





Climathon Venice:

An Annual Program to Facilitate the Development of Climate-Focused Startups in Venice

An Interdisciplinary Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in fulfillment of the requirements of the Degree of Bachelor of Science.

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Abstract

This project worked with the goal of creating a structure to be used by hosts of the Climathon Venice event to help make event planning easier and help improve the outcomes generated by the event. This event operates with the intent of generating ideas that can be transformed into startup businesses, but it has had limited success in this regard. Our team researched Climathons around the world as well as similar events in order to determine what factors were most important to focus on. From this, we have created an Event Planner Website, designed to help with planning for the Climathon Venice, an Archive Website, designed to showcase information from past Climathon Venices and aid registration for upcoming the upcoming Climathon, and an advertising booklet, designed to be a physical representation of the Archive Website in order to showcase the event in a physical format. It is our hope that with these resources, the hosts of future Climathon Venices will have an easier time planning the event and the outcomes produced will be more successful.

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Chapter 1. Introduction

Venice, Italy faces major negative impacts from both climate change and their heavily tourism-based economy. The historic city of Venice is unique with its location on the lagoon and its widespread use of canals, making it highly susceptible to flooding. So much so that in the past years the city implemented the MOSE system, which consists of a set of gates split into four barriers that can be open or shut in the event of acqua alta (high water) up to 3 meters high (MOSE Venice). In addition to the flooding, Venice has experienced a rapid population drop over the past few decades, going from 174,800 permanent residents in 1951 to 50,000 in 2019 (Bertocchi, 2019). With the rapid increase of tourists entering the city every year, the number of tourism-based jobs has risen and has limited the growth of more diverse job opportunities. Because the job market is heavily tourism-based, it therefore limits the ability of native Venetians to acquire jobs that are higher paying or in fields outside of the service industry, therefore pushing Venetians to pursue work outside of Venice.

A possible start to remedy these massive issues is the annual Climathon Venice. A part of the international organization EIT Climate-KIC's initiative to reach net zero emissions world wide, Climathons are climate-change themed hackathons that seek to solve climate change issues specific to the host city. Teams, generally made up of 4-5 people spend 24-48 hours developing ideas to solve a problem based on a defining theme that structures each year's competition, create a pitch of their business model, and present it to the judges. Recent themes have included waste management, sustainable mobility, and boosting Venice's economy. It is evident the event has a very wide scope, but the themes stay focused on improving Venice's environmental and economic issues. At the end of the event, winning teams are chosen and invited to participate in a national-level event, eventually moving forward to an international-level event. Past years have shown great idea generation, but have struggled to produce any long-term results. Venice Calls, an organization that participated in the 2018 Climathon Venice is the current host with major partner SerenDPT. Venice Calls' goal is to support the creation of sustainable business models and projects to benefit the city (Venice Calls, 2020), while SerenDPT seeks to produce startups that generate Venetian made products. The combination of these two stakeholders in the organization and hosting of this event forms the basis of our project. To evaluate the successes of the current Climathon Venice and provide a repeatable event framework for the 2022 Climathon Venice that will encourage the ideas generated by the event to be cultivated into startups or small business in an effort to remedy some of the climate change effects specific to Venice, and to diversify Venice's economy.

In order to achieve this goal we have defined and produced three main deliverables. The first is our Event Planner Website that is a fully functioning website designed to be navigated by the organizers of the Climathon year after year that connects back to their Google Drive account. Both the website and the drive include all of the documents, templates, and process guides that make up our recommendations that we have created in order to facilitate the success of the event. The second is our Archive, which is a website functioning as a collection of all of the past editions of the Climathon Venice from the years 2016-2021 with accompanying individual edition presentations for reference and possible advertisement purposes, that has an accompanying printed booklet, which is our third deliverable. The Archive Website is essential for showcasing the highlights from past Climathon Venices and providing a place for participants to register for the upcoming Climathon. The Booklet is an important piece of advertising material that will be used to showcase highlights from past Climathons, similar to the Archive, but in a physical format. This will hopefully help to inspire participants and give them ideas of how to take their ideas to new heights. These main deliverables make up the culmination of our seven weeks in Venice and our work with Venice Calls. It is our hope that, in future editions of the Climathon Venice, they will help the hosts by making organizing the event easier and by increasing the outcomes of the event with the creation of startup businesses.

Chapter 2. Challenges and Opportunities in Venice

The following chapter will introduce and discuss topics important to understanding the scope of our project. We present some of the context of our project by introducing the concept of a Climathon and then more specifically the Climathon Venice and its partners and then by exploring other Climathons from other cities including Zurich, Switzerland and Tallinn, Estonia. We then connect the Climathon Venice to the climate change and economic challenges faced in Venice that this event has the capacity to help provide solutions to.

2.1 How Climathons and Hackathons Catalyze Ideas

A hackathon is a competition where teams are presented with a problem and they have a set amount of time to collaborate and produce a solution. A winning team is usually chosen, and they are presented with some sort of prize. Hackathons provide a way to bring teams of people with different talents together and to accelerate innovation. In recent years, hackathons have been gaining attention from the corporate world, since this competition framework can be described as enabling "open innovation" (Flores, et al 2018).

Open innovation differs from the usual closed innovation, which is commonly used in the normal work atmosphere. Open innovation seeks the collaboration of different perspectives, including those outside the company to accelerate the development of ideas. Hackathons best fit the ideals of the Lean Startup concept through their open innovation approach and time limit. This framework is used to investigate and implement best innovation practices for companies for the facilitation of product development. The lean startup methodology is especially important for startups as these emerging companies search for ways to scale up and survive. The first part of this framework is to have time set aside for brainstorming and hypothesizing. The second part involves reaching out to different audiences and gathering different perspectives as well as testing their already made hypotheses on these outsiders. Finally, there is an accelerated prototyping phase where startups create minimum viable products that they will later test (Blank, 2018). All three of these pillars focus on collaboration with outside perspectives involving many iterations of designs all within a short amount of time.

Climathons, a version of a hackathon, hold the same general practices and structure but have a more specific topic. Climathons are hackathons that aim to produce innovative ideas with the goal of mitigating the effects of climate change. Just like a hackathon, participants come from a variety of backgrounds to collaborate on a topic to share ideas, network, and innovate together. A Climathon is different from a hackathon in the way that there may not be tangible products that are produced, but instead there will be ideas and business models. The Climathon Venice provides a chance for participants to build their ideas into business models that can develop into viable startup opportunities that greatly benefit the city.

The first Climathon competition came to Venice in 2016 and has been held annually since. The structure of the event consists of a 48-hour period where teams participate in a "brainstorming session" to develop solutions for the problems presented by the host. The teams are expected to develop a solution and present it to a panel of judges. The winning team is provided the opportunity to participate in the national competition and, hopefully, the international competition.

Venice Calls, the sponsor of this project, got their start as a team of participants who won the 2018 Climathon Venice. The solution their team produced was in response to the challenge of developing sustainable ideas for waste management in the city. Their idea was to incentivize Venetians to use eco-friendly water bottles that had a QR code on them. By using this bottle and scanning the QR code, Venetians were provided with transportation and museum discounts in the city. In the few years that the Climathon has been held in Venice, many other innovative ideas have been developed to mitigate the effects of climate change and add jobs. With each year of experience, the event framework has improved. However, very few successful startups have been produced as a direct result of the event.

2.2 The Climathon Venice's Organizers

The Venetian economy is stressed by its dependence on tourism. Diversifying the Venetian economy will help to alleviate its dependence on tourism and create new, non-extractive job opportunities in Venice. Venice Calls' goal is to develop a sustainable city model that is economically, socially, and environmentally in tune with the threats facing the city

(Venice Calls, 2020). They have four main initiatives: volunteering, disclosure, innovation, and culture. For example, members of Venice Calls volunteer in activities like the cleaning and removal of graffiti as well as reducing the amount of plastic on the beaches and in the lagoon (Venice Calls, 2020). To support disclosure, Venice Calls also hosts conferences, courses, and webinars with researchers and experts on Venice and the lagoon with the goal of planning for the best future of the area. They host an art and music show to promote Venetian culture, and to encourage innovation, they host a 24-hour Climathon (Venice Calls, 2020).

Venice Calls continues the work of organizing the Climathon Venice for the city in collaboration with SerenDPT. Together they share the goal of developing a more diverse selection of jobs in Venice to solve problems plaguing the city and to promote those solutions to the rest of the world (SerenDPT, 2021). The organization owns an incubator space in Venice for the development and cultivation of innovative startups. The best ideas presented in the Climathon hosted every year could leverage this collaboration to grow into startups or small businesses. Opportunities cultivated in the H3 incubator space could provide an increase in non-tourism-related jobs. For example, SerenDPT has been able to produce the startup daAaB which is one of the only apps that has routes in cities all over the world based on public transportation information (*daAaB*, 2019). Through SerenDPT's resources, they were able to take an idea and turn it into a legitimate startup with a developed app.

Finally, Venice leverages the assistance of the European Institute of Innovation and Technology (EIT) Climate - Knowledge and Innovation Community (KIC), an international-level partner dedicated to cultivating knowledge and innovation with the goal of a zero-carbon and climate-resistant society (Climate-KIC, 2020). EIT organizes the international Climathon event held in 100 cities, 60 countries, and 6 continents (Climate-KIC, 2020) and sponsors organizations that wish to host Climathons in their own city.

2.3 Climate Change Impacts on Venice

Venice is uniquely affected by climate change, which is perhaps the most important issue our current generation is facing. As mentioned previously, the Climathon Venice provides an opportunity to remedy some of the major climate change issues Venice faces currently, and in the

future. The IPCC or the International Panel on Climate Change's most recent report, released in 2021, revealed some grim projections for the future (IPCC, 2021). The report predicted that there is a high chance of reaching a 1.5 degrees Celsius increase in temperature in the next few decades. Coupling this with the knowledge that global temperatures have already risen about 1.8 degrees Celsius from 1901-2020 clearly reveals an increase in the rate at which the planet is heating up (NOAA, 2019). Along with rising temperatures comes rises in sea levels accelerating from 1.7 mm/year throughout the twentieth century to 3.2 mm/year since 1993 (NOAA, 2019). Glaciers are melting and carbon dioxide concentration in the atmosphere has increased by about 40% since the industrial revolution, both factors directly impacting global temperature and sea-level rise in a positive feedback loop (NOAA, 2019).

The most impactful effect of climate change on the city of Venice is sea-level rise (SLR) and the risk of flooding. SLR brings other effects with it, including erosion, inundation (intentional flooding), lack of drainage after flooding, salinity intrusion into freshwater, and higher water tables that risk destabilizing foundations (Nicholls and Hoozemans, 1996). Data indicates that there is an average rate of 1.13 mm/year of SLR in the Adriatic Sea or 23 centimeters of increase over the twentieth century (Varrani and Nones, 2018). Along with sea rise, Venice is at increased risk of flooding because the city itself is sinking. Beginning in the 1930s with the industrial boom, groundwater below Venice was withdrawn for industrial, agricultural, and domestic uses (Varrani and Nones, 2018). Alongside methane extraction, these withdrawals resulted in a drastic "sinking" of a full 10 cm from 1950-1969 alone. A strong reduction of water abstraction appeared to remedy the areas most seriously affected by this to a relatively stable rate of 1-2 mm/year (Varanni and Nones, 2018).

