

Problem Solving and Need Recognition Techniques

- Sometimes, navigating from the recognition of an opportunity to overcoming problems in the development of that opportunity can feel like winding through a maze. (credit: modification of “human hand company paper solutions” by “Eluj”/Pixabay, CC0)

Chapter Outline



PROBLEM SOLVING TO
FIND ENTREPRENEURIAL
SOLUTIONS



CREATIVE
PROBLEM-SOLVING
PROCESS



DESIGN THINKING



LEAN PROCESSES

Problem Solving vs Decision Taking

- ▣ **A decision** is needed to continue or smooth a process affecting the operation of a firm. It can be intuitive or might require research and a long period of consideration.
- ▣ **Problem solving**, however, is more direct. It entails the solution of some problem where a gap exists between a current state and a desired state.

Problem Solving to Find Entrepreneurial Solutions

Learning Objectives

By the end of this section, you will be able to:

- Define problem solving in the context of entrepreneurship
- Describe and compare the adaptive model and the innovative model of problem solving
- Identify the skills entrepreneurs need for effective problem solving
- Identify types of problem solvers



is the process of using innovation and creative solutions to close that gap by resolving societal, business, or technological problems. Sometimes, personal problems can lead to entrepreneurial opportunities if validated in the market

Entrepreneurial problem solving

Problem
Solving
Models:



Adaptive



Innovative

Adaptive Model



The adaptive model seeks solutions for problems in ways that are tested and known to be effective. An adaptive model accepts the problem definition and is concerned with resolving problems rather than finding them

Innovative Model



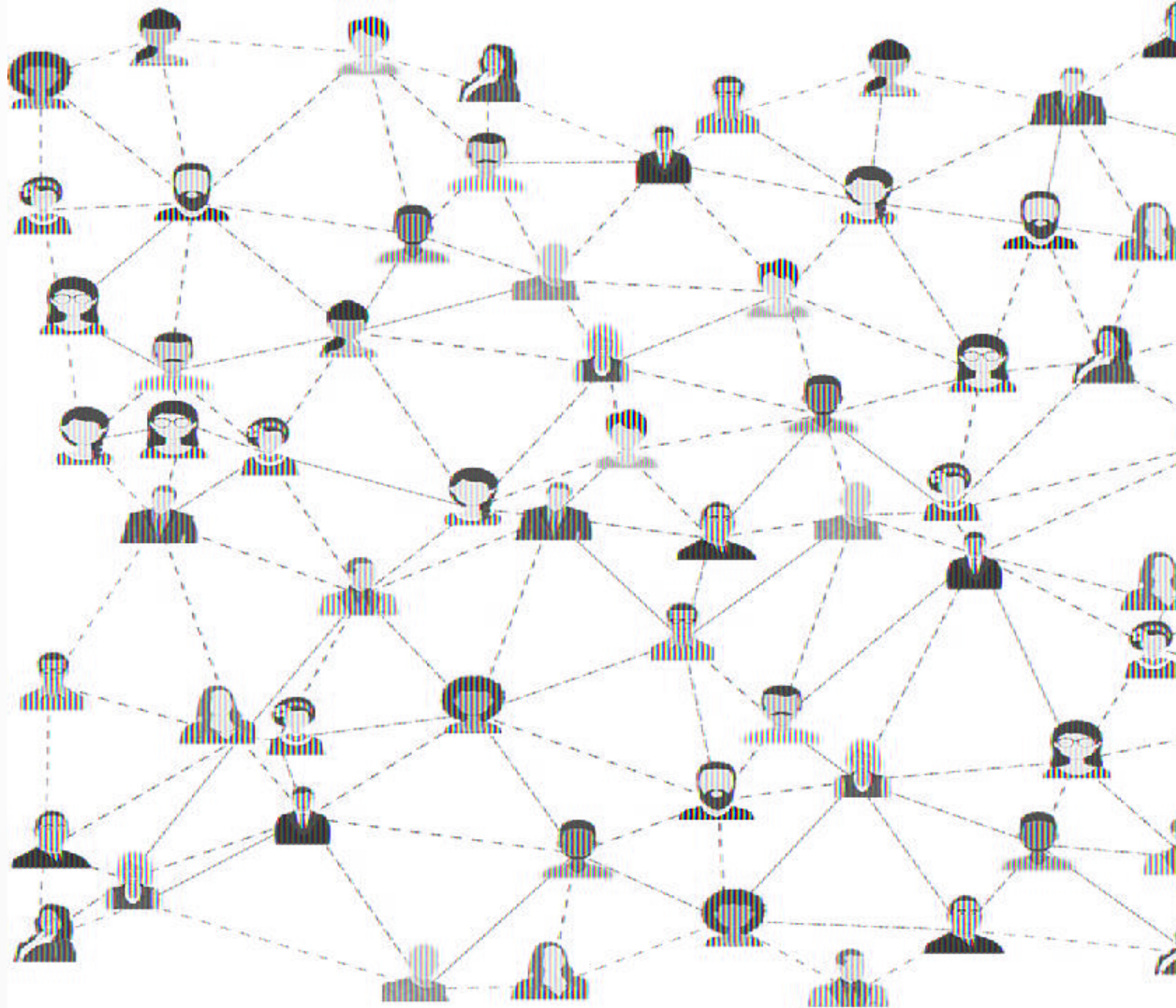
The second and more creative approach is the innovative model of entrepreneurial problem solving, which uses techniques that are unknown to the market and that bring advantage to an organization. An innovative problem-solving style challenges the problem definition, discovers problems and avenues for their solutions, and questions existing assumptions—in a nutshell, it does things differently. It uses outside-the-box thinking and searches for novel solutions.

