

FINDING AND FRAMING YOUR PROBLEM

Professor Todd Zenger

FIGURE 1: a blank copy

VALUE LAB A THEORY FOR YOUR FIRM	
THEORY	ACTIONS
<p>Beliefs Common</p>	<p>Run Experiments</p>
<p>Contrarian or Uncommon</p>	<p>Shop for Resources</p>
<p>Core Problem</p> <hr/> <p>Subproblems</p> <hr/> <p>Causal Logic <i>(expressed as if-then statements or hypotheses)</i></p> <p><i>IF</i></p> <p><i>THEN</i></p>	<p>Search for Solutions</p>

WHAT GENERATES VALUE?

Something that...

- saves time
- saves cost
- increases service or satisfaction
- Increases quality or output
- enhances “value” for your customer’s customer

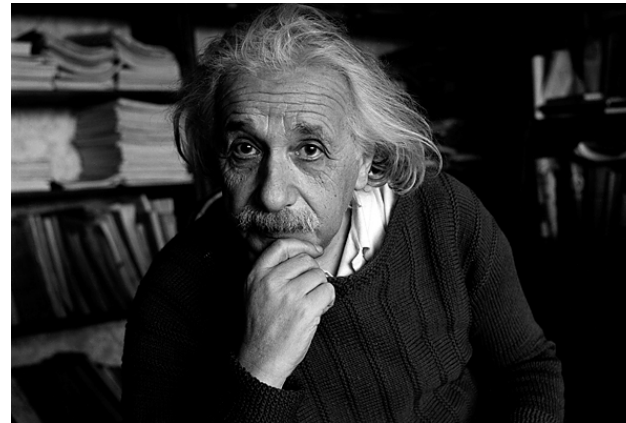
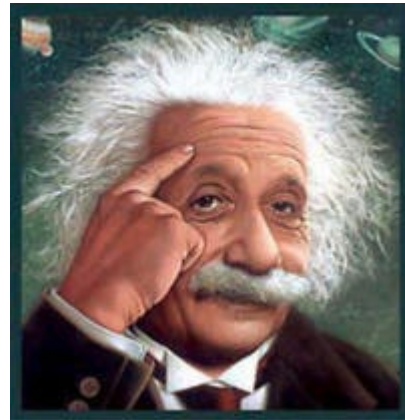
WHAT GENERATES VALUE?

Solving a problem...

... a solution to a novel problem others have not recognized and framed [problem finding]

... a novel solution to a well recognized problem [problem solving]

ENTREPRENEUR AS PROBLEM FINDER AND PROBLEM SOLVER



"The formulation of a problem is often more essential than its solution..."

- Albert Einstein

ENTREPRENEUR AS PROBLEM FINDER

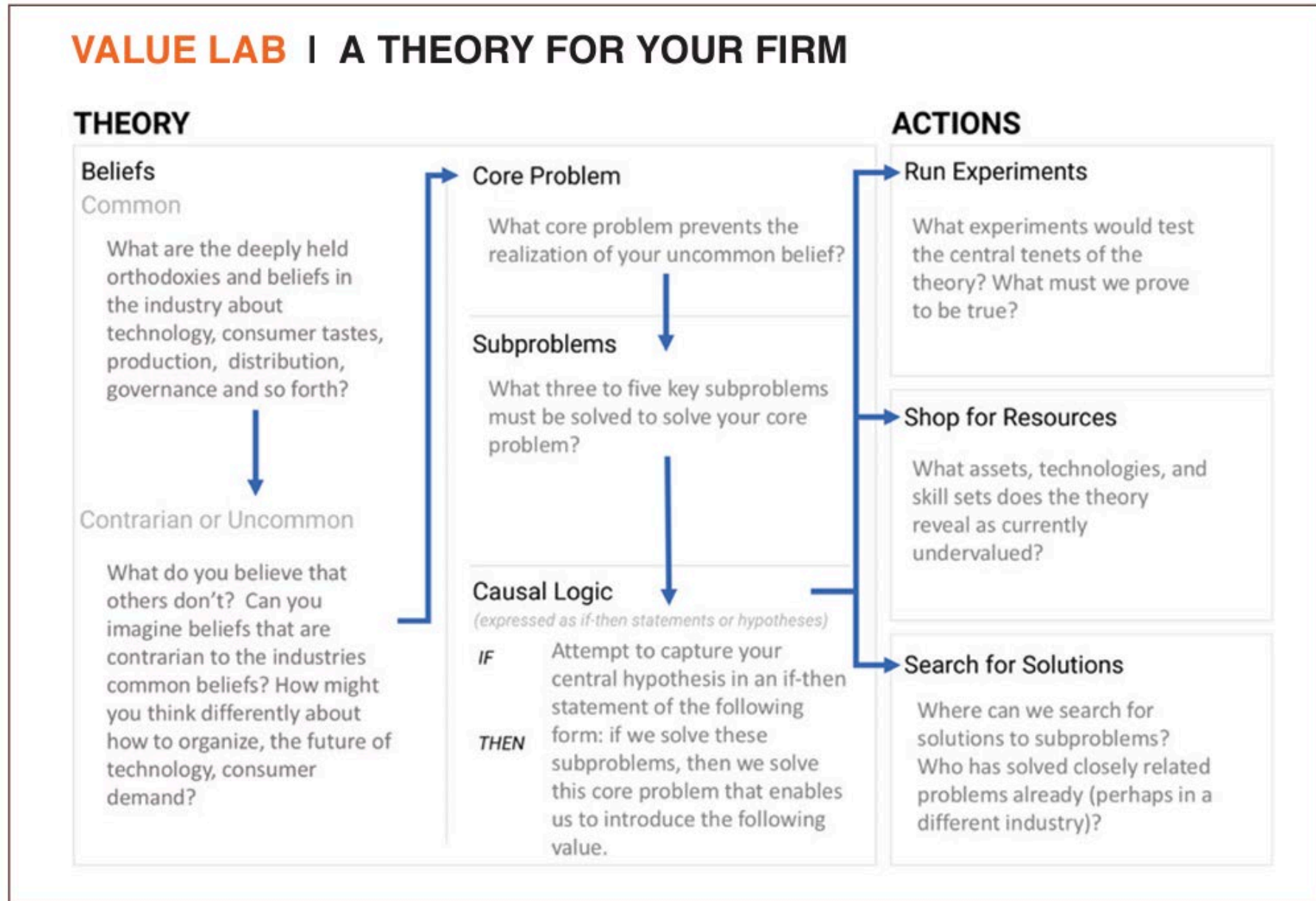


- What problem did Michael Dell see?
 - PC manufacturers with massive inventory depreciating at 10% PER MONTH!
 - Problem: how do you build, sell, and deliver high quality PCs without inventory holding?