Some possible strategies to mitigate flooding in Venice are the installation of 79 moveable barriers, called the MOSE barrier system, at the three lagoon inlets, trestle footbridges for people to avoid flooding, and large-scale uplifts of endangered areas of Venice through injection of CO₂ or seawater below the layers of gas-fields exploited in the 1970s (Varanni, Nones, 2018). All solutions that have been developed thus far have their positives, but they have drawbacks as well. Because of this, there is still a need for more innovative and sustainable ideas to be developed for the mitigation of climate change in Venice.

2.4 Shifts in the Venetian Economy

The other major issue in Venice that a highly developed Climathon Venice could work to help solve, is the diversification of the Venetian economy, and its shift away from tourism. But first in order to understand the gap in opportunities in Venice, it is important to know the major threat facing the Venetian economy. Venice is one of the most popular tourist destinations in the world, with an important classification as a World Heritage site. This means that Venice and its lagoons are considered a natural or cultural site with great influence or significance on an international scale (UNESCO, 2018). Despite this reputation, the city is no longer flourishing in terms of development and quality of life for its permanent residential population (Ursotti et al, 2021). Figure 1 reveals that after growing steadily from 1871 to 1971, the residential population in the Venice municipality, including parts of the mainland, hit a peak of 363,062 residents. In 1981, however, the number of residents began to decline (Ursotti et al, 2021). On just the island, residential numbers reached a peak of roughly 175,000 people in 1951 before decreasing to 50,000 residents in 2019, leaving the city with less than a third of its peak population size (Bertocchi and Visentin, 2019).

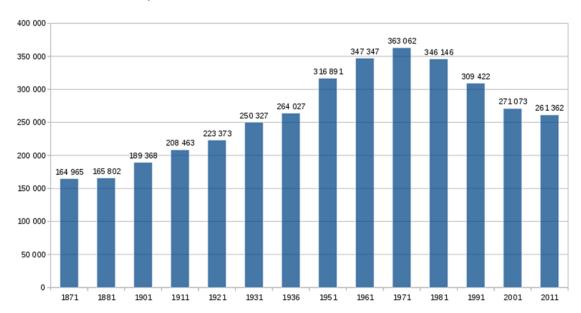


Figure 1. Census recordings of the resident population of the municipality of Venice from 1871 to 2011 (Ursotti et al, 2021).

Notably, the municipality's population was still growing in the decades from 1951-1971 while the city's population had already begun to decrease. At this time, Venetians had begun to

migrate out of Venice and into the surrounding towns on the mainland, Marghera and Mestre, who had begun to flourish industrially (Ursotti, et al. 2021). These towns also provided an opportunity for residents in the municipality to live a more "normal" life with a house, car, and other amenities that were not available on the island. Taking this into account and combining it with the knowledge that the city's population had over 35% of residents aged 60 and older, this has resulted in a 9% decrease in population or a net average loss of 1500 residents per year since 2000 (Ursotti et al, 2021).

These population trends are best explained when the effects of overtourism are brought into the picture. Overtourism has had a strong impact on residential population migration out of the city of Venice. Registered tourists in the city grew from 4.2 million in 2013 per year to 5.0 million in 2017, while overnight stays grew from 9.8 to 11.17 million per year (nature). In 2017 alone the city had almost 60,000 visits per day (Seraphin et al., 2018). Tourism in Venice has created a significant gentrification problem, where Venice has not been able to balance the needs of its citizens and the demands of tourists (González, 2018).

The city's economy has been transformed for the service of tourists, as seen with hotel beds and complimentary accommodation facilities increasing from 29,000 to 31,000, increasing the availability of beds for tourists by 7% in total, and dictating that nearly half of the beds in the city are relegated to tourists instead of local residents (Cristiano and Gonella, 2020). Not only have accommodations for overnight stays increased with the influx of tourists but other infrastructure within the city has been dominated by the tourism sector. Urban functions of buildings, apartments, and businesses are often altered from their original purpose with the goal of profiting from the tourism sector (Cristiano and Gonella, 2020). For example, restaurants have had a 160% growth increase between 2008 and 2019 (Betocchi and Visentin, 2019). As a result of tourism increasing in Venice, there has been little opportunity left for permanent residents of the city.

With such a focus on the tourism sector and the development of urban tourism infrastructure, significant portions of individual salaries in the city are dependent upon tourism. Businesses and jobs that are tourist-based include hospitality, public and private transportation, guided tours, souvenir and other shops, bars, restaurants, and catering services (Cristiano,

Gonella, 2020). At the start of the pandemic in 2019, international flights dramatically dropped. Along with lockdowns and decreased travel and tourism, the city was left empty with many unemployed residents (Cristiano and Gonella, 2020).

In the face of these vulnerabilities, Venetian policymakers have attempted to make some changes to try to save the city. Perhaps the most recent change, enacted on August 1st, was the full ban of certain types of cruise ships in the city (Pianigiani and Bubola, 2021). They have also begun to set stricter limitations on the number of tourists allowed into the city for events like Carnival (González, 2018). The city limited the number of visitors per show to 11,000 as they tried to control the flow of tourists, and to guarantee spots for the residents of Venice (González, 2018). Four turnstiles were also implemented during the Carnival to regulate foot and aquatic traffic. In accompaniment with an entry fee for day-trippers next summer, many Venetians are beginning to feel that the city is starting to resemble more of an amusement park rather than a historic city full of art and culture (Smithsonian, 2021). The lack of success and of pre-emptive changes made by government officials in Venice further perpetuates the need for not only more strategies to lessen the flow of tourists into the city, but also for the development of quality jobs that are unrelated to tourism.

Chapter 3. Investigation of Successes and Failures of Hackathons and Climathons

This chapter outlines the first of our major deliverables from our project that stems from our goal of developing a sustainable Climathon event for 2022 that will produce viable startups and a repeatable event framework. This deliverable consisted of investigating the best practices of several hackathon events at WPI, along with other successful Climathons, in order to create an event Matrix for the easy comparison of these events with the 2021 Climathon Venice. This Matrix will compare features of the events, ranging from workshops to entry fees to advertising for the event. The creation of this Matrix enabled us to accurately determine which aspects of each event would allow us to best improve the 2022 Climathon Venice.

Interviews and case study research were our main strategies to create our Matrix. Interviews in particular were an essential research tool that allowed us to better understand and explore the interviewees' thoughts and advice for our project. The interviews that we conducted with the hosts of other hackathons were semi-structured in order to focus the discussion on the information we were looking to collect, but also to allow open-ended answers so that the information we collected could be more in depth.

We also chose to research and perform two case studies on Climathons that had been successful in accomplishing our goal. Zurich, Switzerland and Tallinn, Estonia were chosen because they were structurally different from the Climathon Venice and they both had achieved the type of success we were looking to generate in our event, namely startup development. Therefore, by analyzing the best practices that these two events utilized, along with the best practices determined from our interviews, we were able to determine what aspects of each event were currently being utilized in the 2021 Climathon Venice and the ones that were not, allowing us to fully plan our final framework for the 2022 Climathon Venice.

3.1 Semi-Structured Interviews of WPI Hackathon and Entrepreneurial Event Organizers

As mentioned before, one of the ways we investigated best practices of Climathons is through informal, semi-structured interviews. We chose this method to help guide the conversation to stay relevant to our project while also allowing the interview to discuss topics they felt were important (Ward, 2014). During the interviews, we began by providing an overview of our project, and then gradually brought up the topics we would like to learn more about throughout the interview. A script of the general topics used during interviews can be referenced in Appendix A, while the summarized minutes from each meeting can be referenced in Appendix H. These were scheduled in advance with individuals who have been involved in the organizing of hackathons or other events similar to the Climathon. We were able to gather information regarding the structure, workshops, and organization of these hackathons and determine how they related to the Climathon Venice.

We also met with experts involved with the WPI Innovation and Entrepreneurship Center to gain insight on best practices for organizing workshops prior to the Climathon to help foster skills beneficial to the competition and the creation of startups afterward. These interviews also helped us better understand how to advertise the event, plan workshops, and potentially provide educational resources regarding the business aspect of the Climathon event to participants. In particular, they told us about the video library they have put together with resources around startups and business creation. This video library is the basis of the learning modules and our own video library available on our website which is discussed later on in more detail.

The interview conducted with Andrew Nichols-Melton regarding the FIRST Game Jam provided insights into registration, advertising, and workshops. Nichols-Melton advised on having participants register with a team rather than solo because creating teams based on interests or skill levels may be difficult to manage in person. He then explained how their advertising strategies, which were primarily through normal FIRST Robotics lines, would include those who would be interested in their event. He advised against physical advertisements, and suggested we proceed with social media and to cater the posts and platform to the group that we wanted to target. He mentioned gathering a list of possible past competitors in order to create an invitation list that we could count on being interested in the event to target in the following years. Lastly, we discussed the possibility of including workshops before the Climathon in order to generate interest in the event. FIRST Game Jam did in fact have some pre-events that were hands-on with tutors to help the teenagers that were new to game design on

how to use their software. He advised that hands on was much better for the teenagers, but that their pre-recorded videos were also helpful for them to learn from. The major takeaways from this interview were that we should consider the difficulties of having solo participants register for the event, our advertisements should stick to our video and our social media posts that are catered to our audience, and lastly, that we should have in person pre-events as well as pre-recorded videos for the participants weeks ahead of time in order to generate interest in the event.

For the next interview, we spoke to Bradley Miller. Miller advised an IQP team that developed a repeatable event framework and a set of learning modules/workshops for the Combat Robotics Hackathon hosted by WPI. The goal of the workshops was to give students a better mindset by focusing on ideation, brainstorming, and creativity to better prime them for the competition. The learning modules prior to the event focused on the technical skills that students would find useful during the competition such as SolidWorks and 3D printing. Miller suggested that these types of workshops and modules prior to the event can have a strong impact on preparing the participants. For the Climathon, our goal is to be able to provide these teams with the opportunity to produce startups from the ideas developed during the event, so having teams learn skills relevant to pitching and startup development prior to the event and getting them in the correct mindset is essential.

The next expert we spoke to was Colleen Shaver of the Robotics Resource Center who also organizes combat robotics hackathons at WPI. Shaver provided us with insights into five different categories, expertise, newsletters, structure, audience, and teams. For expertise, she advised that depending on the topic or themes of the event, industry experts should be introduced to teams in advance to work with them on developing their ideas. By doing this we can eliminate gaps in those topics that would otherwise be present from their lack of industry experience. As for possible newsletters or emails prior to the event, she advised us to give participants as much information as possible prior to the event, including the event agenda, judging criteria, and a rough outline for what final products from the Climathon can look like. She lastly mentioned that if we were to include training modules in order to prepare them for the event, that our modules should teach them about startup creation and the steps they must take to develop their ideas.

In terms of structure, Shaver iterated that people are generally not good at managing their time, and therefore we should manage their time for them by having strict time cutoffs in order to make them continue on. She advised that we also guide them through the theme very specifically as having a wide range of products and ideas can make it difficult to judge. Additionally, she suggested possibly having three themes under a central one for the integration of more winners and therefore more incentive to participate. For the audience, she advised that we market the Climathon to be connected to an incubator process like MITdesignX that would help to bring in more driven, entrepreneurial teams looking to create startups. Another idea was that we should possibly have two different brackets of the event. One for the serious competitors and one for novice competitors that are looking to just have fun or get the experience of participating without the stress of presenting and getting judged. The novice bracket would be free to enter and the upper bracket would have an entry fee in order to again, persuade only serious competitors from entering. Finally, Shaver Suggested, agreeing with Nichols-Melton, it may be difficult to organize teams the day of the event, therefore, it may be easier to have teams pre-register and not allow individual registration.

