

Virtual Elevator Pitch: Disruption or Opportunity?

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Introduction

Among the many on-campus activities disrupted by the COVID-19 pandemic worldwide was the annual elevator pitch competition at Stevens Institute of Technology (Stevens). The circumstances required us to teach all the courses remotely, reexamine the competition rules, enable teamwork and retrain the intense competition. All engineering students prepare an elevator pitch based on the two-semester-long capstone design project as part of a companion course called Senior Innovation. The competition starts in class and then moves to extra-curricular rounds for cash prizes. The semi-finals and finals were traditionally held as 3-minute live pitches made in front of a panel of judges with a follow-up of 2 minutes of question and answer (Q&A) period. Due to COVID-19, Stevens went entirely online after seven weeks of in-person classes in the Spring semester. While coaching can be online, the elevator pitch competition required a new format for the pitch competition.

Conducting live-video pitches has the risk that an internet connectivity disruption during the presentation can scuttle a perfectly prepared pitch. A live pitch presentation (both in-person or video) requires scheduling all the judges at the same time to listen to the presentations and interact with the presenter. This also limits the amount of time available to listen, understand, analyze and judge the quality of the presentation. Therefore, we hypothesized that an asynchronous video pitch format with an extended Q&A interaction period might provide a better evaluation of the competition entrants.

We redesigned the competition to have pre-recorded video pitches with a Q&A session via a secure messaging platform to span an entire week. We found that the asynchronous nature of the final competition provided several benefits starting with attracting and recruiting judges who are not location and schedule bound. The extended Q&A period allowed a due diligence phase often utilized in business plan competitions and helped mimic how investors might make investment decisions [2]. The overall scores were lower than in previous years, indicating a more thorough evaluation. Other benefits included the elimination of order bias [3] and less stress for the students.

Based on our experiences from last year and feedback from our judging panel, we will be implementing this new format to the competition moving forward. These changes enable better evaluation of the project teams and ensure that the best ideas are evaluated and win the competition. This paper provides an in-depth understanding of how we decided to add a due-diligence phase into the semi-final and the final rounds of our elevator pitch competition for engineering students.

Background

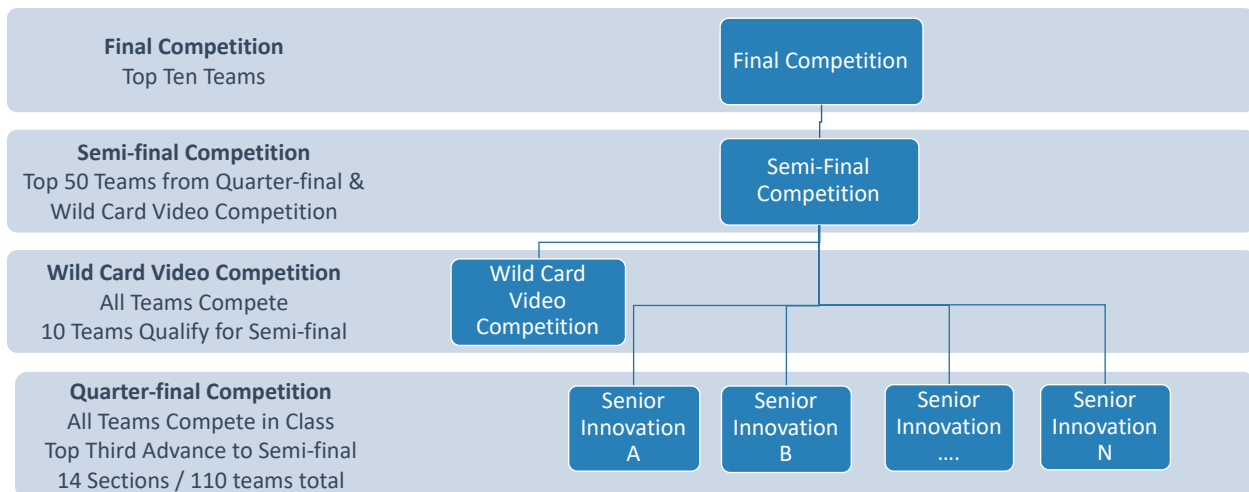
The Capstone Design experience is the culmination of the engineering educational experience. Several authors have identified that the senior design project is the perfect opportunity to apply entrepreneurship skills and further develop the entrepreneurial mindset ([1], [2], [3]). While many definitions of entrepreneurial mindset persist, many authors include communication skills

as one of the specific skills relevant in acquiring an entrepreneurial mindset ([4], [5], [6]) [7]). ABET student outcome #3 also focuses on "an ability to communicate effectively with a range of audiences" [8]. These specific outcomes are typically met with presentations, posters, and technical reports and are touched upon and developed over many courses throughout an engineering curriculum. An elevator pitch is an additional way to teach students effective communication. Some universities have adopted the "delivering an elevator pitch module" module developed by the University of New Haven-based on the KEEN framework [9] [10] and have placed it in intro classes, technical classes, or in senior design like the University of Cincinnati [11]. Other universities integrate a pitch competition into a senior design course, like at Stevens and Calvin College ([12] [1]) or with a business plan competition, like Grove City College [3].