Problem-Solving Skills



Networking

□ Networking results in connecting individuals who otherwise might not have met and who may be able to help each other solve problems. (credit: “social media connections networking” by “GDJ”/Pixabay, CC0)



Link to learning

Read this LinkedIn blog post on decisiveness (<https://openstax.org/l/52decisiveness>) to learn more.



Analytics

Descriptive

involves understanding what has happened and what is happening

Predictive

uses data from past performance to estimate future performance

Prescriptive

uses the results of descriptive and predictive analytics to make decisions

Types of Problem Solvers



self-regulators,

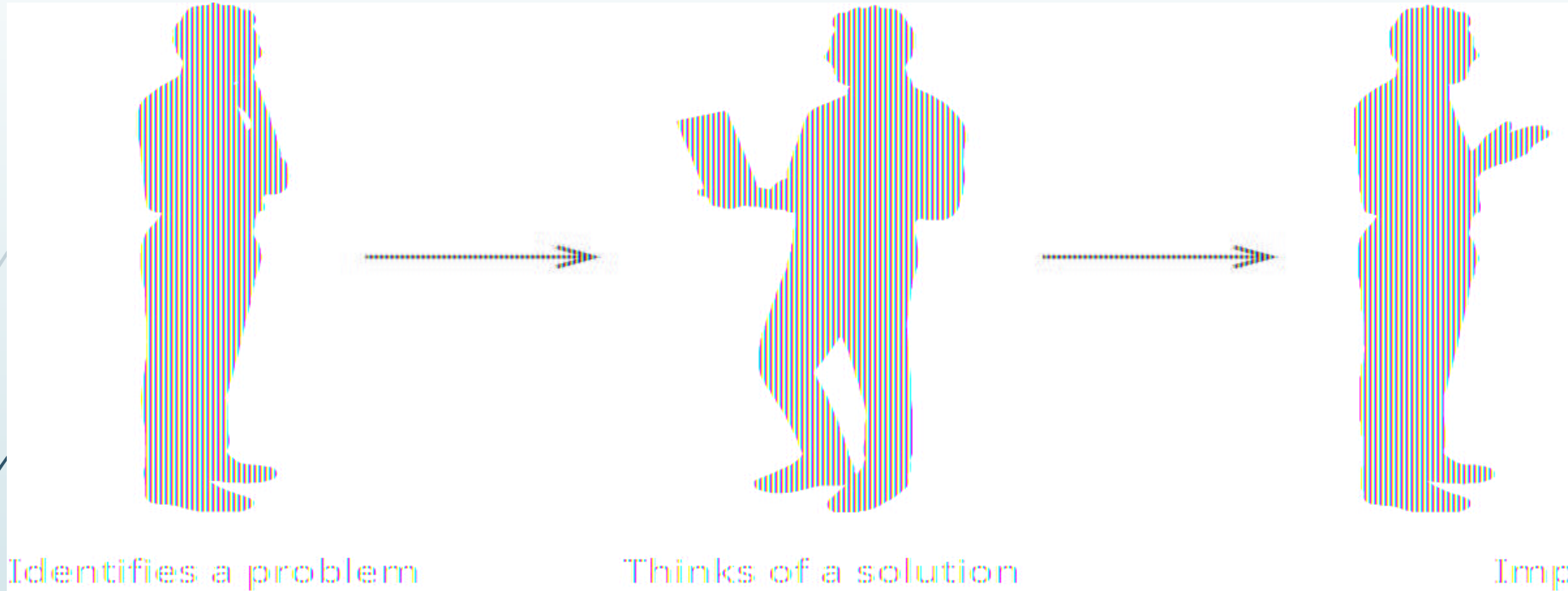


theorists,



petitioners.