Our last interview was with Curtis Abel of the Center for Innovation and Entrepreneurship at WPI. The main takeaways from this interview were that if we are to have speakers at the 2022 Climathon Venice, they should not spend hours speaking at the audience, but instead that we should have an interactive panel of speakers in order to engage the audience. He advised that after ideas had been generated we create a forum to determine if their ideas are truly viable, to decide if people would use that product or that they would invest in it. For generating teams he mentioned possibly having a speed dating forum of some sort in order for solo participants to get to know the skillset and interests of the other participants in order to decide which team they want to join, or whether to form a team of their own. He lastly stressed that we should have many incentives, whether it's networking with mentors or industry experts, high profile pre-events, or cash prizes in order to persuade serious participants into joining. These interviews were all featured in our Matrix and contributed heavily to determining the best practices that we wanted to adopt for our own event framework.

3.2 Relevant Models in Climathon Events

Another strategy used in order to develop insights into planning the 2022 Climathon Venice and to develop our Matrix was looking at Climathon competitions throughout the world as they all have the same basic structure, but the details vary from city to city due to the different host organizations planning the event. Because of this, every Climathon is unique with different processes, outcomes, and their own definition of success. Learning from Climathon events helped inform our framework for the Climathon Venice and the summative notes from this research can be found in Appendix H. Therefore through our research, we developed two case studies from the Climathons in Zurich, Switzerland, and Tallinn, Estonia.

3.2.1 Zurich, Switzerland's Climathon

The Climathon held in Zurich, Switzerland is a one-day event that spans about 27 hours (Climate-KIC Zurich, 2019). The "Brainstorming Event" is divided into multiple phases, directing teams of participants to complete specific parts of their projects. Some of these phased elements include the Research Phase, the Prototyping Phase, and the Business Modeling Phase (Climate-KIC Zurich, 2019). By creating a structure for developing ideas, teams are directed towards the goal of producing viable business opportunities. In addition to structuring team phases to develop their individual ideas, there are a variety of workshops and networking sessions. The topics of these sessions span from a Networking Brunch to a Pitch Training Workshop. By providing the participants with access to these resources, teams can develop new skills that will aid in developing their own ideas for the competition. In turn, the participants are able to produce better results which will then increase the number of viable business opportunities. Furthermore, providing participants with the opportunity to develop skills and network is an added incentive for joining the competition.

All aspects of the event conclude in a "Festival of Ideas" during which each team has five minutes to pitch their final idea in front of the Climathon's "Jury" and answer any questions that may arise. After all ideas are pitched, the jury selects a small number of teams who they deem to have developed the best solutions. These teams then win access to coaching and resources to help with accelerating their idea and further develop it into a startup (Climate-KIC Zurich, 2019).

Throughout the entire event, the organizers of the Zurich Climathon provide resources and knowledge that will direct all participants to reach their goal of producing models that have the potential to become viable startups.

3.2.2 Tallinn, Estonia's Climathon

The Climathon held in Tallinn, Estonia is a multi-day event that spans about a month. The event begins with one to two "Warm-Up Events" usually held in early October. These events include speakers, interviews, and question and answer sessions with a variety of industry experts (Climate-KIC Tallinn, 2019). The goal of these preliminary events is to provide participants with the opportunity to network as well as learn new skills from experts that can be utilized in the competition. The main competition is held in late October and spans 24 hours (Climate-KIC Tallinn, 2019). Throughout the event, participants are provided with a structure to follow for the development of their ideas, including team bonding activities and development sessions where skills are learned to be put towards their own ideas.

Using these resources, teams are expected to develop a solution to the competition's challenges before presenting to a panel of judges. The judges select the top three teams to receive three months of mentoring from the Tallinn Climathon's partners as well as earn the opportunity to join the Cleantech ForEst division of the Climate-KIC accelerator. In this accelerator, teams can gain access to further mentoring, media coverage, and €10,000 - €75,000 of non-equity funding (Climate-KIC Tallinn, 2019). Finally, the Tallinn Climathon hosts a follow-up event in late November for the winning teams. At this event, the winning teams are provided with more networking as well as the opportunity to provide feedback on the Climathon itself. This provides the host of the event the feedback needed to improve the event year after year. During the planning and execution of the Tallinn Climathon, the organizers provide participants with the structure and resources needed to produce their goal of producing viable business models that can join startup accelerator programs.

3.2.3 Case Study Similarities and Differences

The structure of the Zurich Climathon and the Tallinn Climathon are very different: one event spanning the course of two months whereas the other lasts one day. The vocabulary used, prizes offered, and other minute details are different. However, the two events are more similar than they are different, and both events have a common goal to produce innovative ideas that have the potential to develop into viable startup opportunities.

The way the two cities approach reaching this goal is also very similar. At both events, participants are provided with access to learning sessions, resources, and interaction with industry experts during the events. Not only does this access benefit the participants in their personal development, but it also aids in producing quality ideas during the Climathon. In turn, a greater quantity of feasible business models is produced from these events. Furthermore, both events advertise their goal to the public. It is clear to any potential participants that the target audience is for serious and passionate partners who want to work to develop a business opportunity. By advertising this goal, the event is more competitive rather than just for fun.

Overall, both the Zurich Climathon and the Tallinn Climathon do a good job in organizing their event in a way that produces a large number of viable startup ideas year after year. The organizers of Tallinn's Climathon, Cleantech ForEst, has helped to develop over 60 startups, many of which were a result of their Climathon. See Table 1 for some examples of the startups produced in Tallinn. After comparing these two events and discovering the similarities of their structure, it is clear that this type of structure is effective in reaching the goal of our sponsor. Both of these cities have been reaching this level of success in their Climathon competitions for multiple years in a row, proving that their format is reliable. Furthermore, Zurich, Switzerland and Tallinn, Estonia are different locations. Seeing that this common approach of the Climathon is effective in both cities and shows promise that it could be replicable. The Zurich Climathon and the Tallinn Climathon are two events that have been used as a model for planning our framework for the 2022 Climathon Venice with the goal of producing opportunities for viable startups.

Name of Startup	Description
Woola	Reduces plastic waste by replacing plastic packaging with a reusable packaging made from leftover sheep wool.
WhatPackage	Serves as a platform for package-free shops to sell their goods in an effort to reduce wasteful packaging.
Recyclist	Serves as an online marketplace where companies can sell leftover materials from production rather than send them to a landfill.
Poko	Designed the 'Poko bag' with the intent of creating a highly-reusable polyester shopping bag to replace single-use plastic bags.
Circular Algae	Predict, harvest, and process harmful algae blooms to make feed supplements, biogas, and bioplastics.
Laava Tech	Develop and manufacture smart-LED to be used in vertical and hydroponic farms
Winsect	Provides a sustainable solution for feeding fish using insects.
GeoData DronPort	Offer geotagged data processing or precision agriculture and environment monitoring.
GetElectric	Democratizing electric car-charging to allow anyone to become a car-charging provider.
SilverHull	Developed an automated ship cleaning system to save fuel.

Table 1. Description of some of the Startups to come out of the Tallinn, Estonia Climathon

3.3 Climathon/Hackathon Matrix

An event matrix is a manner of compiling data about indicators and activity for a given area of interest. In the case of the Climathon Venice, our goal was to create an event matrix that allowed for the easy comparison of different structural features that were essential to the success of the other hackathons and Climathons that we investigated. The matrix would then enable us to see firsthand which areas of the Climathon Venice would need to be targeted for our recommendations and which were sufficient.

The collection of the interviews with hackathon organizers, interviews with experts from the WPI Innovation and Entrepreneurship Center, and case studies of other successful Climathons were combined into a matrix for comparison and compilation of their best practices. The creation of this matrix firstly allowed all of our best practices to be in one place, and secondly, allowed us to easily compare and contrast all of our different case studies in order to

		Events							
		Tallinn, Estonia Climathon	Zurich, Switzerland Climathon	FIRST Game Jam	Combat Robotics Hackathon	Robotics Event Coordinator (suggestions)	WPI Innovation Challenge	Venice, Italy Climathon	
	Pre-Event Workshops								
	Learning Materials								
	Provide Judging Criteria								
	Produce Successful Products								
Features	Entry Fee								
Feat	Structured Event								
	Tutors/Mentors								
	Post-Event Workshops								
	Advertisement								
	Budget for Event								
	Duration of Event	24 hours	27 hours	1 weekend	1 day over multiple weeks	NA	2 days		

Figure 2. Incomplete Hackathon and Climathon Event Matrix

develop our full framework for the 2022 Climathon Venice.

As seen in Figure 2 all of the events featured in our Matrix had all or most of the determined structural criteria, and they were all able to achieve their designated type of success. Whether that was startup development for the Zurich or Tallinn Climathons, successful app generation for the FIRST Game Jam, or successful robot creation. All of the events had pre-event workshops, provided judging criteria for participants, produced successful products, had a well-structured event, mentors/tutors, advertisements for their targeted audiences to generate interest into their events, and a chosen budget. This version of the matrix enabled us to determine which of the structural best practices were essential in all of the events in order to apply those to our framework for the 2022 Climathon Venice.

Chapter 4. 2021 Climathon Venice

The two major issues that Venice faces, as outlined in this report, are its struggles with climate change and the rising tides that cause damaging floods in the city, and the need for its economy to become less dependent on the tourism sector through diversification of jobs. The Climathon Venice is a means to accomplish both of those goals by providing the support and means for teams to develop their ideas into startups or small businesses. The Climathon Venice is a climate-change themed hackathon where participants came together to generate ideas for the mitigation of climate change in thematic categories with mentors and industry experts readily available for guidance. Venice Calls, a previous winner of the event, organized the 2021 edition of this event in collaboration with SerenDPT and hosted the event in the H3 incubator space.

This year's event focused on restarting the Venetian economy after the pandemic, with three sub themes for participants, Social Innovation, Circular Fashion, and Creativity and Craftsmanship, and took place on October 30th and 31st. The event featured 31 participants in 6 teams leading to three thematic winners and one overall winner of the grand prize. Day one of the Climathon featured a brief welcome period for a half hour and then speakers from 10:30 to 1 pm, and then the teamwork section took place from 2:30 to 8 pm. The second day featured a teamwork section from 9:30 to 1:30, presentation preparation from 2:30 to 3:45 and finally the presentation of their proposals to the jury from 4 to 5:30 pm. The jury was set to deliberate for a half hour and chose the three thematic winners and one overall winner. The full agenda can be referenced in Appendix J.

4.1 Participant Observation

In order to understand how the event is run from a participant's point of view, we actively observed this event. To do this, we created an observation sheet to collect qualitative and quantitative data to create a day-by-day snapshot of the event whose summary can be found in Appendix I. The observation sheet was split into seven different sections based on the sections of the event, Arrival, Welcome, Presentations, Teamwork, Mentors, Before and After, and Event Room. A video and photo footage checklist was also made to ensure we gathered optimal shots for advertisement purposes, that can be found in appendix K. Members of the team were divided

and assigned to specific observations or footage during the different portions of the event in order to maximize our time there. A sample page of the Teamwork section is shown in Figure 3.

