

# Supplemental Material

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For Extending the Impact of Technovation Armenia 2018-2019



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## **1. Past-Participant Survey Summary**

The past-participant survey questions focused on providing a statistical overview of the girls' motivation for participating in Technovation, their post-Technovation activities related to the goals of the Technovation program, their experience in program, and their reasons for their post-Technovation life trajectories. Due to the exploratory nature of this research, our intention was to involve as many Technovation participants as possible. Taking into consideration the geographically distributed nature of the teams, we used an online survey to gather as many perspectives as possible.

To develop the survey, we used the following best practices: input from stakeholders on survey contents, an iterative development process, and beta testing with fifteen 2019 Technovation participants. The questions used in the survey can be found below. To distribute the survey, we sent out an email written by the regional Technovation ambassador, Ms. Abazian, to the 373 past Technovation participants from years 2017 and 2018. We also sent out weekly reminder emails to increase our response rate. Even with weekly reminders, we only received 9 usable responses.

While we could not use the responses directly for any of our findings, some findings could still be drawn. Most of the responses related to the actual competition were positive, with 7 respondents saying that they would recommend Technovation to a friend with the other 2 being neutral. The mentors seemed to be generally liked, with only one participant reporting they felt their mentor was neither helpful nor unhelpful. When it came to the lack of continuation, the most cited reason for not pursuing a technical field was disappointment towards their team's result in Technovation. This aligned with our sponsor's observations of key factors in why teams do not continue. Overall, the lack of responses made the analysis of any of the results difficult and inherently untrustworthy.

## 2. Survey Parental Consent Form

### Parent Informed Consent

Please read the following statements and fill in the following questions.

- I agree to letting my daughter participate in a survey exploring the post-competition experience of Technovation.
- I understand that completing this survey will not take her more than an hour and that she may omit answering any question at any time.
- I understand that she is under no obligation to participate and that she may disengage at any time.
- I understand that her participation (or decision not to participate) in this survey will in no way affect my or her relationship to Technovation.
- I understand that this research is expected to bring no harm to my daughter or me and that it also will be of no substantial benefit to her or me personally.
- I understand that findings from the survey will not identify her or me, personally, in any way, and that efforts will be made to present findings in ways that will not permit a reader to identify the particular source of any information.

Do you agree with the above statements and consent to allowing your daughter to take the survey?

- ☐ I consent
- ☐ I do not consent

By selecting an answer above, you certify you are the parent/legal guardian of the survey participant. Through this signature, you also agree to allow your daughter to participate in the post-Technovation feedback survey.

If you have any questions regarding the form, the survey or anything else, please contact us at [grtechgirls-d19@wpi.edu](mailto:grtechgirls-d19@wpi.edu)

### 3. Survey Participant Consent Form

#### Participant Consent

Please read the following statements and answer the following question:

- I agree to participate in a survey exploring the post-competition experience of Technovation.
- I understand that completing this survey will not take more than an hour and that I may omit answering any question at any time. I understand that I am under no obligation to participate and that I may disengage at any time.
- I understand that my participation (or decision not to participate) in this survey will in no way affect my relationship to Technovation. I understand that this research is expected to bring no harm to me and that it also will be of no substantial benefit to me personally.
- I understand that findings from the survey will not identify me, personally, in any way, and that efforts will be made to present findings in ways that will not permit a reader to identify the particular source of any information.
- I understand that if I have any questions regarding this survey, I may contact gr-techgirls-d19@wpi.edu for additional information.

Do you agree with the above statements and consent to take the survey?

- ☐ I consent
- ☐ I do not consent

## 4. Past-Participant Survey Questions

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### Start of Block: Personal Information

Name Please provide your name (First, Last):

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Age Please select your age:

▼ 10 (1) ... 21 (12)

Q5 Please select your grade level:

▼ Grade 4 (1) ... Post-secondary schooling (10)

Q6 Please select your marz/province:

▼ Aragastotn (1) ... Yerevan (11)

### End of Block: Personal Information

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### Start of Block: Technovation Questions Block 1

Q7 Which year(s) did you participate in Technovation?

☐ 2017 (1)

☐ 2018 (2)

☐ 2019 (3)

**End of Block: Technovation Questions Block 1**

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**Start of Block: Technovation 2017**

Q8 Please provide your full team name for the year 2017:

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Q9 In which division were you in 2017?

☐ Junior Division (1)

☐ Senior Division (2)

Q10 Did you submit your final project in 2017?

☐ Yes (1)

☐ No (2)

Q11 Why or why not?

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*Display This Question:*

*If Did you submit your final project in 2017? = No*

Q12 How many weeks of the program did you complete in 2017?

▼ 0 (1) ... 12 (13)

**End of Block: Technovation 2017**

**Start of Block: Technovation 2018**

Q13 Please provide your full team name for the year 2018:

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Q14 In which division were you in 2018?

☐ Junior Division (1)

☐ Senior Division (2)



Q15 Did you submit your final project in 2018?

☐ Yes (1)

☐ No (2)

Q16 Why or why not?

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*Display This Question:*

*If Did you submit your final project in 2018? = No*

Q17 How many weeks of the program did you complete in 2018?

▼ 0 (1) ... 12 (13)

End of Block: Technovation 2018

Start of Block: Technovation 2019

Q18 Please provide your full team name for the year 2019:

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Q19 In which division were you in 2019?

☐ Junior Division (1)

☐ Senior Division (2)

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Q20 Is your team on schedule to submit your project for 2019?

☐ Yes (1)

☐ No (2)

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Q21 What has been helpful for your team to make progress?

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Q22 What has not been helpful for your team to make progress?

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End of Block: Technovation 2019

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Start of Block: Technovation Questions Block 2

**Q23 For the rest of the survey, please think of your overall experience with Technovation regardless of which year(s) you participated:**

**\*\*Entrepreneurship is defined as the process of designing, launching, and running a new business**

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Q24 Why did you participate in Technovation? Please select all that apply:

- ☐ I wanted to make a mobile app (1)
  - ☐ I wanted to learn more about business (2)
  - ☐ I wanted to learn more about programming (3)
  - ☐ I wanted to learn more about entrepreneurship (4)
  - ☐ I wanted to learn more about leadership (5)
  - ☐ My friends were doing it (6)
  - ☐ A mentor recruited me (7)
  - ☐ It looked fun (8)
  - ☐ My parents wanted me to participate (9)
  - ☐ Other: (10) \_\_\_\_\_
-

Q25 How would you describe your experience in the overall program?

- ☐ Easy (1)
- ☐ Moderately easy (2)
- ☐ Neither easy nor difficult (3)
- ☐ Moderately difficult (4)
- ☐ Difficult (5)
- 

Q26 Thinking about the 12-week curriculum, please describe your experience with each component:

	Easy (1)	Moderately easy (2)	Neither easy no difficult (3)	Moderately difficult (4)	Difficult (5)
Programming (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business plan/pitch (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time commitment (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working on a team (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q27 If you would like to elaborate, please do so here:

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Q28 How would you describe your experience with you mentor?

- ☐ Helpful (1)
- ☐ Moderately helpful (2)
- ☐ Neither helpful nor unhelpful (3)
- ☐ Less helpful (4)
- ☐ Unhelpful (5)

Q29 Please describe your experience with your mentor in the following components:

	Low (1)	Moderately low (2)	Unchanged (3)	Moderately high (4)	High (5)
Impact on self-confidence (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teaching ability (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of app building (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Degree of encouragement (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q30 If you would like to elaborate, please do so here:

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Q31 Would you recommend this program to a friend?

- ☐ Very unlikely (1)
- ☐ Somewhat unlikely (2)
- ☐ Neutral (3)
- ☐ Somewhat likely (4)
- ☐ Very likely (5)

Q32 Would you consider becoming a Technovation mentor?

- ☐ Yes (1)
- ☐ No (2)

End of Block: Technovation Questions Block 2

Start of Block: Post-Competition Block 1

Q33 When you left Technovation, how interested were you in continuing in a technical field?

- ☐ Not at all (1)
- ☐ Somewhat (2)
- ☐ Moderately (3)
- ☐ Very (4)
- ☐ Extremely (5)

**End of Block: Post-Competition Block 1**

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**Start of Block: Post-Competition: Interested**

Q34 What have you done since participating in Technovation to maintain your interest? Select all that apply:

- ☐ Continued technical path in education (high school and college) (1)
- ☐ Continued with Technovation app (2)
- ☐ Participated in other technical competition/programs (please list): (3)
- \_\_\_\_\_
- ☐ Other: (4) \_\_\_\_\_

.....

Q35 Please elaborate on your above selections:

\_\_\_\_\_

.....



Q36 Do you see yourself pursuing a technical career?

- ☐ Absolutely yes (1)
  - ☐ Probably yes (2)
  - ☐ Neutral (3)
  - ☐ Probably not (4)
  - ☐ Absolutely not (5)
- 

Q37 Do you see yourself pursuing a business career?

- ☐ Absolutely yes (1)
- ☐ Probably yes (2)
- ☐ Neutral (3)
- ☐ Probably not (4)
- ☐ Absolutely not (5)

**End of Block: Post-Competition: Interested**

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**Start of Block: Post-Competition: Not Interested**

Q38 For what reasons did you not continue in technical fields? Select all that apply:

- ☐ Lack of interest (1)
  - ☐ Disappointment towards results of Technovation (2)
  - ☐ Lack of mentors (3)
  - ☐ Lack of direction (4)
  - ☐ Lack of females in technical fields (5)
  - ☐ Parental expectation (6)
  - ☐ Technical fields are not for women (7)
  - ☐ Other: (8) \_\_\_\_\_
- 

Q39 Please explain your above selections:

\_\_\_\_\_

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Q40 Do you plan on working after graduating school?

- ☐ Yes (1)
- ☐ No (2)

**End of Block: Post-Competition: Not Interested**

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**Start of Block: General Questions**

Q41 How did your education prepare you for Technovation?

- ☐ Not at all (1)
- ☐ Somewhat (2)
- ☐ Moderately (3)
- ☐ Very (4)
- ☐ Extremely (5)
- 

Q42 How do you feel about the following statements?

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Women should not pursue their interests in science, technology, engineering, and math (STEM) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is support for girls pursuing science, technology, engineering, and math (STEM) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: General Questions

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Start of Block: Willingness to Participate in a follow up interview

Q43 Would you be interested in participating in a follow-up interview?

☐ Yes (1)

☐ No (2)

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*Display This Question:*

*If Would you be interested in participating in a follow-up interview? = Yes*

Q44 Please provide an email address by which to contact you:

\_\_\_\_\_

**End of Block: Willingness to Participate in a follow up interview**

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**Start of Block: Age Block**

Q0 Are you 18 years or older?

☐ Yes (1)

☐ No (2)

**End of Block: Age Block**

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## 5. Regional Ambassador Email to All Participants

This email was sent in Armenian to all the past participants from 2017-2018.

Տեխնոլագիա Հայաստան ծրագրի սիրելի մասնակիցներ,

Երեքշաբթի մենք ուղարկեցինք մի հարցում, խնդրելով կիսվել Տեխնոլագիա ծրագրի ձեր փորձով: Մենք իսկապես ուզում ենք լսել ձեզանից, որպեսզի կարողանանք շարունակել բարելավել ծրագիրը: Յուրաքանչյուր պատասխան շատ արժեքավոր է եւ պատասխանելու համար կիսի ձեզնից մոտավորապես 10 րոպե: Մենք անհամբեր սպասում ենք լսելու ձեր մտքերը: Ստորև ներկայացված է հարցման հղումը: Հարցման հետ կապված հարցերի դեպքում, խնդրում ենք գրել մեզ [gr-techgirls-d19@wpi.edu](mailto:gr-techgirls-d19@wpi.edu) հասցեով:

Նարինե Աբազյան,

Տեխնոլագիա Հայաստան ծրագրի տարածաշրջանային դեսպան,  
Կանայք և տեղեկատվական հասարակությունը հկ նախագահ

Translated:

Dear participants of the Technovation Armenia program,

On Tuesday we sent a request asking you to share your experience with the Technovation program. We really want to hear from you so we can continue to improve the program. Each answer is very valuable and will take you about 10 minutes to respond. We look forward to hearing your thoughts. Below is a link to the request. If you have any queries, please write to us at [gr-techgirls-d19@wpi.edu](mailto:gr-techgirls-d19@wpi.edu).

Narine Abazian,

Regional Ambassador of Technovation Armenia Program,  
Women and the Information Society for the Future

## 6. Weekly Reminder Email

This email was sent on a weekly basis to all the Past Participants who did not fill out the survey.

Տեխնովացիա Հայաստան ծրագրի բոլոր տարիների սիրելի մասնակիցներ,

Հայաստանում Տեխնովացիա ծրագրի բարելավման նպատակով ես դիմել եմ Ամերիկյան լավագույն համալսարաններից մեկի ուսանողների աջակցությանը: Վերջիններս սիրով համաձայնել են իրականացնել հետազոտություն:

Հետազոտությունը ներառում է մասնակիցների կարծիքների հարցում՝ Տեխնովացիա ծրագրի շարունակական կատարելագործման համար:

Ստորել բերված է կարճ հարցումի հղումը, որը ուսանողները պատրաստել են: Խնդրում եմ լրացրեք հարցումը լավագույն ձևով որ կարող եք:

Բոլոր պատասխանները շատ կարևոր կլինեն Հայաստանում Տեխնովացիա ծրագրի բարելավման համար: Հարցերի դեպքում, խնդրում ենք կապվել մեզ՝ հետևյալ էլ փոստին gr-techgirls-d19@wpi.edu:

Նարինե Աբազյան,  
Տեխնովացիա Հայաստան ծրագրի տարածաշրջանային դեսպան,  
Կանայք և տեղեկատվական հասարակությունը հկ նախագահ

### Translated:

Dear participants of Technovation Armenia all year round,  
In order to improve the Technovation program in Armenia, I applied for the support of one of the best American universities. The latter kindly agreed to conduct a research.  
The survey involves participants' opinions on the continuous improvement of the Technova Program. Below is a link to a short survey made by students. Please fill out the request in the best way possible. All answers will be very important for improving the Technova Program in Armenia. If you have any questions, please contact us at gr-techgirls-d19@wpi.edu.

Narine Abazyan,  
Regional Ambassador of Technopolis Armenia Program,  
Women and Information Society NGO President

## 7. Interview Parental Consent Form

### Parent Informed Consent

Please read the following statements and answer the questions below.

- I agree to letting my daughter participate in a survey exploring the post-competition experience of Technovation participants during the year 2019.
- I understand that completing this survey will not take her more than an hour and that she may omit answering any question at any time.
- I understand that she is under no obligation to participate and that she may disengage at any time.
- I understand that her participation (or decision not to participate) in this survey will in no way affect my or her relationship to Technovation.
- I understand that this research is expected to bring no harm to my daughter or me and that it also will be of no substantial benefit to her or me personally.
- I understand that findings from the survey will not identify her or me, personally, in any way, and that efforts will be made to present findings in ways that will not permit a reader to identify the particular source of any information.

Parent Signature (name):

Today's Date:

By typing your name above, you certify you are the parent/legal guardian of the interviewee. Through this signature, you also agree to allow your daughter to participate in the post-Technovation feedback interview.

If you have any questions regarding the form, the survey or anything else, please contact us at [gr-techgirls-d19@wpi.edu](mailto:gr-techgirls-d19@wpi.edu) .

