Appendix E: Case Study Discussion Guides

Draft Site Visit Plan and Discussion Guide: I-Corps Teams

Introduction

Thank you for agreeing to participate in our research study. As I mentioned, I'm from [MSG/Westat], a social science research firm in [Bethesda/Rockville], MD. NSF contracted with us to conduct a study of the I-Corps program and its accomplishments. Specifically, we're interested in learning more about I-Corps participants' experiences and achievements, as well as the range of networks (e.g., collaborative partnerships) that were developed after the I-Corps training.

Your project was selected… [Insert a statement about how they were selected for the site visit]. This conversation will take approximately **60** minutes. We chose twenty projects to be the subject of our case study, and NSF is aware of the names of these projects. We won't identify you by your name or your institution and will do everything we can to protect your anonymity. You should know that I-Corps staff will know the names of all of the institutions we are talking to you, even though we will not specifically identify the institution or team to them. Do you have any questions before we start?

Do I have your permission to tape this conversation for my notes? **Yes/No**

A. Project Description

I'd like to start with learning a little about the history of your project and how it came to be.

1. That is, what was the initial motivation or impetus for the original NSF grant upon which your I-Corps work was based?

   - Did you have commercialization in mind at that point? Briefly explain your ideas at that time.

2. We're interested in the history of your research. At the time of your I-Corps grant, about how long had you worked on the original NSF grant upon which your I-Corps work was based?

   - If there was predecessor work not funded by NSF, tell us a little about that, too.

3. What is the status of the commercialization of your idea or product? *(Reference survey data if available)*

   - For example, tell us about the status of your project in terms of commercialization, now and how that has changed over time (ready, not ready, not sure if possible) (Q12 post/Q9 longitudinal survey)

   - Tell us about your future plans (ex. I have adequately assessed my technology's readiness for commercialization; I have identified a viable commercialization path for my technology; I have developed a capable business model; etc.)

   - Prompt: What are your next steps?

4. What factors have hindered or facilitated your pursuit to commercialize your idea or product?

- Prompt: What were the external and/or internal contextual factors affecting project design and implementation?

- Probe: Host institution involvement, characteristics, resources; social factors, state policies

B. Entrepreneurial and Commercialization Training
I-Corps Training

5. Prior to attending the I-Corps training, how would you describe your entrepreneurial and commercialization experience?

6. Describe how the individuals on the I-Corps team were assembled?

   - Probe for previous history of collaboration
   - Prompt: How has the team evolved? Are the original members still involved?

7. What were your desired goals of I-Corps training?

   - Prompt: What were you most eager to learn from the I-Corps course? What aspect of your team would you like to strengthen as a result of the I-Corps course?

8. How would you access the quality of I-Corps Training?

   - Probe for: pros/cons, possible improvements, most valuable aspects of the I-Corp course.

9. What were some direct impacts of I-Corps Training?

   - Prompt: To what extent did the training contribute to revisions to the team's approach moving forward?

10. What kind of feedback did you receive from potential customers?

    - Prompt: How did the nature of the feedback change as your business model advanced?
    - Prompt: What did you learn from this feedback that influenced revisions to your business model?

11. What were your greatest pivots or insights as you developed your business model?

Relevant Non-I-Corps Training

12. Aside from I-Corps what other steps have you taken to enhance your understanding of commercializing your idea or product?

C. Structures and Infrastructures

13. At your Institution, what structures, infrastructures, or individuals do you have at your disposal to support the pursuit to commercialize your idea or product?

- Probe for
  - Individuals - Who did you talk to? What offices? What are their roles?
  - Structures/infrastructures: policies, equipment, programs, etc.

- Prompt: How did those structures, infrastructures, or individuals help you move forward?

14. How has networking (both within and outside of your institution) played a part in your pursuit to commercialize your research project?

- Prompt:
  - With what types of group are you interacting?
  - What is the purpose of your networking interactions?
  - How have these networking interactions affected their work and its trajectory?

15. What kinds of connections did you form with others individuals (e.g., at your institution or other nearby institutions) through the support of your institution or the I-Corps node?

16. Have you attempted to secure additional sources of funding to support your pursuit for commercialization? If yes, what sources of funding have you secured?

D. Team Collaboration

17. Describe the leadership structure and the process for decision-making.

18. How would you describe the level of team collaboration? What factors contributes this level of collaboration?

19. Given your experiences thus far, if you were to do this project again, how would you approach the development and management of the team composition and utilization?