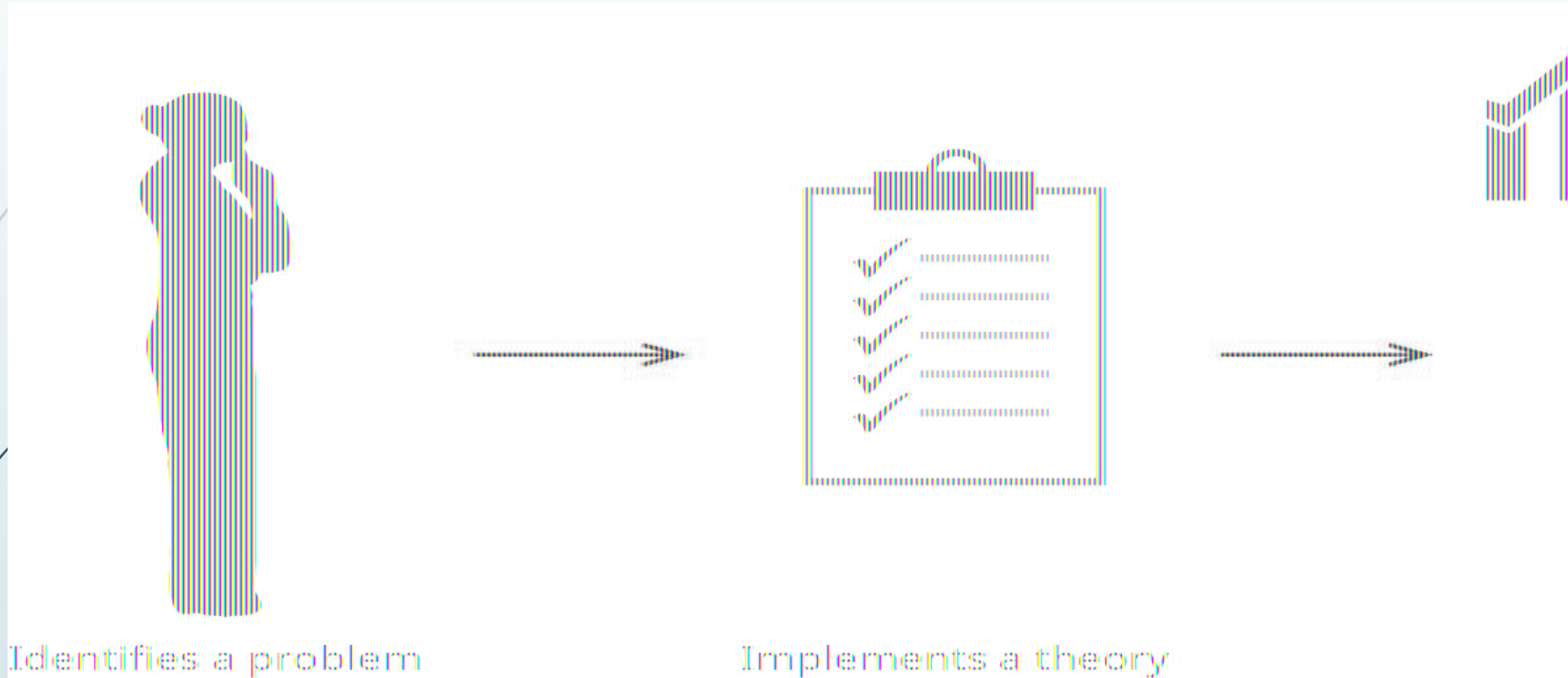
Self-regulating problem solvers



are autonomous and work on their own without external influence. They have the ability to see a problem, visualize a possible solution to the problem, and seek to devise a solution,

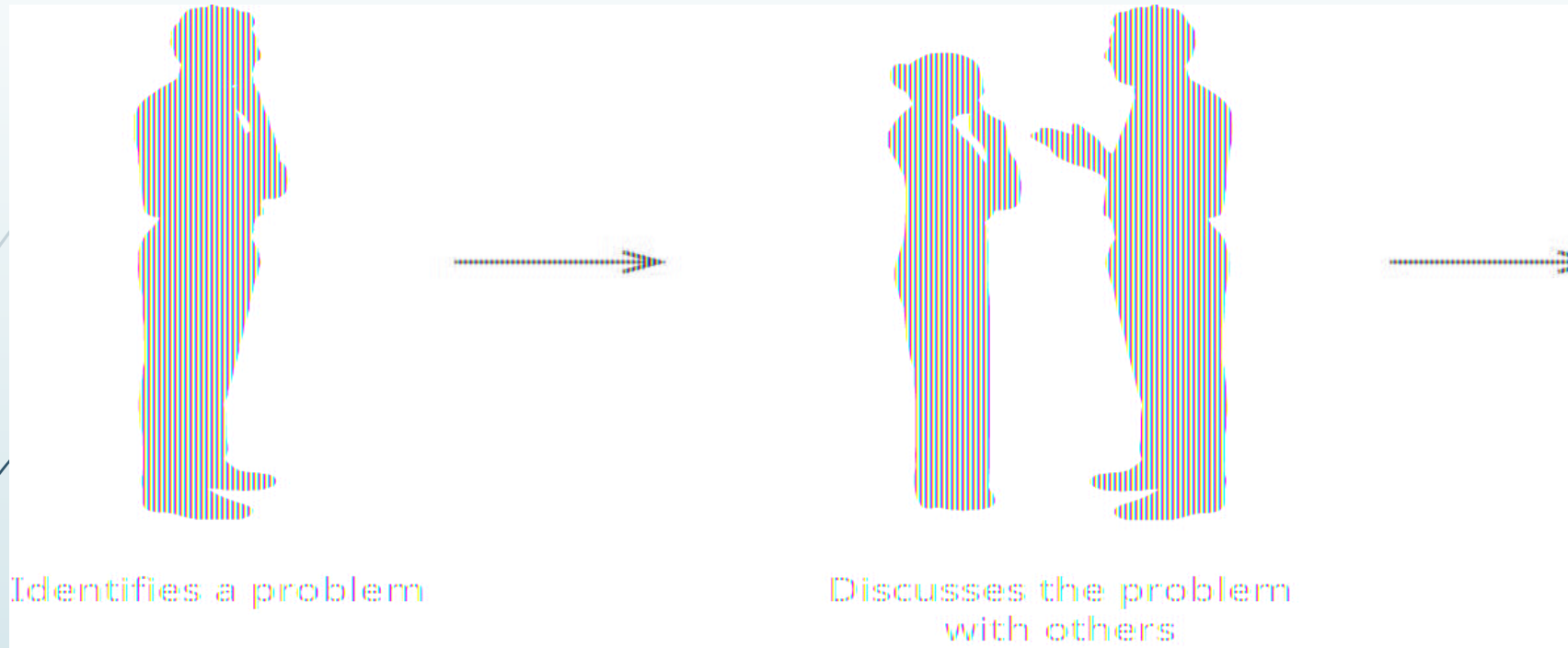
A self-regulating problem solver identifies a problem, thinks of solution, and then implements the solution. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Theorist Problem Solvers