## **8. Standard Past Participant Interview Questions**

- Why did you join Technovation and why did you start the program?
- Why did you participate in Technovation again in 2018?
- What did you expect to get out of this program?
- What did you expect this program to be like and how did your experience differ from what you expected?
- What surprised you about your experience in this program?
- What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.
- What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?
- What have you done since completing the competition?
- Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?
- Have you considered pursuing an ICT or a computing career? Why or why not?
- What are you scared of when thinking about pursuing ICT?
- Did you consider aligning your Technovation app to your interests?
- Do you see ICT as something completely separate from your interests?
- What were your parents' thoughts on you participating in Technovation? Were they supportive?
- If you had three wishes to improve your technology related education, what would they be?
- Were there any questions that we should have asked you that we did not?



## **9. Interview Transcripts: Past Participants, Mentors, Administrators, & Judges**

All interviewed past participants, mentors, administrators, and judges included below have given verbal consent for usage of their responses in our report.

### **Past Participant 1**

- **Why did you join Technovation and why did you start the program?**

The first time she heard about Technovation was through her IT teacher. Her teacher told her about how she could learn how to create apps and therefore she became very interested in participating. She then found out it actually included a lot of other things beyond creating applications.

- **Why did you participate in Technovation again in 2018?**

She wanted to participate again to do something more serious. She was also going to be a part of the senior division which includes writing a business plan. In the junior division, the business plan is not included within the curriculum and this is something she was interested in learning about.

- **What did you expect to get out of this program?**

She expected to learn the basics of programming which was also her main interest. She also expected to pitch on a big stage and use teamwork. She expected to gain more knowledge and help her friends learn too.

In addition, she thought the website was very helpful to her in order to learn about the programming. The administrators helped a lot too. She went to the weekly classes only if she had questions and she also talked to past participants that were recommended to her by Narine.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She thought it would be easier than it was. She did not think it would be difficult to work with a team, but it was difficult for her. She noted that with a team you had to consider everyone's thoughts and opinions. She did think that the work was more interesting because it was done as a team.

- **What surprised you about your experience in this program?**

She notes that preparing for the pitch was fun and not as bad as she thought. She prepared a lot. She did this by thinking about questions that people may ask.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

The biggest challenge for her was coming up with a good team, resolving disagreements, and trying to complete the program before April 25<sup>th</sup>. The first time she competed in 2017, her team was from the same class so there were fewer problems. The second year, she invited girls from different schools and no one knew each other. She also said that everyone had different opinions which made things difficult too.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She mentioned that there were not enough lectures and sections on coding and business. She also would have liked to attend a teamwork workshop to learn more about how to work in a team.

- **What have you done since completing the competition?**

They participated in other programs and met other teams who were successful. Her team participated in the [REDACTED], received [REDACTED] and attended the [REDACTED]. She's in high school now and plans to continue her career in the IT sphere.

- **How did you hear about these programs?**

Social media, friends and other participants

- **What specific high school is she in?**

She studies in an ordinary high school. In her town there are no other high schools with specific paths to take.

- **When was your first exposure to programming? When did you figure out what you wanted to do?**

In 6<sup>th</sup> grade, an IT teacher told her about it and she decided she wanted to pursue it as a career. Her mentor helped a lot in her decision.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She had an invitation to something called the [REDACTED] but did not attend.

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

Nothing is more interesting to her than the ICT sphere. She wants to find the best way to solve problems which will be able help people. She also attends [REDACTED] and robotics workshops, and she really likes that too. Now she does not know if she's going to do either robotics or computing. She said she may want to do both.

- **What are you scared of when thinking about pursuing ICT?**

She hasn't found anything scary yet. A lot of it is learning on your own and she likes to do that

anyway.

- **Did you consider aligning your Technovation app to your interests?**

She said it was her responsibility to create the application. Everyone was interested in everything so everyone worked a little bit on every aspect of the project.

- **Do you see ICT as something completely separate from your interests?**

ICT is one of her interests. She said that the practice of coding the application helped her a lot.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

They were interested in what she was doing. Her parents told her to do whatever she is interested in. She said that both of her parents work in a hospital and are physicians. They told her to continue to do what she likes to do.

- **If you had three wishes to improve your technology related education, what would they be?**

1. She would like to have meetings and videos showing how to create a startup and a business that will be successful or being able to go to a place or office that can help, such as big companies that help startups. She wanted somewhere to go to ask questions.
2. She mentioned one girl who participated said it would be nice to have meetings during Technovation. Perhaps it would be good to be able to get in touch with judges to ask if their idea is good earlier on. She said a lot of the girls were told they did not have good ideas, and finding this out earlier would help with figuring out if the app is needed or not.
3. She would like some kind of other prizes for the teams besides the money prizes to make the girls more interested. Maybe advice or something that they could use to continue, maybe from partnerships with Technovation and other startups. Another idea was letting the winners go to a paid professional workshop for free.

- **Were there any questions that we should have asked you that we did not?**

No.

- **What was your experience with the judges?**

She knew some of the judges. She also noted there was one judge for each part of the project. The judges gave them good advice for moving forward and let them ask questions. She heard the judging was not fair for some of the other teams, but for her team specifically the experience was fine.

- **Has Technovation ever asked you to come back and talk to other girls?**

She was asked once in February to go back and talk about her experience. At this event, other mentors were telling about their success stories as well.

- **Were you ever asked how the program can be improved by the administrators?**

She did fill out a form, and she talked about how teamwork could be improved.

## **Past Participant 2**

- **Why did you join Technovation and why did you start the program?**

She was interested in CS and business management and participated to try to learn more and see if CS would be something for her. She participated in a business specific program outside of Armenia the summer after Technovation and was planning on using her experiences from both programs to decide which path to pursue.

- **What did you expect to get out of this program?**

She expected to work through the program until the very end. She expected to continue their development even if they did not win. During the competition, there were no professionals to ask questions about MIT App Inventor and she thought the consultation sessions were not helpful. She also commented that the weekly classes interfere with school as well. She did not think it was necessary to go to the classes because the administrators were recording them and uploading the classes. Moreover, her team did not think it would provide additional help. She would have liked to have more time to ask questions, especially during the classes. She said everything she learned about App Inventor was through Google and YouTube.

- **How would you improve the supplemental classes that take place on Thursdays?**

She thinks having laptops and computer in front of them would help to learn. In addition, she mentioned that when she did go to the classes, there were no tables for her to put her computer on. She wanted the classes to involve more difficult coding examples in order to learn how to make a better app.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She did not expect the process of creating the idea and writing the business plan would be interesting. She really enjoyed the teamwork part of the program and gaining new skills and integrating their different skills. She also thought they all made each other more efficient.

- **What surprised you about your experience in this program?**

She was surprised that the judges told her team that their application idea was bad because it was not unique. She felt that from a business perspective, competing with other similar apps is not a bad thing. She was also surprised that many people were willing and committed to helping others during the program.

- **If you didn't know something about App Inventor, who would you contact for help?**

She continued to work with App Inventor over the summer so she could help her next team. She has not faced any major issues, but is not sure who she could contact if she had a problem.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

The biggest challenge was related to coding and programming. She had studied some programming in javascript but struggled with App Inventor since it was limited and it was visual programming.

She mentioned that for other participants, it was difficult to do the public speaking for the pitch event. Many were nervous and unprepared because Armenian schools do not have public speaking classes, especially not in English.

- **How did you overcome these challenges?**

She found a website that provided extensions for App Inventor that provided many new features. This website also provided tips on how to implement them.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She thinks coming up with three ideas and then getting the judges opinions on them would be helpful. For many students, especially in the provinces, it was hard to write a business plan to make their application profitable. It would have been better if the judge who was responsible for evaluating the business plan would host a workshop to assist in the process.

- **What have you done since completing the competition?**

After the end of Technovation, she continued and completed the application by herself because the rest of her team had focused on the non-technical parts of the project. She talked with an IT specialist for advice on the app and how to get more functionality out of App Inventor. She also participated in leadership programs for project management and public speaking.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

No, but she completed a business program called [REDACTED], which taught her the necessary skills for general learning, how to be a leader, and develop leadership skills.

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

She is still interested in computing and is starting to study CS. She may start the Microsoft classes in Armenia, but definitely wants to do both CS and business at different universities.

- **What are you scared of when thinking about pursuing ICT?**

She said she has no fears of going into ICT. She is not sure if she will succeed but is comfortable with doing programming and coding work.

- **Does she know of people who have their reservations?**

She mentions the stereotypes around high schools. There's a polytech high school and kids at the other schools think the polytech students are the only ones that can do IT.

- **Have you ever encountered a stereotype with boys?**

She mentions that it is a popular opinion in Armenia that science is not for girls, but girls think otherwise. She said it is worse in the other provinces than in Yerevan. One girl left Technovation because their parents did not let her compete. One girl in her group was scared to do Technovation because of the fear of her father finding out. She was currently studying to become a medical student and her father thinks that his daughter should not do anything else besides medicine because it will be a distraction.

- **Did you consider aligning your Technovation app to your interests?**

Her team developed an application that aligned with her interests, but there are two girls from her team that are going to study CS but were not interested in Technovation or working on the coding portion of the program.

- **Do you see ICT as something completely separate from your interests?**

She is interested in ICT and has been integrating it into her business interests.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

She did not tell her parents anything about it while she was doing it. She only wanted to tell them once it was complete. She doesn't like when people expect things from her and did not want to disappoint her parents if she ended up doing poorly. She also saw Technovation as something she wanted to do for herself.

- **If you had three wishes to improve your technology related education, what would they be?**

1. To remove App Inventor from the program. She felt it was outdated because she was not able to test her application on her mother's phone because the phone was too new. She also felt it was too removed from professional programming.
2. To have tech professionals host workshop sessions. The younger students, especially ages 13 to 14, expect much from the program and it is the first step they have going into Technology.
3. Technovation needs to advertise a lot more to get through schools, the majority of students do not even know about it. If the head of the school decides not to tell the students about it, they have no idea it even exists.

- **Were there any questions that we should have asked you that we did not?**

No.

### **Past Participant 3**

- **Why did you join Technovation, why did you start the program?**

She is studying computer science and knew that it was what she wanted to pursue as a career.

- **How did you know you wanted to study computing before the competition?**

Her parents studied computer science, and since her childhood she knew she would study it.

- **What did you expect to get out of this program?**

She wanted to gain more experience and knowledge.

- **How would you improve the supplemental classes held on Thursdays?**

She did not go to the classes, the workshops were informative but not helpful enough pertaining to writing the business plan. She had to gain help from girls who competed for the previous years.

- **How did you get in touch with the teams from previous years?**

The regional ambassador recommended they talk to past participants.

- **How did they use Technovation to validate their choices of CS if they did not do any of the coding for the project?**

She did not gain any information from the workshops but gained knowledge from one of the team members who did all the coding while she was working on the coding.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She expected the workshops to be better and more informative. In addition, she thought the judges at the pitch event were way too harsh.

- **What else do you want to see from the judges to make the experience better?**

She mentioned she wanted judges to make workshops about the subject they judge on. She would have liked more help from the beginning, including more opportunities to connect with judges and get advice on ideation.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

Utilizing English was a challenge and she had no experience with public speaking. Another challenge was picking the idea. They also noted that more workshops would have been helpful if they were

planned correctly. Utilizing English was such a big challenge because it affected their ability to pitch. It was difficult to overcome, one girl even forgot what to say.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She said improving the workshops to be more practical would have been helpful. In addition, she thinks that going with laptops and being able to practice when they are actually taught would help them to understand things a lot better.

- **What have you done since completing the competition?**

She had applied to a university and have taken coding courses with a tutor.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She has not participated in other programs because she thinks most of them would be in English.

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

She has always wanted to create something that makes people's daily lives better and she can create applications that can help people stay in Armenian for school-university.

- **What do you like specifically about CS?**

She likes everything so far about CS but only has basic knowledge of them.

- **What are you scared of when thinking about pursuing ICT?**

Language is a big fear for her. She understands that English is almost required for the ICT industry, but she doesn't enjoy learning new languages and struggled with it in school.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

Her parents were supportive. They however did not help directly because they wanted her to learn on her own.

- **If you had three wishes to improve your technology related education, what would they be?**

1. Get accepted to university.
2. Work in Synopsys because it is really popular, all good programmers work there
3. Become a really good professional programmer



- **Were there any questions we didn't ask that we should have?**

No.

#### **Past Participant 4**

- **Why did you join Technovation, why did you start the program?**

She looking at studying CS and decided to participate in Technovation to convince herself CS was for her.

- **How did they know they wanted to study this before the competition?**

Parents studied computer science, and since their childhood they knew they might follow in their footsteps.

- **What did you expect to get out of this program?**

Similar to her teammates, she wanted to gain more experience and knowledge in programming.

- **How would you improve the supplemental classes held on Thursdays?**

She did not go to the classes. She states the workshops were informative but not enough for writing the business plan. She needed help from other sources to do the business plan and reached out to teams from the previous year's competition.

- **How did you get in touch with the teams from previous years?**

The regional ambassador connected their team with some past participants.

- **How did they use Technovation to validate their choices of CS if they did not do any of the coding for the project?**

Though she did not directly work on the coding or attend workshops for coding, she learned vicariously through the teammate that did the coding.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She expected the workshops to be more educative and for the judges be more tolerant and to have better expectations. Though she did not like the pitch event, she enjoyed the experience and knowledge gained from the program.

- **What surprised you about your experience in this program?**

She was unsure of how to answer the question.

- **What else do you want to see from the judges to make the experience better?**

She would have liked to have more involvement from the judges and for them to have workshops on the subjects they will judge. She also would have liked more help early on in the program so that they can get recommendations and create a connection at the beginning.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

She had difficulty in speaking English and doing public speaking in general. She and many of her teammates memorized their scripts in English. They also started to write their pitch 1-2 days before the event, which they felt should have been done earlier to give them more time.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She wanted the existing workshops to be more practical and allow the teams to work and practice during the workshop rather than be lectured at.

- **What have you done since completing the competition?**

She has a tutor for coding classes and plans to apply for university for CS.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She did not participate in anymore programs because they were all in english, but she participated in [REDACTED].

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

She had always wanted to create something to improve and make more comfortable the daily lives of other people using CS.

- **What do you like specifically about CS?**

She likes everything about CS and has a basic idea of programming but does not know any programming languages.

- **What are you scared of when thinking about pursuing ICT?**

She feels that her memory is not good enough to memorize all of the required knowledge. She tried to learn HTML but it did not work out.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

Her parents were supportive but she did not want to ask for help because she wanted to do the work on her own.

- **If you had three wishes to improve your technology related education, what would they be?**

1. Create an application that is really helpful for not only Armenian people
2. Open an institution for people to learn CS, coding, and programming
3. Make education more accessible because classes for CS outside of school and university are expensive

- **Were there any questions we didn't ask that we should have?**

No.

### **Past Participant 5**

- **Why did you join Technovation, why did you start the program?**

She saw it as great opportunity in October 2017. She also wanted to become a programmer and her friend told her about it. She did not see it as anything serious, just wanted to help and wanted to learn something.

- **What did you expect to get out of this program?**

She did not know she was going to use App Inventor. She worked more on the business plan. She felt that in general, not all of her expectations were met but enough of them were.

- **Why didn't you work on the code?**

Her friend who had already done the program in 2017 came in with all the programming experience and took over the role early on.

- **What did you expect this program to be like and how did your experience differ from what you expected? What surprised you about your experience in this program?**

Some of the team members participated before her, so they helped her set very realistic expectations for the project.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

She said she is very shy and was afraid of pitching. When she started to talk she thought she was going to die. They participated in [REDACTED] afterwards, but did not have the same experience because Technovation helped get over her fears. She mentioned there were some workshops for pitching during Technovation, but they were not very helpful because it was not enough practice.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She wished there were more workshops. She wanted to meet other mentors and other participants face to face. She also wanted to talk to judges before the pitch. Another point she made was that she got a bad score internationally because a Hispanic judge could not see their video.