CONTRARIAN BELIEF TO CORE PROBLEM

- The central cost in PC manufacturing is inventory cost/depreciation, not production or shipping costs

FIGURE 2: includes comments about each column and box, offering guidance on how to fill them.



GETTING THE PROBLEM RIGHT

- **Problem:** How do you get people feeling OK about waiting for Ketchup to dispense.
- **Solution:** Make people feel waiting is a virtue. Carly Simon singing: “Anticipation....”



Problem: How do you get Ketchup dispensed quickly so they will buy more?

Solution:





Pepsi commissions market research and discovers:
People drink whatever they buy, quickly.

Better problem: How do we get people to buy larger quantities when they buy Pepsi?

Initial problem framing:
How do we compete with the iconic Coca Cola bottle?



Theory: create packaging that is easy to carry and with multiple container sizes

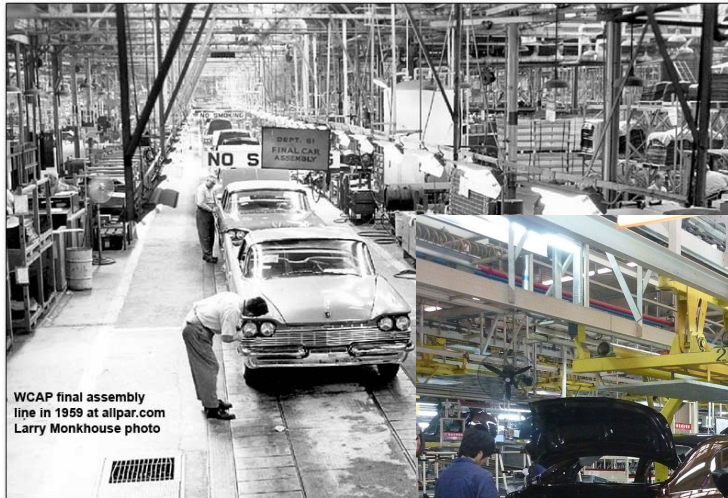
Pepsi-Cola Swirl 10 Oz.



US Problem Framing:

Given the high cost of model changeovers (8 hours), how should we minimize production costs?

Related problems: inventory holding, number of models, customer responsiveness



WCAP final assembly line in 1959 at allpar.com
Larry Monkhouse photo



Toyota Problem Framing:

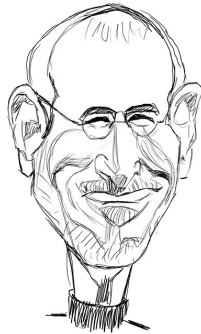
How do we reduce changeover time?

Theory: By lowering model switching cost, we can reduce inventory, increase product variety, and improve customer responsiveness

WELL-FRAMED PROBLEMS REVEAL SOLUTIONS



WELL-FRAMED PROBLEMS REVEAL SOLUTIONS



parc[®]
A Xerox Company





Hailing cabs

Managing
payment
and tips

Driving
with
strangers

Arrival
Uncertainty

BUILDING A CAUSAL LOGIC



Overarching problem: How do we reduce the time between purchase of parts and their delivery as finished goods?

Key subproblems:

- 1) How do we build a mass-customized assembly operation?
- 2) How do we build a model that circumvents retail inventory holding?
- 3) How do we develop a brand?

THEORY

Beliefs

Common

- Consolidation in the hotel industry will persist
- Established hotel brands are hard to compete with
- People value a consistent, “clinical” and professional accommodation experience
- Startups don’t fare well in the hotel industry

Contrarian or Uncommon

- There is vast idle “hotel capacity” (people’s homes) in any city
- People are willing to rent from and to strangers when traveling
- B&B and couch surfing-type home-sharing could be done on a large scale
- Many people want a varied, more human and flexible hotel (or accommodation) experience with a local, artisanal flavor
- People could use the extra income from renting their homes

Core Problem

How can we broker safe, easy and reliable access to idle “hotel capacity,” offering a lower cost, local accommodation experience for customers?

Subproblems

- How can we efficiently match idle capacity to demand?
- How can we facilitate secure payment between strangers?
- How do we develop trust between strangers?
- How do we facilitate efficient and professional property listing?

Causal Logic

(expressed as if-then statements or hypotheses)

IF *we can efficiently match providers and seekers, facilitate secure payment, and generate a mechanisms that facilitates trust*

THEN *we can introduce a robust new service that provides customers with safe and reliable provision of lower cost accommodations with a local flavor*

ACTIONS

Run Experiments

- Experiment with locations with big events like South by Southwest, political party conventions
- Start in New York City

Shop for Investments

- Hire photographers to professionalize listings
- Solicit funding
- Get into Y Combinator

Search for Solutions

- Examine the trust, payment, customer and other solutions of eBay, Craigslist and other Internet platforms
- Explore demand via social media

TAKEAWAYS

- Entrepreneurs find and frame great problems
- Transform uncommon beliefs into core problems and critical subproblems
- These form the basis for a theory of value

STOP

PROBLEM FINDING TECHNIQUES

WHAT IS THE ROOT PROBLEM YOU SEEK TO SOLVE?

Wal-Mart in Small Towns – The Five Whys

- People pay considerably more for general merchandise in small rural towns than in big cities

Why?

- People purchase from small inefficient mom and pop shops in small rural towns?

Why?

- Big discount retailers don't operate in small rural towns

[Click here](#)

Why?

- Too costly

Why?

- Composing efficient supply chain for a small rural town is inefficient

Why?