Theorist problem solvers see a problem and begin to consider a path toward solving the problem using a theory.

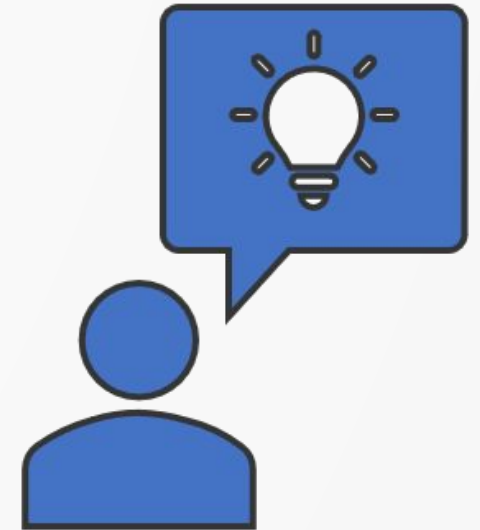
Petitioners



A petitioner problem solver identifies a problem, discusses it with others, and arrives at solution agreeable to others. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Discussion Questions

- Which method do you think applies more to entrepreneurship, the innovative or adaptive problem-solving method? Do you see yourself as using one method more than the other in your entrepreneurial endeavors? If so, which one and why?
- Do you think it is important for the entrepreneur to understand and develop all the problem-solving skills to manage a successful startup? Why or why not?
- Which of the three types of entrepreneurs relies more on the innate skill of the entrepreneur?



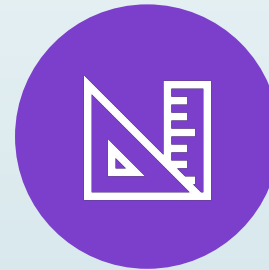
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**CREATIVE
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DESIGN THINKING



LEAN PROCESSES



Learning Objectives

6.2 Creative Problem-Solving Process

- Describe the five steps in the creative problem-solving process
- Identify and describe common creative problem-solving tools