The Elevator Pitch Competition before the Pandemic

The authors have previously detailed our required elevator pitch competition at the ASEE conference in 2020 [12], but a short summary is provided here. At Stevens, senior engineering students take a companion course to senior design called Senior Innovation. The goal of this course is for students to learn how to understand, identify and communicate value in their engineering capstone design projects. This course has several deliverables, including an executive summary, a Business Model Canvas, a defined value proposition, and a 3-minute elevator pitch. The course concludes with an in-class elevator pitch competition run by the course instructors. The top teams from this in-class competition, plus some additional teams from a wildcard round, would have the opportunity to move on to an extra-curricular competition and compete for cash prizes. The top cash prize is \$10,000 for the first prize, \$5,000 for the second prize, and \$2,500 for the third prize. See Figure 1 for the competition structure.

Figure 1: Elevator Pitch Competition Structure from 2011-2019



The semi-final and final-rounds have traditionally been in-person and on-campus at convenient times for the students, which limits the external judges that are available to participate. The

students would present the 3-minute pitch, and then the judges have the option to ask questions or provide feedback for around 2 minutes. The judges would then immediately score the team using the judging rubric form, which scores teams in 5 categories [12]. The team can get a maximum score of 50.

- Presentation: verbal, non-verbal, and ownership of the pitch. A "read straight from the script" situation is valued at the lowest score of 1; on the other end, a true "evangelist" would receive the maximum score of 10.
- Business Plan/Business Model details: no details, a couple of details, some details, most details, or all details?
- Value Proposition: the quality of the presenter's stating the uniqueness and prominence of the idea and how it differentiates itself from its competitors.
- Quality of Ask: Presenters require something from the judges (funding, etc.). Was the ask compelling, reasonable, and sensible?
- Viability: Is this a problem worth solving, and were the components of the business plan/model the correct and logical choices?

The judges repeat this process for up to 45-50 teams in the semi-final competition rounds over two days, with 25 teams in each 3-hour session. The scores were then tallied for each team from all judges, and the top teams were selected to advance to the final competition. Typically, the scores get higher towards the end of the session, and early teams may have experience bias in the past, which concurs with research by Clingsmith and Shane [13].

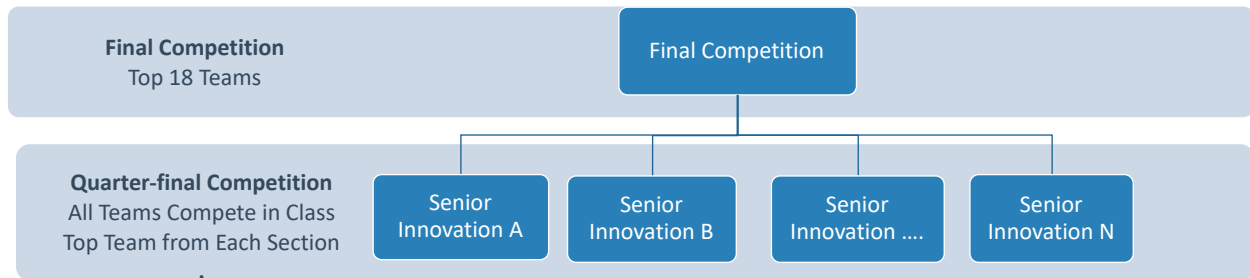
The final competition is handled in a similar fashion. The finalists complete live in-person pitches and have a 2-minute Q&A time frame. This event usually caps off a much-celebrated day on campus, the senior design expo, and board of trustee members, alumni, faculty, parents, and other students are in attendance. The judges would score the teams immediately after the Q&A, and then the next presentation would start. It should be noted that the first-place team has never won the Elevator Pitch competition or even placed in the top three. It is customary to have a photographer stage a photo of the winning teams holding their big check prizes. The event has always been considered extremely successful and has attracted an endowed fund for \$450,000.