- Retailers are too distant from one another in small rural towns

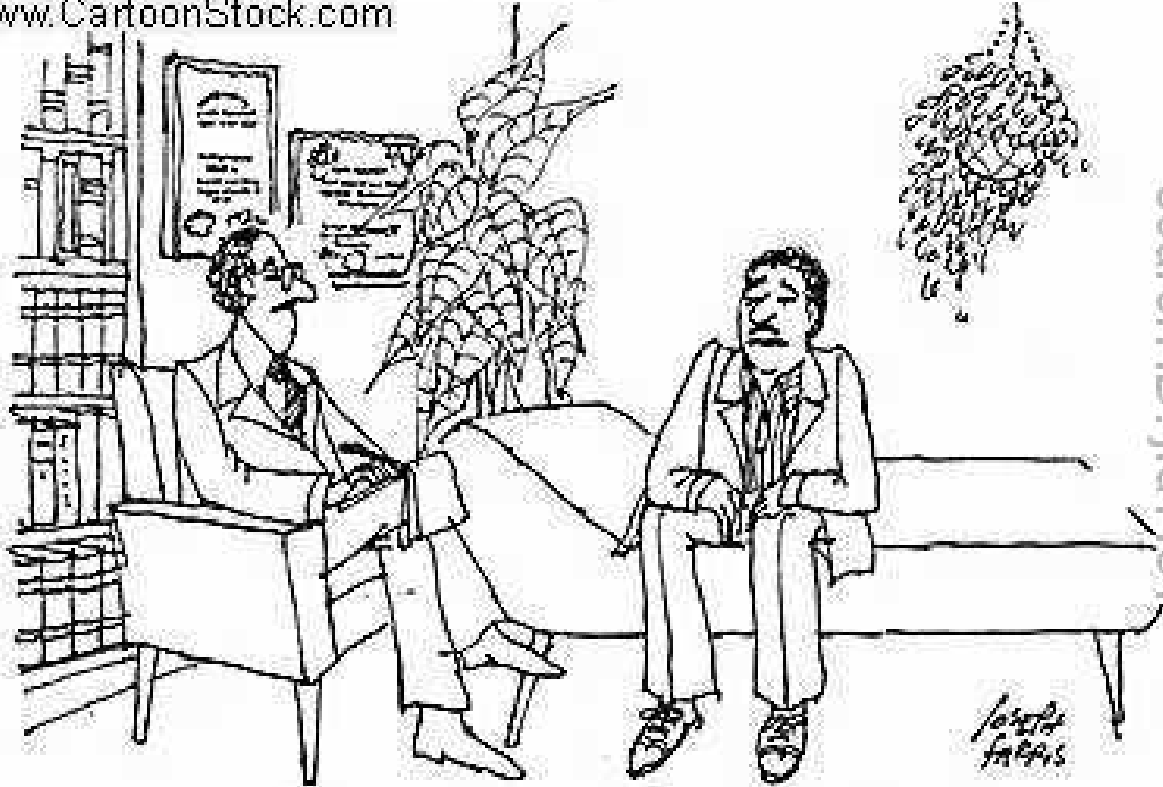
ACTIVITY CHAIN ANTHROPOLOGY



What problems might my customer have of which they are not aware, and which I could effectively solve? (An external focus)

UNDERSTANDING THE CUSTOMER

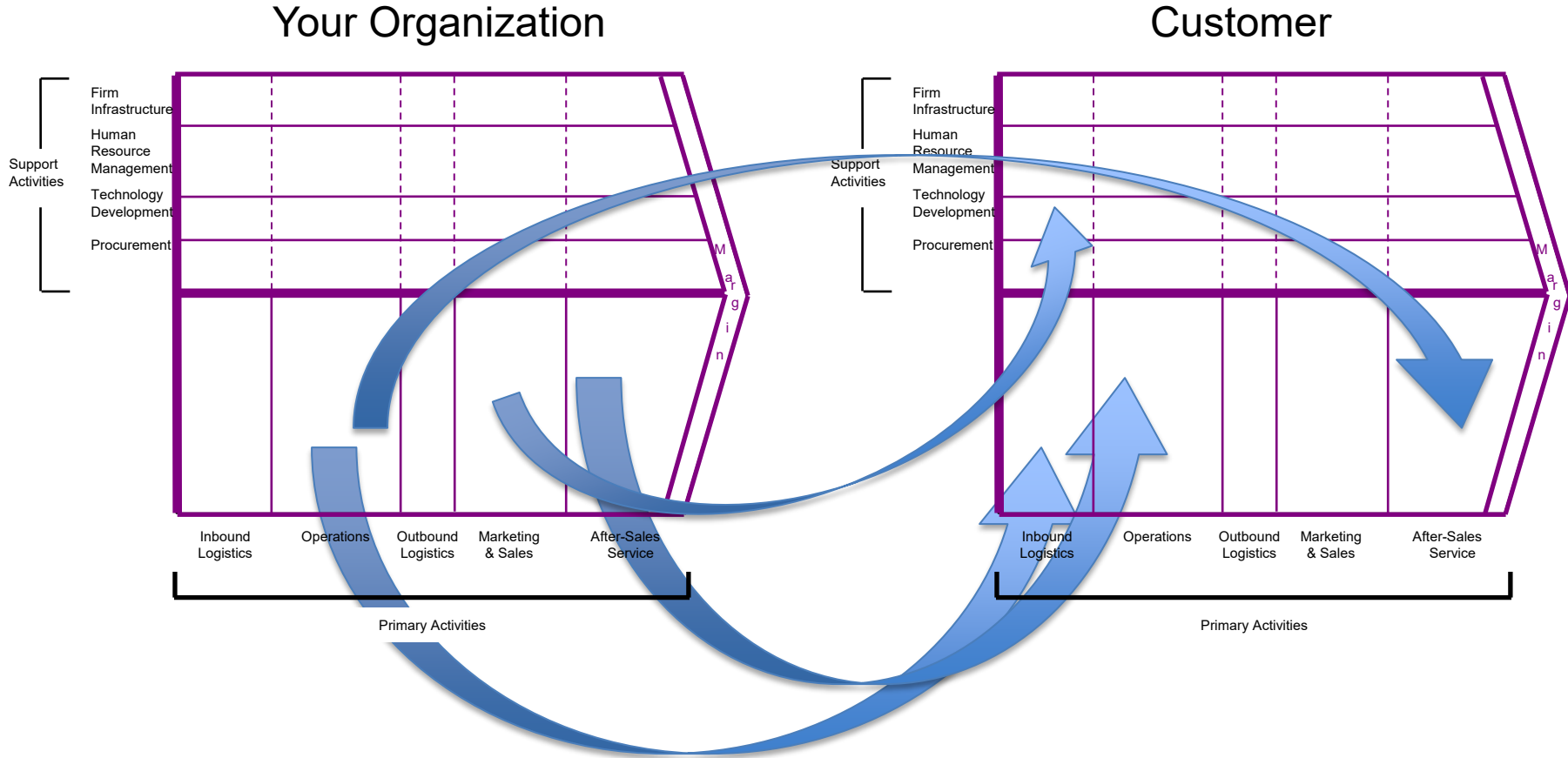
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"The IRS doesn't understand me."