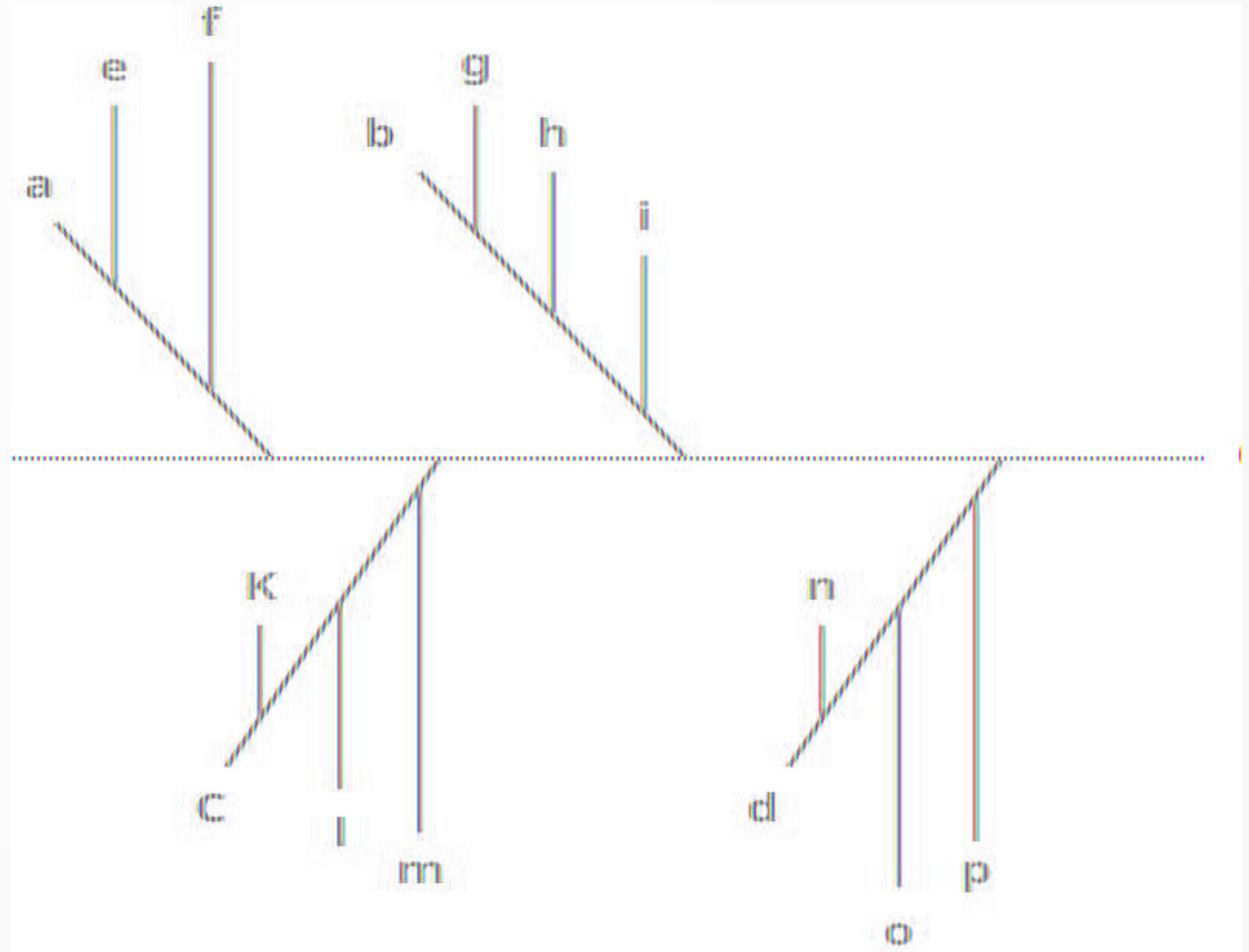
Creative Solving Problem Process



The process of creativity is not random; it is a specific and logical process that includes evaluation. The entrepreneur repeats the creative process until reaching a successful solution. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