Elevator Pitch Competition During the Pandemic

Due to COVID-19, the 2020 competition had to be revised to accommodate a virtual experience. The course coordinator, the associate dean as well as other stakeholders, came together to try to keep the spirit of the competition without overloading the students who were dealing with a pandemic. It was decided the learning outcomes of the course and the in-class competition would remain the same with instruction moving to virtual and synchronous competition in class via zoom. Instructors utilized breakout rooms and were able to continue coaching students and watch them present their elevator pitches in class.

The wildcard competition, which provided some additional incentive and motivation from students, was eliminated so students could focus on their in-class competition and adapt to working together on teams remotely. Additionally, it was determined to keep things simple by removing the semi-final competition and instead qualify one team per senior innovation section to move on to the finals. This resulted in a slightly large final competition of 18 finalists.

Figure 2: Adjusted Elevator Pitch Competition due to COVID-19



For the format, we hypothesized that an asynchronous video pitch format with an extended Q&A interaction period might be better suited for the final competition. Conducting live synchronous video pitches has the risk of an internet connectivity disruption. This could either cause a participant to scuttle their perfectly prepared pitch or for the judges to miss an important part of the 3-minute pitch and render them unable to properly score a team. A live-format would not allow for do-overs, especially with a large crowd in attendance. The winning cash prize is \$10,000, so a fair and thorough competition was also warranted to satisfy the donors. A live pitch presentation requires all judges to be available at the same time, and in light of COVID-19 and family obligations, a synchronous competition did not provide adequate flexibility to find judges. Instead of a live competition, students prepared 3-minute pitch videos that the judges were able to view. Instead of just 2 minutes of questions, the Q&A session was extended and spanned to an entire week and provided flexibility to students and the judges.

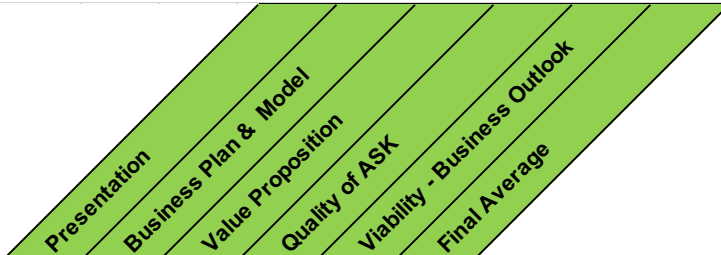
To execute the Q&A session, we created a messaging channel between each team and all judges where judges could ask questions, and the teams could provide short-written answers to the questions. Judges were allowed two days to review the final pre-recorded presentations at their leisure and post questions on the messaging channel. The teams had one-day to respond to the questions. The judges then had two days to submit individualized scores based on the same pre-determined rubric that has been used in past years. The messaging channel documented all queries and responses. We created rules and had oversight on the channels to ensure fairness for all participants. The teams were not able to communicate orally with the judges or to talk to the judges outside the messaging channel. They were unable to submit pictures or websites to the judges to review more info about their projects. They were restricted to just text responses. The final results were announced live at the end of the senior design day, which was held virtually.

2020 Competition Results

We found that the asynchronous nature of the final competition provided several benefits starting with attracting and recruiting judges who are not location and schedule bound. Some of these judges in the past have declined due to scheduling constraints and business travel. Additionally, the pool of judges was expanded to notable alumni that were living outside the immediate tri-state area.

The extended Q&A period allowed a true due diligence phase often utilized in business plan competitions and helped mimic how investors might make investment decisions with time for proper reflection [14]. Judges had the ability to ask thorough questions like "How do you plan to go to market at scale?" or "Have you done an initial assessment of the Intellectual Property landscape." There were 11 judges for the competition, and each team was asked between 15 to 18 questions between all the judges, with all judges being able to read the responses to the questions. The answers to these questions were additional opportunities to further impress the judges with their crafted responses. The same final rubric form was used in past years and this year's competitions. The total scores were lower than in previous years, as the judges drilled down deeper into each project and did not feel the pressure associated with scoring at a live event with an audience.

Table 1: Elevator Pitch Competition Results from 2018-2020



Year	Result	Team	Pitch Components					
2018	1st	OrthoInsight	9.6	8.6	7.9	8.7	8.7	43.4
2018	2nd	MiraView	9.0	8.0	8.0	7.7	8.0	40.7
2018	3rd	ApneAir	8.7	8.6	8.0	7.4	7.0	40.6
2019	1st (tie)	Castle Point Rocketry	9.0	8.0	8.0	8.8	7.1	40.9
2019	1st (tie)	Life Skills	8.3	7.6	8.8	8.1	8.1	40.9
2019	3rd	REDCap Reimagined	9.0	7.6	8.1	7.6	7.9	40.3
2020	1st	Lift Assisst	8.4	8.0	7.5	7.5	7.8	39.1
2020	2nd	BIA	7.9	7.5	7.5	7.2	7.1	37.2
2020	3rd	ToothPIX Dental Imaging	7.8	7.6	7.1	7.1	7.4	37.0