ENTERPRISE TO ENTERPRISE (CUSTOMER)



HOW TO DO IT

- Begin by defining your customer
 - Identify key activities your customer performs to create value (perhaps for their customers).
 - For each activity your customer performs, define key drivers of value creation (i.e. what lowers their costs or elevates quality).
- Shift to your future organization
 - Seek to identify distinct activity choices which you could make to address value drivers of your customer.
 - Identify key activities which you perform to create value for customers.
 - What **problems** impede your creation of greater customer value?

IMPEDIMENTS TO VALUE CREATION



Canning Operation

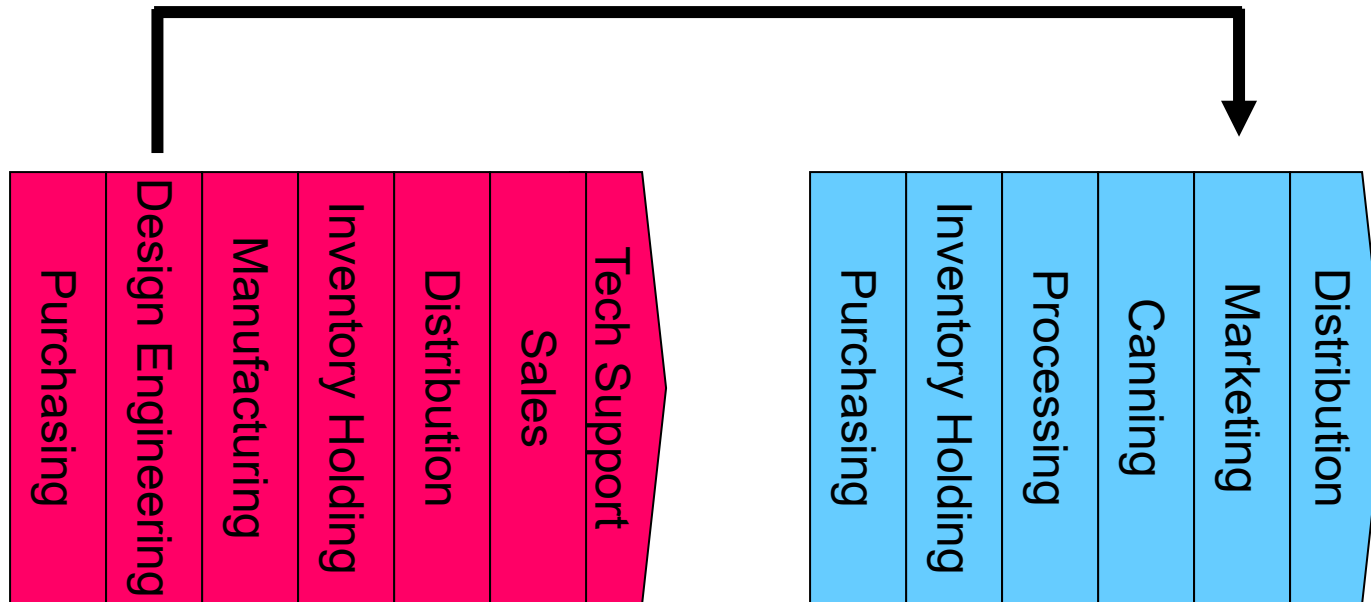


What canning operation problems destroy value?

1. High input costs
2. High inventory holding
3. Inefficient ingredient/input processing
4. Downtime
5. Packaging that impedes marketing
6. Inefficient distribution

CREATING VALUE FOR THE CUSTOMER

Design capability provides distinctive cans for customer marketing and image creation.