- **Did you participate more than once, why or why not?**

She did not have time in 2019. If she had the time, she said she would have participated.

- **What have you done since completing the competition?**

She is doing a startup with some members of her team working on a different app than what she did in Technovation. It's a website to be used for travel that would provide info for tourists amongst other things.

- **How did you learn the skills to make it?**

She learned HTML and javascript and is working with her friends and some people from the [REDACTED].

- **How did you learn about the Seaside Startup competition?**

Their Technovation mentor told them about it.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She participated in [REDACTED], [REDACTED], [REDACTED], [REDACTED] and the [REDACTED].

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

Yes, she wants to be more around ICT. She feels like it's hers and it feels right. She also understands that she is pretty good at ICT.

- **How did Technovation affect your decision?**

She decided she wanted to do this before Technovation. In fact, her mentor treated one person better than everyone. The one person did all the coding and was the mentor's student. The mentor always agreed with her.

- **How hard is it for 2 people to code?**

She said it was pretty difficult for two people to work on App Inventor. Teamwork is hard for her and thinks she can do things faster on her own.

- **Did Technovation help with teamwork?**

Technovation did help with this, she met great people.

- **What are you scared of when thinking about pursuing ICT?**

She always thinks she's not going to do it because she thinks she's not smart enough. Technovation helped her because it got her to try new things and proved that she could do things she thought she couldn't.

- **Did Technovation prepare you enough or did you do a lot of self-learning?**

A lot of the learning was completed on her own, but she did learn from her team members, the videos and the team mentor. Technovation gave her the opportunity to do more than what she thought she could do.

- **What pushed you and your friends to continue developing your website?**

After [REDACTED] the team received [REDACTED] and therefore they wanted to do everything to finish application because they saw it as something that was special and useful- it was to help [REDACTED]. The team understood that it was a real problem and in most of the Post-Soviet countries it is still a problem. She has a friend who has a [REDACTED], and it is very hard for the family. She notes that once acquainted you realize that people in Armenia are not the best with handicapped people.

- **When you were working on your business plan, did you have any additional help?**

After they finished, they sent it to a good friend because he was studying at a university and was studying business and marketing. He showed them that there were some mistakes and issues and then they were able to learn what they did wrong, fix and improve it.

- **What were your parents'/ family thoughts on you participating in Technovation? Were they supportive?**

They supported her and gave her time to work on it and said, "oooo that's our girl."

- **What do you think Technovation can improve on?**

She thinks advertising, incorporating other regions, having people to go to schools to talk about Technovation and an assembly pertaining just to Technovation would be great improvements.

- **Did you go to the Thursday classes in Yerevan?**

She did not have time, and did not really need to attend, i.e. for the business plan they just downloaded and self-learned

- **What do they do really well?**

She thought that the instructors taught about app inventor well and how to speak was also taught well. She thought everything that was needed to participate was taught pretty well.

- **Do you know other participants that were discouraged to pursue ICT from Technovation?**

She does not remember any participants who did not think it helped them or discouraged them.

- **What did the judges say?**

She said the judges told her team that they had technical issues. She said she went up to one of the judges and asked what could have been better and the judge helped them. The other judge helped them as well and they are still using the judges' advice through the application as well as in their lives. She mentioned that if she did not ask the judges, their team would not know how to improve, so they asked the judges personally. The judges conveyed to the girls that they understood the app solved a real problem.

- **If you had three wishes to improve your technology related education, what would they be?**

1. She's lazy and wants to change that
2. She wants a tutor, not just videos, who she can always call so she can ask questions. She noted that she thinks she's an idiot if she asks questions.
3. She wants to be a better problem solver

#### **Past Participant 6**

- **Why did you join Technovation, why did you start the program?**

Her teacher informed her of Technovation. It was a new program for her and she had not heard about it.

- **What did you expect to get out of this program?**

She wanted to learn more about programming.

- **What surprised you about your experience in this program?**

She did not expect there to be so many other teams from the remote regions. She noted that a lot of the outside region projects had to do with pollution and more nature related projects. Their mentor helped with the business plan but would direct them to use websites in order to build their application. One group member did a lot of coding but the other girls helped with the design of the application. Her team skipped a lot of the coding videos because they did not understand the way it was being taught.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

The judges said their idea was too hard and that they weren't in contact with the correct people to get it to happen.

- **How do you get judge feedback?**

They told the team to be more concrete and that they need to find a sponsor. She said the judges could improve by not being in disagreement with each other. Apparently the judging is only verbal and not through something else. She said she could not refer back to what they said.

- **Did you continue developing your application?**

She said her team did not continue their application because the team was too busy doing other things such as private tutoring for example.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

When she did attend the classes, she thought more information on programming the application would have been helpful. She acknowledges that there were classes, but they could have started smaller. She wanted to learn more about how to do it through performing different examples. She also wanted to learn more about coding in general but with different languages.

- **What have you done since completing the competition?**

Her team had completely forgotten about the application because they wanted to focus on preparing to go to a university. The preparation for the exams takes up a lot of their time. Technovation actually helped this participant know she wanted to pursue a marketing career. She noted that Technovation also taught her what she could and possible want to do in the future.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

No, not enough time.

- **Did you two ever considering pursuing an ICT or a computing career? Why or why not?**

Her dad wanted her to be in CS, but she thinks she cannot do it because she's not very serious and can't sit and work for hours on end.

- **What are you scared of when thinking about pursuing ICT?**

She thinks she is most scared of failure. There's no guarantee the app will be successful. She also had no knowledge as to where to find a sponsor for the app because it is difficult to reach them. She also thinks that companies would not take a bunch of kids seriously.

- **Did you consider aligning your Technovation app to your interests?**

Yes, she wanted to see something improve within their schools and therefore created an application similar to that reason.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

Her dad was supportive, while her mom just saw it as another program for her to participate in.

- **If you had three wishes to improve your technology related education, what would they be?**

1. More representation of the program since not a lot of people know about it. Their mentors didn't really talk about it in depth before they joined.
2. It would be good if the judges would give them concrete improvement to make their application complete. They told them all the problems and not the things they could have done to improve.
3. English lessons could help, because some girls could not understand anything

- **Would you be interested in going back to talk about your story?**

She said she would be interested in going back and talking to current participants. She does not regret participating. Her team was close and she made great friends.

#### **Past Participant 7**

- **Why did you join Technovation, why did you start the program?**

She had not heard about Technovation but her teacher informed her about the opportunity.

- **What did you expect to get out of this program?**

She did not know anything about making applications and wanted to learn more.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She felt that it was a nice experience, especially since it was an international competition.

- **How did you feel about the international community?**

She could see participants from other Technovations in different countries and thought there was high standards because the competition was international.



- **What surprised you about your experience in this program?**

It was cool for her to see how the other participants outside of Yerevan wanted to make an impact in their community. Some application ideas from other provinces were more environmental based or focused on selling crafts. The mentors from other regions were able and were involved in working with the girls from those regions.

- **What was the work distribution like?**

She did help with the programming on some aspects like design, but was more involved with the other aspects. She skipped the coding videos and felt that basic knowledge about coding is a prerequisite to understanding them. She attended some workshops classes but not all of them.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

The judges said their application was too hard, the scope was too big, and that the government would have to be involved in some way which is difficult to do. The feedback from the judges was to make their idea more concrete and if they do continue, to present their idea to sponsors for funding.

- **Why was this a challenge? How did you overcome this challenge?**

She did not continue because she was finishing high school and seeing private tutors from the French University to prepare for exams.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

On the occasions where she did attend the workshop classes, she would have liked to have seen more examples of how to program the application. The instructors talked a lot about ideas to include but she would like the instructors to actually demonstrate how to implement the idea. She feels she understood most of the content taught, but sometimes the classes didn't teach the basic concepts that would have helped her understanding.

Classes did not teach about other programs and only taught App Inventor. She expressed interest in seeing other programming/coding languages because there were a lot of things her teammate could not do that could have been done using those other languages.

- **What have you done since completing the competition?**

After the competition, she continued with traditional schooling and education. The judges had told them how they could continue building the application and the team discussed if they would be able to achieve what they set out to do. She and her team concluded that they did not have enough

resources, and, as a result, did not want to continue.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

No.

- **Did you two ever considering pursuing an ICT or a computing career? Why or why not?**

She is more focused on activism and international women's rights. She also had not studied math since middle school, and, as a result, didn't think it would work out.

- **What are you scared of when thinking about pursuing ICT?**

There's no guarantee the app will be successful and didn't know where to find a sponsor. She thought it would be difficult to reach them and they would not take a bunch of kids seriously.

- **Did you consider aligning your Technovation app to your interests?**

Yes, they wanted to see something improve within their schools.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

Her mother was supportive of her endeavors, but her father felt like it was just a new program for her to join and did not expect anything out of it. However, as the competition drew closer to an end, her parents started to take things more seriously.

- **If you had three wishes to improve your technology related education, what would they be?**

1. Having someone who knows how to build something from the bottom up (programming)
2. She thinks it would be nice to have a platform where people can share their ideas of their applications
3. (Could not find one)

- **Were there any questions that we should have asked you that we did not?**

No.

## **Past Participant 8**

- **Why did you join Technovation, why did you start the program?**

She is pretty interested in computer programming. She wants to continue her career in that field which motivated her to be part of the Technovation Challenge.

- **What did you expect to get out of this program?**

She expected to make strong bonds with her teammates and other Technovation participants first. She was also looking forward to learning more about how to make a business plan and how to create a mobile application with the help of MIT App Inventor. She was not really expecting their mobile application to be that much of a success in the competition or that the judges would love it.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

At the beginning she thought they had plenty of time for what they needed to do. She expected it to be easy to accomplish. However, the whole process of the program was a challenge for her as her team needed to work hard all the time to be able to finish the project on time.

- **What surprised you about your experience in this program?**

She was surprised with how successful their app became in the competition. Her team was one of the [REDACTED], which she was not expecting. She was also pretty nervous about the live pitching of the app. However, seeing how amazed the judges were after their pitch she was a little bit shocked.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

She said the biggest challenge in completing the project was deciding the issue her team wanted to solve through the mobile application. They had lots of ideas, but was not sure which one was going to succeed. So, they created a lot of surveys asking people what they thought they should do. It took a long time to come to a final decision, but when they did she was happy with the decision.

- **How would you improve the workshops Technovation offered? Do you have any suggestions for us?**

She really liked the workshops a lot. Her biggest problem was with the process of making the business plan. Her team talked with their regional ambassador and got advice, but she would have liked there to be more workshops about that part of the project.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She would have liked it to be more advertised. Lots of students have never heard about it and even when her and her teacher were telling the students in her school about it, they were not very excited about it. She thinks if students saw the results of the competition, they will be more excited about

joining it.

- **What have you done since completing the competition? What are you currently doing? And why?**

During the competition, she won a scholarship to become an exchange student. So right after the competition, she flew to [REDACTED] to study there for a year and exchange her culture. She did try to form a group of girls in her school to participate in Technovation this year, too. However, again because they never heard about it, they were not excited to join, which honestly was a pretty frustrating moment for her. However, she is pretty excited to be part of it next year when she comes back.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She has been in the STEM field a lot. She has never really been part of other competitions like Technovation, but she has been part of different workshops related to the STEM because she's very interested in those fields.

- **Have you considered pursuing an ICT or a computing career? Why or why not?**

She does want to pursue a career in ICT. She's very interested in computer programming because she is a problem solver.

- **What are you scared of when thinking about pursuing ICT?**

Her only concern about this field is that it continues developing really fast and it is going to be important to be able to keep up with it.

- **Did you consider aligning your Technovation app to your interests?**

She thinks her teams app did align with her interests. The application they made was to [REDACTED]. The field of Education is very important for her, so it motivated her even more, to work harder to get a good result.

- **Do you see ICT as something completely separate from your interests?**

ICT is exactly what she was always interested in the most.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

Both her parents and her sister were pretty excited about the project they were making for the Technovation Challenge. Most of the time they would try to give ideas and advise her which helped her to do her best.

- **In general, what would helpful for you as you continue your professional path?**

Besides having higher education, she thinks being part of such competitions will be one of the biggest factors of being a good ICT specialist later. In addition to giving experience, it helps to develop her understanding even better by getting acquainted with others' projects and ideas.

- **If you had three wishes to improve your technology-related education, what would they be?**

1. To continue education in one of the world's best colleges
2. Find time for self-teaching
3. Try to be more active in such events.

- **Were there any questions that we should have asked you that we did not?**

She said we asked everything she wanted to tell us.

### **Past Participant 9**

- **Why did you join Technovation and why did you start the program?**

She knew that Technovation would help her to broaden her horizons, deepen her knowledge and would give her the opportunity to start something new in her life.

- **What did you expect to get out of this program?**

She expected to learn new computing skills and get new acquaintances. She expected that the program would help her to decide what profession she should choose in the future.

- **What did you expect this program to be like and how did your experience differ from what you expected?**

She thought her expectation generally met the reality.

- **What surprised you about your experience in this program?**

She thought the atmosphere and people's attitude toward the competition was astonishing.

- **What was your biggest challenge in completing this program? This answer can be directly related to Technovation or something outside of the program that affected you.**

It was hard for her to believe in herself. She did not have any experience before Technovation and faced the dilemma of low self-confidence. The Technovation team helped her to value her abilities and achieve success.

- **What do you wish there was more of in Technovation? Was there something that wasn't there that you would have preferred to have seen/done?**

She think if there were some extracurricular programs, teams would become friendlier and would work with more enthusiasm. She think this would have a good influence in her environment.

- **What have you done since completing the competition?**

She notes that she was really motivated after the competition and would like to continue in the field of computing.

- **Have you participated in other science, technology, engineering, or math (STEM) related programs? Why or why not?**

She had not participated in any other programs but would like to participate in some tech related programs to improve her skills.

- **Have you considered pursuing an ICT or a computing career? Why or why not? What are you scared of when thinking about pursuing ICT?**

She is fond of people who are highly interested in ICT. She does not see any problems in pursuing this field. She also said she'll iron out any problems if she has any.

- **Do you see ICT as something completely separate from your interests?**

She sees it as very similar and in alignment with her interests. She acknowledges that nowadays it is vital to develop her knowledge about computing.

- **What were your parents' thoughts on you participating in Technovation? Were they supportive?**

They were proud of her and always supported her in any situation.

- **If you had three wishes to improve your technology related education, what would they be?**

1. Enhance their skills by participating in practical sessions.
2. Take part in workshops with professionals.
3. Stay in touch with various organizations in different countries and move toward success by cooperating with them.

**Mentor 1 (Filled out by mentor)**

- **Why did you get involved with Technovation?**

I wanted to gain new knowledge and meet new people. I have the desire to change the world for the better, the motivation for school children to assess knowledge and believe in their strength, new horizons ...

- **What was your goal as a mentor to the girls?**

The role of girls in the world of information technology is to assure that knowledge is a powerful force to move forward and achieve goals and dreams and that they can explore, reveal, work out and solve their surroundings and give interesting solutions.

- **What were your expectations for the program?**

I was primarily looking forward to acquiring new knowledge and acquaintances with IT professionals and highlighting the role and importance of high technologies in the modern world for school children. Also, as a competition, I was expecting a victory and dreamed of seeing the joy of the students' victories. Also, as an international competition, I present my country with honor in the world.