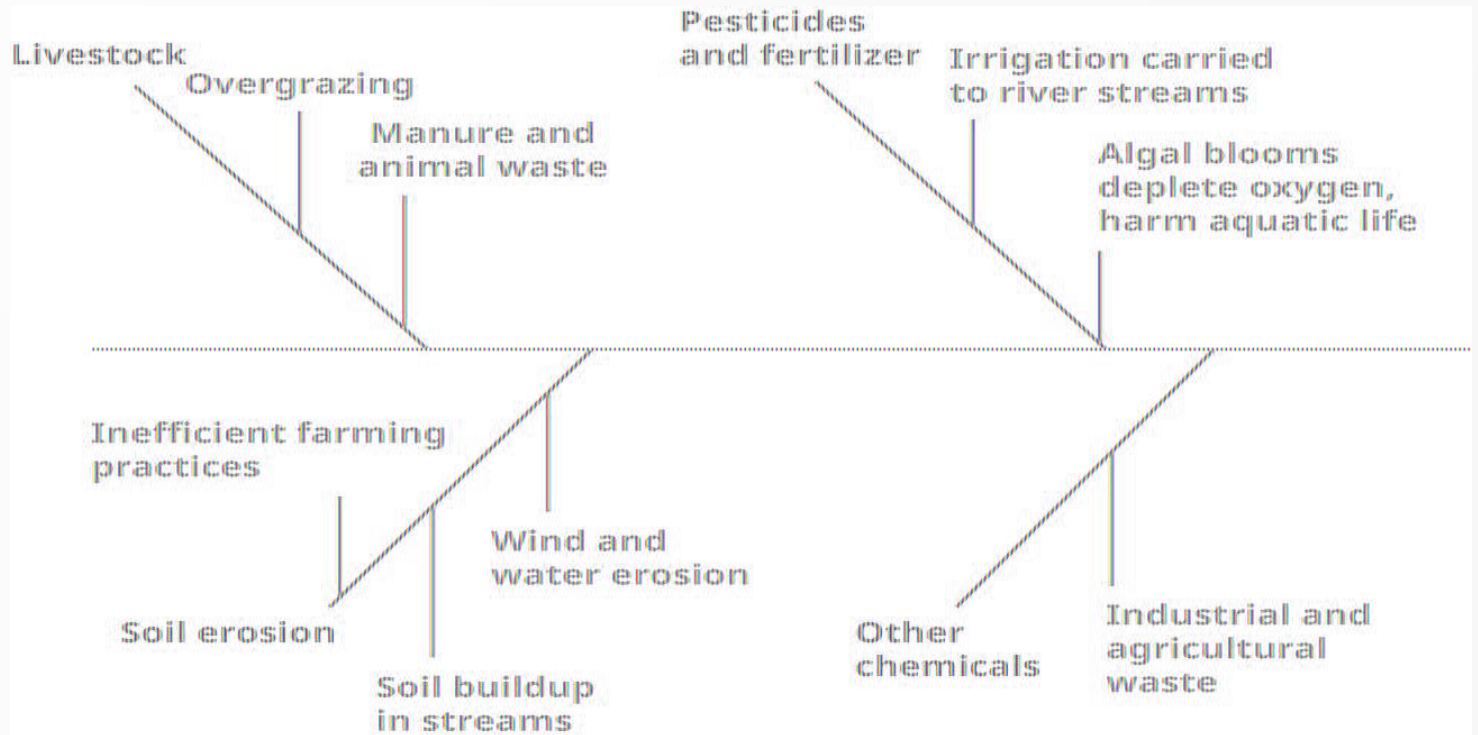
Fishbone Diagram

- A quality problem has main causes—here designated as a, b, c, and d. Within these main causes, there are several causes that might need to be addressed to solve the quality problem. The goal of a fishbone diagram is to find the root causes of the quality problem. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)



Example

□ Farm water pollution could have four main causes, such as livestock, pesticide and fertilizer, soil erosion, and other chemicals. For each of those, there are other related causes. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)





Problem of waste in Khorog Town

Removing waste is a problem, and it can also present an entrepreneurial opportunity. Try to examine ways in which waste products that you usually pay to have hauled away can now generate revenue. Whether it's recycling aluminum cans or cardboard, or garbage that could be used to feed animals, your task is to come up with solutions to this entrepreneurial-oriented problem.

- Try following the first step of the creative problem-solving process and clearly identify the problem.
- Next, gather data and formulate the challenge.
- Then, explore ideas and come up with solutions.
- Develop a plan of action.
- Finally, note how you would evaluate the effectiveness of your solution.

Entrepreneurial collaborative methodologies



crowdsourcing,



brainstorming,



storyboarding,



conducting quick online surveys to test ideas and concepts,



team creativity activities.

Crowdsourcing

- “an online, distributed problem-solving and production model.” – Prof. Daren Brabham
- Crowdsourcing involves teams of amateurs and nonexperts working together to form a solution to a problem
- “tap into the collective intelligence of the public at large to complete business-related tasks that a company would normally either perform itself or outsource to a third-party provider” - cbsnews.com’s Jennifer Alseve



Example of crowdsourcing

- ❑ A Crowdsourced Potato Chip In an effort to increase sales among millennials, PepsiCo turned to crowdsourcing to get new flavor ideas for their Lay's potato chips (called Walker's in the UK).
- ❑ Their 2012 campaign, "Do Us a Flavor," was so successful that they received over 14 million submissions. The winner was Cheesy Garlic Bread, which increased their potato chip sales by 8 percent during the first three months after the launch.
- ❑ What are some other products that would work well for a crowdsourced campaign contest?
- ❑ What items wouldn't work well?