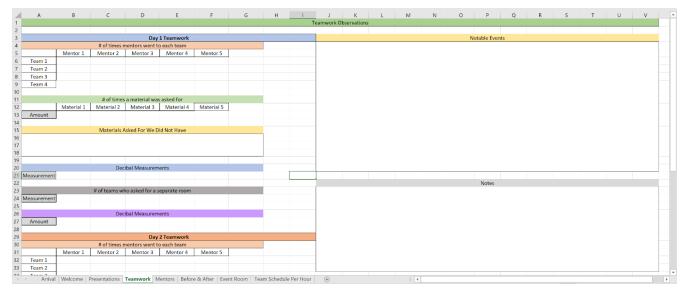


Figure 3. Observation Sheet during Teamwork

4.1.1 Best Practices Determined By Observation At 2021 Climathon Venice

Since the observation sheet was split into seven different sections for observation, seven tables of general summative data from the observation excel sheets were created that include the section, positives, negatives, and other/notable events. The first of these tables can be seen in Table 2. The major takeaways from this section were that there was no actual check-in as previously described to us. The original plan was for us to check in people using a table set up in the entryway and then for participants to be guided to the courtyard or cafeteria for them to mingle before gathering in the church space for the start of the main event. Instead there was no table set up as previously indicated, and no computer or check-in sheets for us to use. Instead later as participants were gathering for the Welcome, a participant was recruited and asked to go around with a laptop asking for names and emails, as well as the team that participants were with. Therefore, in our plans for next year's event we will implement a more organized plan for set-up and dress rehearsal that will include details around how many volunteers should be on 'check-in duty' and how the event space should be organized to help direct people and limit

confusion. The other major notable event was that volunteers came to help out, and provide assistance for the weekend, had to leave since there was no direction and they were not assigned

Section	Positives	Negatives	Other/Notable Events
Arrival	- Agendas were printed in time - Snacks and drinks provided in cafeteria	 No actual check-in No flyers were printed No signs to guide participants Set-up of snacks happened in front of participants Volunteers had no idea what to do Volunteers later left since they were given no direction Tables only had three chairs in the church, participants had to move chairs around themselves 	- We did not receive the finalized Italian agenda for the agenda booklets until 5:30 the night before when the print shop closed at 6:30 - Nobody stayed in the church, they all went to the cafeteria - A participant went around to ask names, and email for the "check-in" - An agenda was taped to the door as an indicator of where the event was

Table 2. Summative Data Table of Arrival Section from Observation Sheet

any tasks to complete. Based on these observations, when we developed our framework for future Climathons we included specific guidance as to how best organize and run the arrival period to start the event without any issues.

The second section of the observation sheet seen in Table 3. As can be seen, key takeaways from the Welcome included a late start, presentations edited mid-speech, and little audience participation. Perhaps the most important observation recorded during this times was

Section	Positives	Negatives	Other/Notable Events
Welcome		 Started 13 minutes behind Presentations were edited as participants could watch One team did not have a table, unlike every other team Difficult to see the projector and speakers from the back (dim) 	- No questions were asked, or periods for questions offered

Table 3. Summative Table of Observation Sheet Section, Welcome

the percentage of participants that did not pay attention to the Welcome by using their cell phone, with over 20% of participants using their cell phones the entirety of the Welcome and reaching a

peak halfway through from 10:21-10:25 with over 40% of participants using their phones which can be seen in Figure 4.

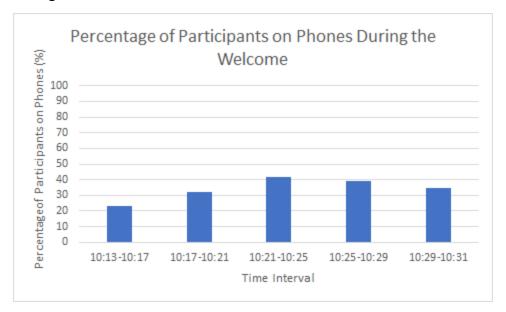


Figure 4. Graph describing the percentage of participants that were on their phones during the welcome period

In our plans for next year, buffer periods will be added between sections of the day in order to account for delays as well as creating a floor plan in advance that includes seats during the welcome and presentation stages, along with a plan for the movement of the chairs and tables at specific times to accommodate the teamwork and other stages.

The third section was the Presentation section. On the first day, this included speaker presentations and on the second day, it included final presentations. Our summarized observations can be seen in Table 4. Some of the key takeaways from the day one speakers included technical difficulties with audio equipment and speakers over Zoom, very few opportunities for questions for the speakers, little audience participation and involvement, and presentations almost entirely in Italian, despite the attendance of some English speakers. The percentage of participants that were on their cell phones during the speaker presentations can be seen in Figure 5. During the speakers, over 40% of participants were consistently on their cell phones. Such high percentages indicate that many participants were not actively engaged in the presentations. Other notable events included that the panel speakers during this time were seated at the same height as the audience therefore if you were in the back of the room since they were

seated at the same height as them had difficulty seeing them, and that the majority of the speaker presentations were virtual.

Section	Positives	Negatives	Other/Notable Events
Presentations	Day 1 Presentations: - Wifi password provided to participants at 11:25 Final Presentations: - Time for questions was given, and a question was answered - Participants appeared to enjoy presenting and their projects	Day 1 Presentations: - Projector was small and hard to see - It was difficult to see in person speakers in the back - Mic backfired and echoed constantly - Difficult to hear zoom speakers - No English was spoken to accommodate English only speaking team - Multiple groups were talking during speakers - Someone came up to say that it was very cold - Not all links were included in presentations and had to be googled in front of the audience Final Presentations: - Started half hour late - Went over a half hour over - No buffer time was built in as some presentations went over their allotted five minutes - Jury asked questions for over 10 minutes with some teams - Major technical difficulties organizing the livestream zoom - Audio test that was extremely shrill and loud	Day 1 Presentations: - No questions were asked, and a period for questions didn't appear to be provided - Panel speakers were seated at the same level as the audience which lowered visibility - Almost all of the presentations were virtual Final Presentations: - Seven people left the event room to go to the bathroom or smoke multiple times - Only having six teams with four total winners allowed the majority of groups to win a prize

Table 4. Summative table of observation sheet section, presentations

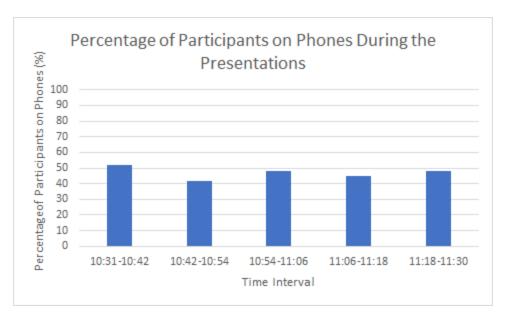


Figure 5. Graph describing the percentage of participants on phones during the speaker presentations

Our plans for next year's framework will include instructions to carefully test and set up technical equipment days in advance in order to avoid difficulties, as well as to have some form of interpreter or subtitles for non-Italian speaking participants. Lastly we also plan to change the amount and topics for the speaker presentations in order to better engage the audience. There were little to no questions asked or question periods offered since we were on a very strict schedule. Instead of speaking to the audience, the section will be altered to be a full panel with time for questions and engagement with the audience.

For the Final Presentations there were also some notable areas for improvement that can be seen in Table 4. To start, the event room was not set up for final presentations until after the original start time, and after that there were still technical difficulties being sorted out by organizers with the livestream zoom audio and screen sharing. In the end, these delays ended up delaying the start of the final presentations so that they started 30 minutes later than scheduled. The final presentations consisted of five minutes for presentations and then a period for questions from the jury and audience, but the Q&A time was not restricted in any way, leading to some question periods lasting over 10 minutes. These timing issues led the final results to be delivered just over an hour behind schedule. However, most teams did seem to enjoy the presentation period and being able to present their ideas and hear from other teams. There were also four

teams awarded for their ideas which increased morale as over half of the groups received recognition for their hard work.

In our framework for next year, we again suggest testing audio equipment ahead of time and more importantly, to adjust the schedule to accommodate and give more time for final presentations while also restricting the Q&A time for each team to keep the schedule on track.

The fourth section of the observations sheet was the Teamwork section that can be seen in Table 5. We had two main takeaways from this section, first that only one team stayed in the main event space because of temperature and bad acoustics for multiple groups to be working. Secondly, there was little to no structure to the teamwork time. As mentioned in Chapter 3, in our interview with Colleen Shaver, she advised us to give participants some structure during

Section	Positives	Negatives	Other/Notable Events
Teamwork	- Two teams in courtyard and cafeteria were very focused	- The English speaking team didn't know what to do until receiving help from the mentors - There was no apparent structure to the teamwork section, just get to work	- Every team but one left the event room to work somewhere else, this was mostly due to temperature an acoustics of main room - Some teams only worked on laptops while others used poster paper and sticky notes - Larger teams tended to split into smaller groups to work

Table 5. Summative table of observations sheet section, Teamwork

their work time to keep them on track. Likewise in our case studies, other Climathons usually give structure to keep the participants working on track rather than falling behind, since it is a fast paced event.

To accommodate this idea in our agenda for the 2022 Climathon Venice, we have included plans to separate this period of time into sections including Brainstorming and Presentation Preparation in order to keep teams on tasks and moving along. In addition, we have planned out more spaces for teams to work by looking at where they chose to work during the 2021 Climathon so that we can be prepared and have tables and materials in place ahead of time.

The next section on Mentors takes a look at our observations of the mentors' interactions with teams during the Teamwork section and can be seen in Table 6. Difficulties in this section

Section	Positives	Negatives	Other/Notable Events
Mentors	- They were able to help the English-only team - Mentors traveled in slightly smaller groups on Day 2 - Shorter and more frequent visits to teams	 Day 1: No nametags Difficult to tell who was a mentor vs. a participant On day one the mentors split into two large groups That left no mentors available if other groups had questions One group of mentors spent nearly 45 minutes with just one group, they didn't reach other groups until the end of day for 15 minutes Day 2: Still difficult to tell participant vs. mentor Different groups of mentors would ask the same questions to teams, very repetitive 	- 7-9 mentors depending on the day - Some mentors dominated conversations

Table 6. Summative table of observational sheet section, Mentors

arose from the lack of name tags for participants, organizers, and the mentors, making it very difficult to determine who was a mentor and who was a participant at times. On the first day of teamwork the mentor group of 7-8 traveled as a large group and spent much longer amounts of time with some groups than others, with some groups not even being visited on the first day. The second day, the mentors split into smaller groups of 2-3 for mentoring, which enabled them to make shorter and more frequent visits to groups. The issue with this formation however was that the mentors lacked a schedule and one group would visit a group and ask them what their topic was only to have another group of mentors ask the same question to the team shortly after.

To reflect our observations, our plan for next year will plan to make small groups of mentors with a schedule based on the number of teams and the mentors' skill sets and to help guide the mentors with the types of general questions that should be covered in that meeting session in order to facilitate more efficiency and help guide the teams.

