

SILICON VALLEY: THE UNTOLD STORY

DISCUSSION GUIDES
COLLEGE AND UNIVERSITY STUDENTS AND ADULT LEARNERS

Silicon Valley is more than just silicon chips, computers, and apps. For every decade or so since the early 1900s, the region has spawned or nurtured not just new products that have changed the world but whole new industries. It is a hotbed of innovation and entrepreneurship that is constantly reinventing itself. Inspiring lessons can be learned from Silicon Valley about creativity, collaboration, and taking risks that we can all use to enrich our personal and professional lives.

The full scope and drama of the region's evolution is revealed in *Silicon Valley: The Untold Story*—a three-part primetime series by Kikim Media for Discovery's Science Channel. The discussion guides and clips from the film provide college-age and adult learners with provocative guidelines for in-depth exploration of the innovation ecosystem in Silicon Valley: what works and why. Key companies and figures featured in the film include: Airbnb and Atari, Apple cofounder Steve Wozniak, WhatsApp cofounder Jan Koum, Marimba cofounder Kim Polese, and T/Maker cofounder and CEO Heidi Roizen. The discussion guides are provided by the Computer History Museum's Exponential Center, the community and educational outreach partner for the film.

About the Author

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The Exponential Center at the Computer History Museum captures the legacy and advances the future of entrepreneurship and innovation in Silicon Valley and around the world. Our mission is to inform, influence, and inspire the next generation of innovators, entrepreneurs, and leaders changing the world.

Kikim Media was founded in 1996 by Kiki Kapany and Michael Schwarz, whose work over the past 20 years has been honored with some of the most prestigious awards in broadcasting. Production of *Silicon Valley: The Untold Story* was made possible thanks to a generous grant from The Alfred P. Sloan Foundation.

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SILICON VALLEY: SECRET SAUCE

What ecosystems make innovation and entrepreneurship possible?



Overview

Audience: College, Organizations, Adult Learners, and Community Screenings

Duration: 1–2 sessions + optional projects

Essential Question

What is the Silicon Valley “ecosystem” and how has it helped to cultivate a unique culture of innovation and entrepreneurship?

LESSON/WORKSHOP GOAL:

Participants will:

Consider what makes innovation and entrepreneurship possible

Explore how Silicon Valley’s culture favors innovation and entrepreneurship as illustrated in the film *Silicon Valley: The Untold Story*

Understand and Define the entrepreneurial “ecosystem” of Silicon Valley

Consider how they might adapt and apply the innovation and entrepreneur ecosystem model to their own communities

RESOURCES/MATERIALS

Clips from *Silicon Valley: Secret Sauce*

Silicon Valley: The Untold Story Official Trailer:

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO>

Secret Sauce Clip 1

Look to the fringe

<https://www.youtube.com/watch?v=bRh75fSW4Jk&t=0s&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO&index=2>

Secret Sauce Clip 2

It’s ok to fail

<https://www.youtube.com/watch?v=TJXIKG1M9Nc&t=0s&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO&index=3>

Computers with Internet access

LCD projector

Whiteboard/blackboard

Pens, markers, and writing paper

Handouts

- Facilitator Handout: Silicon Valley and the Computer History Museum
- Workshop Handout: Viewing Guide - Innovation & Entrepreneurship

INTRODUCTORY ACTIVITY: WHAT MAKES INNOVATION AND ENTREPRENEURSHIP POSSIBLE?

Think-Pair-Share: What makes innovation and entrepreneurship possible?

Give participants 3-5 minutes to free-write about what they think makes innovation and entrepreneurship possible. Have them share their ideas with a partner and discuss their responses with the group.

Discuss: Who are modern innovators and entrepreneurs that you admire?

1. What is the relationship between innovation and entrepreneurship?
2. Why do you think so many innovators and entrepreneurs are concentrated in Silicon Valley?
3. What do you know about the culture and community of Silicon Valley?
4. What qualities does Silicon Valley and its community have that favor innovation and entrepreneurship? (Record responses to revisit throughout the workshop.)

Examples:

- Experimentation
- Openness to new ideas
- Pushing boundaries
- Curiosity
- Ambitious goals
- Flexibility
- Movement of people, ideas, capital
- Risk taking
- Collaboration
- Skill-set diversity
- Valuing failure/trial and error
- Persistence
- Funding resources
- Established industry
- Mentorship/apprenticeship opportunities
- Material resources
- Networking
- Strong research institutes & universities
- Favorable government funding & policies

ACTIVITY 1: THE SECRET SAUCE FOR INNOVATION AND ENTREPRENEURSHIP

Explain: Today we'll watch excerpts from the film series *Silicon Valley: The Untold Story* episode "Secret Sauce" and consider the unique mix of ingredients—the secret sauce—that fueled the rise of Silicon Valley as a technological and economic powerhouse. We'll also explore the stories behind the technologies that shape our world today.

Have a volunteer read a brief summary about the series *Silicon Valley: The Untold Story*, in Facilitator Handout: Silicon Valley and the Computer History Museum.

Distribute the handout Workshop Handout: Viewing Guide - Innovation & Entrepreneurship and review the note taking activity.

Play the official trailer for *Silicon Valley: The Untold Story*

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO>

and CLIP 1 and follow with a brief discussion: <https://www.youtube.com/watch?v=bRh75fSW4Jk&t=0s&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO&index=2>

Apple: Counterculture to the Mainstream

1. Why did Steve Wozniak of Apple want his innovations to be tools for "liberation"? What did he mean by that? Do you think he was successful? Why or why not?
2. How did the counterculture of 1970s Northern California influence both Jobs and Wozniak? Why was it important that they were experiencing these revolutionary ideas in a rigorous environment of engineering, problem solving, and technology production?
3. What did Steve Jobs mean when he said: "... if you want to know what's going to happen in five years, you don't look at the mainstream, you look at the fringe"?

Play CLIP 2 and follow with a brief discussion: <https://www.youtube.com/watch?v=TJXIKG1M9Nc&t=0s&list=PLQsxaNhYv8dbqYLR-MwF0n9MVneh6KASO&index=3>

Hewlett Packard: Innovating Workplace Culture

1. What does Michael Malone mean when he says that Hewlett Packard "had as many personnel innovations as it had technology innovations"? What personnel innovations have influenced Silicon Valley culture through the 21st century? Have your places of work offered similar benefits? If so, how did they affect workplace culture?
2. How did the culture at Hewlett Packard contribute to the company's innovation and success?
3. Why did Bill Hewlett see "labor mobility" as a good thing? How is this an example of "giving back and reinvesting in the community"?
4. Why did Hewlett Packard take a risk on the HP 35 calculator? Why was that significant to Steve Wozniak, who was an employee at the time? What lessons did he learn from his time there?
5. What did Bill Hewlett mean when he said "it's OK to fail"? How were risk, failure, and trial and error essential to both HP and Apple's success?
6. Have you experienced professional leaders who encouraged the style of flexibility, independence, and accessibility that existed at HP?
7. What aspects of that culture were most attractive to you?
8. If you are (or were to be) a manager, what would be the benefits and challenges of offering an HP style workplace?
9. What personnel innovations initiated by HP helped create a culture that created space for and cultivated "fringe" ideas?
10. How has learning about the philosophies and culture of companies such as HP and Apple affected your understanding of their impact on culture beyond the tech sector?

Follow with a review of the Viewing Guide notes and discussion (use the following prompts as needed).

The Silicon Valley Ecosystem

1. What surprised you most about the history of Silicon Valley? What did you already know and what did you learn?

2. What did Heidi Roizen mean when she said, "There is a cultural magic here that makes Silicon Valley work"? What is the "cultural magic"?

3. Why did Margaret O'Mara describe Silicon Valley as "a whole ecosystem"? What elements came together to make Silicon Valley such an advantageous environment for innovation and entrepreneurship? How did the location, culture, and community of Silicon Valley make revolutionary companies like Apple possible?