- **What challenged you the most as a mentor?**

The competition was attended by the students of the most famous and prestigious schools of Armenia, the hardest thing ever was to instill trust and confidence in the pupils, and then, after the victory of the Armenian round, they had already competed with the participants of 102 countries on the international stage, but this time they persuaded me and assured us the inevitability of victory.

- **What do you think was the greatest motivator to get girls interested?**

In the event of victory, we would meet with the Presidents of the US and Armenia.

- **Do you think there is something Technovation could do more of? Do you wish there was more engagement outside of the competition?**

Compared to the first year, the changes are noticeable, the more important the competition is, the seminars are very interesting and informative, during the competition children have the opportunity to participate in their work with professionals and get answers to their problems, but there is always room for improvement : It is very important after the competition, at least to the winners, the support that has been set up by the app.

- **How do you feel their education prepared them to participate in the competition?**

The trainings are very extensive and the organizers' contributions are greatly supported, especially for students with language problems. Although all these things can be added to the part of the programming section, it is not very difficult to get technical solutions.

- **What did your team do after the competition?**

We took part in programming courses, studied and learned Android programming, Java Core, HTML web programming, and thanks to the knowledge gained, adding some additional features to the app, and put [REDACTED] .

- **If you could have any three wishes to improve the overall experience for the girls, what would they be?**

I always like to say that this competition opens doors for girls. As a recommendation:

1. Trust in your own strength.
2. Be creative, different from mentality
3. Highlight knowledge, self-education

- **Were there any questions you were expecting us to ask that we didn't?**

Thanks for the questionnaire, I was very pleased to answer and recall that way again.

## **Mentor 2 (Filled out by mentor)**

- **Why did you get involved with Technovation?**

As I am an English teacher, another mentor who is an IT specialist asked me to participate for helping them with the language issues but it also interested me because I wanted to be a part of it and be aware of it learn something new and go to the direction where the whole world seems to go.

- **What was your goal as a mentor to the girls?**

Mentoring the girls is very important as we live in a far away town from our capital Yerevan and like in the other places in our country as well it seems that everything happens only for those who live in big cities. It was important for me to inspire the girls and motivate them to grow as the technologies don't have limits and borders.

- **What were your expectations for the program?**

I expected to learn more about new technologies which I don't think was so successful because I am not a specialist in that field.

- **What challenged you the most as a mentor?**

For me the fact that the girls participated in classes only on line was challenging.

- **What do you think are the greatest challenges to get girls interested?**

Awareness about the opportunity.

- **Do you think there is something Technovation could do more of? Do you wish there was more engagement outside of the competition?**

Yes, there should be more engagement and it would be better if they visit sites to see how the girls work.



- **How do you feel their education prepared them to participate in the competition?**

I think that it is difficult to train good skills in a short time.

- **What did your team do after the competition?**

The team split but some of them participate this year as well. This is how we can find really interested ones and give them opportunity later as well without limiting the age.

- **If you could have any three wishes to improve the overall experience for the girls, what would they be?**

Time and experience will be needed.

- **Were there any questions you were expecting us to ask that we didn't?**

Does Technovation have an influence to change the lives of people?

### **Mentor 3 (Filled out by mentor)**

- **Why did you get involved with Technovation?**

As a teacher, I pay an important attention to any educational program, which aims to develop and teach pupils. Secondly, this program gives me the opportunity to communicate more with my lovely students and discover their potential.

- **What was your goal as a mentor to the girls?**

Firstly, to contribute to career orientation, give them opportunity to practice self-education and build the right value system.

- **What were your expectations for the program?**

Build a professional network and have a career growth.

- **What challenged you the most as a mentor?**

Be able to keep the team working spirit, seek innovative, new ways to motivate girls and it's sure, if there is a wish, everything can be overcome.

- **What do you think are the greatest challenges to get girls interested?**

Challenges they want to face, concerned mainly to social problems solutions, but in addition a great challenge for them is also career orientation, because during this competition they get to know with several professions.

- **Do you think there is something Technovation could do more of? Do you wish there was more engagement outside of the competition?**

The English lessons can be organized for the improvement of the foreign language and as well as make them keep in touch with girls of another country. I would like really.

- **How do you feel their education prepared them to participate in the competition?**

If the question is about the education in schools, the response is surely not. During the programme there are support documents and some preparation which help participants, but however difficulties are many.

- **What did your team do after the competition?**

They are going to participate in startup programmes, they want to do their best that their business plan comes true.

- **If any of your team members did not continue in tech or computing, what caused them to stop or continue?**

From the very beginning the participants were not interested in tech, but they wanted to have a positive contribution in social problems solutions and try themselves in that field. But the fact, that the competition has an effect on their orientation for tech field, is real and it's a question of time, if they would like to continue in that field.

- **What could Technovation give you to become a better mentor?**

They could organize some trainings and connect us with another mentors, in this way we could share our experience with each other.

- **If you could have any three wishes to improve the overall experience for the girls, what would they be?**

Meetings with specialist of different fields, especially of marketing, finance, management etc. Be engaged in workshops and we could change the deadlines of the programme.

- **What do you think Technovation needs to create an influence in people's lives?**

The technovation must be more popular among pupils, people via social media, tv, or conferences. Also the bright ideas, which were presented in programs, but couldn't win, must be supported or redirected to another programmes and opportunities.

- **Were there any questions you were expecting us to ask that we didn't?**

**How accessible is the competition? (language, regions, need of internet)**

It is not accessible at all, which is against to UN's stable development programme and must be done everything for getting involved regional pupils in this programme.

**As a mentor have you ever been involved in another programme?**

No

**Are the trainings important for the mentors ?**

Yes.

#### **Administrator 1**

- **How did you get involved with ICT?**

In 2013 she had a chance to be in the US for a scholarship program in the ASU, where she was focused in linguistics. Eventually she visited school girls in a village for a separate program. She worked with Narine to investigate women in ICT, after which Narine introduced Technovation in Armenia and recruited her. She has a personal interest in ICT because of the great potential and talent in young girls. She finds it inexcusable for this potential in Armenia to go unused.

- **What mentors did you have growing up?**

She identified that mentoring and mentorship is a very new concept in Armenia. She said she would have liked to have this kind of opportunity growing up.

- **What were your parents original thought on your educational ambitions? Were they supportive?**

Her parents have been very liberal about her education and were not pushy. She chose to pursue linguistics after finishing a program in the English language. Her mother found it important for her to know and have the skills to understand the ever-growing world, especially in tech.

- **How are you involved in ICT in Armenia?**

She is currently working as an administrator for Technovation. She is also working on introducing CompGirls program in Armenia.

- **What challenges did you face when pursuing your profession?**

Awareness development, she sees as a teacher, is one of the largest issues they have today.

- **How did you become interested in your profession?**

She has been frustrated in the lack of motivation and enthusiasm of students in learning new things. It is an issue because of new and emerging challenges. She thinks it is important to bring this new knowledge and motivation to students because the idea of lack of motivation has been stagnant and is potentially overlooked.

- **What helped you pursue your career in linguistics?**

She wanted to observe the behavior and lifestyle of students in the US. The change of location resulted in her developing of an awareness of her situation and of how there is a great potential

for change in terms of Technology in armenia. She found that the lack of such basic classroom items is a simple change that would greatly enhance the quality of education.

- **What do you believe to be the greatest problem facing girls pursuing ICT in Armenia?**

She identified in the past the stereotypes, such as women having to care for family, was much worse, but has seen more women involved because it is a strong area of financial growth. She still sees a prevalence of stereotypes in general; there is a misconception that Yerevan represents the rest of armenia, and that gender stereotypes are more prevalent in remote regions. She also talked about how husbands leave the country for seasonal work and how it is difficult for women to provide for the family with the salary of a teacher. Technovation is a great opportunity for young girls to be involved and change the outlook of their life, promoting the idea that the girls lead their own life.

- **How did you get involved with the Technovation Program?**

She was recruited by Narine, the Regional Ambassador of Technovation.

- **What did you expect when joining this program and how have your experiences differed from your expectations?**

Her expectation was to divide the post-program participants into different spheres/stages, considering what they are doing, in which stages they are, considering if they are pursuing ICT or not, what they need, and how to initiate activities to make use of the skills they learned during Technovation.

- **Do you think there are shortcomings of Technovation? If so, what are they?**

The program is becoming more and more vibrant, a movement in a way, so they need more people working on it. For new staff, they need financial sources and grants and would need to consider hiring temporary people who are young and more vibrant.

- **How do you define success and how would you measure the success of the program?**

For her, it is important that the girls have different perspectives and critical thinking to identify problems in their communities and focus on topics that can bring actual change.

- **How much of a concern is funding for Technovation?**

Initially the administrators did not think the program would be successful because they started with nothing. Narine had to invest from her own pocket multiple times to make things work. As such, the two grants successfully did not include hiring new staff. The limitations and restrictions on the number of times they could apply for a grant was surprising.

- **Why have classes on Thursday specifically?**

Mentors are very busy and the administrators decided it was better because it was in the middle of the work week, after classes at 3PM. Weekends were also not an option.

- **If you had three wishes to improve the program, what would they be?**

1. More girls participating, especially girls from remote regions
2. Changing the stereotypes about girls in tech, no boundaries for girls to be in Technovation
3. To have a very strong community of Technovation alumni

- **Were there any questions we should have asked that we did not?**

She said the sharing of experience and knowledge would be beneficial, especially for people who want to be in the ICT sector.

#### **Judge 1 (Filled out by judge)**

- **Why did you decide to be a judge in the Technovation competition?**

I was offered to be a judge in the competition and I agreed gladly.

- **Is there anything specific that you would like to see improved within the program?**

Fund/finances raising processes

- **What main aspects or criteria did you keep in mind while judging the participants?**

Team work, application functionality, application implementation and its potential to serve a wide circle of people.

- **Are there any procedures to ensure fairness in the judging process?**

All the judges are unbiased and judge objectively.

- **What did you expect from judging this program and how did your experience differ from your expectations?**

I expected well-done team work, problem identification and its solution via application. There were applications which needed additional work (business plan). I expected to see many pitches in English.

- **Have you ever participated in similar programs in the past either as a participant, mentor, or judge?**

Yes.

- **What do you think was the biggest aspect/factor lacking from the team submissions?**

Technical issues and lack of time.

- **What do you think would help the girls be more successful after the program?**

Persistence and hard work.

- **What do you think is the greatest challenge facing the girls during and after the competition?**

Language barrier

- **How did you provide feedback to the teams? Did you give them examples of what they could improve on, things that did not work, etc.?**

I personally gave examples about improvement and why some points did not work.

- **Were you available to the teams during the 12-week Technovation program? If not, would you be willing to be contacted during the competition to help participants?**

I was present at the 12- week sessions. I presented ideation and pitch techniques.

- **How do you think you and other judges could improve the experience of judging for the girls?**

Share more personal and individual experience.

- **What would have helped you be a better judge?**

To know more about the teams.

- **What does Technovation need to create an influence in people's lives?**

A sound information society

- **If you had 3 wishes to improve the judging of Technovation in Armenia, what would they be?**

1. English language barrier,
2. Invite international figures in ICT
3. Teams' psychological readiness for the competition.

- **Were there any questions we did not ask that we should have?**

No.

## Judge 2

- **Can you provide us an overview of who you are?**

Established an ICT Union in 2015, including universities and organizations that use technology. It consists of about 35 members including multinational companies such as [REDACTED].

- **What are your thoughts about Technovation?**

Has a supportive attitude pertaining to Technovation. Noted he may involve some of the startup members of the union to judge for the competition in 2019. He is going to be a judge for the competition this year. In the past, he offered Narine mentorship for their teams for the ideation phase however, the Narine mentioned that there is not really a section for it to happen within the competition.

- **Would involving professional mentors be a substantial cost to the regional ambassador?**

He thinks the mentors would do it for free but for the girls in the remote villages it may be difficult, but that is why he advised the regional ambassador to use a Facebook page.

- **What does the competition lack the most of?**

“The students need to think more openly”. The ideas they come up with only pertain to their regions or just Armenia, they need to think on a global level.

- **How did you hear about the opportunity to judge?**

Narine connected to [REDACTED] through Synopsys and they are always in communication. They provide awards to the winning teams.

- **Why did you decide to judge?**

There are not a lot of projects like Technovation, he thinks everything stems from education and tech. He feels there is an extreme gap that needs to be closed through education and school. The program helps to improve ICT education and raises the girls’ interest to pursue it.

- **Are you aware of any incubator opportunities?**

EIF, they have a network of centers.

- **Does there need be more of a focus on a particular part of the Technovation curriculum?**

There needs to be more focus on the pitch and different tech approaches. He mentioned that a center specializes in those areas could help the girls think like a business and an entrepreneur.

- **What criteria did you focus on while judging?**

Pitch impressions, the idea, and the scalability of the application. A lot of the other judges focused on functionality pertaining to what the app does.

- **How did you keep things fair for the participants?**

For him, if the criteria includes an open mindset then it would have a high score. On the other hand, if the girls just solved a small problem, then it's not a good idea. He picked the [REDACTED] because he was excited to work with them and learn about their approaches.

- **Have you had any past experience?**

Was a judge for Hackathons but has not been a mentor.

- **What were your expectations and how did they differ from reality?**

He had higher expectations than reality, but if the projects were improved it would meet his expectations. He just wants students to think more openly, think bigger.

- **What is your opinion on the educational system?**

Some schools are good, but some are very low-level pertaining to technology. Some people do not even think it is an opportunity to pursue sometimes.

- **What is some feedback you gave to the girls after they pitched their applications?**

Apparently there is content that is given to the girls afterward, but it is difficult to provide concrete steps. He thinks even if they fail it's good because they learn from failing. He thinks the girls should look to success stories and try to meet that level. He mentioned that failure is good because you learn and that all good organizations have had failures.

- **In your opinion, what do you think are the biggest benefits gained by participating in Technovation?**

They learn how to work as a team, they learn how to work with a teacher, and it enables them to think about issues that may not be close to them. To him, each step is good for their future lives, even if they do into different fields. They will know the knowledge they gained from the program, and will be able to apply the knowledge to things in the future.

- **What is their biggest challenge?**

Participating in the project, not all schools are participating. Always worrying about failure is a huge challenge as well.

- **What can be improved in term of judging?**



Choosing the right people, including the people from the tech industry, venture capitalists may be a good idea, but involving them may cancel out the educational process of the project. He does not think everyone knows about the option of reaching out to professionals.