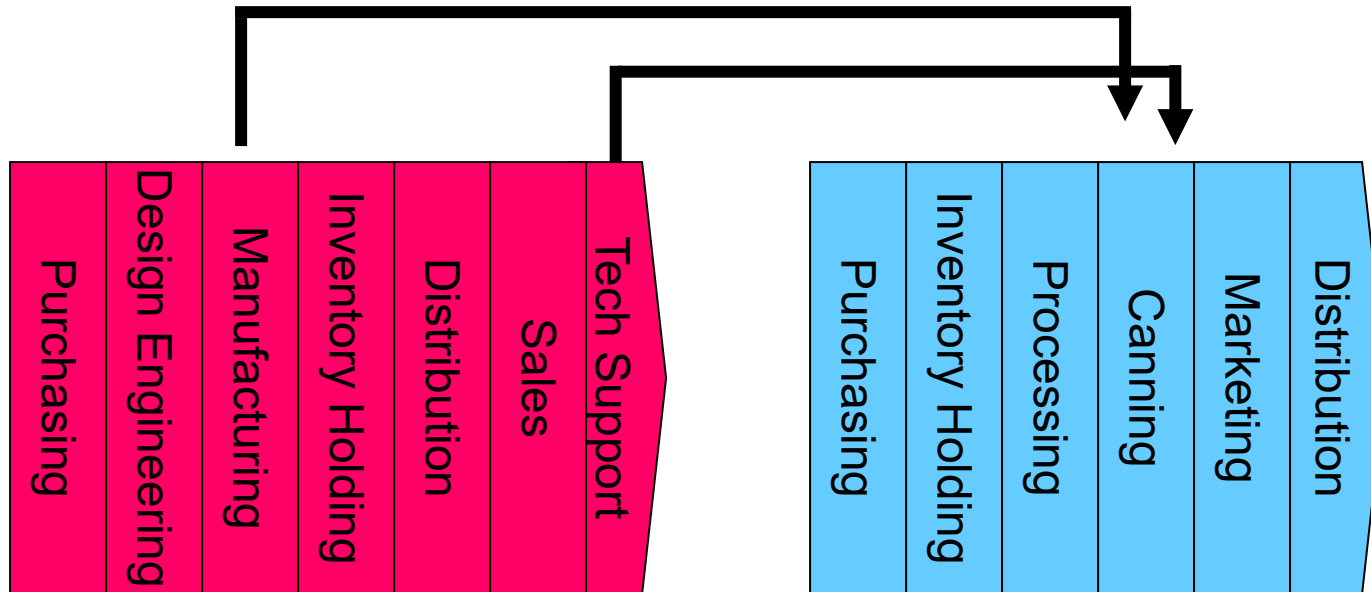


PACKAGING
20 oz. can - 12 / Case

CREATING VALUE FOR CUSTOMERS

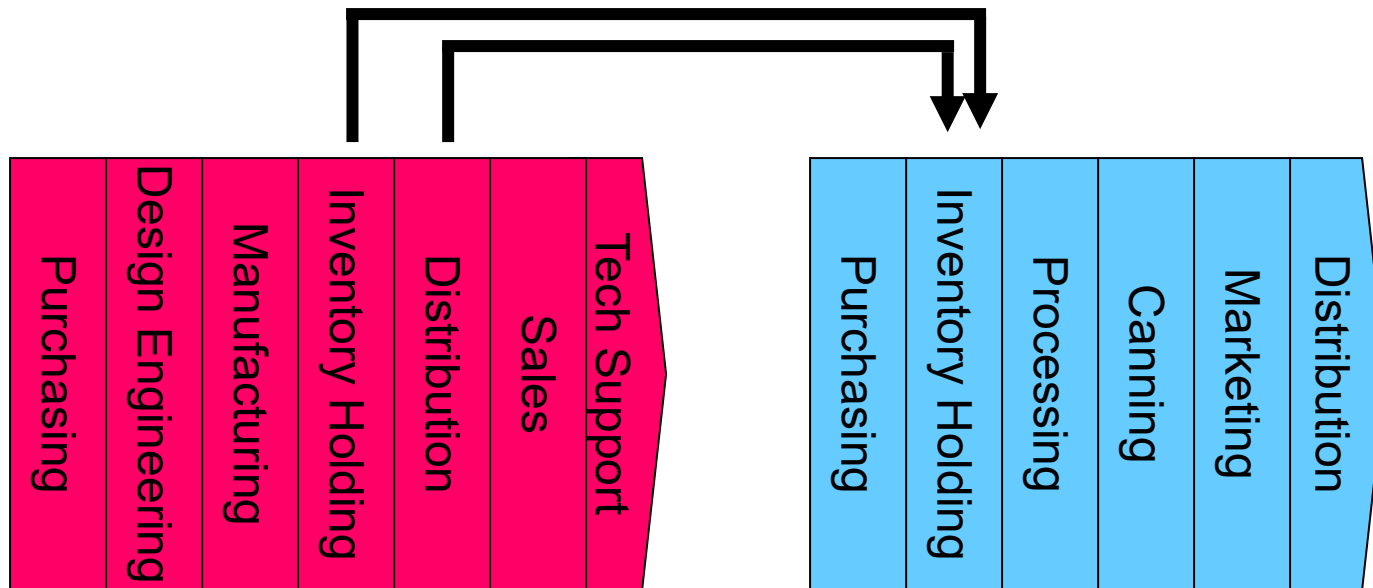
Consistent can quality
minimizes customer
downtime.

Superb customer technical
support minimizes customer
downtime.



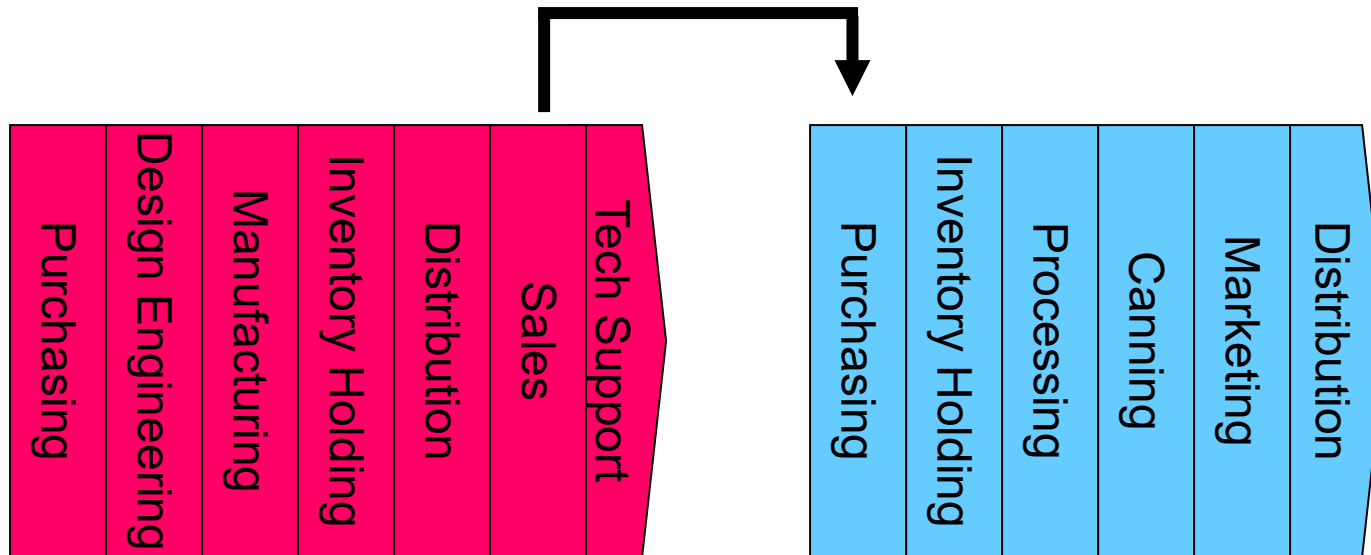
CREATING VALUE FOR CUSTOMERS

Inventory holding and rapid delivery minimize customer inventory costs.



CREATING VALUE FOR CUSTOMERS

Efficient order processing reduces customer purchasing costs.



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JOBS/PROBLEM ANALYSIS

What job would your customer like your organization to perform for them? What problem would your customer like to have solved?

WHAT IS THE UNDERLYING PROBLEM?

- “The customer rarely buys what the business thinks it sells him.”
 - Peter Drucker
- Customers “don’t want a quarter inch drill. They want a quarter-inch hole!”
 - Ted Levitt

WHAT JOBS DOES BAKING SODA PERFORM?