20. How influential were the I-Corps project team roles of Entrepreneurial Lead and mentor to the pursuit of idea or product commercialization?

E. Partner Collaboration

21. Who were the projects partners?

- Probe for: collaborations between the university and external community (e.g., industry investors, local or state government, non-profit organization, others)

22. What steps were taken to ensure all partners had a shared vision for the project?

23. What steps were taken to enhance the capacities of participating organizations (e.g., to develop materials and disseminate information).

F. Impacts and Outcomes

Finally, I would like to gather insights on the impact of the project on program participants, participating organizations, and the broader community.

24. What, if any, are the lasting effects of being involved with the I-Corps project? On you, your team, and your research product?

    - Probe these potential areas of impact: Entrepreneurial competence, mentoring, teaching, research or career, pursuit of new ventures, network building, human capital building, and workforce development.
    - Prompt: To what extent have you and your team become more entrepreneurially competent after your participation in I-Corps?

25. What are the significant lessons that you have learned from this initiative that could be applied to others who are trying to commercialize their NSF ideas or products (generally and/or through the I-Corps program)?

26. What challenges do initiatives like I-Corps face? What are some strategies for overcoming those challenges?

Discussion Guide: Comparison Group

Introduction

Thank you for agreeing to participate in our research study. As I mentioned, I'm from [MSG/Westat], a social science research firm in [Bethesda/Rockville], MD. NSF contracted with us to conduct a study of the I-Corps program and its accomplishments. The NSF I-Corps program was developed to foster entrepreneurship among recipients of NSF research grants that will lead to the commercialization of innovative products. The program provides researchers with support and guidance to pursue commercial applications of their research.

Specifically, we're interested in learning more about the experiences and achievements of NSF-funded researchers who have sought to commercialize their research ideas or products, as well as the range of networks (e.g., collaborative partnerships) that were developed as the result of their commercialization endeavors.

Your project was selected… [Insert a statement about how they were selected for the site visit]. This conversation will take approximately **60** minutes. We chose twenty projects to be the subject of our case study, and NSF is aware of the names of these projects. We won't identify you by your name or your institution and will do everything we can to protect your anonymity. You should know that I-Corps staff will know the names of all of the institutions we are talking to, even though we will not specifically identify the institution or team to them. Do you have any questions before we start?

Do I have your permission to tape this conversation for my notes? **Yes/No**

A. Project Description

I'd like to start with learning a little about the history of your project and how it came to be.

1. Your project was selected based on your work on [INSERT NAME OF PROJECT AND AWARD NUMBER]. What was the initial motivation or impetus for this project?

   - Prompt: Did you have commercialization in mind at that point? Briefly explain your ideas at that time.

2. We're interested in the history of your research. At the time of this NSF grant, about how long had you worked on the ideas or product upon which the work of [INSERT NAME OF PROJECT] was based?

   - Prompt: If there was predecessor work not funded by NSF, tell us a little about that, too.

3. What is the status of the commercialization of your idea or product? *(Reference survey data if available)*

   - Prompt: For example, tell us about the status of your idea or product in terms of commercialization, now and how that has changed over time (ready, not ready, not sure if possible)
   - Prompt: Tell us about your future plans (ex. I have adequately assessed my technology's readiness for commercialization; I have identified a viable commercialization path for my technology; I have developed a capable business model; etc.)

- Prompt: What are your next steps?

4. What factors have hindered or facilitated your pursuit to commercialize your idea or product?

   - Prompt: What were the external and/or internal contextual factors affecting project design and implementation?
   - Probe: Host institution involvement, characteristics, resources; social factors, state policies

B. Entrepreneurial and Commercialization Training

5. Prior your work to commercialize the ideas or products from [INSERT PROJECT NAME], how would you describe your experience in the entrepreneurial and commercialization arena?

6. Over time, what steps have you taken to enhance your understanding of commercializing research ideas or products?

7. If you have sought training in this area, what were your desired goals of attending training?

   - Prompt: What were you most eager to learn?

8. What were some direct impacts of the entrepreneurial and/or commercialization training you sought?

   - Prompt: To what extent did the training contribute to revisions to the team's approach moving forward?

9. Have you discussed your idea or project with potential customers? If so, what kind of feedback did you receive from them?

   - Prompt: How did the nature of the feedback change as your business model advanced?
   - Prompt: What did you learn from this feedback that influenced revisions to your business model?