- **If you have 3 wishes to better Technovation, what would they be?**
  1. Wants to mentor a team that will win, a team that will go to the global market, they want other countries to be afraid when they compete against them
  2. Improve PR of Technovation, involve more schools, submit good ideas and projects
  3. A more enabling judging platform- the Technovation platform can tell the judges not to be so negative, this limits the criticism that the judges can provide

## 10. List of Organizations that Aid Underrepresented Demographics

Organization	Program	URL
TUMO	TUMO	<a href="https://tumo.org/en/">https://tumo.org/en/</a>
Girls Inc.	Girls Inc.	<a href="https://girlsinc.org/about-us/">https://girlsinc.org/about-us/</a>
EPIK Deliberate Digital	DIGCIT	<a href="https://digcitutah.com/">https://digcitutah.com/</a>
Google	Made with Code	<a href="https://www.madewithcode.com/">https://www.madewithcode.com/</a>
Intel	She Will Connect/ Future Skills	<a href="https://www.intel.com/content/www/us/en/corporate-responsibility/social-impact-and-educational-initiatives/overview.html">https://www.intel.com/content/www/us/en/corporate-responsibility/social-impact-and-educational-initiatives/overview.html</a>
	ASSETS	<a href="https://www.csiro.au/en/Education/Programs/Indigenous-STEM/Programs/ASSETS">https://www.csiro.au/en/Education/Programs/Indigenous-STEM/Programs/ASSETS</a>
QUT	Indigenous Australian Science and Infrastructure Development School	<a href="https://www.qut.edu.au/about/oodgeroo/indigenous-australian-science-and-infrastructure-development-winter-school">https://www.qut.edu.au/about/oodgeroo/indigenous-australian-science-and-infrastructure-development-winter-school</a>
WPI	Camp Reach	<a href="https://www.wpi.edu/academics/pre-collegiate/summer/stem-residential/camp-reach">https://www.wpi.edu/academics/pre-collegiate/summer/stem-residential/camp-reach</a>
Curtin U	IAES	<a href="https://scieng.curtin.edu.au/about-us/outreach/indigenous-australian-engineering-school/">https://scieng.curtin.edu.au/about-us/outreach/indigenous-australian-engineering-school/</a>
iWish	The iWish Conference/alumni network/campus weeks	<a href="http://www.iwish.ie/">http://www.iwish.ie/</a>
Diamond Challenge	Diamond Challenge	<a href="https://diamondchallenge.org/">https://diamondchallenge.org/</a>
Synopsys	SAED Program	<a href="https://www.synopsys.com/company/contact-synopsys/office-locations/armenia/armenia-educational-program.html">https://www.synopsys.com/company/contact-synopsys/office-locations/armenia/armenia-educational-program.html</a>
U of Otago	Hands-On	<a href="https://www.otago.ac.nz/hands-on-at-otago/about/index.html">https://www.otago.ac.nz/hands-on-at-otago/about/index.html</a>
Me to We	Leaders in Training	<a href="https://www.metowe.com/camp/ontario/leaders-in-training/">https://www.metowe.com/camp/ontario/leaders-in-training/</a>
National Girls Collaborative Project	National Girls Collaborative Project	<a href="https://ngcproject.org/">https://ngcproject.org/</a>
National Math and Science Initiative		<a href="http://www.nms.org/">http://www.nms.org/</a>
	Code to Inspire	<a href="https://www.codetoinspire.org/">https://www.codetoinspire.org/</a>
Girls Start	Summer Camp    Girls in STEM	<a href="https://girlstart.org/">https://girlstart.org/</a>
STEM for Her	Cyber Patriots    GIT Mentor-Protégé Program	<a href="http://www.stemforher.org/">http://www.stemforher.org/</a>
NCWIT	Aspirations in Computing	<a href="https://www.ncwit.org/programs-campaigns/aspirations-computing">https://www.ncwit.org/programs-campaigns/aspirations-computing</a>
	AspireIT	<a href="https://www.ncwit.org/programs-campaigns/aspirations-computing">https://www.ncwit.org/programs-campaigns/aspirations-computing</a>
ChickTech	ChickTech: High School    ChickTech: Rural	<a href="https://chicktech.org/">https://chicktech.org/</a>
IGNITE Worldwide	Panel Disc., Field Trips, Workshops, Job Shadows	<a href="http://www.igniteworldwide.org/about/">http://www.igniteworldwide.org/about/</a>
Latinas in STEM	Stem 101   Summer Enrichment   After-school programs	<a href="http://www.latinasinstem.com/k-12-outreach.html">http://www.latinasinstem.com/k-12-outreach.html</a>

University of Melbourne	Residential Indigenous Science Experience (RISE)	<a href="https://www.gtac.edu.au/rise/">https://www.gtac.edu.au/rise/</a>
hEr Volution	STEMing Up	<a href="https://www.hervolution.org/program/">https://www.hervolution.org/program/</a>
Pretty Brainy	MISSion Innovation	<a href="https://prettybrainy.com/">https://prettybrainy.com/</a>
***Canada Learning Code	Tailored programs to different demographics	<a href="https://www.canadalearningcode.ca/about-us/">https://www.canadalearningcode.ca/about-us/</a>
Iridescent		
Hour of Code		
Dilijan Community Center (Scholae Mundi Armenia Charity Foundation)		
Synopsys		
United Way Youth Venture		<a href="http://www.uwncm.org/why-it-important-0">http://www.uwncm.org/why-it-important-0</a>
First Robotics		<a href="https://first.global/">https://first.global/</a>
Digi Summer Camps		
Bootstrap		
E2 Young Engineers		
Engineerings for Kids		
PAUTA		
PEN		
Venture Lab		
FLL Robotics in Nigeria		
Coderina		<a href="http://www.fllnigeria.org/">http://www.fllnigeria.org/</a>
Shell		<a href="https://www.shell.co.uk/energy-and-innovation/make-the-future/schools/bright-ideas-challenge.html#iframe=L2ZvcmlzL2JvaWdodF9pZGVhc19jaGFsbGVuZ2VfcmlnaXN0cmF0aW9uXzlwMTg">https://www.shell.co.uk/energy-and-innovation/make-the-future/schools/bright-ideas-challenge.html#iframe=L2ZvcmlzL2JvaWdodF9pZGVhc19jaGFsbGVuZ2VfcmlnaXN0cmF0aW9uXzlwMTg</a>
STEM around the world		
Society for Change		
Big Sister Little Sister		
Tech Girls		
Girls in Tech		
Girls who Code		
Youth Power (CoP)		

## 11. Conversation Correspondences with Program Administrators from Outside Organizations

All interviewed administrators included below have given verbal or written consent for usage of their responses in our report.

### Code to Inspire (Filled out by the administrator)

- **Could you give us an overview of your program and its goals?**

Code to Inspire aims to educate Afghan women with in-demand programming skills, empower them to add unique value to their communities, and inspire them to strive for financial and social independence. We empower women by teaching them how to code and find work, virtually, anywhere in the world. This affords them the opportunity to earn much more than local wages and change their lives for the better while forwarding the Afghan Economy. Our goal is to empower our students to not only make a difference in the community but become entrepreneurs. We understand that through providing girls a safe place to learn, they can not only set goals but achieve them and help empower other women and girls in tangible ways in the generations to come. As computer coding is a global language, girls who otherwise would most likely not have the chance to connect with individuals outside of Afghanistan, now have a chance to do business with individuals around the world. Overall, we seek to encourage each student that she can not only be an entrepreneur but empower others. By developing mobile applications, games and websites, our girls help organizations to achieve their goals by solving local problems in the community and simultaneously give back to their community.

There are 3 categories of students in CTI coding school in Herat, Afghanistan – Web designers (young school students), Game Developers and Mobile Application developers.

- **How/why did you become involved with this program?**

Computer Science was my first favorite major to pick among many choices and fortunately I made it. I finished computer science after 4 years and received my Diploma in late 2013.

After I was done with University, I got the opportunity to work in a public diplomacy program, World In Conversation run by the Penn State University. The project was to hold video conversations between Afghan university students and American students as well as NATO cadets. First I started working as a dialogue facilitator and then became the lead coordinator where it was funded by the NATO.

██████, was my university teacher. She was such an inspiring figure in the university and everyone counted on her. She was not only kind to me, but also to everyone in the class. Her kind and inspiring attitude allowed me to interact with her more often. Our teacher-and-student relationship as well as the mutual respect and care which are our cultural values in the society, resulted in bringing me into the fold. Therefore, As I was working my job, I received emails from her on the idea of founding a school for girls who are interested in computer science. I was amazed by her idea. It was such an honor to be helpful to someone who is so strong and determined. Her plans, determination, mission and vision inspired me to stand beside her.

As the project manager, I feel strong and more determined now. We started everything from nothing. I can remember brushing the classrooms, painting the walls and having designed the tables and chairs. We were a completely new phenomenon to the society. And now we are well-known enough. There is a lot of students who love to sign up in CTI.

- **What do you hope your participants get out of the program?**

We want to educate and inspire the next generation of women tech leaders. We want them to boost their self-esteem and dream big. Either if they want to build their own start up and companies or get hired remotely. We are here to support them in any possible way.

- **What kind of data tracking do you utilize?**

We do not utilize a data tracking system.

- **How do you define success and how do you measure the success of your program?**

When everybody trusts and gives value to the work you are doing is SUCCESS. Making endeavours in spite of the challenges and hardships brings you success. We are very successful because we are well-known to the public now. A high number of young applicants awaiting the chance to get in our school shows a high level of a tangible success. Many students learnt and many of them teach others or work to earn for themselves.

- **What challenges have you faced achieving the goals of your program?**

The only challenge at the very first step was to build trust among the society and recruit students. Not everyone knew about coding. We were successful at this point though. No challenges for now.

- **What techniques have you found to be most beneficial towards accomplishing your program's goal?**

Teaching practically. Encouraging the students to learn. Letting them get engaged in outsourced projects while they were/are studying. Letting them realize their values and importance to society. Promoting their works and products. Spending more time with them and giving them space to be different.

- **Are there any cultural aspects that may affect the engagement of the participants of the program, if so how were they addressed?**

Not any

- **How do you ensure that the participants are fully engaged in the program?**

Frequent exams. Giving them practical projects. Activity evaluations. Asking for their suggestions on how to move forward and, of course, pursuing our rules and regulations set for our students.

- **Does your program have any form of continuation for its participants? How have you approached maintaining the continuation of your past participants?**

Outsourcing projects for them. Also we have built a for-profit company for our graduates who want to work and earn for a living. Moreover, we are in contact with each and everyone of them who get projects to work. We give them feedback and help them with any challenges they face in terms of coding, social as well as personal skills. They consult us constantly and we are open to that under any circumstances. In addition to that, we let them participate in any event related to our work either nationally or internationally by paving the ground for them.

- **What were some challenges you faced with continuation of your participants after your program ends?**

Keeping track of the is a bit challenging as we always try to have updates from their side and help them to either get jobs or do remote work. Right now we have the spreadsheet data of our current graduates that can be traced.

- **Is there communication or evaluative measures taken with other people at any point (e.g. parents, teachers, community leaders, etc.)?**

Yes there is. We don't communicate with parents regarding the lessons since the past generation is not familiar with coding. But there are many colleagues, individuals and groups who are voluntarily helping us like giving feedback, evaluating the projects and content provisioning in many countries.

- **How have you handled funding?**

Funding is a challenging part of the work. We applied to many grant applications. We did two successful online fundraisers. We are also part of giving programs of different companies such as Google and we have individuals who are donating to our cause occasionally.

- **Have you found education to be a problem for preparing kids to participate in your program?**

Majority of our students come from college background specially computer science, therefore, we are not facing literacy problems. Although, we have some students who don't know English and that is a bit challenging as everything online and coding is in English. Also we had some students that never had computer and be online and it took a few weeks to teach them the basic digital literacy using it.

- **If you could have any three wishes to improve the overall experience for the participants, what would they be?**

1. Stay updated with the other world.
2. Having access to more resources and equipment.
3. Internships/fellowships in developed countries.

## **DigiCamp (Filled out by administrator)**

- **Could you give us an overview of your program(s) and its goals?**

We offer STEM education courses and workshops for kids aged 6 to 14. Much of our content is delivered in camp - meaning the schools are closed and kids come to us all day or at least half of the day. We teach computer coding, photography, robotics, graphic design.

- **How/why did you become involved with this program?**

██████ began the camp - DigiCamp - while working at a middle school teaching video and film production. Kids and families began asking about programs for their kids who didn't want to go to sports camp. I decided to create the company and offer kids the opportunity to learn more about STEM related topics in a full day setting. Most schools do a very poor job of teaching any coding or digital media - and those that do make the attempt are handcuffed by a bell schedule and a heavy emphasis on standardized testing.

I feel that schools have pretty ruthlessly taught children how not to be creators of their own digital world, but rather consume that which others are creating.

- **What do you hope your participants get out of the program?**

I hope kids are able to find a thing about which they can be passionate. Whether that's coding and robotics or graphic design and film production, it doesn't matter. Kids who love technology, science and math need a place to explore, create, test, rebuild, test again, and share their creations. I hope children find that DigiCamp is that space for doing exactly that.

- **What kind of data tracking do you utilize?**

We follow children's progress through our programs and those offered elsewhere. We strive to challenge those who choose to come to DigiCamp, but we are not drowning in data and spreadsheets. We want to see processes and are less interested in the product.

- **How do you define success and how do you measure the success of your program?**

Again, the processes by which children find solutions to their problems is the driving force of DigiCamp. We know that learning is highly social and because of that we put children in like-aged groups where they can share resources, ideas, successes, frustrations, and ah-ha moments with each other. We also know that in order to create anything new, we have to be willing to be wrong, to stumble around a problem and get it wrong before we get it right. In doing so, we empower children to find try new things and seek solutions others may not have been willing to seek - for fear of failure.

- **What challenges have you faced achieving the goals of your program?**

We have been well received within the community and tried our best to remain affordable. This has kept our profit margin low and because of that, larger companies have been able to come in and challenge our market. We are self funded - about 98% by me - and struggle to stay in the black. Another note: we try to pay our staff well which contributes to the low profit margin.

- **What techniques have you found to be most beneficial towards accomplishing your program's goal?**

We try to hire equally passionate staff - and then train them, especially in helping children achieve success. Ultimately the goal must come down to children having fun and feeling successful. Our training focuses heavily on this aspect.

- **Are there any cultural aspects that may affected the engagement of the participants of the program, if so how were they addressed?**

Many of the children who come to us are on the Autism Spectrum. We have been honored with the opportunity to grow with them and learn from them. I personally have seen many, many young Autistic children come in, stay and grow with us. Some of them first showed up in a “shell,” not willing to contribute or be a part of a group, but months or years later they have become vocal leaders with great ideas and creativity beyond compare.

- **How do you ensure that the participants are fully engaged in the program?**

We do everything in small groups. 6 to 12 kids in a group with 2 or 3 adults. Children get the attention they need WHEN they need it. This also likely contributes to our low profit margin.

- **Does your program have any form of continuation for its participants?How have you approached maintaining the continuation of your past participants?**

We build age appropriate curriculum beginning at age 6 and progressing into age 14. We have been very cognizant of the need to build a program that is scaffolding in nature so that kids can stay with us for longer periods. Also we offer such a range of courses that kids can nearly spend their entire summer with us and not repeat a course.

- **What were some challenges you faced with continuation of your participants after your program ends?**

Creating new and exciting content that isn't a repeat of what they have already experienced.

- **Is there communication or evaluative measures taken with other people at any point (e.g. parents, teachers, community leaders, etc.)?**

We share programs and projects with parents all the time. Many of our camps have children taking things home, like robots, computers, arduinos, and even 3D printed projects that the children create.

- **How have you handled funding?**

Self funded. Wanna help?

- **Have you found the local education system to be a problem for preparing kids to participate in your program?**



I wouldn't say they are a problem, but kids are being robbed of their creativity and passion for STEM by a system that emphasises tests and "the right answers." We want to emphasise the process instead. It's much more valuable to see how children (or adults) solve problems than it is to see the solution in isolation.

- **If you could have any three wishes to improve the overall experience for the participants, what would they be?**

I would like to include an end of camp celebration (each week) in an auditorium type setting where parents and others come to see the work in which their children have been engaged. I would like to offer the children a single place to maintain their digital portfolio. Right now they have projects in several, many really, places with very little in common. I would love to have the ability to help them create and maintain their portfolio even after they have left us. I would like to take my staff on a rest/retreat at the conclusion or perhaps even before we begin a summer. I know that a happy staff means happy campers.