ACTIVITY 2: UNDERSTANDING AND ADAPTING THE SILICON VALLEY ECOSYSTEM

Part 1: What is Silicon Valley's Ecosystem?

Discuss: Silicon Valley has been described as an “ecosystem.” What is an ecosystem? (Dictionary.com: any system or network of interconnecting and interacting parts, as in a business.)

1. Why is this metaphor applied to Silicon Valley? What are some of the “parts” that are “interconnecting” in this region? [Examples: entrepreneurs, funders, university researchers, manufacturers, mentors, consumers, etc.]
2. What were some examples from the film of the Silicon Valley ecosystem at work?

Organize the participants into breakout teams and ask them to review and analyze the following two models of Silicon Valley's ecosystem:

“Defining an ecosystem.” The Entrepreneurial Ecosystem Building Playbook, Ewing Marion Kauffman Foundation, 2017. <http://www.kauffman.org/entrepreneurial-ecosystem-building-playbook/ii-what-are-entrepreneurial-ecosystems#>

“The Silicon Valley ecosystem of technological innovation and entrepreneurship,” If Venture Capital Falters, Will Job Creation Fade? by Christopher DiGiorgio and Jeanne G. Harris, Accenture Institute for High Performance 2013 (P. 3, Figure 1). https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Technology_11/Accenture-Venture-Capital-Silicon-Valley.pdf

Additional ecosystem models and resources:

“Entrepreneurial Ecosystem Momentum and Maturity” by Ken Harrington, Ewing Marion Kauffman Foundation, April 2017: <http://www.kauffman.org/what-we-do/research/2017/entrepreneurial-ecosystem-momentum-and-maturity>

Isenberg's Entrepreneurship Ecosystem Project: <http://entrepreneurial-revolution.com/about-beep/>

“Introducing the Entrepreneurship Ecosystem: Four Defining Characteristics,” by Daniel Isenberg, Forbes, 25 May 2011: <https://www.forbes.com/sites/danisenberg/2011/05/25/introducing-the-entrepreneurship-ecosystem-four-defining-characteristics/#1cd9645c5fe8>

Domains of the Entrepreneurship Ecosystem (Babson Global): <https://blogs-images.forbes.com/danisenberg/files/2011/05/EES-Domains-and-Pil-lars-only1.jpg>

Have the teams analyze the models and identify what elements featured in each model are considered essential to the success of Silicon Valley's ecosystem.

Once they compare/contrast the models, teams should summarize the essential elements of the Valley's ecosystem and how these elements interact using the film and earlier discussion as a guide. Reconvene the group and have each team share their observations.

Part 2: Adapting Ecosystem Lessons to Your Community

Discuss: How would you describe the ecosystem where you live?

1. How does it compare with the ecosystem of Silicon Valley?
2. How might you apply the lessons of Silicon Valley to your community?

Have teams collaborate to adapt what they have learned using The Startup Ecosystem Canvas Template from the Founder Institute (see below).

Facilitator Note: If participants have specific startup/entrepreneurial projects in mind, they can tailor their Startup Ecosystem evaluation to those goals. If not, the teams can make a general evaluation of their community.

The Startup Ecosystem Canvas:

The graphic organizer and instructions to guide the evaluation of your community's ecosystem and how it can be harnessed for entrepreneur projects: https://fi.co/canvas_template

Printable Ecosystem Canvas Template: https://fi.co/system/upload/ecosystem_canvas_worksheet_v1.pdf

Optional resource:

Y Combinator Startup Playbook written by Sam Altman & illustrated by Gregory Koberger: <http://playbook.samaltman.com/>

When teams have completed their Startup Ecosystem evaluations, have them pair-up to review and provide feedback on each other's work. Teams should make revisions or pivot as needed.

Reconvene and have the group take a "gallery walk" to review all of the teams' ecosystem evaluations.

Reflection

Group Discussion: Revisit the essential question

What is the "secret sauce" of Silicon Valley?

What are innovation and entrepreneurship and what makes them possible?

How will you apply what you have learned through this workshop to your own work?

What is the Right Ecosystem for Social Entrepreneurship?

Social entrepreneurship and social enterprise may benefit from applying techniques pioneered by startup companies and entrepreneurs in Silicon Valley to develop, fund, and implement solutions to social, cultural, or environmental issues around the world.

Have participants research and identify social entrepreneurship projects in their region or in other parts of the world. What strategies have been most effective? How replicable and/or scalable are these projects?

Have participants research and identify social entrepreneurship projects that have been unsuccessful. What are common mistakes that social entrepreneurship projects make? In what ways is the entrepreneur model more or less effective in different regions? What are the criticisms of social entrepreneurship as a development model?

Have participants define the type of ecosystem that is necessary for social entrepreneurship projects to thrive. How are these ecosystems similar to/different from the ecosystem model in Silicon Valley?

How is success measured in social entrepreneurship projects? What elements of the social entrepreneurship ecosystem are most problematic and difficult to predict or manage? When the goal of a project is social progress rather than profits and dividends, how does that impact the commitment of stakeholders, the reliability of resources, and the stability of the overall program?

Have participants debate whether the social entrepreneurship and social enterprise model is viable as a universal development model in the long term.

Resources:

Stanford Social Innovation Review (SSIR): <https://ssir.org/>

The Center for the Advancement of Social Entrepreneurship: Duke University, The Fuqua School of Business: <https://centers.fuqua.duke.edu/case/>

Why Small and Growing Businesses (SGBs)?: <http://www.whysgbs.org/>

"Social Entrepreneurship as Fetish," by Fredrik O. Andersson, Nonprofit Quarterly. April 11, 2012: <https://nonprofitquarterly.org/2012/04/11/social-entrepreneurship-as-fetish-2/>

Venture Capital and the Silicon Valley Ecosystem

What sets the Silicon Valley ecosystem apart? One of the key ingredients in the Valley's secret sauce is the unique history and role of venture capitalists and their relationships with entrepreneurs such as WhatsApp founder Jan Koum and Jim Goetz of Sequoia Capital.

Have participants explore the origins of venture capitalists in Silicon Valley and their unique relationship with the region's culture of innovation:

1. What impact did the Small Business Investment Act of 1958 have on the rise of venture capital in Silicon Valley?
2. How does venture capital contribute to the Silicon Valley ecosystem?
3. How does the venture capital model mirror the focus on local and global social networks?
4. How would the Valley's culture be affected if entrepreneurs needed to rely on more traditional sources of funding and venture capital did not exist?
5. What are the benefits and challenges that result from reliance on venture capitalists? How has the venture capital model influenced Silicon Valley's entrepreneurial and workplace demographics?
6. What is the future of venture capital in Silicon Valley?

Check out the Additional Resources PDF as well as the links below:

Computer History Museum:
<http://www.computerhistory.org/>

AnitaB.org (formerly Anita Borg Institute for Women and Technology, and Institute for Women in Technology)
<https://anitab.org/>

Center for Social Innovation:
<https://www.gsb.stanford.edu/faculty-research/centers-initiatives/csi>

Entrepreneur:
<https://www.entrepreneur.com/>

Hewlett Packard—History:
<http://www8.hp.com/us/en/hp-information/about-hp/history/overview.html>

Stanford Business Review: “How Much Does Venture Capital Drive the U.S. Economy?” October 21, 2015 by Ilya A. Strebulaev Will Gornall:
<https://www.gsb.stanford.edu/insights/how-much-does-venture-capital-drive-us-economy>

Stanford Social Innovation Review (SSIR):
<https://ssir.org/>

Startup Revolution
<https://www.startuprev.com/>

Y Combinator:
www.ycombinator.com/

SILICON VALLEY AND THE COMPUTER HISTORY MUSEUM

SILICON VALLEY: SECRET SAUCE

Secret Sauce

“Secret Sauce” is the first segment of the three-part film series, *Silicon Valley: The Untold Story*, that explores the unique mix of ingredients—the secret sauce—that fueled the Valley’s rise to becoming the world’s technological and economic powerhouse.