The judges also had the opportunity to re-watch the pitch videos if they felt they needed some more clarification, especially after seeing the responses to the questions. The asynchronous nature may have helped eliminate order bias, and judges had the opportunity to score all the pitches at once, rather than one by one at a live event [13]. Judges were able to come back to the earlier videos and able to adjust their scoring accordingly and take into account the messaging channel responses. Here are a few quotes from judges that had participated in previous years in-person format and also in the virtual format. These quotes are transcribed from a zoom webinar that was after the judges had scored teams, but before the winners were announced.

“So having judged this competition last year it was interesting to do it virtually and see the differences. The videos were fantastic. I know it's not easy. I've had to create some videos myself lately. And what I thought was great was having the Slack channel and the opportunity to answer the questions. There was some tough ones and I think it really pushed the students. For me, by having all of those questions and not just having that two-minute time frame that we had last year. Each person was really being able to ask questions from different angles.”

“I think even better the way questions were asked, they certainly had enough research behind the things they had done to be able to answer the questions. I think they did a really nice job with that I would echo that slack channels and be able to do Q & A that way was really nice. And I did like the time bound nature of it because it felt more immediate like you were doing it real time. Moving into an online setting. I think it was probably as good as it could be at this point.”

Students indicated they felt less stress being able to re-record their video until they were 100% satisfied with their performance and were alleviated the competition results wouldn't rely on internet problems or latency issues [15]. None of the students knew how they did until the live announcement. This made the results equally as exciting as an in-person event. A virtual ceremony with a ceremonial check was delivered via zoom. The virtual zoom webinar was attended by 280 people, including students, faculty, administration, the board of trustees members, alumni, and parents. Many of these benefits would enhance the competition in the future, especially the extended Q&A phase, as projects were more thoroughly evaluated.

We did look at the learning outcomes of the course to see if there were drastic differences in past years. The learning outcomes were more or less the same, and it is great that the competition format did not affect the learning outcomes for the Senior Innovation Course.

Table 2: Learning Outcomes from Senior Innovation Course 2018-2020

Spring	2018	2019	2020
Population	439	494	429
Response Rate	61%	56%	50%
	Strongly Agree & Agree		
L1 I am able to define the business value proposition of my design project	89.6%	86.3%	89.9%
L2 I am able to estimate and identify prospective revenue streams	80.3%	84.8%	86.2%
L3 I am able to analyze market viability for a given product/service	82.2%	83.0%	88.5%
L4 I am able to develop basic components of a business plan	84.8%	90.3%	89.9%
L5 I am able to create an effective executive summary	91.1%	87.0%	93.1%
L6 I am able to develop and deliver an effective pitch	87.7%	91.7%	92.2%

Proposed 2021 Elevator Pitch Competition

Our goal with the 2021 and future competitions is to take what we learned from last year's unexpected competition changes to enhance the competition Q&A rounds. It also allows the competition to take advantage of the normalization of remote events and acceptance of new technology to move the final rounds of the elevator pitch competition to an asynchronous and remote format.

This proposed format will bring back the semi-final round of the competition. Each Senior Innovation class will be able to send two teams to the semi-final competition round. To replace the wildcard video round and to ensure proper representation from all departments, senior design instructors will also make sure the best from each engineering department is also included in the semi-final competition.

In the semi-final round, each finalist team will submit a 3-minute video recording of their pitch to be evaluated by the judges. The extended Q&A period will run exactly as the final competition round of the 2020 competition. Judges will have two days to view the videos and pose questions to the teams via the secure messaging platform. The teams then will have a day to respond, and then the judges will have two days to fill out the judging rubric form for each team. The top 10 teams will move on to the final competition. This process will be completed with the finalist teams.