The second to last section covered in our observation sheet was Before and After which was used to indicate notes about things that happened before or after the main event, and can be

seen in Table 6. Key takeaways from this section include that the food and snacks provided were popular, but there could have been more provided and more variety, materials (pens, paper, sticky notes, etc.) were provided, and setup for the event started at approximately 10pm the night before and was poorly organized.

Section	Positives	Negatives	Other/Notable Events
Before and After	- Food items eaten fairly quickly, running out before lunch on day 2 - Little to no food waste - Pens, sticky notes, and poster paper were available	 Only food offered was snacks (cookies/chips) or fruit and nuts If participants wanted to switch rooms they had to move tables and chairs themselves One of the tables was replaced with a small wooden one on Day 2 	- Coffee was drunk regularly on both days - Other material requested was a mouse/clicker to move slides, which we did not have - Setup started at ~10pm the night before and lacked a plan

Table 7. Summative table of observational section, Before and After

In our framework we have planned to include more food options for participants but with similar amounts based on the amount of participants and food used this past year. In addition, we have prepared a more thorough list of materials to have prepared for the main event. Finally, we have added a plan for setup before the event to allow for time to check for any technical difficulties and to give plenty of time to prepare the space.

The last section of the observations sheet was the Event Room observations which can be found in Table 8. Our main takeaways from this were that the space could have held more people if there had been more participants, that the main church area was not heated so people were cold, the lighting and visibility was poor, and a lack of signage and direction for those unfamiliar with the space.

In order to accommodate these observations, we have planned to adjust the seating and remove tables during speakers and presentations to accommodate more chairs, to build the cost of heating the space into the budget, and encourage the hosts of future years to work on lighting and improving visibility of the speakers. In addition to the seating and table set up for the

Section	Positives	Negatives	Other/Notable Events
Event Room	- There was room for more people - All of the groups could have worked in the event room	 Church was not heated Sliding door was opened constantly or not shut fully People were visibly cold and wearing jackets Lighting was dim, and difficult to see projector from the back of the room Difficult to see in person speakers from the back Light added did nothing to illuminate speakers The space felt cramped with tables and chairs Projector was not always level No signs to guide participants 	

Table 8. Summative table of observations sheet section, Event Room

speakers, we have recommended that in future events, the host plans out the best way to set up tables for teamwork time so participants do not have to move tables themselves. The H3 Factory provides a great space for the Climathon, but as with all spaces, it brings its own special complications that must be addressed.

4.2 Entry and Exit Surveys

In efforts to gather live feedback from the participants, rather than directly interviewing them during the event and interrupting their teamwork time, we developed an entry survey to gather demographic information and insights into participants' motivations for participating in the event. There was also an exit survey to determine which aspects of the current Climathon Venice should be altered whether for timing purposes or otherwise. The full lists of questions from the entry and exit surveys can be seen in Appendices E and F. A sample page from our entry survey is included in Figure 6. A booklet including the English and Italian agendas, QR codes for the media release forms in English and Italian, and QR codes for our entry and exit surveys was created and printed in a local print shop for the Climathon Venice website. The full agenda, and media release forms can be found in Appendices J and K. The information we

collected from these surveys helped us take direct feedback from the participants at the Climathon Venice, which in turn helped us plan the 2022 Climathon framework.

Did you attend the pre events? If so, were they helpful? Please specify. If no, why did you no attend?										
	event eas	y to regi	ster for?							
Very dit	fficult							Ve	ery straigh	ntforward
0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0
f difficult	ies arose	, please	specify.							
Rank in o	rder of in	nportanc	e.							
	Network									
	Start up o	pportuni	ties							

Figure 6. Sample page from the entry survey for the participants of the Climathon Venice

4.2.1 Best Practices Determined By Entry Survey

The entry survey results revealed that overall that participants did not feel well informed about the 2021 Climathon Venice, resulting in it receiving a net promoter score of -5%. A net promoter score is a metric of what percentage of respondents would actively recommend this event based on the question provided, and can be seen in Figure 7. It is calculated by choosing our range of promoters, detractors, and passives. In our case, detractors were defined as rating their level of how informed participants felt about the event coming in as 0-5, the passives as a ranking of 6-7, and the promoters defined as a ranking of 8-10. The percentage of the promoters and detractors was calculated and the percentage of detractors was subtracted from the

percentage of promoters (28%-33%) to get -5%. This net promoter score indicates that \sim 5% of participants would actively say that they were not well informed going into the event. This in turn shows that there is great room for improvement on our means of communicating with the participants. One factor in this likely had to do with how there were no pre-event emails sent out to registered participants until the day before the event. It was also noted that some participants



Figure 7. Net Promoter Score of how informed participants felt about the 2021 Climathon Venice were able to walk in and register the morning of the event. Therefore, in our framework for 2022 we have strict plans for opening and closing registration, drafts and timelines of emails to be sent out to update past and current participants, and plans to have the agendas available on our website and in our emails in order to communicate and allow open lines of communication much earlier. We also decided to include updates on our website, social media accounts, and in our

emails about pre-events and registrations for those events months in advance in order to generate interest and higher levels of participation.

Along with their level of informed they felt about the event we also asked participants how they heard about the event and what their preferred type of social media was. Figure 8 provides that data we collected from participants about how they had heard about us. We found

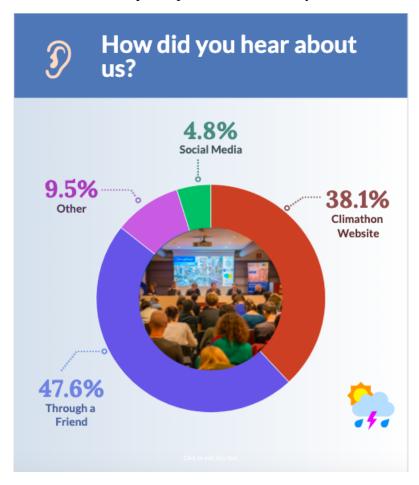


Figure 8. Graphic indicating how participants found out about the 2021 Climathon Venice

that the majority of participants (47.6%) found out about the event through a friend, 38.1% found out through the Climathon website, 4.8% found out through social media and 9.5% found out through other methods. This graphic indicates that while there is some advertising amongst friends and acquaintances, there is a lot of room for improvement on more traditional advertising strategies with social media and the Climathon website. Therefore we then asked participants what their preferred form of social media was, the results of which are found in Figure 9. The

results from this question were crucial in determining which forms of social media we decided to focus on developing our drafts for in our framework. We have decided to target Instagram and LinkedIn more heavily because 55.56% and 14.81% of participants indicate that those are their preferred forms of social media. The drafts created however are universal and can be applied

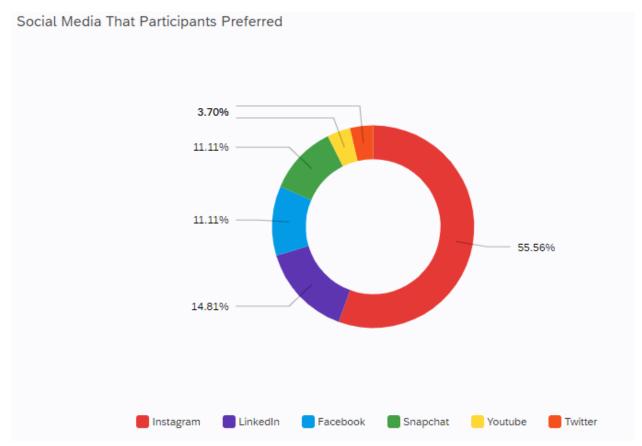


Figure 9. Graphic indicating which form of social media participants prefer to use to almost any social media account enabling the organizers of next year's Climathon Venice to apply those to Facebook, Snapchat, YouTube, and Twitter as well if they wanted to reach an even broader audience.

Lastly we delved into what specifics participants wanted to gain from participating in the 2021 Climathon Venice, and the results can be found in Figure 10. The results from this question revealed that 34% of participants were looking to network at the event, 19% of participants wanted to develop startup opportunities, 22% of them participating because of the content focus on climate change mitigation, and lastly 15% were interested in the competition aspect. These results indicate that while there is already some interest in the area of startup development, many

participants in this Climathon and likely past Climathons have not been focused on startup creation after the event. To help encourage this, we have prepared outlines for pre and post

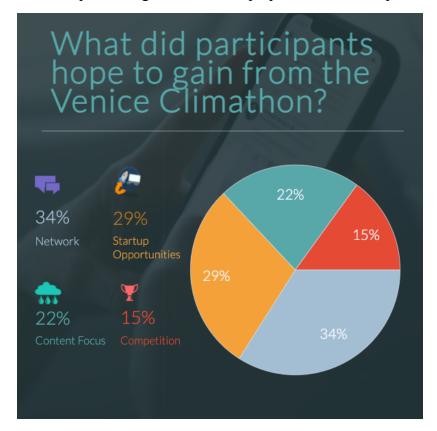


Figure 10. Graphic describing what specific skills or areas of focus they wanted to develop from participating in the 2021 Climathon Venice

events. Additionally, we will plan to provide more support for participants to help them develop their ideas further. Thus our framework includes plans to have participants apply to grants and MITdesignX, an accelerator program coming to Venice in the Spring of 2022.

The fill in answers for Question 11, 'What are you hoping to take away from this experience?', indicated that many of the participants were most interested in the experience from the Climathon, networking, and having a space to develop their ideas. While many of the other changes we have planned will help to improve the Climathon experience and help to give participants the opportunity to develop their ideas, to help encourage networking, we have planned to include opportunities for networking during pre-events and the main event.

4.2.2 Best Practices Determined From the Exit Survey

The overall satisfaction for the 2021 Climathon Venice is visualized in Figure 11. Out of 14 respondents, 21% indicated that their experience was less than satisfactory with a ranking between zero and five making them detractors, 43% indicated that their experience was average or neutral with a ranking between six and seven making them passives, and 36% indicated that their experience was satisfactory with a ranking between eight and ten making them promoters. The net promoter score was then found to be 15% which indicates that 15% of the participants would recommend the Climathon Venice to others. This is a positive result, however there still is room for improvement in overall satisfaction for participants. Specific responses from

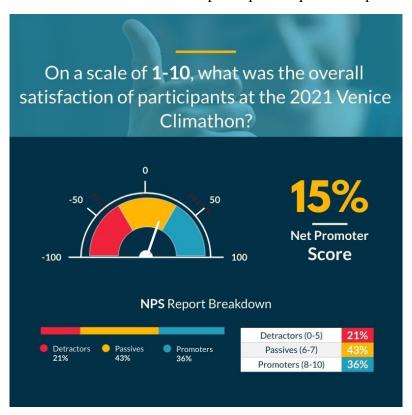


Figure 11. Graphic describing the net promoter score of overall satisfaction of participants from the 2021 Climathon Venice participants about their favorite aspects of the event had a majority of participants mentioning that they like "teamwork time" and the help they received from the mentors the most out of the whole event. Many of the responses about what participants did not like about the event included the language barrier making it difficult and confusing to participate, the organization of the event, and the lack of communication before the event. We also asked participants what they

would like more of and less of. The most common response for what they would like more of was teamwork time with mentors and communication before the event. The most common responses for what participants wanted less of included the introduction and speakers.

In our plans for the 2022 Climathon Venice, we have worked to use this feedback by changing the individual speakers out for an interactive panel of guest speakers, more time for teamwork and a structure to guide participants, and the addition of some speakers in English to accommodate an international audience and language barriers.