New theory: Market Arm and Hammer Baking Soda as an ingredient



JOBS ANALYSIS EXERCISE

Services we provide:



**Jobs customers need
performed:**



EXERCISE

- Using the five whys technique (or another technique), seek to establish the root problem you seek to solve.
- Does this root problem capture well the overarching problem you seek to solve? If not, articulate the overarching problem.
- What are the key subproblems that need to be solved to solve the overarching problem?
- Discuss with your group. Be prepared to share with the class, your overarching problem as well as your key subproblems.

THEORY

Beliefs Common	Core Problem

	Subproblems

Contrarian or Uncommon	Causal Logic <i>(expressed as if-then statements or hypotheses)</i> <i>IF</i> <i>THEN</i>

ACTIONS

Run Experiments
Shop for Investments
Search for Solutions

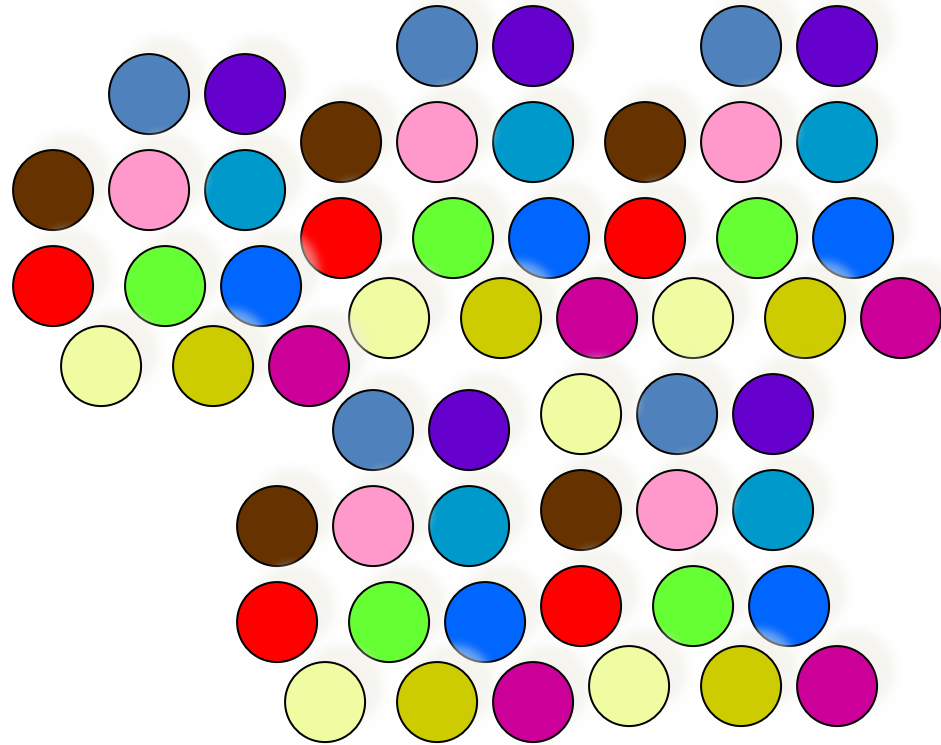
TAKEAWAYS

- Spend time to fully understand the problem you seek to solve
- A well framed problem reveals solutions (think Einstein and Archimedes)