Figure 3: Proposed Elevator Pitch Competition Structure 2021

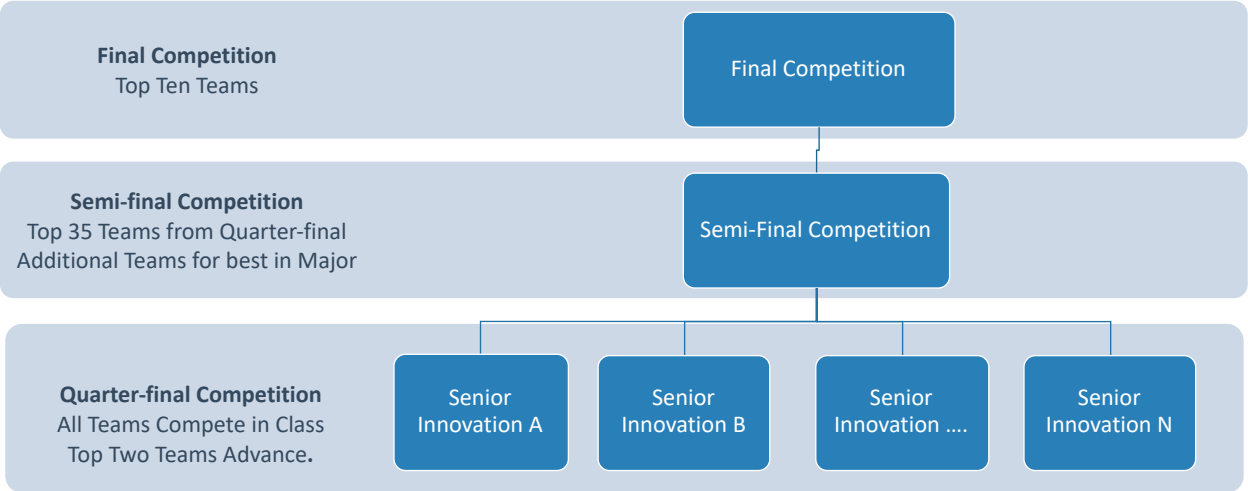


Table 3: Competition and Judging Format Summary

	2021 (proposed)	2020	2019
Quarter-Final	During Class Time Live via Zoom Synchronous 2-minute Q&A	During Class Time Live via Zoom Synchronous 2-minute Q&A	During Class Time Live - In-Person Synchronous 2-minute Q&A
Semi-Final	Throughout a week Pre-recorded video Asynchronous Extended Q&A via Slack	Skipped	2 Sessions during Class Time Live - In-Person Synchronous 2-minute Q&A
Final	Throughout a week Pre-recorded video Asynchronous Extended Q&A via Slack Results Announced Live at Virtual Expo	Throughout a week Pre-recorded video Asynchronous Extended Q&A via Slack Results Announced Live at Virtual Expo	During Innovation Expo Live In-Person Synchronous 2-minute Q&A Results Announced Live at Expo

Limitations of Remote / Asynchronous Competition

Pitches, when were made in front of a live audience, enabled the judges to observe the body language contextually, the confidence of the presenter, and gauge the audience and fellow judges [1]. Pitching via video, either live or pre-recorded, deprive the judges of non-verbal channels of communication. The presentation scores were lower than in previous years, where the excitement could be felt from the stage with participants only 20 feet away.

The in-person event has always filled the auditorium with 400 seats, and we had only 280 in attendance at the final event. Most teams had an average of 130 views, so we can assume that around 130 people viewed all pitches. This may indicate that many who attended the final event had not watched the pitch videos. It is possible that many members of the academic administration, distinguished alumni, and guests missed out on the opportunity to see the results of their education when it was in an in-person format. The winning team now has 380 views, probably most of which happened after the judging of the competition when the audience wanted to check out the winning team. Similarly, the second-place team had 302 views, and the third-place team had 287 views.

In previous years, all pitches would be recorded and individually professionally edited. These 3-minute media clips have been used in various newsletters, on websites, and also as teaching tools. The high-quality made them extremely easy to share and showcase our university and engineering programs well. Some of the past winner's pitches that were recorded and hosted on YouTube have achieved thousands of views, and one video from 2013 has close to 9500 views at the time of this manuscript [16]. The self-filmed student final competition videos were not of the same quality, with many students filming in dorm rooms and apartments. While the content was fantastic, the videos were not professionally polished, as students were encouraged to record their videos in zoom. This did result in some savings from the institute as professionally produced videos are expensive.

Besides media clips, the university was able to capture noteworthy images of student winning teams when the event was in person. Some screen snapshots from zoom screens were captures as part of the event, but these are not the same as posed photographs on a stage with a big check. These photos were often used in marketing and media campaigns as well.

Lastly, based on our limited results of last year, two teams from the same department placed in the competition. We usually like to see a little more diversity in winnings teams. We will have to look to see trends from this year, to see if students of various majors are having a hard time in the new format, and make sure the playing field is level.

Conclusion

Moving our semi-final and final rounds of our annual elevator pitch competition to a virtual and asynchronous format has allowed for an inclusion of a more thorough due-diligence phase that has enhanced the elevator pitch competition at Stevens. While the COVID-19 pandemic continues to disrupt business operations, it also provides opportunities to implement new technology and utilize remote formats.

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