Silicon Valley: The Untold Story

Around the world, people want to know what it is about Silicon Valley that has made it a hotbed of innovation and entrepreneurship for decades. *Silicon Valley: The Untold Story* explores the fascinating and often unknown stories of the people, partnerships, events, and social changes that shaped Silicon Valley and changed the world.

For every decade or so since the early 1900s, Silicon Valley has spawned or nurtured not just new products but whole new industries: Vacuum tubes. Radio. Radar. Integrated circuits. Venture Capital. PCs. Printers. Genetic Engineering. Software. Networking hardware. The Internet. Social media. Cloud computing. Mobile.

This three-part Discovery Science Channel primetime series, *Silicon Valley: The Untold Story*, explores the evolution of Silicon Valley and examines how it has managed to stay on the cutting edge of innovation for so long. The film was produced by Kikim Media, founded in 1996 by Kiki Kapany and Michael Schwarz, whose work over the past 20 years has been honored with some of the most prestigious awards in broadcasting. Production of *Silicon Valley: The Untold Story* was made possible thanks to a generous grant from The Alfred P. Sloan Foundation.

The Computer History Museum

The history of computers is the history of our modern world. The Computer History Museum (CHM) in Silicon Valley, California is dedicated to preserving and presenting the stories and artifacts of the information age and exploring the ongoing impact of the computing revolution on society. CHM explores not only the “what” but also the “why” and the “how” of computing, and brings to life the historical narratives, first-person accounts, iconic examples of industrial design, business and marketing strategies, that shape our modern world and change the way we work, live, and play.

The Exponential Center at the Computer History Museum captures the legacy and advances the future of entrepreneurship and innovation in Silicon Valley and around the world. Our mission is to inform, influence, and inspire the next generation of innovators, entrepreneurs, and leaders changing the world.

VIEWING GUIDE

INNOVATION & ENTREPRENEURSHIP

SILICON VALLEY: SECRET SAUCE

Instructions: While watching the film, identify specific examples of “Qualities that Favor Innovation & Entrepreneurship” as illustrated in the histories of Hewlett Packard and Apple. Note scenes, quotes, and events in the appropriate categories below. (If you need more space or think of additional qualities, you can write your notes on the back of this handout or on a separate sheet of paper.)

QUALITIES THAT FAVOR INNOVATION & ENTREPRENEURSHIP

EXPERIMENTATION AND RISK-TAKING

TALENT POOL

IMAGINATIVE, DIVERSE EXPERTISE, AND EAGER TO COLLABORATE

GIVING BACK

SHARING IDEAS AND REINVESTING IN THE COMMUNITY

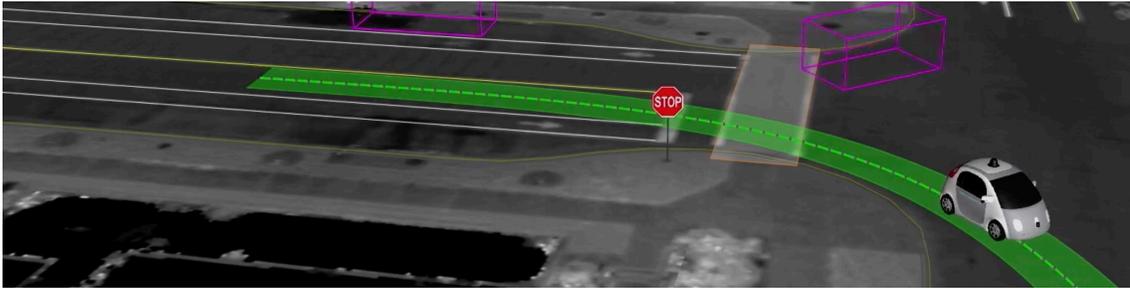
DIVERSE SOURCES OF FUNDING

OPPORTUNITY TO COLLABORATE WITH INDUSTRY

GOVERNMENT SUPPORT

SILICON VALLEY: MAGNETIC FORCE & ENTREPRENEURSHIP

Changing the world by changing the game



Overview

Audience: College, Organizations, Adult Learners, and Community Screenings

Duration: 1–2 sessions + optional projects

Essential Question

What can successful immigrant and women entrepreneurs teach us about what it takes to be a success in Silicon Valley?

LESSON/WORKSHOP GOAL:

Participants will:

Define what we mean by an “entrepreneur”

Identify what common qualities successful entrepreneurs share

Explore the specific challenges that immigrant and women entrepreneurs face as illustrated in the film *Silicon Valley: The Untold Story* and the role of public funding in Silicon Valley’s success

Identify the qualities and skill-sets they develop as a result of their experiences

Understand the benefits diversity offers to companies

Engage with the individual stories of entrepreneurs from the Computer History Museum Oral History Collection

Apply the lessons they have learned through this workshop to achieving their own professional, academic, personal goals

RESOURCES/MATERIALS

Clips from *Silicon Valley: Secret Sauce*

Silicon Valley: The Untold Story Official Trailer:

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Magnetic Force Clip 1

“The fact is, the heroes of Silicon Valley could not have done what they did without a lot of help provided by taxpayers, by a new breed of investors, and waves of immigrants.”

<https://www.youtube.com/watch?v=munnoPKi0xw&index=4&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Magnetic Force Clip 2

“As one of the few women CEOs, I got a lot of attention.”

<https://www.youtube.com/watch?v=2G6AMigAgH4&index=5&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Magnetic Force Clip 3

“New ideas are born of people with multiple perspectives who come in with a belief that they can make a difference.”

<https://www.youtube.com/watch?v=KBe97-fGfjE&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO&index=6>

Computers with Internet access

LCD projector

Butcher paper and/or chart paper (optional: sticky notes)

Markers, pens, and writing paper

Whiteboard

Handouts

- Facilitator Handout A: Silicon Valley and the Computer History Museum
- Facilitator Handout B: Entrepreneur Quotes
- Workshop Handout A: Discussion Questions

INTRODUCTORY ACTIVITY: WHAT IS AN ENTREPRENEUR?

Give students/participants two minutes to define “entrepreneur” in one or two sentences and have them share their responses. (Facilitator note: if the group/class is large, ask volunteers to share their definitions. If the group is small—fewer than 15 members—have the group read out their responses one after the other in rapid succession.) Record similarities among the responses and review with the group.

Share a formal definition (such as the dictionary definition below) and combine it with the group’s responses to create a working definition for entrepreneur. Refer back to and refine this definition throughout the workshop.

Entrepreneur: one who organizes, manages, and assumes the risks of a business or enterprise (<https://www.merriam-webster.com/dictionary/entrepreneur>).

ACTIVITY 1:

WHAT ARE ENTREPRENEURS MADE OF?

Explain: It's difficult to define what an "entrepreneur" is. They're often successful as a result of their unique perspectives, skills, and personal connections to their work. To understand the modern entrepreneur community, we will examine how some of the most successful and innovative entrepreneurs of our time describe what they do, why they do it, and what personal qualities helped them achieve their goals.

Organize the participants/students into small teams and distribute about three quotes to each group (depending on class size) from Facilitator Handout B: Entrepreneur Quotes.

Have the teams read their collection of quotes and make a list of common qualities and characteristics that their entrepreneurs demonstrate and/or highlight.

Tape a large sheet of butcher paper on a flat wall and distribute markers to each team. Invite all of the teams to write their responses on the wall. Reconvene the participants/students to review and discuss their responses.

Next, have the teams choose two traits from the wall that they think are most important for an entrepreneur to possess then share and explain their selection. Record the teams' responses on a separate piece of chart paper or whiteboard.

Discuss: Did any of the teams identify "collaborative" or "collaboration" as an important quality for successful entrepreneurship? If so, why? If not, why was it omitted?