STOP

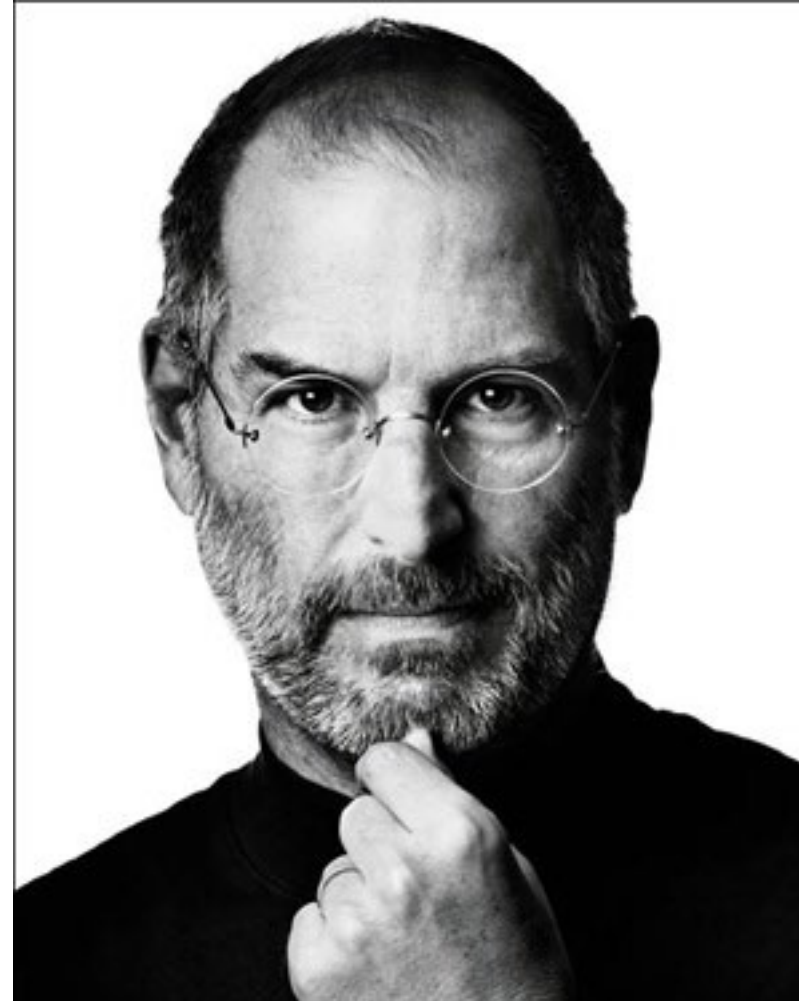
PROBLEM SOLVING TECHNIQUES

FINDING VALUABLE SOLUTIONS THROUGH RECOMBINATION



STEVE JOBS ON SOLUTION SEARCH

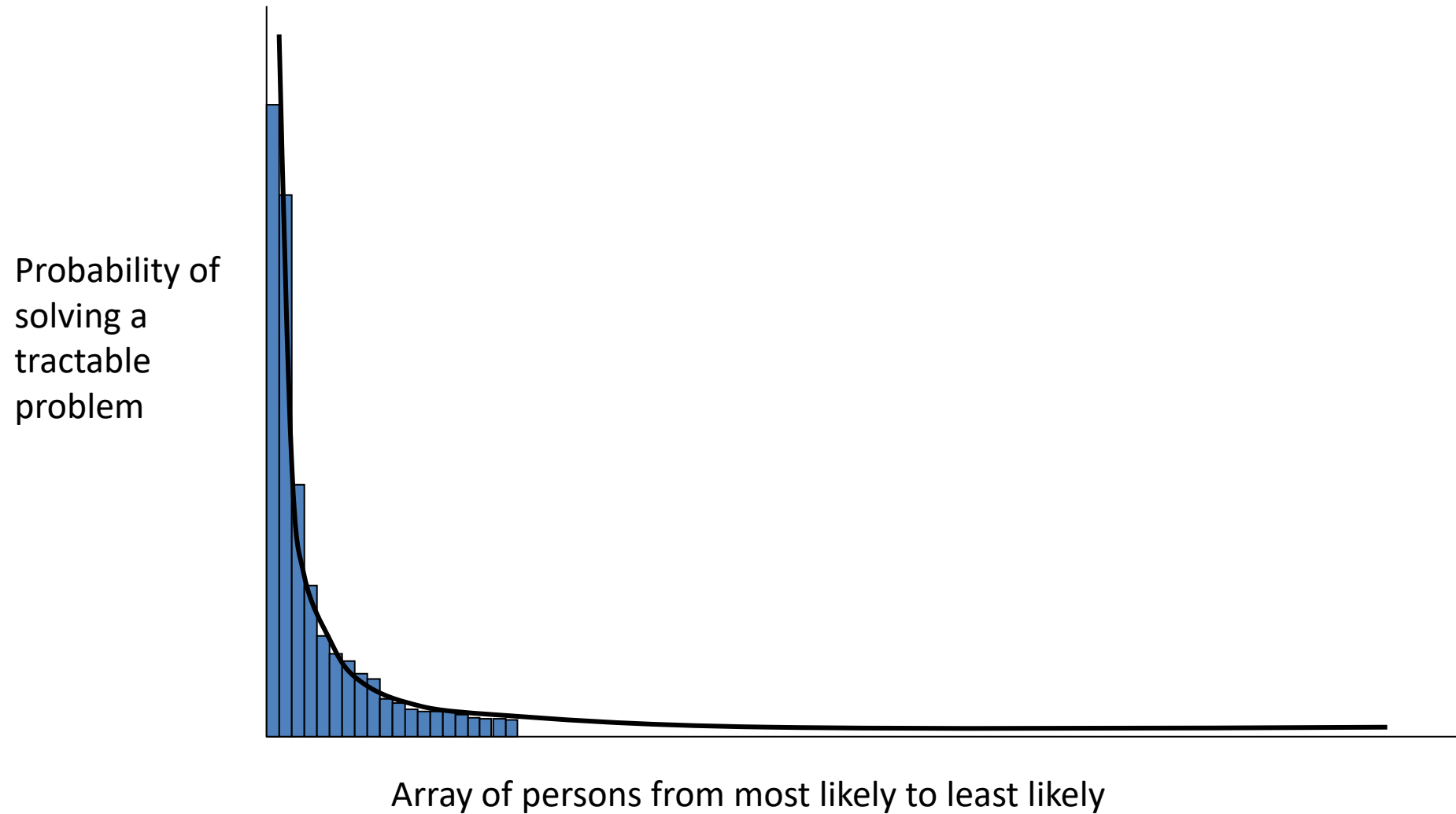
- "Designing a product is keeping 5,000 things in your brain, these concepts, and fitting them all together in kind of continuing to push to fit them together in new and different ways to get what you want," he said. "And every day you discover something new, that is a new problem or a new opportunity, to fit these things together a little differently."
 - [Steve Jobs](#)



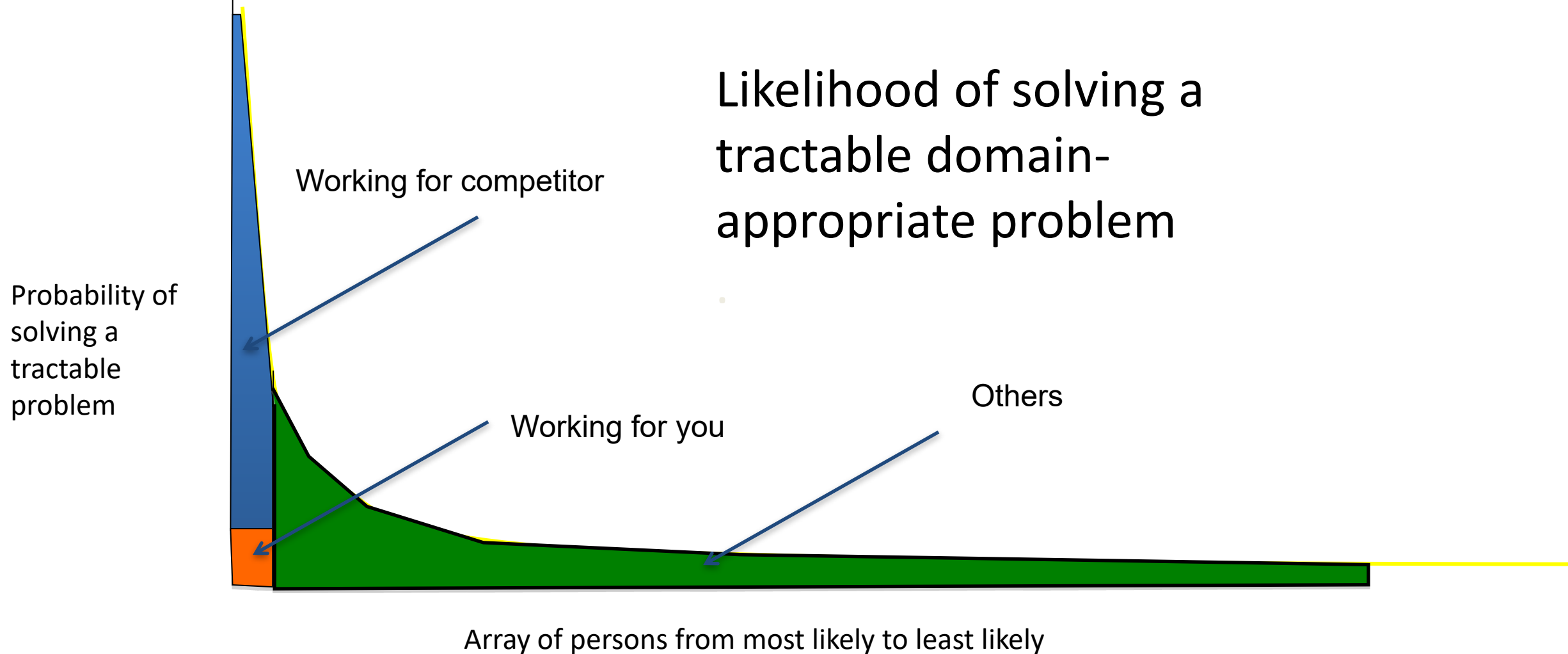
“Most of the smart people work somewhere else.”