Perhaps most importantly, 85% of participants indicated that they would participate in another Climathon in the future, seen in Figure 12. This indicates that the Climathon as an idea is a success and that it just needs some tweaking to help it flourish. Additionally, including the participants from the previous five editions of the Climathon Venice, this provides the start of our mailing list for future Climathons. Ideally, many of the participants from this Climathon will return and hopefully bring other people with them, helping to grow the Climathon through word of mouth.

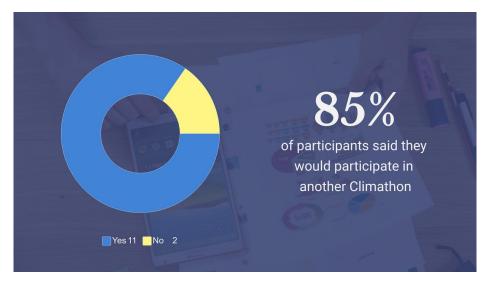


Figure 12. Graphic describing what percentage of participants would participate in another Climathon

4.3 Completion of the Hackathon and Climathon Event Matrix

The completion of the event matrix shown in Figure 13 revealed the successes and failures of the 2021 Climathon Venice in comparison with the other hackathons and Climathons we looked at. All or most of the other events, including the Climathons in Tallinn and Zurich, the

FIRST Game Jam, the Combat Robotics Hackathon, the Robotics Event Coordinator, and the WPI Innovation Challenge had pre-event workshops, learning materials before the event, provided their judging criteria, a well defined structure for their event, an entry fee, advertisements, tutors/mentors, post-event workshops, and a planned budget for their events. As can be seen in the completed Matrix in Figure 13, the 2021 Climathon Venice in contrast only

	Events							
Features		Tallinn, Estonia Climathon	Zurich, Switzerland Climathon	FIRST Game Jam	Combat Robotics Hackathon	Robotics Event Coordinator (suggestions)	WPI Innovation Challenge	Venice, Italy Climathon
	Pre-Event Workshops	yes	yes	yes	yes	yes	yes	somewhat
	Learning Materials	no	no	yes	yes	yes	yes	no
	Provide Judging Criteria	yes	yes	yes	yes	yes	yes	no
	Produce Successful Products	yes	yes	yes	yes	yes	yes	somewhat
	Entry Fee	yes	yes	no	no	yes	no	no
	Structured Event	yes	yes	yes	yes	yes	yes	no
	Tutors/Mentors	yes	yes	yes	yes	yes	yes	yes
	Post-Event Workshops	yes	no	yes	yes	yes	yes	no
	Advertisement	yes	yes	yes	yes	yes	yes	no
	Budget for Event	yes	yes	yes	yes	yes	yes	no
	Duration of Event	24 hours	27 hours	1 weekend	1 day over multiple weeks	NA	2 days	2 days

Figure 13. Hackathon and Climathon Event Matrix

achieved one of those features, and partially achieved two more.

The Climathon Venice did have three pre-events, but they were difficult for participants to find out about and to register for as they had to learn about the event on their own from the Climathon Venice website and then reach out themselves to the organizers through email without those instructions explicitly provided. Most teams for the 2021 Climathon Venice were also not even fully registered until two weeks or even days before the event, making it impossible for those teams to have participated in the pre-events.

A feature not as commonly seen in Climathons, but that was recommended to us is to have learning materials available to participants before the event. Neither of the Climathons we

researched has these resources, but all of the WPI based hackathons had used them and the organizers said that they greatly helped to increase readiness for the main event.

Another key feature that all the other hackathons and Climathons we looked at was giving participants access to the judging criteria before the event or at the start of the event so they can tailor their project to do as well as possible. The Climathon Venice had a set of judging criteria but it was not clearly available to participants and it was mostly disregarded by the judges.

The Climathon Venice has had limited success in generating successful products. Two teams, IGreengo and Ittinsect, were able to turn their ideas into startups, but the Climathon Venice has produced very few other tangible results. Other Climathons, including Zurich and Tallinn, have produced many more startups compared to Venice. While it is up to the teams to come up with good ideas, other Climathons have demonstrated that they are able to help facilitate the transition from idea into startup. As mentioned before, Climathons focused on startup creation will often provide resources including monetary prizes, access to mentoring, and entry into accelerator programs to help turn ideas into businesses. This system has shown success in generating startups, for example, the organizers of the Zurich Climathon, Cleantech ForEst has helped to develop over 60 startups, many of which resulted from the Tallinn Climathon (Cleantech Estonia).

The introduction of an entry fee is something that other Climathons have done but most of the hackathons we looked at did not do. An entry fee can help make participants more focused and dedicated to the event, but it can also make entry restrictive and discourage participation. Based on these ideas, we have several options for the future. First is to have a smaller entry fee that would include costs like lunch. Second would be to have two divisions, one with an entry fee where participants would be eligible for the main prizes, including startup incubation, and another division without an entry fee where participants would not be eligible for the main prizes but would let them have the experience of participating. And third is to have a type of deposit fee, where participants have to pay it in order to participate, but have the option to have it paid back at the completion of the event if they chose.

Most if not all event organizers would agree that a schedule is an important aspect of any event. The Climathon Venice had an agenda, however, it was not finalized until the day prior to the event and it lacked buffer time in between sessions to accommodate for sessions lasting longer than expected, which was a problem observed at the 2021 Climathon. In addition, Climathons like Zurich and Tallinn had their teamwork time structured to keep participants on track and working towards their finished idea and presentation.

All of our researched hackathons and Climathons agreed that having mentors/tutors available to help teams was a crucial aspect of their events. The Climathon Venice had mentors available for teams, but as discussed previously, there were some difficulties and problems with how they operated. As mentioned before, to address this, we have prepared more defined guidelines to help mentors best help the teams.

While there were some social media posts made about the event by the Venice Calls Instagram and Facebook pages, they were not posted until a few days before the event, rather than building awareness of the event throughout the year. Based on our entry survey, they did not increase registration for the event, as only 4.8% of participants found out about the event through social media.

There was no budget prepared for the 2021 Climathon Venice, despite other Climathons regularly having budgets of up to \$5,000 to cover costs like food, the event space, and other costs. While it is possible to host the Climathon Venice on a smaller budget, these costs should still be planned out and recorded to make planning for future years easier.

In total, each of the events we researched were able to reach their definition of success by doing all or most of the features we have determined to be most important. Therefore, we have chosen to reflect our Matrix in our plan for future Climathon Venices. Including features like preand post- events will help to build excitement before the event and check in on teams and their ideas after the event. Learning materials will help to prepare participants for the Climathon by building skills related to idea generation and startup creation. Judging criteria will be provided ahead of the event along with other event information to ensure participants are ready to do as well as possible in the event, and a more structured event will help to guide participants during the event to help them produce a presentation that displays their idea well. An entry fee will help

to fund the event and make participants more serious about the outcomes from the event, and a thorough budgeting system will help future hosts plan for costs before the event so they can fundraise accordingly. Finally, advertisements will be planned out to be spaced out during the year to help create more awareness for the event over social media.

Chapter 5. Climathon Venice Event Planner Website

The main deliverable from our project is our Event Planner Website for the 2022 Climathon Venice. All of the recommendations that our team derived from our investigation of best practices and research are applied within this guide. The guide can be used not only for next year, but for subsequent years in order to create a consistent and repeatable event that has a greater chance of facilitating startup and small business creation. With their current planning structure, Venice Calls is essentially re-planning the entire event year after year. Not only is this difficult and time-consuming to do, it also eliminates the possibility of creating an event that is consistent year after year. Consequently, the success of the event, meaning startups being developed as a result, would be difficult to replicate every year. Our team has created an event planning guide website based on the best practices previously collected so that the framework becomes standardized. This will allow for an easier time organizing the event every year and for more consistent outcomes. Having the repeated aspects and logistics of the event already organized will allow for more time to develop creative ideas to enrich the experience of the participants at the Climathon.

5.1 Previous Planning Cycle of Climathon Venice

In order to develop a planning guide for the Climathon Venice, our team first had to investigate how the Climathon had been planned for the previous editions. The event had been planned using this cycle from 2016, the beginning of the event, to 2021.

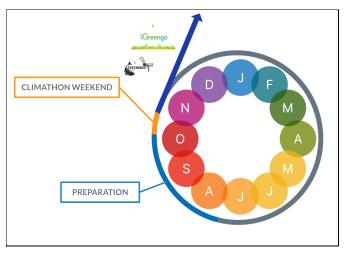


Figure 14. Old Planning Cycle of Climathon Venice

As can be seen in figure 14, the previous Climathon Venice planning cycle was broken into two different phases. From around August to mid-October, the organizers were in a phase that our team has labeled "preparation." During the phase, the organizers would plan the entire event, from beginning to end, in these months. The second and final phase of the planning cycle has been labeled "Climathon Weekend." This phase indicates the time when the Climathon Venice event would occur. These two phases complete the planning cycle, as from mid-November through the beginning of August, no planning for the Climathon would occur.

By investigating the old planning cycle for the Climathon Venice, our team was then able to use the best practices and recommendations we had received and alter the planning cycle to improve the cycle through our research.

5.2 New Planning Cycle of Climathon Venice

By investigating the planning cycle of previous editions of the Climathon Venice as well as similar events that had been successful, our team was able to develop a new planning cycle. This planning cycle, along with all of the planning materials and recommendations we have developed, are implemented within the Climathon Venice Event Planner Guide. We intend for this cycle to be utilized to plan the 2022 Climathon Venice, and all future events.

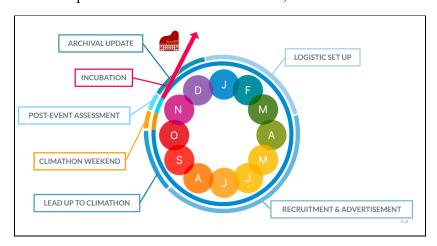


Figure 15. New Planning Cycle of Climathon Venice

This new cycle is divided into 7 different phases as opposed to the two phases from before. With this cycle, planning begins at the beginning of January in a phase called 'Logistic

Set-Up.' During this phase, the main focus for planning the Climathon Venice is providing the organizers with an increased amount of time for planning the event. Through our research, our team found that events that began planning earlier were usually more successful in producing viable projects (Colleen Shaver). This is implemented in the Planner Guide through a planning timeline for organizers with deadlines indicating when aspects of the event need to be planned by.

The next phase of the new cycle is called 'Recruitment & Advertisement,' which begins at the start of April and continues through August. Within this phase, the main focus for planning the Climathon Venice is team building. This is implemented in the Planner Guide through instruction and guideline to develop a variety of pre-events during this time period. These pre-events should have a focus on team building, with the hopes that the teams with a high-level of skill and passion will be formed for the Climathon Venice. Through our research we found that holding these events ahead of the Climathon seemed to help improve the chances of teams producing viable projects as well as improving the likelihood that teams would want to continue the project post-event (Combat Robotics Hackathon).

The next phase, which begins in September through mid-October, is called 'Lead Up to Climathon.' During this phase, the main focus for planning the Climathon Venice is increased communication with participants. Through the observation of the Climathon Venice 2021 as well as responses to the entry and exit surveys we conducted, we found that most participants felt uninformed during the lead-up to the event. To ensure an increased amount of communication occurs, our team developed a timeline for emails and social media posts, with templates already provided to the organizers. Through the utilization of the timeline developed, participants will be able to enter the event feeling much more informed.