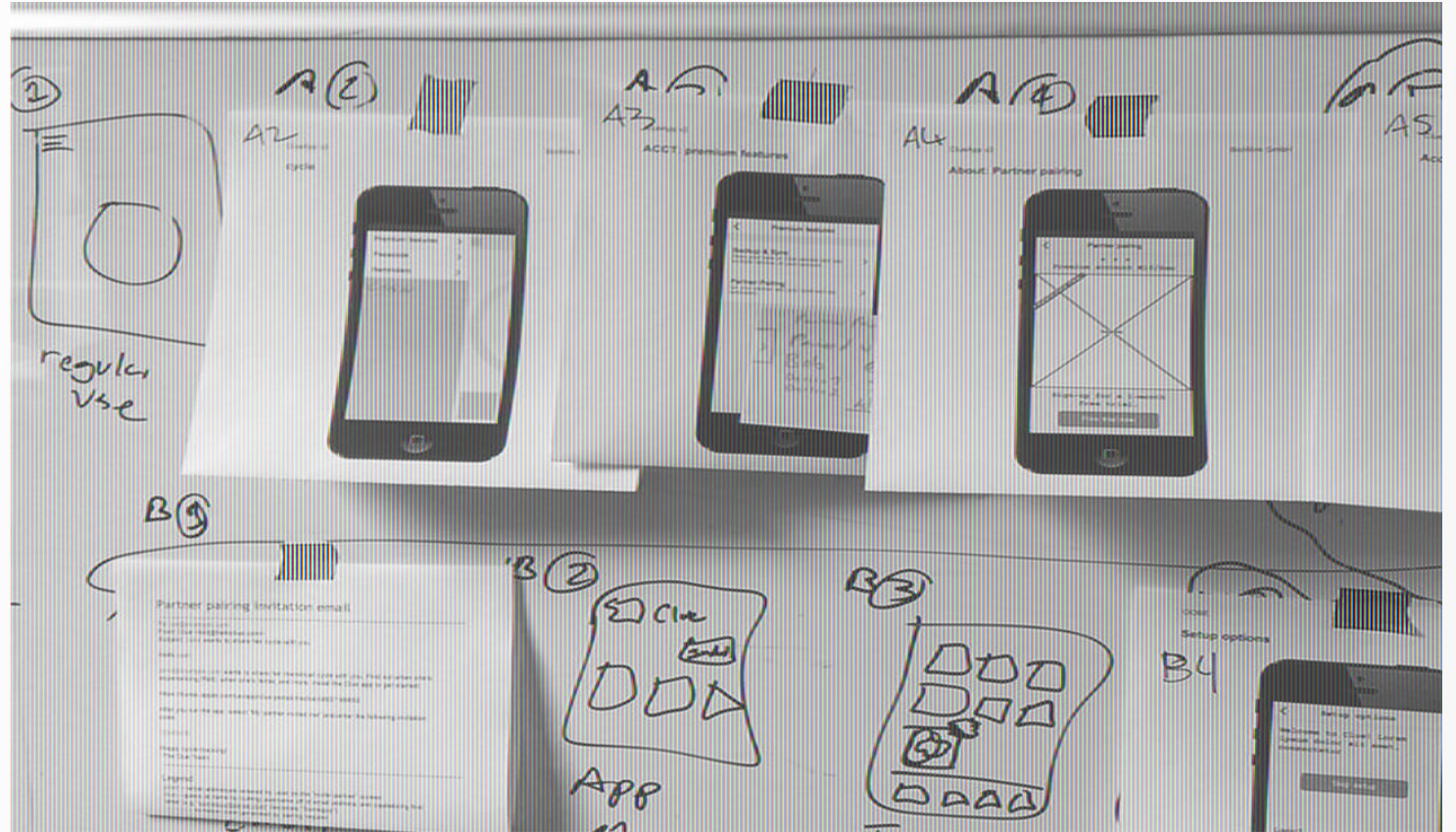
Brainstorming

Watch this video from ABC's Nightline that shows how IDEO designed a new shopping cart (<https://openstax.org/l/52IDEOshopcart>) for an example of a design process that involves brainstorming.



Storyboarding

- Storyboarding helps entrepreneurs and team members to visually represent steps in product creation and problem solving. (credit: "Clue storyboarding" by Adam Wiggins/Flickr, CC BY 2.0)



Team Creativity



- Team creativity is the process whereby an entrepreneur works with a team to create an unexpected solution for an issue or challenge.
- Teams progress through the same creative problem-solving process described already: clarify, ideate, develop, implement, and evaluate.
- The main advantage of team creativity is the collaboration and support members receive from one another. Great teams trust in other team members, have diverse members with diverse points of view, are cohesive, and have chemistry

Learning Objectives

Design Thinking

- Explain the design thinking process
- Discuss some design thinking tools

Design Thinking Process

- The design thinking process focuses on the spaces of inspiration, ideation, and implementation. (credit (left): modification of “thought idea innovation imagination” by “TeroVesalainen”/Pixabay, CC0; credit(center): modification of “document paper business chart” by “rawpixel”/Pixabay, CC0; credit (right): modification of “office business colleagues meeting” by “Free-Photos”/Pixabay, CC0)

Question ladder

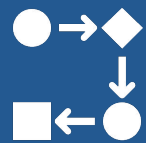
	QUESTION COMPLEXITY				
	Simple ←				
	IS	DID	CAN	WILL	
WHO	Who is	Who did	Who can	Who will	Who
WHAT	What is	What did	What can	What will	What
WHERE	Where is	Where did	Where can	Where will	Where
WHEN	When is	When did	When can	When will	When
HOW	How is	How did	How can	How will	How
WHY	Why is	Why did	Why can	Why will	Why

A question ladder can help refine questions. (attribution: Copyright Rice University, OpenStax, under CC BY 4.0 license)

Discussion Questions



Why is empathy needed in defining problems?



Why is it important to continuously ask for feedback and improve the current design?