Entrepreneurship and Diversity through Collaboration

Share the article "Why Collaboration Is Essential to Entrepreneurship" by Amy Rosen from Entrepreneur Magazine:

"Why Collaboration Is Essential to Entrepreneurship," by Amy Rosen. Entrepreneur Magazine, 7 May 2015: <https://www.entrepreneur.com/article/245599>

Follow with a brief discussion:

1. Why do some people not typically associate entrepreneurship with collaboration? How do collaborative work cultures help to reinforce the value of diversity?
2. Why would collaboration be a benefit for entrepreneurs? What are the potential risks of entrepreneurship? Do you think the benefits outweigh the risks? Why or why not?
3. The article references a McKinsey & Company report that stated: "Between 2008 and 2010, companies with more diverse top teams were also top financial performers. That's probably no coincidence." Why do you think that is?

See the report: "Is there a payoff from top-team diversity?" by Thomas Barta, Markus Kleiner, and Tilo Neumann. McKinsey & Co. Quarterly, April 2012: <https://www.mckinsey.com/business-functions/organization/our-insights/is-there-a-payoff-from-top-team-diversity>

ACTIVITY 2: WHO IS SILICON VALLEY?

Explain: What role does diversity play in Silicon Valley's history and success? We'll watch excerpts from the film series *Silicon Valley: The Untold Story* and explore the "Magnetic Force" that draws innovators from all over the world and learn how the Valley's complex and changing community is shaping the future of technology.

Review the brief summary about the series *Silicon Valley: The Untold Story*, in Facilitator Handout A: Silicon Valley and the Computer History Museum

Ask the participants/students to take notes while watching the film and record quotes, scenes, themes that refer to the significance of collaboration in the entrepreneur community, and how the demographics of the Valley have changed throughout its history.

Play the official trailer for *Silicon Valley: The Untold Story* (optional)

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

and CLIP 1 and follow with a brief discussion:

<https://www.youtube.com/watch?v=munnoPKi0xw&index=4&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

1. What do you think of when you hear "Silicon Valley"?

2. In the film, Leslie Berlin says, "If you're serious about succeeding in finance, you go to New York City. If you're serious about the movies, you go to Hollywood. If you're serious about science and technology, you come to Silicon Valley." Why is Silicon Valley a magnet for technology entrepreneurs and professionals from around the world?

3. What did Fred Turner mean when he said, "The story of the valley is typically told as a story in which heroic and entrepreneurial individuals suddenly find inside themselves the intellectual fortitude and the personal drive to create technologies to change the world. It's a highly individualistic story. It's deeply resonant with American myth and American history, but it's not the case"? If this isn't the true story of Silicon Valley, why does this myth persist? What role does collaboration play in the Valley's success story?

4. What does Jan English-Lueck mean by saying that Silicon Valley "self-consciously aims to change the world"?

5. What role has public funding played in Silicon Valley? In what ways are taxpayer-funded resources especially critical to the Valley's success?

6. Why was Sputnik a catalyst for the expansion of innovation and manufacturing in Silicon Valley? What innovations resulted from the Space Race and Cold War?

Play CLIP 2 and follow with a brief discussion:

<https://www.youtube.com/watch?v=2G6AMigAgH4&index=5&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

1. Despite the fact that women have been integral to Silicon Valley's history from the beginning, the technology industry still employs significantly fewer women than men. Kim Polese comments, "And yet it believes it's a meritocracy. So that's not a good combination." What does she mean?

2. Do you think Silicon Valley's industry is a meritocracy? Why? How does the belief that it is a meritocracy help to reinforce gender and racial inequality?

3. What other factors contribute to Silicon Valley's lack of gender diversity?

4. What strategies are female entrepreneurs and professionals like Heidi Roizen and Kim Polese using to break down barriers in the industry?

Play CLIP 3 and follow with a brief discussion:

<https://www.youtube.com/watch?v=KBe97-fGfjE&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO&index=6>

1. Despite the lack of gender diversity, more than a third of Silicon Valley's professionals are foreign born. What is the benefit of this geographic and cultural diversity?

2. Why did Narinder Kapany choose to move to Silicon Valley? What did the Valley offer that Boston did not? What resources and opportunities were available to him in the Valley?

Following the screening, break out into small teams or discuss the film as a full group/class. Distribute Workshop Handout A: Discussion Questions and instruct the teams to reflect on the film using the prompts.

Facilitator note: If the group has been working in discussion teams, reconvene and discuss this final prompt together:

What are some benefits that increased gender, cultural, and geographic diversity could bring to the Silicon Valley economy and community?

Reconvene the group and discuss: What stood out or surprised you most about Silicon Valley's history and culture?

In the film, Leslie Berlin says, "New ideas are born of people with multiple perspectives who come in with a belief that they can make a difference." What do you think she means by this? What examples of this dynamic can you give from the film clips?

What challenges does increased diversity pose? How will Silicon Valley's culture need to change or evolve to be more inclusive for women and "minority" tech employees from across the United States? How can it remain welcoming to immigrants, who make up over half of workers in computer, mathematical, architectural, and engineering fields? (Currently, workers from China and India greatly outnumber foreign-born workers from other countries. And, while nearly 79% of women ages 25-44 in computer and mathematical fields working in Silicon Valley in 2017 were foreign-born, relatively few women born in the US worked in those fields. Check out updated demographic information here: <http://siliconvalleyindicators.org/data/people/talent-flows-diversity/foreign-born/>)

How could diverse experiences, talents, backgrounds, and perspectives benefit Silicon Valley's culture of innovation? How could new and varied voices open up new markets in the United States and around the world? For example:

Immigrants from African, Latin American, and Southeast Asian countries can provide nuanced perspectives on the unique tech markets, cultural interests, and challenges in their region.

Women around the world are increasingly (if slowly) gaining economic independence and political power. Increasing representation of women in tech will help to identify and address how women's interests and experiences can be better served by the industry.

Non-whites already comprise more than half the population in Silicon Valley, and by 2040, African Americans, Asians, Latinos, and Native Americans will make up more than half of the U.S. population. Tech employees from "minority" communities can help companies prepare for and connect with a more diverse America.

ACTIVITY 3: APPLYING ENTREPRENEUR LESSONS

Distribute paper to each participant and have them free-write a response to the following question for 3-5 minutes. Have participants review their responses with a partner then share with the group :

What creative strategies did the entrepreneurs in the film use to overcome barriers related to gender/race/culture/etc.? [Facilitator Note: barriers mentioned in the film, include access to funding, attaining leadership positions, corporate/work culture in Silicon Valley, preconceived assumptions about their abilities, etc.

Reconvene and discuss:

1. What strategies did these entrepreneurs use to work successfully within the culture of Silicon Valley?
2. How did they “change the game” to make the benefits of Silicon Valley work for them?
3. How could the skills required and developed by entrepreneurs from minority communities benefit their work in tech professions, strengthen their journeys as entrepreneurs, and make them valuable assets as members of a collaboration?
4. How could these strategies/skills be helpful for new entrepreneurs from any background?

Have the participants organize into new breakout teams.

Explain: We will now dig deeper into an entrepreneur’s experience in Silicon Valley and collaborate to apply the lessons we’ve learned through this workshop to your own professional/academic/personal journeys.

Introduce the teams to the Computer History Museum Oral History Collection (<http://www.computerhistory.org/collections/oralhistories/>) and have them select an entrepreneur interview to watch/read together. Have them note how this professional’s qualities and skills intersect with what they have discovered through previous activities and how this entrepreneur applied her/his qualities to succeed in the tech industry.

Students should then shuffle so each new discussion group has at least one participant from the original team. Have this new group compare/contrast what they learned from their CHM entrepreneur interviews.

Have the original teams reconvene and identify and discuss the two most significant lessons each member has learned and how they hope to apply this knowledge to their own professional journeys.

Reflection

Group Discussion - Revisit the essential question:

What lessons have successful immigrant and women entrepreneurs taught you today about what it takes to succeed?

What is one lesson that you learned today that you would like to share with other people?

How will you apply what you have learned through this workshop?