#### **Diamond Challenge (Filled out by administrator)**

- **Could you give us an overview of your program and its goals?**

The Diamond Challenge Competition is an international event running once a year since its founding by the University of Delaware in 2012. Since that time it has grown tremendously with tens of thousands of high school students participating across the world. Armenia first began participating in the Diamond Challenge Competition in 2018, partnering with the Dilijan Community Center (Scholae Mundi Armenia Charity Foundation) in Dilijan, Armenia. The 2018 competition proved a great success with eleven teams of students all across Armenia presenting compelling business concepts at the live-pitch event. In year two, we saw the Diamond Challenge Competition expand even further, providing opportunities to students from all corners of Armenia to learn about and experience first-hand what it means to be an entrepreneur. To this end, it is our mission to inspire the next generation of young people who will be tomorrow's leaders in business and innovation.

- **How/why did you become involved with this program?**

We decided to be the official partner for Diamond Challenge Armenia in 2018.

- **What do you hope your participants get out of the program?**

We hope they gain skills and knowledge in building a business, understanding the world of entrepreneurship, public speaking, networking, and more.

- **What kind of data tracking do you utilize?**

The data tracking used with Diamond Challenge is one provided to us by the international organizers, which is a personalized platform where we can track how far teams have submitted in their applications and their judging results. Unfortunately, we don't know the exact program as it is controlled by the international Diamond Challenge organizers.

- **How do you define success and how do you measure the success of your program?**

We define our success based on the feedback we receive from program participants. We gather information through observation, word of mouth, and surveys after the live pitch event.

- **What challenges have you faced achieving the goals of your program?**

Our first year was 2017, and originally our main challenge was simply spreading the word about the existence of the competition. We mainly used Facebook and people in our network to spread the information. Our second year, this past year, we employed a small committee of people to continue spreading the awareness of the competition through social media, and we also added "site visits" where we would present in English and Armenian to schools and organizations around the country. We also did a few Skype sessions and recorded a video that can be played in areas that don't have computers/wifi. Now, many people around Armenia know what the Diamond Challenge is and we even have sponsors. But our biggest challenge at the moment is not recruitment, but follow-through is tricky. Many Armenian student teams get excited, sign-up, start building their business, and then don't complete the application by the deadline. The 2 major issues are that they lack the education or information to properly build a clear business plan, and that they lack the levels of English language needed to easily complete the application. This year, we plan to hold a few business and entrepreneurship camps and trainings to get this type of knowledge to as many Armenian students as we are capable of, with the end goal being that they form a team and complete a business plan for the competition.

- **What techniques have you found to be most beneficial towards accomplishing your program's goal?**

Our best technique was utilizing social media and also going to sites in-person to spread information about the competition.

- **Are there any cultural aspects that may affect the engagement of the participants of the program, if so how were they addressed?**

We had to consider various cultural aspects. One team who we invited to the live pitch event was a team of 2 girls from Japan, but they didn't come to the event because their families didn't want them to. Another team of 2 boys from the same city had no problem coming to the competition. There are mainly gender-related challenges regarding our participants engagement with the program.

- **How do you ensure that the participants are fully engaged in the program?**

We don't really hold any teams hands as they do the program, it's more individual work. They either submit their concept on time or they don't, but once they are at the live pitch event, every team has a slot to pitch and we require that all other teams stay for the entirety of the event.

- **Does your program have any form of continuation for its participants? Is there any communication with program participants following the completion of the program?**

We remain a resource for the alumni teams and sometimes use participants for testimonials or to

help spread the word about the competition, but otherwise, we typically don't communicate much with alumni post-competition.

- **Is there communication or evaluative measures taken with other people at any point (e.g. parents, teachers, community leaders, etc.)?**

Yes, we speak to all of the above when promoting the competition during application phase.

- **How have you handled funding?**

Our founding organization will help fund where needed, but we try to keep this competition as low cost as possible. We reimburse committee members coming to meetings, we provide rides to committee members traveling around Armenia for outreach, and we provide transportation and lodging to teams who need it for the live pitch event.

- **Have you found education to be a problem for preparing kids to participate in your program?**

Absolutely. The majority of our participants don't have any background knowledge in business/entrepreneurship so they already are a step behind in this competition. It's a huge jump from knowing nothing about starting a business to competing in a business competition, so if our students had more knowledge on the subject, it's possible more would take part.

- **If you could have any three wishes to improve the overall experience for the participants, what would they be?**

1. We could provide more trainings to prepare students to take part in this competition.
2. We had an unlimited budget to put on a larger live pitch event.
3. We could make the competition allow Armenian language, to relieve the students of the language barrier as a challenge.

#### **Diamond Challenge Follow-Up (Filled out by administrator)**

- **What kind of information do you look for in your surveys? Could you elaborate more on that process and who you survey?**

To the participants, we send a Google Form survey out asking if they would recommend the competition to a friend, what their favorite and least favorite parts of the process is, if they learned any new skills, if they will continue their venture in the future, and what they would change if they could. For the guests and judges (adults), we ask more questions about the live pitching event and how to improve it.

- **What techniques have you found to be most beneficial towards accomplishing your program's educational goal?**

We don't really employ too many techniques, we just spread the word about the competition through Facebook, and provide everyone as much information about the opportunity as possible. At the end of the day, from Dilijan and with our limited budget, we can't force students to be

motivated enough to start a business concept, do it well, and follow through with its submission. To an extent, we let that part happen naturally. We do provide resources and assistance as much as we can otherwise.

- **Since we are American and not well versed in the culture in Armenia, could you elaborate further with your experiences of gender-related problems and where they come from?**

It's not a supported notion to have girls (from rural areas and/or conservative families) go off on their own, be without their brothers or fathers, and pursue these larger, international competitions. The team that made it to our top 12 who didn't come were 2 teenage girls whose families not only were uncomfortable with the girls going just up north to Dilijan for the live pitch competition for one day (even though they would be with their female adult supervisor the whole time), but we were told that the idea that the girls were competing to travel to compete further in America was absolutely terrifying to their families, so they decided not to come altogether. I spoke to their supervisor and she confided in me that there was no going back on their decision. It was a huge bummer for us but we accepted their choice. The villages in the regions, and I would argue even many main towns (like Dilijan, Vanadzor, Gyumri) still face huge stigmas with girl's educations and opportunities. Men are still the priority as this is a patriarchal culture. It's just part of the country's values, being a highly Christian state and also still relatively rural in so many parts.

- **Are gender related problems worse in some areas than others? What cultural opinions affect these problems? How is your program attempting to address some of these issues?**

I kind of answered this above, but gender issues are much worse in poorer areas. Yerevan is almost it's own country within Armenia, women have very different experiences there than in the rural areas. At the moment, we aren't directly addressing these issues aside from making sure that we aren't only displaying this competition to young men, but all the young women are in the room as well. We realize we can't control the cultural values regarding gender in the Armenian regions, but we try to encourage girls to compete through the language we use and examples of past winners we bring up. In addition, Sona and I are both women so they see the competition being managed by two women.

- **What do you think are the reasons for students' participation?**

The student's participate mainly for two reasons: one is to get experiences and a certificate that can help them apply for scholarships and schools, and the second is to try and realize a business concept that they've developed and believe in.

## TUMO

- **Could you give us an overview of the program and its goals?**

The goal is to make kids understand that they have a future in what they were working in when they are here

- **What is your name and your position?**

██████

- **How/why did you become involved with TUMO?**

I was a student at TUMO and then was asked to become an ambassador.

- **How do you define success and how do you measure the success of TUMO?**

TUMO defines success if the students go on to continuing their careers in what they started at TUMO.

- **What challenges have you faced achieving the goals of your program?**

Building the program was challenging. When TUMO started, they did not have the 14 sectors that they now have.

- **Was it a struggle getting people here?**

There were 2,000 to start so getting people involved was not an issue. Word of mouth was probably the biggest advertisement for the program. Spacing, however is becoming an issue in addition to transportation for the children who are far away.

- **What techniques have you found to be most beneficial towards accomplishing the program's goal?**

The workshops seem to be more beneficial for the students. They have teachers who are professionals in their fields, and the learning labs are also very well liked. The learning labs can also be used as supplements to be completed levels.

- **How did you address the specific cultural aspects of your demographic to get them engaged in your program?**

The workers are here to regulate any discrimination. Everyone is welcome here including handicapped kids and children with mental illness.

- **Is there a divide between the male and the female participants?**

- In terms of percentage?

The percentage is often changing. Generally there are more girls than boys and then it changes further when the boys leaving for mandatory army training.

- Do you see them being interested in different classes?

They are pretty evenly distributed between subjects. The teachers transfer between all the different locations

- **How do you ensure that the participants are fully engaged in the program?**

Coaches have a group of students who they are matched to. They are not considered as mentors but are there to assist with learning and keeping them on track. Presence is also a big thing at TUMO. There is no WiFi on the main floor which helps the students to stay focused and be

productive.

- **Does your program have any form of continuation for its participants?**

They are able to work at TUMO afterward if they want.

- **How have you approached maintaining the continuation of your past participants? (Is it through making sure they come back or just tracking what they do after?)**

The TUMO portfolio really helps anyone who is looking for a job. It also carries a lot of weight when applying to universities.

- **What kind of data tracking do you utilize?**

They do not utilize data tracking on their participants.

- **Does TUMO utilize program evaluations with its participants?**

TUMO sends out a survey every month.

- **What is your opinion on the education system?**

The subjects taught at TUMO are picked through research of upcoming sectors. In the Armenian education system, the content taught is great, but the methods used to teach are old.

- **What are the barriers for people who want to pursue ICT careers?**

The education offered here does not exist in their normal education. The biggest problem is transportation because kids travel long distances to come.

- **What are your three wishes for improving the program?**

1. Adding new subjects for kids to study, particularly AI.
2. Get other foreigners to come here to study and to teach the students.
3. Promoting the TUMO brand

## **Embry Tech**

- **Please give us an overview of who you are and what your organization does.**

I moved back to Armenia from Boston in 2010. I am a registered dietician, worked in a hospital, and received a masters degree in Chinese medicine. I wanted to open up a health clinic in Armenia too but there is no market. I also don't have the time due to my family. I started in retail but it was too much with children, switched again to [REDACTED] of Armenia, director of commerce, I then moved onto online media to be the director of partnership and development, [REDACTED] is a competition in Geneva to bring start ups to compete and pitch. I heard the cofounders pitch there and reached out to help them and then we joined together.

Embry tech is trying to change any shoes in order to track movement, exercise, and bodyweight. “Think Fitbit but in your shoes.” When the company started, there was no money so each of the founders had a separate job to make money. Applied to EU sponsored grants, won [REDACTED] then SmartGate invested [REDACTED], then angel investor came in and invested [REDACTED], we then started hiring people. We are now talking to a lot of manufacturers and being approached by footwear sole companies

- **How did you find these resources?**

Armenia is small, the tech community is tight knit and utilizing Facebook lets you see everything that is going on. When you go to one event then you meet more people, going to these events and networking was very beneficial. Mostly word of mouth and following Facebook events to find more events.

- **Why do you want to keep R&D in Armenia?**

Sales need to be in US. We want to keep R&D here because the talent is here and it is cheaper to keep the team here.

- **Before you got involved in your startup, what helped you get interested in technology? (Any mentors, programs, ...?)**

Graduated in 2004 so technology wasn't quite huge yet, but I was interested in medicine, once I got here I realized I couldn't do what I wanted, so I started brainstorming. I had always loved the idea of being a doctor, but once I got into impact hub, I wanted to combine tech with my passion for health. I had a total of three ideas I wanted to pursue. I started and stopped after doing a lot of research on my own and eventually found [REDACTED] and attended.

- **How did you attain the necessary resources to be a successful startup?**

Armenian Startup academy, pre-accelerators etc. Hero House was very helpful and provided a lot of resources and connections.

- **Do you have a plan for scaling?**

We want to turn the tech into a medical device. For our startup, we want the shoe to eventually be able to measure fat, water, and muscle composition, pulse, etc.

- **From your experience, what should we be giving the Technovation girls to inspire them to continue in technology?**

The education is the problem, they need more business help, how to present themselves, public speaking, girls need to know it's okay to work and have a career and need to have access to work.

Having money is okay and not shameful, they need internship opportunities. Lots of people don't continue because they are scared of failing.

- **If you had 3 wishes to help your past self get to where you are today, what would they be?**

1. Business education
2. social media, get your connections, use it to present yourself
3. Resilience, being flexible and handling change

- **Were there any questions we did not ask that we should have?**

Look into Impact Hub near the Vernissage, Smeda (sponsored by EU4Business), and HAX accelerator.

- **How did you find these?**

Facebook is a great platform since Armenia is so small. Hero House brings people, organizes events, and has helped them build their connections. Going to talks and meetings to get into the community is important for starters

## Smart Gate VC

- **Can you give us a quick overview of who you are and what you do?**

Worked with Hero House for 2 years now and assist with a pre-seed venture capital fund. Is involved with different projects to address the pipeline problem and is involved in the Armenian Startup Academy.

- **Can you describe the startup scene in Yerevan and what are the main factors that have contributed to its growth?**

A lot of startups start in Armenia and then move on to the U.S., keeping their engineers in Armenia. However very few startups raise over millions for funding. There are 3 large investors: AICA, FAST - Angel Network, and BANA

- **What are the goals of your organization?**

We take ideas and turn them into successful startups. We also turn tech into commercialized tech. We organize a lot of events as well to get university students into the tech scene. To goal is to elevate Armenian startups and turn them into investable startups.

- **Have you tried reaching the other provinces?**

The students come from university so they may be from other provinces



- **What resources do you provide to the teams to get them up to speed?**

Start up boost weekend helps with ideation and shaping of the idea.

If ideation is done already they will move to customer development tracking. We provide free work space, can use our network of people involving our customer network and investment network. Smartgate invests certain funding [REDACTED]. We current have 3 main admin, [REDACTED] helping with around 25 teams.

- **What has been your biggest challenge in achieving the goals of the program?**

Sourcing of company and pipeline, and partnerships and incubators have been an issue. There is also the issue of space and capacity in the current location. The rapid growth has lead to the inclusion of volunteer workers from the United Armenian Volunteers League.

- **How can we better connect the Technovation past participants to the tech startup scene in Armenia?**

Judges should be tech entrepreneurs. We recommend entrepreneur networking, meeting the professionals, and inviting them to competitions to develop personal relationships. The program should provide students with videos, books, and resources they can use, as well as share posts and and content from organizations like Smart Gate and other opportunities.

- **What specific resource do you think would help the girls the most if they decide to pursue commercialization of their app?**

Look into Y Combinator Startup School, Blitzscaling, and YC books.

- **From a startup perspective, is the education system good enough to provide the needed skilled workers?**

Math, coding, and engineering is very good here in Armenia but recent graduates lack experience, senior professionals are lacking here because once they get good enough they leave.

- **Are there any other organizations you think we should talk to, to better connect the teams to the startup scene?**

Look into ANEL Incubator. The focus should be on university incubators and include judges (by recruiting them by better “selling” the program).

- **If you could have 3 wishes to improve the startup scene in Yerevan, what would they be?**

1. We need good AI Data science entrepreneurship research program (PHD programs), need good AI Data science entrepreneurship research program (PHD programs)
2. More circulation of smart money (money that circulates in building networks and sharing knowledge) (More venture funds in the smart money)
3. Maybe two more Multinational research development centers, maybe more cyber security

- **Were there any questions we should have asked that we did not?**

Look into Entrepreneurship Immersion Program (Smart Gate). She joined as a mentor of the program.