-Bill Joy, Sun Microsystems-

CUMULATIVE PROBABILITY



MAXIMIZING THE PROBABILITY OF SUCCESS



PROCESSES FOR SOLUTION DISCOVERY

1. Connecting and combining
2. Innovation challenges
3. Value profiling

INNOVATION THROUGH CONNECTIONS

Consumer Foods

&

Inkjet Technology

Hasbro

&

P&G



RANDOM RECOMBINATION!

Back in 2002, as we were brainstorming about ways to make snacks more novel and fun, someone suggested that we print pop culture images on Pringles. It was a great idea, but how would we do it?

One of our researchers thought we should try ink-jetting pictures onto the potato dough, and she used the printer in her office for a test run. (You can imagine her call to our computer help desk.) We quickly realized that every crisp would have to be printed as it came out of frying, when it was still at a high humidity and temperature. And somehow, we'd have to produce sharp images, in multiple colors, even as we printed thousands upon thousands of crisps each minute. Moreover, creating edible dyes that could meet these needs would require tremendous development.

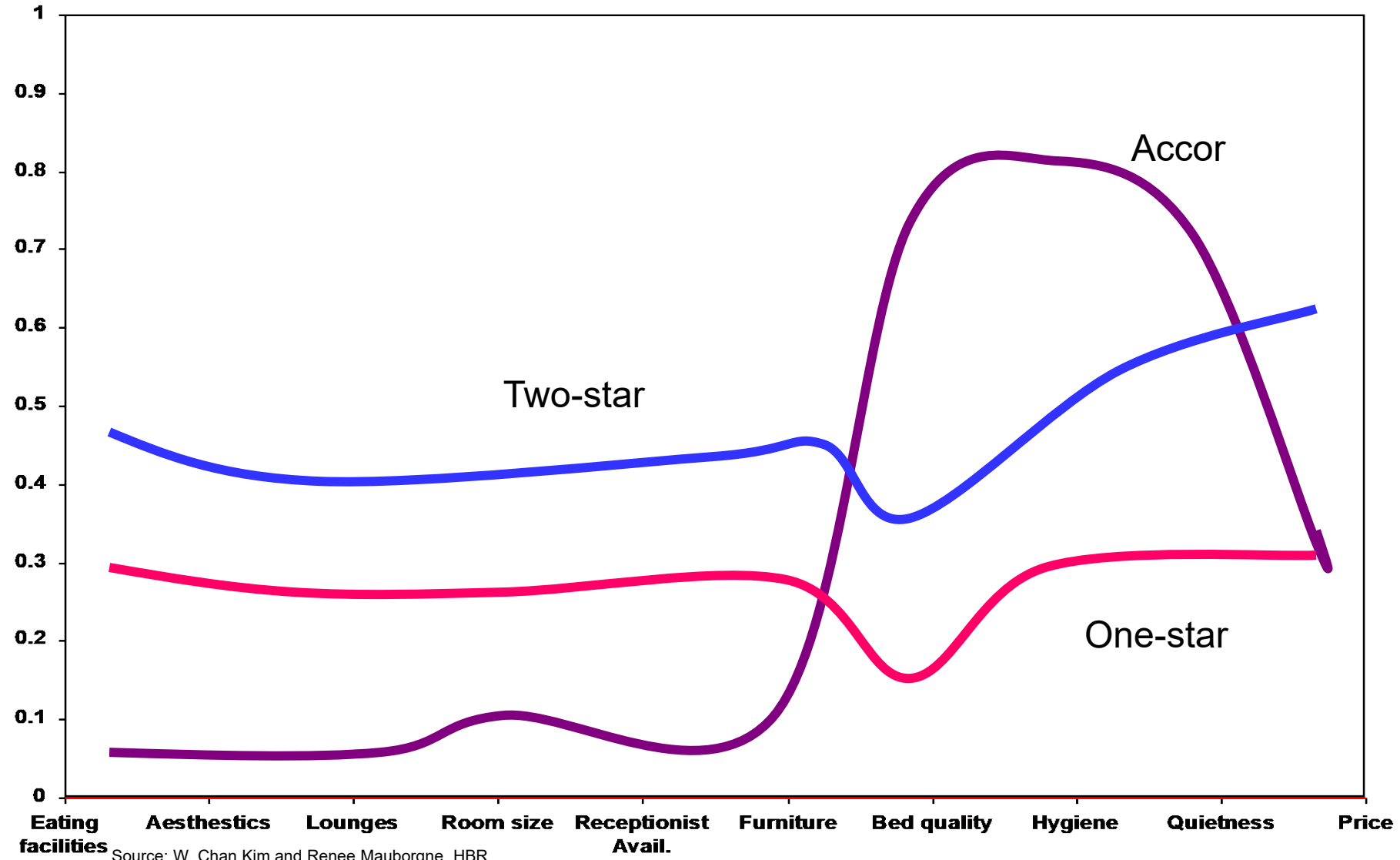
-- Larry Huston & Nabil Sakkab, P&G

VALUE PROFILING: CHANGING THE MIX



1. What are the basic dimensions which define your products and services?
2. Which dimensions do your customers take for granted? Which could be eliminated?
3. Which dimensions do customers particularly value and could thus be elevated?
4. What new combinations should we explore?

DRAWING A NEW VALUE PROFILE



Source: W. Chan Kim and Renee Mauborgne, HBR

HOW TO DO IT

Attribute	Current Profile of other offerings	Possible New Profile
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

KEY TAKE-AWAYS

- Problem solving is much easier with a well framed problem
- Problem solving involves creatively recombining knowledge
- Need to seek out critical new knowledge