Tech Equity—The Journey Toward Inclusion in Silicon Valley

Despite recent efforts to address the need for full inclusion of diverse groups in the Silicon Valley professional community, progress has been spotty. A 2017 study by the Ascend Foundation analyzed the leadership trends for San Francisco Bay Area technology companies through publicly available data covering 2007-2015. Their findings suggest that new and innovative strategies are needed to cultivate a culture of inclusion in companies and funders as well as the broader Silicon Valley community. According to the study:

Race is an increasingly more significant impediment than gender to climbing the management ladder, with Asian women and Hispanic women most affected.

Asians are the least likely to be promoted to managerial or executive positions, in spite of being the largest minority group of professionals and the most likely to be hired. In particular, Asian women are the least represented group as executives, at 66% under-representation.

White men and women are twice as likely as Asians to become executives and hold almost three times the number of executive jobs.

Even though white women are now substantially more successful in reaching the executive level than all minority men or women, white men are still 47% more likely than white women to be executives.

Both Blacks and Hispanics have declined in their percentage share of the professional workforce over the past decade despite pledges to close the diversity gap.

Adapted from: THE ILLUSION OF ASIAN SUCCESS: Scant Progress for Minorities in Cracking the Glass Ceiling from 2007–2015 (October 2017) by Buck Gee, Executive Advisor of Ascend and Denise Peck, Executive Advisor of Ascend <http://c.yimcdn.com/sites/www.ascendleadership.org/resource/resmgr/research/TheIllusionofAsianSuccess.pdf>

Have participants/students:
Examine the history of Silicon Valley over the last century and identify the circumstances, events, and individuals that have contributed to the current demographics of the tech community.

Review how the debate about qualified candidate “pipelines” has changed over the past 20 years and how it is viewed today.

Identify companies and startups that are succeeding in establishing an inclusive culture, and explore the many campaigns and organizations working to improve opportunities for diverse communities.

Compare Silicon Valley to tech communities in places like Seattle, Washington; Boston, Massachusetts; London, England; Beijing, China; Tel Aviv, Israel. Compare how diverse and inclusive other tech hubs are and how that might impact their innovation and quality of life.

Use their research to support their conclusions about the cause of diversity challenges in Silicon Valley, how the community would benefit from progress in this area, and which recent strategies appear to be most promising.

Resources

AnitaB.org - Women transform technology:
<https://anitab.org/>

Ascend Leadership and Foundation:
www.ascendleadership.org

Black Girls Code:
www.blackgirlscode.com/

CEO Action for Diversity & Inclusion:
<https://www.ceoaction.com/>

Culture Shift Labs:
<http://www.cultureshiftlabs.com/>

Hispanic Foundation of Silicon Valley:
<http://www.hfsv.org/Initiatives>

Lesbians Who Tech:
<https://lesbianswhotech.org>

Project Include:
<http://projectinclude.org/>

StartOut:
<https://startout.org/>

TechEquity Collaborative:
<https://techequitycollaborative.org>

#YesWeCode:
www.yeswecode.org

Wonder Women:**Entrepreneurship, Education, and New Frontiers**

It takes hard work, hard science, and hard-core commitment to change the world. But Calico Chief Computing Officer Daphne Koller and GoldieBlox CEO and Cofounder Debra Sterling are doing it. These technologists turned entrepreneurs are creating building blocks for achieving healthier lives and empowering girls to meet their potential. View and discuss the panel discussion Wonder Women: Entrepreneurship, Education, and New Frontiers, from the Computer History Museum Collection.

Have participants/students explore videos on the role of women in tech in the Computer History Museum Collection and compare the opportunities, perspectives, and expectations about women in the computer industry from the 1990s to today and discuss: What progress has been made? How have the challenges and opportunities changed? What expectations have been fulfilled and what progress is still needed? Based on these comparisons, what will life be like for women in tech 10 or 20 years from now?

Resources:

Wonder Women: Entrepreneurship, Education, and New Frontiers, The Computer History Museum Oral History Collection: <http://www.computerhistory.org/collections/catalog/102738586>

The Computer History Museum Collection: videos (Moving Images) on the topic of women in tech: <http://www.computerhistory.org/collections/search/?s=Women&f=movingimage>

Women in Tech videos and discussion guides from the Museum's Exponential Center on topics like gender and job stereotypes and challenges for women leaders: <http://www.computerhistory.org/exponential/women-swork/>

Check out the Additional Resources PDF as well as the links below:

Computer History Museum:
<http://www.computerhistory.org/>

AnitaB.org (formerly Anita Borg Institute for Women and Technology, and Institute for Women in Technology):
<https://anitab.org/>

Ascend Leadership and Foundation:
www.ascendleadership.org

Black Girls Code:
www.blackgirlscode.com/

CEO Action for Diversity & Inclusion:
<https://www.ceoaction.com/>

Center for Social Innovation:
www.gsb.stanford.edu/faculty-research/centers-initiatives/csi

Culture Shift Labs:
<http://www.cultureshiftlabs.com/>

Hispanic Foundation of Silicon Valley:
<http://www.hfsv.org/Initiatives>

Lesbians Who Tech:
<https://lesbianswhotech.org>

Project Include:
<http://projectinclude.org/>

StartOut:
<https://startout.org/>

Stanford Social Innovation Review (SSIR):
<https://ssir.org/>

Startup Revolution:
<https://www.startuprev.com/>

TechEquity Collaborative:
<https://techequitycollaborative.org>

#YesWeCode:
www.yeswecode.org

Y Combinator:
www.ycombinator.com/

SILICON VALLEY: THE UNTOLD STORY—MAGNETIC FORCE SILICON VALLEY AND THE COMPUTER HISTORY MUSEUM

Magnetic Force

Magnetic Force,” the second episode of the three-part film series, *Silicon Valley: The Untold Story*, explores why Silicon Valley draws innovators from all over the world and shows how the Valley’s increasing diversity is shaping the future of technology.

Silicon Valley: The Untold Story

Around the world, people want to know what it is about Silicon Valley that has made it a hotbed of innovation and entrepreneurship for decades. *Silicon Valley: The Untold Story* explores the fascinating and often unknown stories of the people, partnerships, events, and social changes that shaped Silicon Valley and changed the world.

For every decade or so since the early 1900s, Silicon Valley has spawned or nurtured not just new products but whole new industries: Vacuum tubes. Radio. Radar. Integrated circuits. Venture Capital. PCs. Printers. Genetic Engineering. Software. Networking hardware. The Internet. Social media. Cloud computing. Mobile.

This three-part Discovery Science Channel primetime series, *Silicon Valley: The Untold Story*, explores the evolution of Silicon Valley and examines how it has managed to stay on the cutting edge of innovation for so long. The film was produced by Kikim Media, founded in 1996 by Kiki Kapany and Michael Schwarz, whose work over the past 20 years has been honored with some of the most prestigious awards in broadcasting. Production of *Silicon Valley: The Untold Story* was made possible thanks to a generous grant from The Alfred P. Sloan Foundation.

The Computer History Museum

The history of computers is the history of our modern world. The Computer History Museum (CHM) in Silicon Valley, California is dedicated to preserving and presenting the stories and artifacts of the information age and exploring the ongoing impact of the computing revolution on society. CHM explores not only the “what” but also the “why” and the “how” of computing, and brings to life the historical narratives, first-person accounts, iconic examples of industrial design, business and marketing strategies, that shape our modern world and change the way we work, live, and play.

The Exponential Center at the Computer History Museum captures the legacy and advances the future of entrepreneurship and innovation in Silicon Valley and around the world. Our mission is to inform, influence, and inspire the next generation of innovators, entrepreneurs, and leaders changing the world.

SILICON VALLEY: THE UNTOLD STORY

MAGNETIC FORCE

ENTREPRENEUR QUOTES

Instructions: Make at least three copies of the Entrepreneur Quotes handout and cut out the individual quotes. Randomly distribute one quote to each student as directed in Activity 1.