Next, immediately following the event, we have advised the organizers to enter a phase called 'Post-Event Assessment.' During this phase, there are a variety of activities that are supposed to take place, however one of the most important is interviewing teams. These interviews are meant to learn which teams want to continue developing their ideas as well as what resources they would need to be able to do so. This is implemented in our planner guide

through a timeline for when organizers should conduct outreach to the teams as well as guidance for completing these interviews.

Next, the top teams who indicate that they want to continue their ideas post-event will enter a phase called 'Incubation.' During this phase, SerenDPT will work with the teams to provide resources to incubate their ideas further. Through this phase, teams will have a much greater chance of developing into viable startups as they will have the resources, connections, and guidance they need to develop.

The final phase for planning the Climathon Venice is called the 'Archival Update' phase. During this phase, organizers will be updating the Climathon Venice Archive. This is composed of a website component as well as a presentation summarizing the edition of the Climathon Venice that just completed. Through this archival process, all of the planning and ideas generated will be organized and saved for reference in the future.

All seven of these phases compose the new structure for the planning cycle of the Climathon Venice. Along with the aspects of the planner guide mentioned, more guidance, templates, and timelines have been provided to aid organizers in the planning of the event. Through the implementation of this new cycle, our team hopes that a more intentional planning process will be developed, therefore increasing the organization and success of the Climathon Venice Overall.

5.3 Event Planner Guide Structure

The most important aspect of the planner guide that we needed to develop was the structure. To do this, we researched similar-styled events, which took about a year to plan and contained many aspects of planning. Through our research, we discovered wedding planner guides which we found had a structure that would be easily converted to planning a Climathon.. The basic guide chosen was the 'Perfect Planner' by Basic Invite which included agendas, calendars, planning sample budgets, guest lists and seating arrangements, day-of planning, printable binder tabs, and blank templates (Basic Invite). Of those chapters, we were able to adapt them to meet the needs of planning a Climathon rather than a wedding. Some of the

templates we created were a budget template, timelines for emails and social media posts, day-of planning, and other useful templates for planning the event.

One major change we made in the format of the planner guide was making it a Google website rather than printable pages. By doing this, the planner guide is easier to use, documents are better organized, and, most importantly, the guide can be used year after year. If we were to have made our planner guide be printable, the organizers would have to reprint a new copy every year, the likelihood of documents being lost or misplaced would be increased, only one organizer could use the guide at a time, and planning materials from previous years would likely be forgotten. Additionally, our team felt that, by making the guide a Google website, changes made to the event and the structure of its planning would be implemented more easily.

The event planner guide website we created is structured with multiple different sections. The user would begin on the homepage, where they would be greeted with a "How to Use" section. This webpage guides the user on how the guide is structured and how it should be used for the planning of the Climathon Venice.



Figure 16. 'How to Use' Page

The next section of the website is titled "New Cycle Preparation." As previously mentioned, this planner guide can be used year after year for the planning of all future Climathons. On this webpage, the user is presented with step-by-step instructions as well as video tutorials about how they can prepare the planner guide for a new planning cycle of the Climathon.

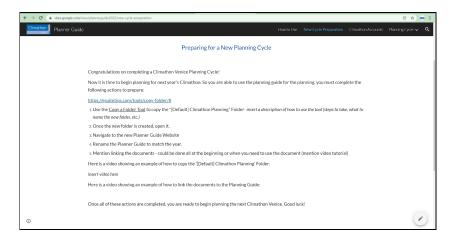


Figure 17. 'Preparing a New Cycle' Page

Next, the presenter is able to navigate to a web page titled "Climathon Accounts." On this page, the user is presented with descriptions of different software or websites, usernames and passwords to accounts created for Climathon organizers, and links to the different platforms provided. One of the three accounts that are currently created for Climathon organizers and linked on this page are Canva, a software that can be used to develop social media posts, pamphlets, flyers, and other forms of visual media. The next account that is on this page is the Climathon Venice Google Drive. This Google Drive is already developed for the organizers of

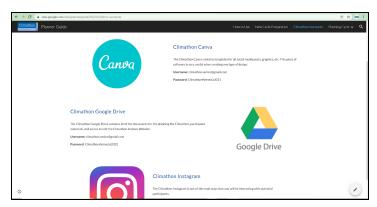


Figure 18. 'Climathon Accounts' Page

the Climathon Venice, with different folders for each year of the Climathon, including planning materials as well as the materials that will be used by the participants. The final account is an Instagram account. This account will be vital in the advertisement of the event and aid the

organizers in communicating with participants as well as helping to attract new potential participants.

The final section within the planner guide website is the "Planning Cycle." When the user navigates to this page, they are presented with an overview of the yearly cycle, with the main action items that need to be completed for each month (Figure 19). As an example, the user could then navigate to the month of January, where they would be presented with the two main action items, "Preliminary Budget" and "Dates & Venue" (Figure 19). Next, they could select "Preliminary Budget" and would be directed to a page that contained every action that needed to be completed to achieve the development of the Preliminary Budget, as well as guidance for carrying out these actions (Figure 19). Finally, the user could navigate to the already-developed template for the budget (Figure 19). This process is the same for every action item within every month of the planning cycle. As mentioned before, all of the planning documents are also accessible through the Climathon Venice Google Drive.

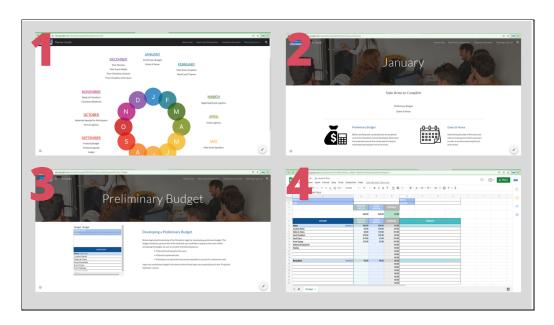


Figure 19. Process of Using the Event Planner Guide

The full guide with access to the planning materials can be found at the following URL: https://sites.google.com/view/plannerguide2022/how-to-use

5.4 Planning Organizational Methods for Hosts of the Climathon Venice

To help the hosts of the Climathon Venices keep their various materials organized, we have created a new Gmail account 'climathon.venice@gmail.com' to hold all of the organizational materials relating to the Climathon. Most importantly, this Gmail will host the Event Planner Website and Archive Website, but will also contain all of the Google Drive materials the Event Planner Website links to. Each of the editions of the Climathon and their pertinent planning and event information are housed in the google drive for easy access labeled by their year (ex. "2016 Climathon), while the Event Planner Website documents are located under "2022 Climathon Planning". This will allow for hosts to easily move between the Website and the deliverables they are working on during each month.

The 'New Cycle Preparation' page on the Event Planner Website is especially important to helping the hosts stay organized. As mentioned before, this page will guide them through the initial creation of template documents that they will use as planning happens. Without properly organizing documents at the start of the year, the Google Drive will quickly become cluttered and disorganized, making it much harder to plan a great event.

Chapter 6. Archive Website and Booklet

In order to address the lack of information about the Climathon Venice made available prior to the event, we have designed and created a website to store and display all information relating to past and future Climathon Venices. The entire site is housed on Google Sites to make the transition from year to year as smooth as possible and it is available at sites.google.com/view/venice-climathon.

6.1 Website Structure

The website is divided into different sections with subpages as can be seen in Figure 20; Home, Our Purpose, 2022 Climathon Venice, Resources for Participants, Past Climathons, and About the Organizers. The home page is a basic introduction page to the upcoming Climathon. It shows the dates, what a Climathon is, some photos of the past Climathon, and how to register for the next one. Within the 'Our Purpose' section, we explain the overarching goal of the Climathon, which is solving both environment and job diversity needs. This then divides into sections of 'Climate Change in Venice' and 'Lack of Job Diversity in Venice'. These sections will provide brief facts and background about these rising issues particular to Venice, thereby emphasizing the need for a solution. On the '2022 Climathon Venice' page, you can find information about any pre-events, the agenda for the main event, the scoring criteria for participants' proposals, and the prizes and resources available to the winners and participants to help support their ideas. Under the 'Resources for Participants' tab, we have curated several modules composed of videos and other learning experiences designed to help support participants as they get ready for the Climathon to help them create the best idea and proposal they can. The 'Past Climathons'

Venice Climathon Home ∧ Our Purpose Climate Change in Venice Lack of Job Diversity in Venice ↑ 2022 Venice Climathon Pre Events Agenda Scoring Criteria Prizes! ▲ Resources For Participants Learning Modules Video Library ▲ Past Climathons 2021 2020 2019 ∧ About the Organizers Venice Calls SerenDPT WPI IQP Team

Figure 20. Navigation Bar From Climathon Archive

page will have a subpage for each year of the Climathon Venice. Each of these pages will have the overall challenge, collaborators of the event, the team presentations including the winners, and the event agenda. Depending on how thorough past organizers were, some of these details are missing from past years, but our goal is that going forward, starting with the 2021 Climathon, this framework will make it easier to keep track of these details. Finally, the 'About the Organizers' page has a subpage for each of the main contributors to the Climathon; Venice Calls, SerenDPT, and our IQP team. These pages are simple descriptions of the work these different groups and organizations do outside of the Climathon and have links so anyone can go to their main websites to find out more information.

Additionally, individual presentations of each of the six editions of the Climathon Venice from the years 2016-2020 were created as summaries of the sections already present on the Archival website. These presentations have currently been planned for use as summary documents to be housed in the google drive, but have the potential to be repurposed for advertisement purposes.

Although it has plenty of other features, this website will serve two main purposes: first to provide a space to showcase information and register for the upcoming Climathon, and second to serve as a library or catalog for past Climathons, holding event details and brief descriptions of the ideas generated each year.

6.2 Transformation of the Archival Website Into a Booklet

As a physical method of advertisement for the Climathon, our team has prepared a short booklet designed to show off the Climathon. It has details from past years including a short description of the ideas teams created, the main theme and any sub-themes, and a spotlight on the winning team(s) to showcase their idea and give them recognition. Our goal with this booklet is that it not only helps to recruit participants, which will primarily happen online or through word-of-mouth, but that it also helps to inspire people who have already decided to participate, giving them ideas that will help them improve their team. This booklet will be available for people to look at in locations where potential participants are available. This includes Venice Calls events, the pre-events for the Climathon, and a copy kept with SerenDPT.

Chapter 7.0 Expansion of the Project

Through the completion of our project we have identified some key areas where the project has potential to be expanded upon further by other IQP groups. The key limiting factor to our event planner guide website and accompanying google drive is that organizers year after year must duplicate the website and essential google drive folders in order to remain repeatable and create the blank website and drive. A project in the future could look to automate this whole process by coding a way for organizers to merely press a button and have the website and all accompanying documents be saved, and then reset for easy transfer between years. The event planner guide website could also be expanded to go more in depth with each portion of the planning structure to provide even more guidance, and hopefully with the successful completion of more editions of the Climathon Venice, we will see this occur as the organizers analyze and implement concrete changes from each year to continue improving the the guide and the event.

During our research we found that other organizers of hackathons and climathons not only had video libraries for participants, but also had active learning modules for participants in the weeks or days leading up to the event that honed the skills participants needed and primed them for the event. In the future, more in depth video libraries or learning modules could be created for participants of the Climathon Venice to hone their pitching, teamwork and other skills before the event, beyond what the pre-events could provide for them.