### **American University of Armenia**

- **Does AUA have a program for engaging more women in STEM? If so, what does it look like?**

AUA has initiated a “Yes, Armenian women can” campaign to raise resources for encouraging more women in STEM education.

- **We heard that having TUMO on a college application carries some degree of weight. Have you experienced this? If yes, what does a program need to do to get this type of influence?**

Of course, all extracurricular activities are assessed by admissions committees in making a determination on an applicant’s abilities, track record, and aptitude. More significant than listing TUMO, is appreciating what the applicant has done at TUMO (or anywhere else, for that matter).

- **What can programs like Technovation do to better make the connection to (in?) the future, especially colleges?**

Maybe work with our faculty in related fields to discuss the “curriculum” of Technovation, what are the topics covered, what are the activities conducted, and the knowledge gained. Maybe hold an Open House for the participants to see AUA 1<sup>st</sup> hand and have a Q&A about the university so they are more informed applicants if and when they decide to apply. Maybe hold an open classroom day for Technovation girls to “be an AUA student for a day” and visit classes.

- **If you know, what is the nature of AUA’s relationship with Technovation? Please describe the partnerships/resources being provided?**

We have been keynote speaker, judges, and hosts for their events.

- **If you could have any three wishes to improve the Armenian college system for girls interested in ICT, what would they be?**

Visit the universities early in high school career so they can make an informed choice re: what to study. Push women role models (from academia, from industry, from govt) to be more active/expressive in showing the younger generation that it is possible to succeed as a woman in this realm. Support Technovation and similar endeavors.

- **Can you refer us to any person or organization you think would be beneficial for us to talk to? Can you provide us with their contact information?**

I'll think about this...

- **Technovation is looking for volunteers, especially if they are well versed in English, business, and programming. Does AUA have a volunteering system or a pool of volunteers that Technovation can utilize?**

ACDO office is the alumni and career development office. Student Success Center also may be helpful here.

- **Is there a topic or question we didn't ask that we should have?**

Seems pretty complete to me. Good luck!!

## 12. List of Technovation Regional Ambassadors that were Contacted

State/Country	City	Email
Australia	NSW	angie.melville@internode.on.net
Australia	Brisbane	info@techgirlsmovement.org
Bolivia	La Paz	planetpame@gmail.com
Botswana	Gaborone	cindymelemo@gmail.com
Brazil	bahia	claudiastippe@institutoparamitas.org.br
CA	Redwood City	noelle.e.santamaria@gmail.com
CA	San Fran	meghana.begur@gmail.com
California	LA	bshannon@wearesynergy.org
California	Los Angeles	zanotti@pd.code.org
California	LA	Globalthought747@cs.com
Cambodia	Phnom Penh	oumuoy.heang@gmail.com
Cameroon	Douala	meghana.begur@gmail.com
Cameroon	Yaounde	bshannon@wearesynergy.org
Cameroon	Yaounde	zanotti@pd.code.org
Cameroon	Bamenda	Globalthought747@cs.com
Canada	Ontario	meghana.begur@gmail.com
Canada	Ontario	bshannon@wearesynergy.org
Canada	Calgary	zanotti@pd.code.org
Canada	Burnaby	Globalthought747@cs.com
Canada	Edmonton	meghana.begur@gmail.com
Canada	St.Catherines	bshannon@wearesynergy.org
Canada	Ottawa/Toronto	zanotti@pd.code.org
Canada	Niagara	Globalthought747@cs.com
Canada	Waterloo Ontario	jmatlee@uwaterloo.ca
Canada	Montreal	sjecrois@technovationmontreal.com
Canada	Calgary	meawang@ucalgary.ca

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Chima	Shenzhen	julietcxq@gmail.com
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China	Hong Kon	youngmaker.changemaker@gmail.com
China	Chengdu	alicejo114@gmail.com
China	Shanghai	yzhang@mba2004.hbs.edu
Connecticut	Hartford	asailor@ctsciencecenter.org
Egypt	Giza	r_naser6@hotmail.com
Egypt	Alexandria	yousra.anwar@gmail.com
Ethiopia	Addis Ababa	saratbt@gmail.com
Ethiopia	Addis	berhanu.safe@gmail.com
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Georgia	Atlanta	KeshaS@comcast.net
Germany	hamburg	Katharina.Hemp@dkjs.de
Ghana	Kumasi	sparkswery@gmail.com
India	Hyderabad	shilpak407@gmail.com
India	Chennai	bhuvana.kundumani@gmail.com
India	Bangalore	dhana.kodithi@gmail.com
India	Delhi	neerajsharma19@gmail.com
India	Madurai	sentenwin@gmail.com
Ireland	Greystones	dolanjo@tcd.ie
Ireland	Louth	evelyn.nomayo@northeastcollege.ie, enomayo@gmail.com
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Italy	Milan	glamp@amazon.it
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Malawi	Blantyre	maliwichi@must.ac.mw
Malaysia	Kuala Lumpur	nuraizah@madcatworld.com
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Mexico	Villahermosa	alejandradelaparra@gmail.com
Mexico	Monterrey	technovationnl.mx@gmail.com
Mexico	Guadalajara	maria.makarova@gmail.com
Mexico	Nuevo Leon	leon@technovationmx.org
mexico	Morelia	gildavr@yahoo.com
Mexico	Guadalajara	maria.makarova@gmail.com
Mexico	Mexico city	yanira.chergom@gmail.com
Mexico	Guadalajara	zyadeleg@gmail.com
Minnesota	Minneapolis	jaweiss4233@gmail.com
Montana	Mussoula	lander@americacampaign.org
Morocco	Rabat	salima.kaissi@hotmail.com
Morocco	Rabat	larhrissi.nezha@gmail.com
New York	New york	nhollier@thoughtworks.com
New Zealand	Auckland	tcorballis@me.com
Nigeria	Lagos	adams.isaac77@gmail.com
Nigeria	Lagos	dipo@delphitechnologies.com
Nigeria	Guarinda	ifywayne@gmail.com
Nigeria	Lagos	pamelachukwuemeka@yahoo.com
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Palestine	Gaza	rana@gazaskygeeks.com
Palestine	Bethlehem	hazbountina+ra@gmail.com
Palestinian	Ramallah	Alaa.fatayer@gmail.com
Palestinian	West Bank	ayahsoufan@gmail.com
Portugal	Caparica	a.rodrigues@fct.unl.pt
RI	Province	JoeMazzone@outlook.com
Romania	Bucharest	cristina@adfaber.org
Romania	Bucharest	alexandra.cautis@adfaber.org,
Romania	Bucharest	claudia@adfaber.org
Rwanda	Kigali	gneza1@gmail.com
Singapore	Singapore	tran.thanhtuyen@gmail.com
Singapore	Singapore	hilary@firstcodeacademy.com
South Africa	Cape Town	baratang@girlhype.co.za
South Carolina	columbia	elvionna.white@richlandone.org
Spain	Barcelona	girls4change@ciberespiral.org
Spain	Madrid	veronika@powertocode.org
Spain	Las Palmas de Gran Canaria	gescuo@gmail.com
Spain	Valencia	majose.valero@gmail.com
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Spain	Zaragoza	silvia.fron@gmail.com
Spain	Madrid	lmc2004@gmail.com
Spain	Las Palmas	gescuo@gmail.com
Spain	Murcia	mariajose@talento-stem.es
Spain	Valencia	majose.valero@gmail.com
Spain	Las Palmas de Gran Canaria	100383105@alumnos.uc3m.es
Spain	Murcia	mariajose@talento-stem.es
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Turkey	Istanbul	sedat.yalcin@ggl.hisarschool.k12.tr
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Uganda	Kampala	sgaba@ranlab.org
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United Arab E	Dubai	karenrenaeowens2004@yahoo.com
US	New York	mfenders@thoughtworks.com
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Uzbekistan	Tashkent	elenna.selezneva@gmail.com
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VA	Alexandria	ludaonemail@gmail.com
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Zimbabwe	Bulawayo	youthsforinnovationtrust@gmail.com



## 13. Conversation Correspondences with Technovation Regional Ambassadors

All interviewed ambassadors included below have given verbal consent for usage of their responses in our report.

### International Regional Ambassador 1

- **Please give us an overview of who you are?**

I am [REDACTED] the Technovation Regional Ambassador in [REDACTED]. I am a Career and Technical High School teacher in the Pre-Engineering Technology program at [REDACTED] school.

- **Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

I advise a Women in Technology club and became involved with Technovation two years ago after hearing about its success in Massachusetts. I had my girls compete with Technovation MA. Last year I had a meeting about bringing Technovation to --- and nobody wanted to be the Regional Ambassador, so I stepped up and took on the role.

- **How long has this branch been active?**

This is Technovation [REDACTED] second year/season.

- **What did you hope to achieve by introducing Technovation to your region?**

Increase female interest and participation in computer science.

- **How do you define success for your branch and how do you measure it?**

Right now I am measuring success by number of participants and especially number of completing teams.

- **What challenges have you faced in achieving your goals for the program?**

Number of participants: Getting mentors that want to form teams. I see most successful teams have a mentor (typically teacher) that find interested participants. Getting those individuals willing to recruit young ladies to form a team is an issue.

Completion: Middle school and especially high school students have a lot on their plate. They become overwhelmed by the competition.

- **What challenges have you faced to increase participation or fostering interest in STEM?**

N/A

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

Gender stereotyping and exposure to gender stereotyping at a young age.

## **International Regional Ambassador 2**

- **Please give us an overview of who you are?**

I raise good will from many different people to make a difference.

- **Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

I saw the documentary of Technovation on Netflix, and my friend told me about the documentary and I watched it with my daughter who was fascinated with the contest and asked if someone in [REDACTED] had the program and I was told that I can bring it to the country. My daughter really wanted me to bring it to [REDACTED]. I wanted to create a technological and entrepreneurship environment. Startup [REDACTED] and other programs create a great environment for programs like this. I am working in a team of 3, my team is more technical than I am because I only know minimal coding, but I am good at making things happen. I have a degree in creative industries and 20 years of administering other programs. I also work in feminism and human rights. I have connections with a lot of people.

- **How long has this branch been active?**

This branch has been active for 4 years. This year was our first year to use grants and for teachers to learn how to code. Our first year we had two schools, but this grew eventually to 15 schools. We are also able to utilize the public library this year with computers. It is insane because there is only 1 library for 6 million people and only access to 10 computers. One of the mayors is a woman and she asked for stuff for Technovation but sometimes it is a struggle to get the necessary resources.

- **What did you hope to achieve by introducing Technovation to your region?**

I was naive about bringing Technovation to [REDACTED]. I thought it was going to start faster. [REDACTED] is a really conservative country it was a dictatorship for a while and was also suppressive amongst other things. The country started a democracy but had the same democracy from the earlier times. The country was led by a dictator who thought that education had to make profit, with that in mind the politics, arts and philosophy are not in schools. There are only a few hours of history and other important things for boys and girls to learn. They do not learn how to code, the private schools are really expensive so the upper classes have all the opportunities to pay but there is an extremely gap between the public and private schools. 80% of students in public school do not understand what they read. [REDACTED] am privileged and am able to pay for my children to go to school. My hopes in the beginning was that every school could participate in Technovation because there is not a lot of access to technology. [REDACTED] looks like a rich place because the upper class is very very rich but the GDP would drop to \$10,000 if the 1% of rich

people are taken away.

- **How do you define success for your branch and how do you measure it, keep track of it?**

Success for me, (most of the girls live in places with high poverty, with parents in jail), is that the girls can believe that they can do anything. I also want them to be taught properly so that they can learn the skills to be successful in their own lives. need a way to measure things. So far, I measure the success through the quality of the projects developed as well as the quantity of girls that are making the application offline. Some schools do have technological classes which created a good view of how the idea of Technovation entered into education. We do need more time to measure the impact of the program.

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

People who say it is not girl's place to do it. We have had a patriarchal system for many years, if we do not change it, it will never change. The teachers are more inclined to listen to boys questions than girls in school. We need to tell the girls they have the talent and the capability to move forward and to not be ashamed of their interests. There is a Microsoft study from 2016 that shows the percent of girls in certain places increased but dropped by 17%. Girls do not feel they belong or are deserving of those positions. In the classroom, the country utilizes gender nouns and the boy meanings of the words are always referenced.

- **Do you have any form of follow up with your participants after they complete the competition? Any communication?**

There needs to be a certain focus. Starting our 4th year we wanted to grow in quality and quantity. In the next 5 years, we plan to start to make more follow-up, but for now 90% of the girls come back and is essentially considered continuation.

Women need to take territories, if women don't take it, it will be taken by someone else. Feminist waves are beginning. There are marches that occur and other activities as well.

I want to open universities on weekends for the girls to continue their development. My goal for this year is to keep them on track. If they continue on it is a success but we need more girls.

- **Do you have any processes to address keeping your girls interested in STEM after the competition?**

I structured our region's Technovation program over a longer period of time. It is impossible for us to do it in 12 weeks. We do not have enough time or resources. We start in March and have it throughout the duration of school. I tried to do it in 12 weeks the first year and could not do it. In addition, the idea of free speaking was hard to instill in girls and almost everyone.

Often there are wars that go on between the people within the country.

- **How do you guys compete?**

Culturally, the women do not want to compete, the patriarch asks us not to compete. We do not

pressure the girls to compete, but about 40-50% of them go on to compete globally. In 2018, we had 37 teams and only 7 were in the global pitch.

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

1. Better internet, wifi, technology everywhere
2. More funding to teach teachers, need to teach a lot of teachers how to learn how to teach the programming needed for the competition
3. One day that companies from the industry, will want to work with each other, want to show participants their options, but it is difficult to put them all in the same place.

### **International Regional Ambassador 3**

- **Please give us an overview of who you are? Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

I am [REDACTED] and live there. For the past 15 years, I have been working on empowering young women. I was a school teacher who used to teach IT, started in 2013 with 4 teams, she does not teach anymore and works in a university for IT. We gained more support and grew 4-100 teams (last year)

- **How long has this branch been active?**

This branch has been active since 2013, and started in the season of 2014.

- **What did you hope to achieve by introducing Technovation to your region?**

Like I said, I used to be an IT teacher, if you look at books, the curriculum is all over the place. It does not focus on group work or leadership and only focuses on data and memorization, when I was introduced to the idea of Technovation I thought it was breakthrough. I wanted people to enjoy coding and IT more. I felt that I was empowering young girls through power and self-efficacy so they think they can do anything they put their minds to.

- **How do you define success for your branch and how do you measure it?**

I want the program is have a long lasting impact. I want more of the participants to have idea of helping others, of changing their surroundings for the better. People have heard about it and people have asked how they can get involved. Getting more people to know about it would make it more of a success.

- **Did you manage to get those people involved, if so how?**

It depends on their skills, I ask them if they can meet in person, provide them a debrief of the program, notify them of opportunities, and ask university students to do workshops on particular parts of the program, for example the business pitch. I tried to match make people depending on skills and openings, involving people and older students in these things causes the girls to stay more involved.

- **How do the university students learn about Technovation, how is it advertised?**

I met with the VP of the university and told him more about the program. I also asked if they would be willing to be a partner. We use the university's equipment and collaborate with the IT faculty. Through community service requirements, the university students help with codings. We also do a workshop at the beginning of the program to show the university students what they can do.

- **How many people do you have as administrators?**

We have 3 regional ambassadors, one for each general region, one in the north, south and middle of [REDACTED]. We also have a student ambassador who is a university student. We have 6 volunteers, who help with anything that we ask of them, on and off. And 4 students doing community service. They sign an agreement for 50 hours and are mentors.

- **Who else do you have as mentors?**

Teachers, people related to the participants (who are usually in the industry), university students, friends of the people have all been mentors.