<p>“You’ve got to take some risk to do new things.” — Allan Alcorn, developed Pong for Atari</p>	<p>“I think that’s the single best piece of advice: constantly think about how you could be doing things better and questioning yourself.” — Elon Musk, founder Tesla, SpaceX</p>
<p>“Innovation is the never-ending search for better solutions.” — Andy Bechtolsheim, cofounder Sun Microsystems</p>	<p>“Knowing whose advice to take and on what topic is the single most important decision an entrepreneur can make.” — Vinod Khosla, cofounder Sun Microsystems, founder Khosla Ventures</p>
<p>“Move fast and break things. Unless you are breaking things you are not moving fast enough.” — Mark Zuckerberg, founder and CEO, Facebook</p>	<p>“...I view this year’s failure as next year’s opportunity to try again.” — Gordon Moore, cofounder, Intel Corp.</p>
<p>“If you love what you do and are willing to do what it takes, it’s within your reach.” — Steve Wozniak, cofounder, Apple Computers</p>	<p>“I’m convinced that about half of what separates the successful entrepreneurs from the non-successful ones is pure perseverance.” — Steve Jobs, cofounder and CEO of Apple</p>
<p>“I’d say determination is the single most important quality in a startup founder. If the founders I spoke with were superhuman in any way, it was in their perseverance.” — Jessica Livingston, cofounder, Y Combinator</p>	<p>“I don’t know any successful entrepreneur that doesn’t have at least a handful of stories about the things they did that went horribly wrong.” — Heidi Roizen, cofounder and CEO, T/Maker</p>
<p>“Get into the business for the right reasons—to build something great that you’re passionate about and that fills a real need.” — Adi Tatarko, cofounder and CEO, Houzz</p>	<p>“I think it’s been a real challenge... [don’t] get too distracted by all the possibilities.” — Julia Hartz, cofounder and president, Eventbrite</p>
<p>“Fail often so you can succeed sooner.” — Tom Kelley, partner at Ideo</p>	<p>“What would you do if you weren’t afraid?” — Sheryl Sandberg, COO, Facebook</p>
<p>“Your most unhappy customers are your greatest source of learning.” — Bill Gates, co-founder of Microsoft</p>	<p>“We don’t celebrate failure in Silicon Valley. We celebrate learning.” — Reid Hoffman, cofounder, LinkedIn</p>
<p>“A lot of people have ideas, but there are few who decide to do something about them now. Not tomorrow. Not next week. But today. The true entrepreneur is a doer, not a dreamer.” — Nolan Bushnell, entrepreneur Atari, Inc. and Chuck E. Cheese’s — Pizza Time Theatre</p>	<p>Exponential Center @CHM</p>

SILICON VALLEY: THE UNTOLD STORY

MAGNETIC FORCE

DISCUSSION QUESTIONS

1. What qualities and traits do the entrepreneurs in the film share with our own list? What qualities would you add (if any) after hearing their stories?
2. In the film we learn, “the heroes of Silicon Valley could not have done what they did without a lot of help provided by taxpayers through government and military contracts, by an outward-looking university, by a new breed of investors, and waves of immigrants.” How has the culture of innovation in Silicon Valley been supported by American taxpayers? Why is it important to recognize that the Valley is as much a product of public funding as venture capitalists and entrepreneurs? Would you classify this as a form of collaboration? Why or why not?
3. Why do people come to Silicon Valley from all over the world? How has this geographic and cultural diversity driven the Valley’s success?
4. What aspects of Silicon Valley’s history have influenced the disproportion of White European male professionals in top leadership roles? How have the demographics of the Valley changed throughout its history?
5. How is being an “outsider” (a woman, immigrant, or “minority”) a benefit and hindrance in Silicon Valley?
6. According to the film, in Silicon Valley men have always been more likely than women to be judged solely on their merits. Why do you think that is? What role have women played in Silicon Valley’s success?
7. Kim Polese talks about her experience in Silicon Valley: “I’m perplexed by the fact that we’re still dealing with this problem. Back then in 1996 when we co-founded Marimba and I was getting some of this strange reaction I thought well this will all be gone in 10 years, there will be so many more women founding and building companies. This is just a blip in time. Unfortunately, 20 years later now, things have changed for the better, but they certainly are not where they need to be.” Why do you think women are still underrepresented in the tech industry?
8. What challenges do both women and immigrants confront when pursuing entrepreneur projects in Silicon Valley? How does the “funders culture” contribute to the demographic profile of the Valley?
9. What role have immigrants played in Silicon Valley’s success? Why do you think immigrants from Asia are more represented in Silicon Valley than immigrants from the “Global South” (Central/South America and Africa)? Why do you think Latin-Americans and African-Americans are also underrepresented?

SILICON VALLEY: LUCKY ACCIDENTS

Pivoting, prototyping and learning from failure



Overview

Audience: College, Organizations, Adult Learners, and Community Screenings

Duration: 1–2 sessions + optional projects

Essential Question

How can we turn failures into learning opportunities?

LESSON/WORKSHOP GOAL:

Participants will:

Consider what sparks inspiration and how failures provide valuable learning opportunities

Understand the importance of pivoting in the innovation process

Explore how risk, persistence, creative problem-solving, and iterative design have driven innovation and entrepreneurship throughout Silicon Valley's history

Apply lessons of rapid prototyping to their own projects

RESOURCES/MATERIALS

Clips from *Silicon Valley: Secret Sauce*

Silicon Valley: The Untold Story Official Trailer:

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Lucky Accidents, Clip 1

"Our culture allows us to take more risks."

<https://www.youtube.com/watch?v=tq-JmGV3E3k&index=7&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Lucky Accidents, Clip 2

"Let's go make some big mistakes."

<https://www.youtube.com/watch?v=oWnCwD9AMV4&index=8&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

Lucky Accidents, Clip 3

"Traveling a long and jagged road."

<https://www.youtube.com/watch?v=uwMWfNg0hgw&index=9&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

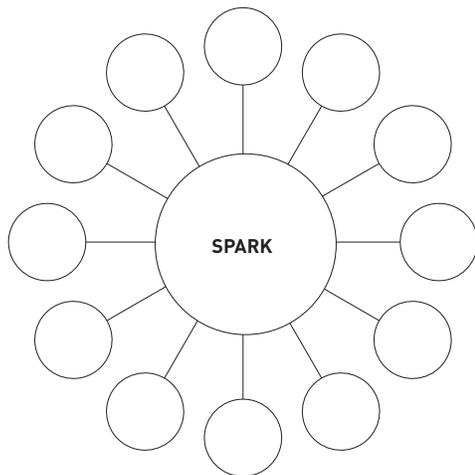
- Computers with Internet access
- LCD projector
- Chart paper
- Butcher paper
- Sticky notes (multiple colors)
- Markers, pens and writing paper
- Whiteboard/blackboard
- Additional design project supplies, as needed
- Handouts
 - Facilitator Handout: Silicon Valley and the Computer History Museum
 - Handout: Adapting Rapid Prototyping

INTRODUCTORY ACTIVITY: MAKING SPACE FOR ENTREPRENEURSHIP AND INNOVATION

Ask participants to free-write for about 3-5 minutes about a time when they felt inspired, had an “Ah-ha!” moment, or were in a creative “zone.” Organize the group into pairs and have them discuss what circumstances, environments, work cultures, activities, interactions, stimuli (sounds, sights, smells, etc.) spark creativity and inspiration for them.

Facilitator tip: Prep participants for the workshop by establishing that there are no wrong answers or ideas in brainstorming. Brainstorming is an opportunity for them to free their imaginations and write whatever comes to mind, without judgement.

Give each pair a sheet of chart paper and markers. Have them draw a circle in the center, write “SPARK” in it (example below) and surround it with all the stimuli that spark inspiration.



