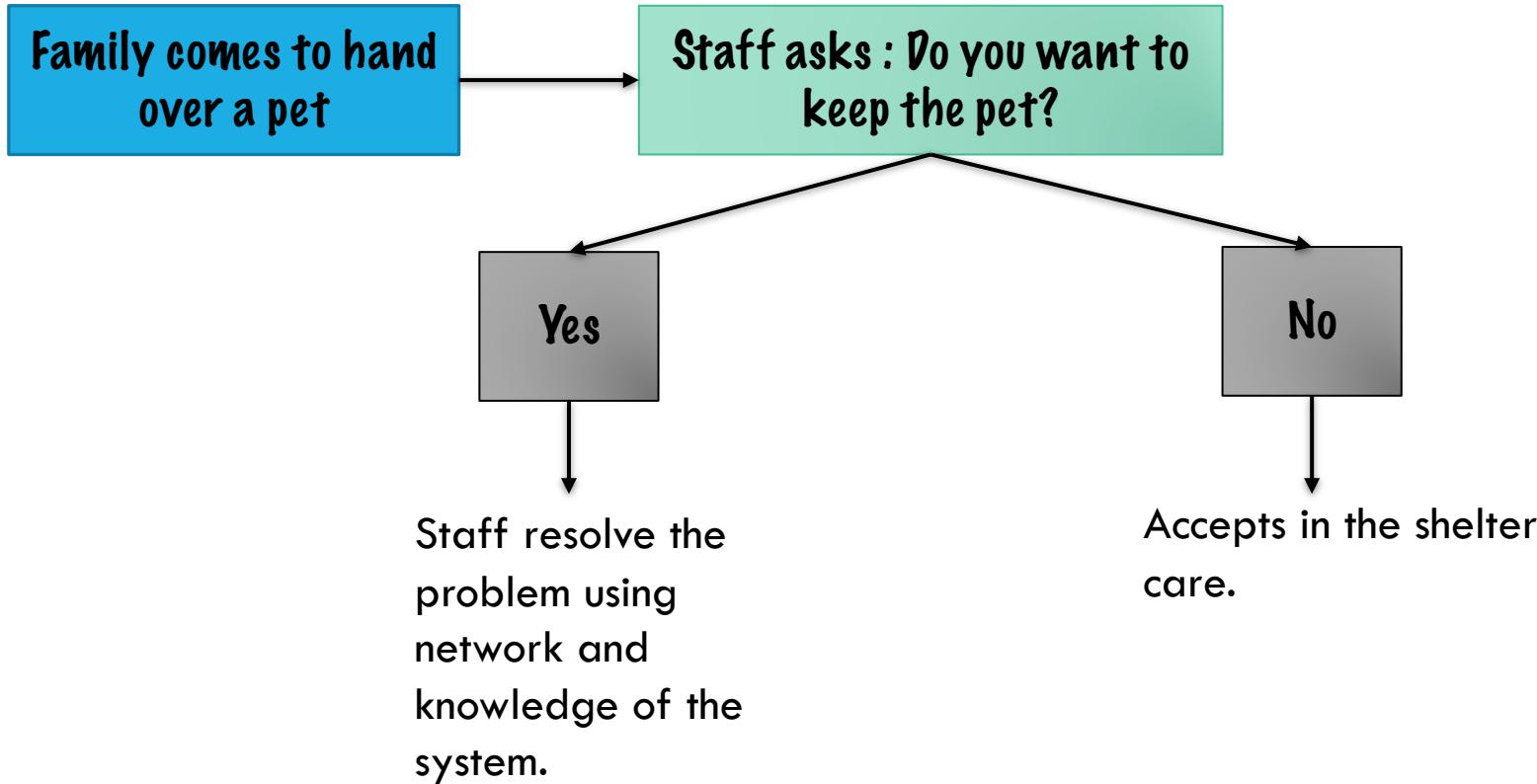


Lori Weise, founder Downtown Dog Rescue, Los Angeles

# REFRAMING OF THE PROBLEM

1. Adoption is not the only way to frame the problem.
2. Lori tries to keep the dogs with their owners so that they do not have to enter the shelters at the first place.
3. Are the owners who surrender dogs, "bad"??
4. Not according to Lori Weise.
5. "Owner surrenders are not a people problem, they are POVERTY problem".
6. Families with dogs may be too poor to take care of it or pay the landlord dog deposit.
7. Unable to manage the dog expenses, last option? Surrender the dog .