Learning Objectives

Lean Processes

- Discuss the lean process methodology
- Understand the phases of the lean problem-solving process

Lean Processes

The lean process is a systematic method for the maximizing of continuous improvement and the minimization of surplus or unused material in the production of a proc

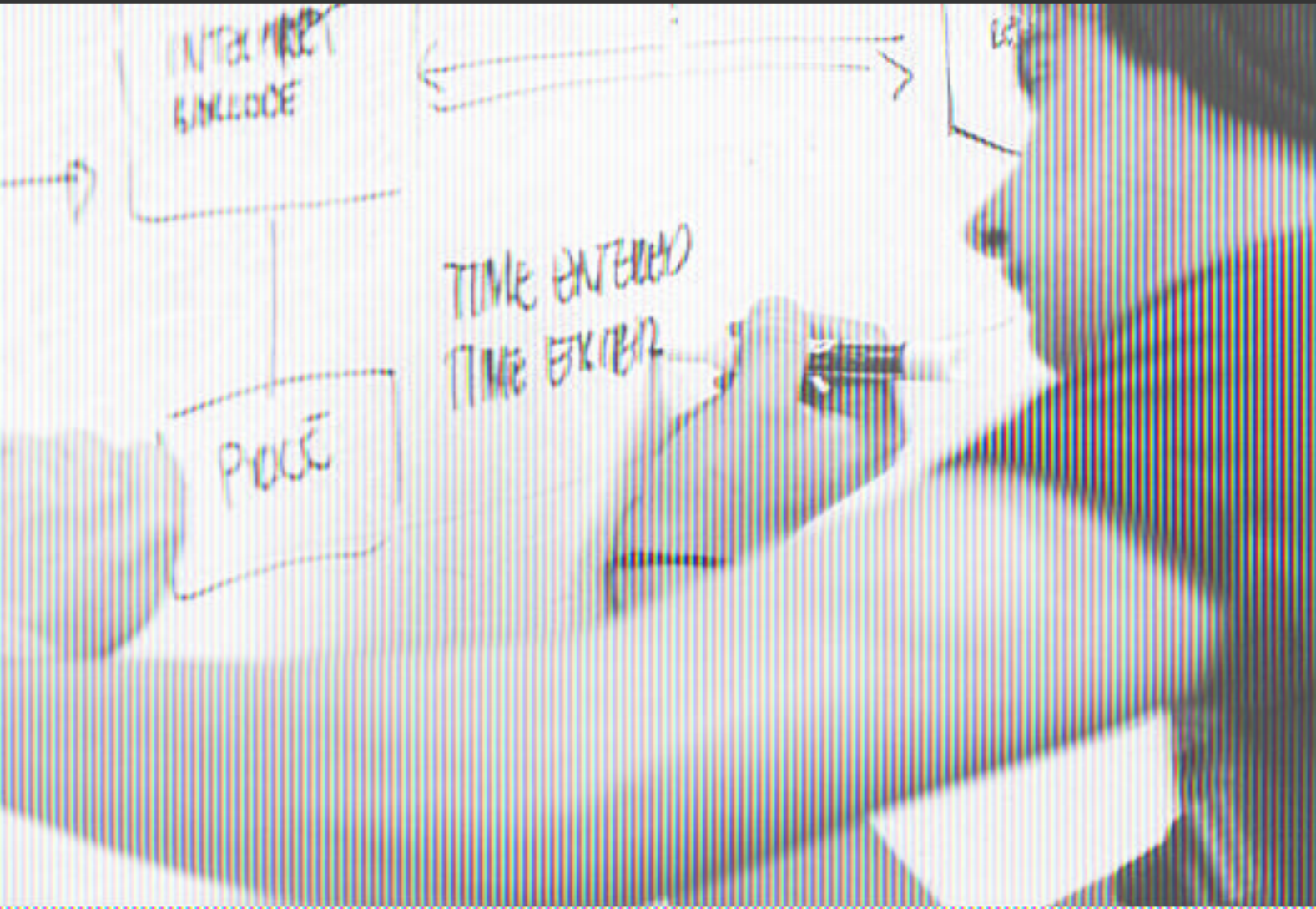
Lean problem solving means the entrepreneur's entire team scans both the company's **internal and external environments** for continuous improvement and methods for bringing additional revenue to the startup by cost improvement processes that promote sustainable value.

Steps in the Toyota Lean Problem-Solving Process

Step	Action
Step 1	Clarify the problem.
Step 2	Analyze the problem (genchi genbutsu is the Toyota practice of thoroughly understanding a condition by confirming information or data through personal observation at the source of the condition; the Japanese phrase essentially means “go and see”).
Step 3	Set targets.
Step 4	Identify root causes. Asking, “Why?” repeatedly can narrow down the factors to a root cause.
Step 5	Develop countermeasures by asking, “What is the specific change we want to make?” and involving others in the problem-solving process.
Step 6	Implement the countermeasures and see them through.
Step 7	Monitor results.
Step 8	Standardize processes that succeed. Lean problem solving is about learning more about the problem itself and its deep causes in context.

The lean problem-solving, step-wise process allows the business to observe, assess, and continually evaluate.

Whiteboarding




□ Whiteboarding is a technique that can help entrepreneurs visualize and analyze processes. (credit: “whiteboard man presentation write” by “StartupStockPhotos”/Pixabay, CC0)

Readings

- Problem Solving and need recognition techniques
– Chapter 6, Textbook





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