Organize the group into new pairs and distribute a second sheet of chart paper. Ask the pairs to draw another circle in the center, write “IDEA,” and pose the question: What do we need to take a project from idea to reality? Have them brainstorm and quickly surround their idea with as many responses as they can.

Follow with a quick gallery walk so participants can view the responses to both the SPARK and IDEA brainstorm activities made by other pairs. Reconvene for a brief discussion:

1. What sparks inspiration for our group? What were the most common responses? What surprised you most about your own or other responses?
2. What do we need to take a project from idea to reality? What patterns do we see in our responses?
3. Which responses refer to the importance of “resources” (funding, equipment, workspaces, etc.) for making innovation possible?
4. Do any of the responses refer to the style of work environments or communities that innovation thrives in? Why would this be important?
5. What examples of collaboration (if any) were identified in our brainstorming activity? Do you think collaboration is a benefit or an obstacle to inspiration, creativity, and innovation? Why? What role can collaboration play in the process of innovation?
6. Did anyone include concepts like “failure,” “mistakes,” or “trial and error”? How can failure or mistakes be useful?

Organize the group into new pairs again and distribute a third sheet of chart paper. Following the same process, have them draw a circle in the center and write the word “FAILURE.” Ask the pairs: How can we turn failures into opportunities? Have them brainstorm and quickly surround their idea with as many responses as they can.

Follow with a quick gallery walk and reconvene for a brief discussion:

1. What responses surprised you most?
2. According to our responses, what are our most common strategies for responding to failure?
3. Is it better to persist in the face of failure or walk away? Why?
4. What benefits does trial and error provide?
5. Which responses refer to changing direction or goals? How can this be a benefit? Can you give a specific example?
6. Pivoting is seen as critical to invention, innovation, and entrepreneurship. What does it mean to “pivot”?

ACTIVITY 1: PIVOTING

Explain: Although the early stages of a startup or entrepreneurial endeavor require persistence and a commitment to the creative vision, successful entrepreneurs understand the importance of making adjustments and revising goals.

“Pivoting” is the art of recognizing that the pursuit of a specific idea, direction, or product – in which you’ve invested significant time, money, and energy – is no longer the correct path to follow. According to the Startup Genome Compass of San Francisco, “founders who change products and markets between one and three times raise more money than those who don’t.”

Ask participants to give examples of successful companies that had to pivot during their development. Share two or three of these examples to further demonstrate the importance of pivoting:

Resources:

“11 Startups That Found Success By Changing Direction,” by Nicolas Thomas for Mashable, July 8, 2011. <http://mashable.com/2011/07/08/startups-change-direction/#xTkRu5lHlPqp>

“14 Famous Business Pivots,” by Jason Nazar for Forbes.com, Oct 8, 2013. <https://www.forbes.com/sites/jasonnazar/2013/10/08/14-famous-business-pivots/#6e6d1cf57978>

ACTIVITY 2: SILICON VALLEY AND THE CULTURE OF CREATIVE RISK

Explain: Today we will explore how risk, persistence, creative problem-solving, failure, and pivoting have driven invention and innovation throughout Silicon Valley's history.

Have a volunteer read a brief summary about the film series *Silicon Valley: The Untold Story*, in Facilitator Handout: Silicon Valley and the Computer History Museum. (This overview can also be distributed directly to each participant.)

Ask the participants/students to take notes while watching the film and record quotes, scenes, and themes that illustrate the process of revising, refining and pivoting.

Play the official trailer for *Silicon Valley: The Untold Story*

<https://www.youtube.com/watch?v=37SBRv40qsA&index=16&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

and CLIP 1 and follow with a brief discussion (use the following prompts as needed):

<https://www.youtube.com/watch?v=tq-JmGV3E3k&index=7&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

1. Steve Blank says, "It's not that we're smarter. It's that our culture allows us to take more risks because we're not afraid that one shot and you're gone." Why is risk-taking critical to innovation?
2. What did Satjiv Chahil mean when he said, "Silicon Valley is what Florence was to the Renaissance"? How has the work environment in Silicon Valley contributed to decades of innovation and entrepreneurship?
3. What was the original idea for Airbnb? What prompted the founders to change direction (pivot)?

Play CLIP 2 followed by a brief discussion:

<https://www.youtube.com/watch?v=oWnCWd9AMV4&index=8&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

1. Have you heard of Atari or Pong before? In what context?
2. What was the original purpose of the Pong game? What triggered the project to pivot to a new direction?
3. What was Atari's company culture like in its early history? How did that culture affect the creative process? Why was it important that they were willing to "break all the rules" and have the "freedom to screw up"?
4. How did Atari's culture make it possible for them to hire a young Steve Jobs?
5. Why did Nolan Bushnell think Atari was losing its soul after it was bought by Warner Communications? What changed?
6. What were Atari's biggest innovations (technological and cultural)?

Play CLIP 3 followed by a brief discussion:

<https://www.youtube.com/watch?v=uwMWfNgOhgw&index=9&list=PLQsxaNhYv8dbqYLR-MwFOn9MVneh6KASO>

1. What is the "unlikely path" that Kyle Vogt's career has followed? What was the genesis of Twitch and what was the "Ah-ha" moment that caused the original project to pivot? Why did Vogt shift gears to pursue Cruise?
2. Vinod Khosla explains, "If you look at the history of Silicon Valley, for every thousand startups, 990 eventually end up being inconsequential or failures. But the 10 that changed the world have permanent, lasting global impact." What makes those 990 "failures" as valuable to Silicon Valley as the 10 that succeed?

Follow with a reflection on the stories and themes in the film (use the following prompts as needed):

- 1.** What surprised you most in these stories?
- 2.** How is risk-taking connected to innovation and entrepreneurship? What are some examples of how the culture of the Valley allows for failures to serve as learning opportunities?
- 3.** What common risks did Airbnb, Atari, and Kyle Vogt take?
- 4.** Why was the Atari team willing to take big risks but the Warner Communications company was not? What impact did that have on Atari over time?
- 5.** How did the purchase of Atari by the Warner Communications company change their work environment? According to Nolan Bushnell, how was the Warner business culture incompatible with the process of invention and innovation at Atari?
- 6.** How do the products and outcomes compare to their original goals? What were the different phases of each project, and what events triggered the pivots?
- 7.** How do the trajectories of Airbnb, Atari, and Twitch illustrate the importance of pivoting?

ACTIVITY 3: ITERATION AND RAPID PROTOTYPING

Discuss: In the film, entrepreneur Kyle Vogt explains, “History shows us that the companies who build breakthrough technologies but keep them locked up in a lab, lose to the companies who ship early, collect data from their customers, and iterate their products.”

1. What does Vogt mean by this?
2. What does it mean to “iterate” a product?
3. Iteration is a procedure in which repetition of a sequence of operations yields results successively closer to a desired result. How did each of the companies (Airbnb, Atari, Twitch, Cruise) “iterate” their products? What was the benefit of that process?
4. Is the process of iteration finite? What are examples from the film of ongoing iterative design?

Explain: In design thinking, a variation of iterative design is referred to as “rapid prototyping.” Rapid prototyping is the process of quickly building and evaluating a series of “prototypes” early and often throughout the design process. Each time a prototype is used, you gather more information for the next, revised prototype. This cycle continues until the final needs and objectives are met.