- **How are mentors recruited?**

In 2015-2016, we recruited through the schools. We would gather the teachers and tell them about the opportunity and targeted teachers and their students. In 2017-2018 we recruited through university students because we wanted to get IT students and the business admin to become mentors to cover the two main parts of the competition.

The university students are matched to the teams who are in schools who do not have mentors from school or relatives.

- **What challenges have you faced in achieving your goals for the program?**

Up until this year everything was running smoothly, we ran into a problem but nothing that would ruin things, for example getting funding for the pitches, or money for the celebration and gifts. Despite the funding challenge, we were able to manage.

- **What do you believe is the biggest problem facing girls getting involved in ICT?**

The girls have a lack of confidence and think they are not as good as the boys. The girls also do not know who would employ them. The labor market in ICT is dominated by men and employers say they want men instead of women, also families and friends do not encourage them to pursue these fields because they would be seen as "nerds" or "geeks". High achievers usually study engineering and medicine so they think that ICT is low on the scale. In addition, the work conditions are brutal in our country. Coders are asked to work overnight without getting paid extra, and threaten workers that they will be replaced if they do not like the working conditions. The ICT labor market therefore is not suitable for girls.

- **Please elaborate on your personal experience of the struggles of your participants?**

Working in teams is difficult for the girls. They need to meet somewhere and may need to work for long hours. Parents are not usually happy with their daughters going places or working late after school sometimes it is not even allowed. It is also difficult to have a Technovation-school balance. Some students are high achievers and are in school making April tricky because they have exams. Another issue is the teamwork balance, I had to have consultations with teams to fix issues an example is one team was fighting and could not agree on a theme for the project. Sometimes I have to meet with mentors as well, but this is difficult due to geographical issues. The time it takes to get to the other cities and through checkpoints takes a lot of time, therefore, we can only do trainings within the cities. Going between the cities is risky. The check points often close randomly and then we have to cancel things we may have planned for the girls. We use chaperons with the girls and have the girls parents consent because moving is risky and is a big constraint sometimes. We try to use skype to avoid the risk but it hinders our freedom. Some participants were unable to attend the final pitch because they aren't approved to go through.

- **Please provide details on the ideation process for your participants.**

This year, I held a workshop for ideation with printouts of photos which presented local or worldwide problems. I hung them around the wall and the girls had to figure out what was wrong. The girls were then put into teams to restructure the idea. After brainstorming these ideas they would come up with an idea that they would like to work on (involving their interests more). The girls were then able to ask questions to make their ideas more clear and more precise.

- **Do the girls have the chance to ask questions about their idea?**

This year, I used university students for lectures which also included myself, and old judges to work with girls so they had others to ask about their ideas. This was done in a single 4 hour session with a break, and then another 4 hour section.

- **What about the girls who cannot make it?**

I videotaped it and put it online. I also work with university students to help create videos for each module.

- **Do you have any form of follow-up with your participants after they complete the competition? Please elaborate.**

I do not have a very extensive follow-up process. For next year, when I do the opening workshop I invite previous participants to talk about their ideas, what they've done with it afterward and they provide advice for new participants. If I had the time, I would create an alumni meeting so they can exchange their ideas, see what they have done, did they continue in the university, or if have they worked on the Technovation program at all anymore since they submitted.

- **Are there any other programs for the girls to participate in?**

Techgirls, Girls in Tech, Girls Who Code, STEP.

- **Do you have any processes to address keeping your girls interested in ICT after the competition? Please elaborate.**

No, but I think that we need to do this to fully improve the self-efficacy of the girls.

- **Do you think it would be helpful to offer provide info of post-program activities, notify the girls of their opportunities etc?**

Yes, it is quite useful. [REDACTED] has a Technovation website page. Whenever there is an idea I try to advertise it on the FB page.

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

1. Remove checkpoints in order to move freely, incorporate more workshops.
2. More funding in order to do more activities and more workshops for the girls.
3. Unlimited access to school so I do not have to ask for it.

#### **International Regional Ambassador 4**

- **Please give us an overview of who you are?**

[REDACTED]

- **Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

[REDACTED]

- **How long has this branch been active?**

This branch has been active two to three years. Last year was the first big enrollment

- **What did you hope to achieve by introducing Technovation to your region?**

My team wants to reach far into [REDACTED] and the more developing areas and to get more awareness of the program. We need to work with the schools in order to get the word out. We currently do not utilize several social media channels.

- **How do you plan to get the girls to the coding area?**

This is an existing problem for us because they are far away which makes organizing things much more complicated. Sometimes, they don't really feel like traveling for the field trips and other things that we have planned for them.

- **What type of field trips do you have?**

We like to show the girls the industry and companies, how their careers would work, and also

show how coding can help them in many ways. We have also realized that public speaking training would be valuable- the pitching part is difficult.

- **What other ways did you get feedback?**

We brought teams back to talk to the current girls to help them with how to identify the ideation process as well as sharing their entire experience, including the final competition.

- **Who helps them the girls with the ideation?**

The mentors help with the ideation part of things. I want the girls to take into consideration not just the local problems of the particular region but something that can be used anywhere in the world.

- **How do you train the mentors?**

There is a workshop they attend, and we explain what it is expected and how to work with the girls but nothing much than that. The mentors are mostly teachers.

- **Does this branch have support from other organizations and companies?**

We have a grant from [REDACTED]. This is the only form of monetary funding and then there are other places that provide resources acting similar to sponsors.

- **How do you define success for your branch and how do you measure it?**

We haven't really measured it in the past. We wanted enough girls for a regional event to come talk and present and enabling them to have the experience was extremely important. Something else that would measure success is reaching remote locations. As of now, the mentors and judges are willing to participate again, but we want to establish this as an ongoing program.

- **What challenges have you faced to increase participation or fostering interest in STEM?**

We assume that the mentors are more involved with helping the girls to maintain the interest. Perhaps we should monitor this more closely.

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

It really depends on the country, but in [REDACTED], it's about choosing what they want to do and depends on the circumstances. In other locations it is more about the lack of knowledge of the opportunities they can take in the future.

- **Please elaborate on your personal experience of the struggles of your participants?**

Parents have been generally proud, the biggest problem is creating the initial interest and reaching out to them properly.



- **Do you have any form of follow up with your participants after they complete the competition? Please elaborate**

No, not right now but I think it is a good idea.

- **Do you have any processes to address keeping your girls interested in STEM after the competition? Please elaborate.**

No

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

1. More time and capacity on their side to develop the structure, only 4 of them trying to mangle with so many things
2. Have more advanced sponsors or companies that can show the girls their possible opportunities, not just about a career, but what they can get out of using it
3. Provide them more opportunities with coding, where they can go to practice and train more, have a place to go to continue learning more

#### **International Regional Ambassador 5**

- **Please give us an overview of who you are?**

████████

- **Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

Two active teachers in the community started the Technovation Challenge with their students 7 or 8 years ago and did not have the bandwidth to run expand on it.

- **How long has this branch been active?**

This branch is in its 5<sup>th</sup> year.

- **What did you hope to achieve by introducing Technovation to your region?**

Getting girls excited about STEM and keeping it sticky in hopes they continue on a pathway towards STEM related majors in the future.

- **How do you define success for your branch and how do you measure it?**

Number of teams submitting, number of teams finishing, number of teams returning.

- **What challenges have you faced in achieving your goals for the program?**

It is hard to get the word out. We are an industry association so not as embedded in the schools. Also, some kids may be interested but not know where to start if it is not brought to them by a teacher. We have a huge issue in the less affluent school districts where having an extracurricular program is difficult and this being only targeted towards girls makes it curricular impossible.

- **What challenges have you faced to increase participation or fostering interest in STEM?**

We have not faced specific challenges.

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

Again, this is not something we face. We only see the girls once they register so they've shown an interest.

- **Please elaborate on your personal experience of the struggles of your participants?**

See above answers.

- **Do you have any form of follow up with your participants after they complete the competition? Please elaborate.**

We have reached out to specific teams for different purposes (IE. Profiling for our website, etc) but do not survey

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

Include an opportunity for boys so that we can work with school systems that do not have ability for their students to participate as an extracurricular.

## **International Regional Ambassador 6**

- **Please give us an overview of who you are?**

I'm a designer, I work freelance from home with a programmer partner. We develop websites and apps, and I do somewhat of graphic and editorial design as well. Since 2015 I have also been promoting projects in [REDACTED], to help close the gender gap in technology such as [REDACTED] and the Technovation. I'm a mom of a little toddler of 16 months.

- **Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

Since 2015, I was working with [REDACTED], but I felt that the girls were missing something, then I met [REDACTED] from Technovation [REDACTED] and she told me about the program, I fell in love immediately and reached out to [REDACTED] the [REDACTED]-coordinator, and here I am.

- **How long has this branch been active?**

This is our second season.

- **What did you hope to achieve by introducing Technovation to your region?**

To get more girls interested in STEM.

- **How do you define success for your branch and how do you measure it?**

Every season is different, but as long the girls are interested and motivated in their project it's a success.

- **What challenges have you faced in achieving your goals for the program?**

This season unfortunately I didn't get to involve many girls in the program, because of many reasons, such as one of my partners got a job in another city so with a little baby and my design job I didn't get to do a good promotion of the program.

- **What challenges have you faced to increase participation or fostering interest in STEM?**

Many girls think that STEM is only for engineers, and they can't achieve to develop an app.

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

Motivation and self image.

- **Please elaborate on your personal experience of the struggles of your participants?**

Many girls lost interest in their app, or get overwhelm of the work they have to do and quit. For the little girls I think getting parents involved would improve their interest.

- **Do you have any form of follow up with your participants after they complete the competition? Please elaborate.**

No I don't have one yet ☺

- **Do you have any processes to address keeping your girls interested in STEM after the competition? Please elaborate.**

No I don't have one yet ☺

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

1. More time for me to do alliances.
2. A more committed team with the cause.
3. A community more interested in girls and STEM

## **International Regional Ambassador 7**

- **Please give us an overview of who you are? Please give us an overview of how you got involved with Technovation and became the regional ambassador?**

My name is [REDACTED] and I am working with a technical company. I stumbled into Technovation on the internet and started working with them in 2015. We have been constantly growing and we did our first regional pitch last year. I worked with Iridescent on other programs and helped to build the curriculum.

- **How long has this branch been active?**

Since 2015.

- **What did you hope to achieve by introducing Technovation to your region?**

I want more girls to get into STEM education, making sure the necessary information is incorporated for the girls to learn things to be successful. I want to help the nation grow through Technovation. I also assist with other programs beside Technovation. I see technovation as a tool not an end. I also have a lab where the girls can go to do projects. The lab is working on pollution, recycling and other local subjects.

- **How do you define success for your branch and how do you measure it?**

When it comes to Technovation, I want girls to be able to code once they complete the program. Some are comfortable with coding, some have even moved to other coding languages. I also think once the girls stop getting discouraged when they lose and decide to continue with their app or in developing their interests then we are successful. If the girls have learned new things over time and have developed their skills, we were successful.

- **How are the programs communicated to the girls?**

I always reach out to them through Whatsup. I also talk with their parents through their email addresses as well. These emails or messages includes the programs details.

- **How does she use her center to continue their interests, what are the types of programs?**

We have a fabrication laboratory where girls can come up with ideas, they can download their designs, they can create things and print things, for example someone is developing a drone to be used with their app. We also do software classes too where kids can come back and take classes

and will decide what they want to work on.

- **What challenges have you faced in achieving your goals for the program?**

When there is not a reward, a lot of people feel they cannot participate. In addition, school ends at 3, so they connect with them afterward but the students are often stressed after school, so we put on other activities that are not directly related to Technovation. Sometimes we'll all go to the movies with each other and in between programs we do other activities to keep the girls working up until the Technovation program.

- **What do you believe is the biggest problem facing girls getting involved in STEM?**

The girls think because of their background that STEM is for boys. Some of them think that it is too complex for them to understand because they are scared they will not understand it. When they get older they become more involved with families, they are unsure of themselves if they can do it. I also go to the schools to recruit the girls, I am bothered with the girls who cannot afford the technology to complete the competition, A lot of the time I hear girls say, "my mom says that I cannot stay in the field, its for the guys".

- **Please elaborate on your personal experience of the struggles of your participants?**

- **Do you have any form of follow up with your participants after they complete the competition? Please elaborate.**

There is a post-survey, most of the girls who were very active were followed-up with, and we keep track on what they are studying. This is done informally through Whatsup. We are planning an alumni meeting so they can talk to the younger participants. This will be the first one of these we plan.

- **Do you have any processes to address keeping your girls interested in STEM after the competition? Please elaborate.**

We keep the girls interested with the programs I previously mentioned.

- **If you could have any three wishes to improve the impact of Technovation in your region, what would they be?**

1. Funding has been a problem, the girls do not have access to technology, and she takes her friends laptops to use for training.
2. Perhaps utilizing the alumni more to show the girls further opportunities, perhaps ask the alumni to invest back into Technovatio.
3. Better reward system

- **Were there any questions or topics that we did not address that we should have?**

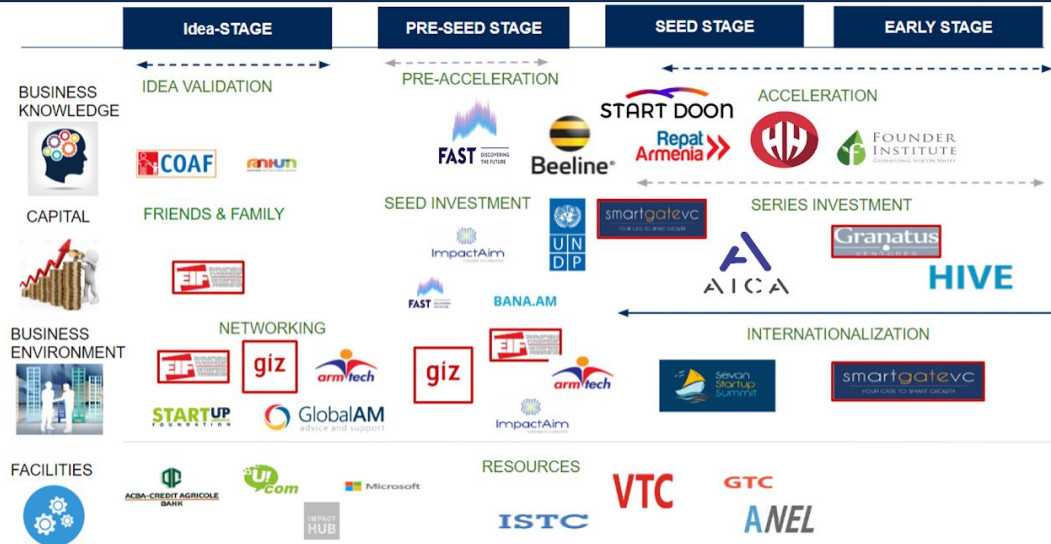
Volunteering is very difficult, the government has nothing for volunteers. People have a lot of expectations of me, and I have tried to get others to help as much as we can. I was running with a vision so that my country can become a better place with programs such as these. I have also had problems with mentors staying in the competition. Lastly, I was slightly bothered when I was not invited to attend with the girls when they won... I was not invited to go. I utilize tech professionals as mentors.

- **How do you reach remote villages?**

I have tried to do hands-on activities in the remote villages and they are interested in them and want to know when they can do it again. I have a significant lack of resources in terms of people who can show the girls that they can continue and how they can continue.

## 14. Armenia's Startup Ecosystem

### Armenia's Start-up Ecosystem



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