# THE ALTERNATIVE APPROACH TO THE PROBLEM



# DID THE REFRAMING OF THE PROBLEM HELP?

Previously the organization was spending \$85 per pet it helped. New program brought the cost down to \$60 per pet while keeping shelter space for other animals in need.



# BUT THAT WAS NOT IT...

1. Wider impact on the community.
2. Families learnt about problem solving, know their rights and responsibilities.
3. They learnt that help was available.
4. In fact, 75% of owners who came to shelter house wanted to keep the pet.

# PRACTICES FOR EFFECTIVE PROBLEM REFRAMING

1. Reframing is a quick and iterative process.
2. Cognitive counterpoint to rapid prototyping.
3. Reframing is not a one time process.
4. It involves observation, conversation, prototyping.
5. Sometimes reframing won't help at all.

**You won't know which problems  
can benefit from being reframed  
until you try.**

# SEVEN PRACTICES

## 1. Establish legitimacy.

1. Creating a conversational space. Remind your team members of the slow elevator problem.

## 2. Brings outsiders into the discussion.

1. So that you do not fall into love with the solution without understanding the problem.
2. Helps in clear diagnosis of the problem.
3. Research by Michael Tushman: the most useful input tends to come from people who understand but are not fully part of your world.

4. Innovation workshops may not always be the solution.

## 5. Expect inputs, not solutions.

6. Outsiders are not experts on the situation, giving solutions is not their function.

## 3. Get the people's definitions in writing.

1. People often leave meetings thinking they know the problem.
2. Later realize the folly.

# CONSIDER AN EXAMPLE..

Why getting definitions of problem from team members is important?

1. Management team says there is lack of innovation.
2. But if you ask each member of the management team, they say:
  1. Employees are not motivated to innovate.
  2. Employees do not understand the urgency of the situation.
  3. They do not have the right skill set.
  4. Customers are not willing to pay for the innovation.
3. So, ask your team members to write their problem understanding on flip charts.
4. Gather individual definitions of the problem.

# REFRAMING PRACTICES CONTINUED..

## 4. Ask what is missing.

- What is missing from your definition of the problem?

## 5. Consider multiple categories.

- Transforming your perception of the problem. Eg. Lori Weise story.
- Eg. Nickelodeon kids app. The team launched the new app and many kids downloaded it.
- Activating the app was complicated. Required logging into household cable TV service.
- At this step of sign-up process most kids dropped out.
- The team thought the problem was of usability.
- Ran tests on sign-up flow process. Nothing helped.
- Problem was?? THINKING TOO NARROWLY ONLY THE ISSUE.
- Team focused on kids actions during signup process : swipes, clicks, etc. but not how they **felt** during the sign up process.
- Kids actually felt fearful when password was requested.
- Company added a short video saying, it is okay to ask parents for the password.
- Result? 10 fold increase in the sign-up process.
- **METACOGNITION : THINKING ABOUT THINKING.**

## **THE FAMOUS LAW OF INSTRUMENT :**

**Give a small boy a hammer,  
and he will find that  
everything he encounters  
needs pounding.**



What was the  
problem at  
Nickelodeon?



The team members were usability experts,  
they defaulted to thinking the problem was one  
of usability.

# CONTINUED...

## 6. Analyze positive exceptions.

- Look for instances when the problem did not occur.
- What was different about that situation?
- Also called as the Bright Spots.

## 7. Question the objective.

- Consider a problem. Two people fighting to keep a window closed or open.
- Goal of person 1: To get fresh air.
- Goal of person 2: Avoid a draft (a flow of cold air that comes into a room).
- Bringing these goals to notice of the third person.
- Solution? Open the window in the next room.
- Another way to reframe the problem : paying attention to the objectives of the parties involved.
- Like Lori's approach: shifting objective from increasing adoption to keeping more pets with original owners.

# CONCLUSION

1. Reframing takes time and practice to get good at it.
2. It is difficult to reframe a problem, but effective.
3. Be prepared to feel messy and confused at times.
4. It is fatal to think that you can figure it all out within the comfy confines of your university classes.
5. Combine reframing with real-world testing.

# UPCOMING LECTURE THEMES

Understanding a problem in software engineering and Software Development Lifecycle Models.