Watch Harrison Metal’s Design Thinking 2 Rapid Prototyping video link: <https://flite.com/blog-post/home/2013/3/29/3-lessons-in-rapid-prototyping-with-stanford-dschool.html>

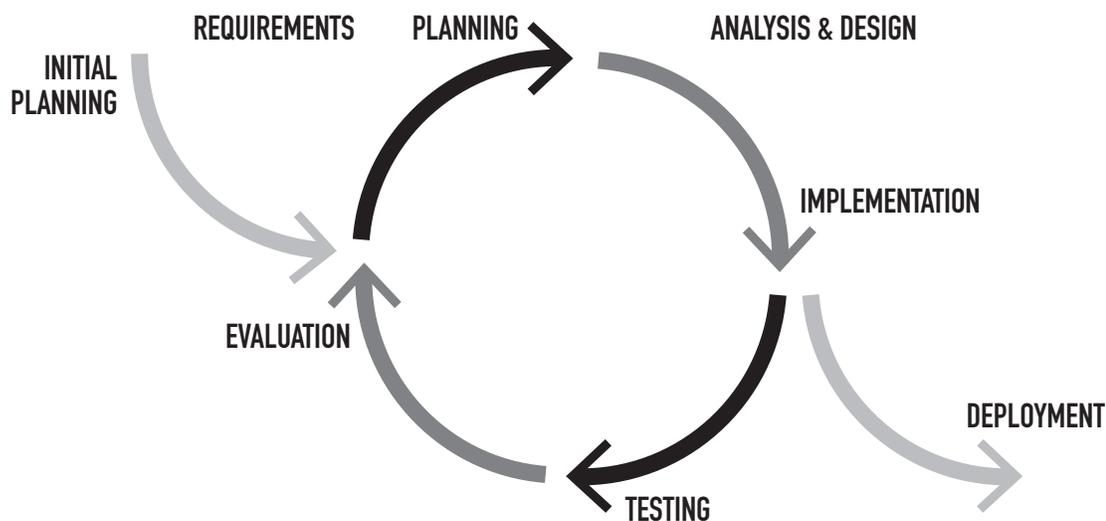
Distribute copies of Handout: Adapting Rapid Prototyping to each participant and have them describe how they could apply the rapid prototype lessons to their own work.

Organize the group into small groups and have each participant share their responses and refine/revise their work based on team feedback.

Reflection

Reconvene the group and reflect:

1. When was the last time you were encouraged to see failure as an important part of the learning or creative process?
2. Failure should be expected when pursuing risky, innovative change. Entrepreneur Elon Musk, who founded Tesla, said, “Failure is an option here. If things are not failing, you are not innovating enough.” How can the fear of making mistakes be a barrier to innovation and entrepreneurship?
3. How can we turn failures into learning opportunities?
4. What is one lesson that you learned today that you would like to share with other people?



“Every time that you see a cycle in a design or development process – it means that iteration is taking place.”

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Lucky Accidents?

The episode “Lucky Accidents” from the film series *Silicon Valley: The Untold Story* charts the circuitous paths and lucky accidents that lie behind some of the Valley’s greatest success stories and reveals that even in a place celebrated for inventing the future, no one can really predict it.

1. Have the group identify examples from the film that illustrate how world-changing innovations can be overlooked?
2. What do each of these examples have in common?
3. What contributed to these innovations being overlooked?
4. What caused these innovations to finally catch on?
5. Have participants collaborate to develop strategies/models to evaluate new ideas and/or overcome resistance to innovation.

Homebrew Computer Club: Makers Past and Present

In March 1975, a group of electronics enthusiasts and technology hobbyists interested in the DIY construction of computing devices met in the garage of computer engineer Gordon French in Menlo Park, California. This was the first gathering of what would later be called, The Homebrew Computer Club. *Time*’s computer technology reporter, Harry McCracken, has called The Homebrew Computer Club “the crucible for an entire industry.”

This informal group of enthusiasts would come together to exchange ideas, share resources, and demonstrate their own projects, and in the process helped to launch the personal computer revolution.

Have students research the history of the The Homebrew Computer Club and the impact its members, such as Apple’s Steve Wozniak and Steve Jobs, have had on the computer and information technology industries. Students should watch interviews with original members, read HCC newsletters, and explore The Homebrew Computer Club collection in the Computer History Museum. Have them consider: What made the Club possible? What role did entrepreneurship play in the Club’s history? How did their location, access to local resources, and the broader social context contribute to the members’ success and the legacy of The Homebrew Computer Club?

Have students explore contemporary Maker’s Movement communities and compare them with The Homebrew Computer Club. What are the similarities and differences? How does their access to resources and the broader social context shape and inspire innovation? What role does entrepreneurship have in the modern Maker Movement? How has the Internet influenced how makers are congregating, collaborating, and communicating today? What implications do these communities of makers have for the future of computer technology?

Resources:

Computer History Museum,
The Homebrew Computer Club Collection:
<http://www.computerhistory.org/revolution/personal-computers/17/312>

Maker Faire
<https://makerfaire.com/>

Make Magazine
<https://makezine.com/>

Check out the Additional Resources PDF as well as the links below:

Computer History Museum:
<http://www.computerhistory.org/>

AnitaB.org (formerly Anita Borg Institute for Women and Technology, and Institute for Women in Technology):
<https://anitab.org/>

David Kelley, Creative Confidence:
<https://www.creativeconfidence.com/>

Center for Social Innovation:
<https://www.gsb.stanford.edu/faculty-research/centers-initiatives/csi>

Entrepreneur:
<https://www.entrepreneur.com/>

Hewlett Packard - History:
<http://www8.hp.com/us/en/hp-information/about-hp/history/overview.html>

IDEO Tools:
<https://www.ideo.com/tools>

Tools for Taking Action," Hasso Plattner Institute of Design at Stanford University,
<https://dschool.stanford.edu/resources>

Stanford Social Innovation Review (SSIR):
<https://ssir.org/>

Startup Genome:
<https://startupgenome.com/>

Startup Revolution:
<https://www.startuprev.com/>

Y Combinator:
<http://www.ycombinator.com/>

SILICON VALLEY AND THE COMPUTER HISTORY MUSEUM

SILICON VALLEY: LUCKY ACCIDENTS

Lucky Accidents

“Lucky Accidents,” the third episode of the film series, *Silicon Valley: The Untold Story*, charts the circuitous paths, successes, failures, and lucky accidents that lie behind some of the Valley’s greatest success stories.

Silicon Valley: The Untold Story

Around the world, people want to know what it is about Silicon Valley that has made it a hotbed of innovation and entrepreneurship for decades. *Silicon Valley: The Untold Story* explores the fascinating and often unknown stories of the people, partnerships, events, and social changes that shaped Silicon Valley and changed the world.

For every decade or so since the early 1900s, Silicon Valley has spawned or nurtured not just new products but whole new industries: Vacuum tubes. Radio. Radar. Integrated circuits. Venture Capital. PCs. Printers. Genetic Engineering. Software. Networking hardware. The Internet. Social media. Cloud computing. Mobile.

This three-part Discovery Science Channel primetime series, *Silicon Valley: The Untold Story*, explores the evolution of Silicon Valley and examines how it has managed to stay on the cutting edge of innovation for so long. The film was produced by Kikim Media, founded in 1996 by Kiki Kapany and Michael Schwarz, whose work over the past 20 years has been honored with some of the most prestigious awards in broadcasting. Production of *Silicon Valley: The Untold Story* was made possible thanks to a generous grant from The Alfred P. Sloan Foundation.

The Computer History Museum

The history of computers is the history of our modern world. The Computer History Museum (CHM) in Silicon Valley, California is dedicated to preserving and presenting the stories and artifacts of the information age and exploring the ongoing impact of the computing revolution on society. CHM explores not only the “what” but also the “why” and the “how” of computing, and brings to life the historical narratives, first-person accounts, iconic examples of industrial design, business and marketing strategies, that shape our modern world and change the way we work, live, and play.

The Exponential Center at the Computer History Museum captures the legacy and advances the future of entrepreneurship and innovation in Silicon Valley and around the world. Our mission is to inform, influence, and inspire the next generation of innovators, entrepreneurs, and leaders changing the world.

SILICON VALLEY: LUCKY ACCIDENTS ADAPTING RAPID PROTOTYPING

Using former Stanford d.school professor Michael Dearing's Harrison Metals video as a guide, describe how you would apply each of these rapid prototyping lessons to a project of your own.

1. EVERYTHING IS A PROTOTYPE

2. LEFT-BRAIN AND RIGHT-BRAIN THINKING GOES TOGETHER

3. FAILURE IS COMPOST.