C. Structures and Infrastructures

10. At your Institution, what structures, infrastructures, or individuals do you have at your disposal to support the pursuit to commercialize your idea or product?

    - Probe for
      - Individuals - Who did you talk to? What offices? What are their roles?
      - Structures/infrastructures: policies, equipment, programs, etc.

    - Prompt: How did those structures, infrastructures, or individuals help you move forward?

11. How has networking (both within and outside of your institution) played a part in your pursuit to commercialize your research ideas or product?

- Prompt:
  - With what types of group are you interacting?
  - What is the purpose of your networking interactions?
  - How have these networking interactions affected their work and its trajectory?

12. What kinds of connections did you form with others individuals (e.g., at your institution or other nearby institutions) through the support of your institution?

13. Have you attempted to secure additional sources of funding to support your pursuit for commercialization? If yes, what sources of funding have you secured?

D. Team Collaboration

14. Describe how the project team members on [INSERT PROJECT NAME] were assembled?

- Probe for previous history of collaboration
- Prompt: How has the team evolved? Are the original members still involved?

15. Describe the leadership structure and the process for decision-making.

16. How would you describe the level of team collaboration?

- Prompt: What factors contributes this level of collaboration?

17. Given your experiences thus far, if you were to do this project again, how would you approach the development and management of the team composition and utilization?

E. Partner Collaboration

18. Who were the partners [INSERT PROJECT NAME]?

- Probe for: collaborations between the university and external community (e.g., industry investors, local or state government, non-profit organization, others)

19. What steps were taken to ensure all partners had a shared vision for the project?

20. What steps were taken to enhance the capacities of participating organizations (e.g., to develop materials and disseminate information).

F. Impacts and Outcomes

Finally, I would like to gather insights on the impact of the project on program participants, participating organizations, and the broader community.

21. What are the significant lessons that you have learned from this initiative that could be applied to others who are trying to commercialize their NSF ideas or products (generally)?

22. What challenges do initiatives like I-Corps face? What are some strategies for overcoming those challenges?

Draft Site Visit Discussion Guide: Technology Transfer or similar offices

Introduction

Thank you for agreeing to participate in our research study. As I mentioned, I'm from [MSG/Westat], a social science research firm in [Bethesda/Rockville], MD. NSF contracted with us to conduct a study of the I-Corps program and its accomplishments. Specifically, we're interested in learning more about the program's impact on broader academic culture.

The project selected was … [Insert a statement about how they were selected for the site visit]. This conversation will take approximately **60** minutes. We chose twenty projects to be the subject of our case study, and NSF is aware of the names of these projects. We won't identify you by your name or your institution and will do everything we can to protect your anonymity. You should know that I-Corps staff will know the names of all of the institutions we are talking to you, even though we will not specifically identify the institution or team to them. Do you have any questions before we start?

Do I have your permission to tape this conversation for my notes? **Yes/No**

A. Office Roles and Responsibilities

We would like to start by learning about the Office of Technology Transfer's history.

1. When was the Office created? What was the motivation?

2. What is the mission and the goals of the office?

3. What types of support does it offer researchers at this institution?
   o Probe: does the office conduct outreach or it waits to be contacted? What types of events does it sponsor? Does the office provide support to researchers who want to apply to I-Corps and other programs at NSF?

B. Environment

Let's talk a little about the university entrepreneurship environment.

4. What types of resources does the university provide to support researchers that have developed products or technology with commercializable potential?

5. Are there typical grants at local, state or national level that your office directs researchers to? If so, in broad terms, what are the features of these programs?

6. Are there other organizations or individuals that your office encourages researchers to contact about their commercializable product? If so, what types of organizations or individuals and for which purposes?

7. What are the most common types of research that the Office comes in contact with?

   • Probe: What are popular courses and trainings that are offered?

- Probe: Does the office encourage mentoring? Who are common mentors to the university researchers seeking to commercialize research?

8. Have there been shifts that affected the work the office conducts in recent years? If so, why?

9. Does your office keep at kind of metrics on university researchers outcomes when it comes to technology transfer/commercialization efforts? If so, would you be able to share some this information?

C. I-Corps Program

10. What is the institution or the office's involvement with the I-Corps program?
    - Probe: differences across the types of I-Corps programs (sites, nodes, teams)

11. Has the I-Corps program influenced the types of services the office offers?
    - Probe: have the types of trainings and services offered at the office changed? Why? (researchers' request, influence from other universities, NSF…)