Future IQP teams could look to expand on media marketing strategies for the event. While our planner guide website includes templates and schedules for social media posts they are not necessarily targeted at a specific audience and remain fairly general. Future projects could look to create a highly developed advertisement and marketing plan and look to target specific audiences, reaching out to universities and other institutions that were most likely to house the types of individuals that would want to develop startups. And lastly, in accompaniment with this marketing campaign, future groups could also look to plan and create more events throughout the rest of the year that would generate interest and excitement about the event in order to gather even more dedicated participants, and possibly look to gain sponsorships and further partners for the event to expand its reach.

Chapter 8.0 Conclusion

The two major issues that affect Venice, Italy that were at the forefront of our project was how Venice is negatively affected by climate change and how native Venetians struggle to make a living in the historic city because of its dependence on tourism in the job sector. This dependence results in little opportunities for citizens to pursue jobs outside of the tourism industry, and the struggle of those within that industry being relegated to low paying jobs. Our project's main goal was to observe the 2021 Climathon Venice and in accompaniment with our own interviews and research, develop a repeatable event framework and planning website that would not only allow organizers of the 2022 and subsequent years to plan and run the event in a smoother, more coordinated manner, but allow for greater opportunities for climate change based startups to develop from the event. This startup development would then begin to tackle the issue of climate change, while also diversifying the Venetian economy, providing higher paying jobs outside of the tourism sector. This website encompasses the full scale of the recommendations we synthesized for organizers to utilize in order to ease event planning as well as facilitate their creative event planning skills to bring the Climathon Venice to where it is not only succeeding, but eventually exceeding our initial goal.

Along with the event planner website are the Archival website, with individual edition presentations, and its accompanying physical booklet. These deliverables can be used for advertisement purposes, but with the event planner guide website, the Archival website acts as a repository of information pertaining to the goals of the Climathon Venice, all past six editions of the event, and the sponsors directly involved in the event. This Archive acts as not only a repository of information and resources for participants, but also looks to generate excitement for the event that will, with supporting social media and email updates, generate higher rates of registered participants in the years to come.

We believe that if the main deliverables created in this project, the event planner guide, Archival website, and booklet are utilized to the extent that we have planned and guided, and that there is organized support for teams after the Climathon Venice is complete, then more climate change based startups will be able to develop out the Climathon Venice. In the future we hope to see not only more climate change based startups develop out of the event, but to see increased

social media engagement with the event, and increased participation numbers in the subsequent years. This increased participation will enable organizers to choose the teams and individuals that can participate in the event, confirming that only the most dedicated participants and teams to developing their ideas beyond the event are participating to receive their expertise and support.

We also hope to see the event expanded, to accommodate not only those who are extremely dedicated to cultivating their ideas into startups and small businesses, but to those who are not necessarily ready to turn their ideas into startups like highschool and college age students, and to those who are merely looking to compete for the experience of the event. This expansion is crucial because organizers will be able to cultivate essential skills and interest in younger generations that will later become those dedicated teams looking to create startups, and because Climathon Venice has the possibility to bring together the community in the name of innovation and ingenuity. This type of expansion would fit perfect to one of our entry fee recommendations involving a free novice category for those who do not want or need the prizes associated with the main category, and a competitive category that would include a fee to increase the seriousness of the event that would be able to compete and win the main prize or prizes. It is also important to continue to utilize social media and website updates in order to reach those who do not live in Venice as well, another point of expansion being to reach out to the surrounding cities and towns that do not have a Climathon of their own. Therefore, we believe that there is a high probability of the future organizers to achieve our goal of not only being able to develop more climate change based startups out of the Climathon Venice, but to exceed this goal.

References

- Bellafiore, D., Ghezzo, M., Tagliapietra, D., Umgiesser, G. (2014). Climate change and artificial barrier effects on the Venice Lagoon: Inundation dynamics of salt marshes and implications for halophytes distribution. *Ocean & Coastal Management*, 100, 101-115. https://doi.org/10.1016/j.ocecoaman.2014.08.002
- Bertocchi, D. & Visentin, F. (2019). "The Overwhelmed City": Physical and Social Over-Capacities of Global Tourism in Venice. *Sustainability*, 11(24), 6937. https://doi.org/10.3390/su11246937
- Blank, S. (2018, February 9). *Why the lean start-up changes everything*. Harvard Business Review. Retrieved September 17, 2021, from https://hbr.org/2013/05/why-the-lean-start-up-changes-everything.
- Caciagli, L. (2019, March 24). From Climathon Venice, seven bright ideas for a new waste management. here the winners. CMCC. Retrieved September 17, 2021, from https://www.cmcc.it/article/da-climathon-venezia-sette-idee-brillanti-per-una-nuova-gesti one-dei-rifiuti-ecco-i-vincitori.
- Climate change widespread, rapid, and intensifying. IPCC. (n.d.). Retrieved September 17, 2021, from https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809.
- Climate-KIC. (2019). *Tallinn*. Climathon 2019. Retrieved September 17, 2021, from https://climathon.old.climate-kic.org/en/tallinn-the-event-page-2019.
- Climate-KIC. (2019). *Zürich*. Climathon 2019. Retrieved September 17, 2021, from https://climathon.old.climate-kic.org/en/zurich-the-event-page-2019.
- Cristiano, S., Gonella, F. (2020). 'Kill Venice': A systems thinking conceptualization of urban life, economy, and resilience in tourist cities. *Humanities and Social Science Communication*, 7, 143. https://doi.org/10.1057/s41599-020-00640-6

- Flores, M., Golob, M., Maklin, D., Herrera, M., Tucci, C., Al-Ashaab, A., Williams, L., Encinas, A., Martinez, V., Zaki, M., Sosa, L., Pineda, K.F. (2018). How Can Hackathons Accelerate Corporate Innovation? *IFIP Advances in Information and Communication Technology*, 535, 167–175. https://doi.org/10.1007/978-3-319-99704-9_21
- Free wedding planner binder printable. Basic Invite. (n.d.). Retrieved December 8, 2021, from https://www.basicinvite.com/wedding-planner-printable.html.
- Gonzales, A. T. (2018). Venice: the problem of overtourism and the impact of cruises.

 *Investigaciones Regionales Journal of Regional Research, 42, 35–51.

 https://www.redalyc.org/articulo.oa?id=28966251003.
- Hospers, G.J. (2019). Overtourism in European Cities: From Challenges to Coping Strategies, CESifo Forum, 20(3), 20-24. https://www.researchgate.net/publication/336553855_Overtourism_in_European_cities_f rom_challenges_to_coping_strategies.
- McGreevy, N. (2021, August 27). Starting Next Summer, Day-Trippers Will Have to Pay to Enter Venice. Smithsonian Magazine. Retrieved September 17, 2021, from https://www.smithsonianmag.com/smart-news/venice-start-charging-entry-fee-install-turn stiles-reign-tourists-180978529/.
- Ministry of Infrastructure and Transportation. (n.d.). MOSE Venice. Retrieved December 8, 2021, from https://www.mosevenezia.eu/mose/.
- Nicholls, R. J., & Hoozemans, F. M. J. (1996). The Mediterranean: Vulnerability to coastal implications of climate change. *Ocean & Coastal Management*, 31(2-3), 105–132. https://doi.org/10.1016/s0964-5691(96)00037-3.
- Patel, N. (2015, September 2). 90% of startups fail: Here's what you need to know about the 10%. Forbes. Retrieved September 17, 2021, from

- https://www.forbes.com/sites/neilpatel/2015/01/16/90-of-startups-will-fail-heres-what-you-need-to-know-about-the-10/?sh=76041a426679.
- Pianigiani, G., & Bubola, E. (2021, July 13). *Italy's government to ban cruise ships from Venice*. The New York Times. Retrieved September 13, 2021, from https://www.nytimes.com/2021/07/13/world/europe/venice-italy-cruise-ship-ban.html.
- Rossi, M. (2015). The role of venture capital funds in financing innovation in Italy. Constraints and challenges for innovative small firms. *International Journal of Globalisation and Small Business*, 7(2), 162–180. https://doi.org/10.1504/ijgsb.2015.071201
- SerenDPT. (n.d.). Retrieved September 17, 2021, from http://serendpt.net/en/aboutus.
- Startups. Cleantech Estonia. (n.d.). Retrieved December 8, 2021, from https://www.cleantechforest.ee/startups.
- Stern, N. (2014). The Science of Climate Change: Scale of the Environment Challenge. *The Economics of Climate Change*, 3–24. https://doi.org/10.1017/cbo9780511817434.005
- Seraphin, H., Sheeran, P., & Pilato, M. (2018). Over-tourism and the fall of Venice as a destination. *Journal of Destination Marketing & Management*, *9*, 374–376. https://doi.org/10.1016/j.jdmm.2018.01.011
- Ursotti, F., Gerardi, A., Sanguin, A., Illing, B., Drago, F., Bellati, F., & Chatto, A. (n.d.).

 Demographics in Venice: Demographics and population factsheet. Royal Geographical Society with IBG. Retrieved September 17, 2021, from https://www.rgs.org/.
- Varrani, A. & Nones, M. (2018). Vulnerability, impacts and assessment of climate change on Jakarta and Venice, International Journal of River Basin Management, 16(4), 439-447. https://doi.org/10.1080/15715124.2017.1387125
- Venice and its lagoon rest in fragile balance. findings of new study on the World Heritage Site.

 UNESCO. (2018, October 10). Retrieved September 17, 2021, from

 https://en.unesco.org/news/venice-and-its-lagoon-rest-fragile-balance-findings-new-study

- -world-heritage-site#:~:text=The%20%E2%80%9CVenice%20and%20its%20Lagoon,int o%20an%20extraordinary%20natural%20landscape.
- Venice Calls: A Local Network for the Future of Venice. (2020, October 28). Retrieved September 14, 2021. https://www.venicecalls.com/en/.
- Ward, K. (2014). Researching the City. SAGE Publications.
- What is eit climate-kic? climate-kic. Climate. (2020, July 28). Retrieved September 17, 2021, from https://www.climate-kic.org/who-we-are/what-is-climate-kic/.

Appendices

Appendix A- Semi-Structured Interview Script for Hosts of Other Hackathons Introduction:

We are a group of four WPI students working to reorganize and restructure an event called the Climathon which will take place in Venice. The Climathon is structured similarly to a hackathon where teams will come together for 24-48 hours to collaborate and are competing against one another to decide a winner, who will then be moved onto the international competition. The goal of the Climathon is to develop ways of mitigating climate change effects in Venice. The event is sponsored by an organization called Venice Calls, whose mission is to support projects with sustainable goals in Venice. We will also be partnering with SerenDPT, a startup incubator aiming to create more jobs through developing startups in Venice.

Topics and Questions:

Workshops:

- Did you find that the workshops right before the hackathon began were effective?
- Did you think participants needed more time to prepare for the hackathon, especially those with little to no experience?
- What would improve the workshop?

Advertising:

- How was the event advertised to students?
- Did you reach out to grades, to majors, have physical advertisements or emails?
- Did you have a target audience or was the audience just every WPI student?
- If you had a target audience how did you determine what that audience was and how did you specifically advertise to those people?
- Did you consider including some type of incentive for participation (getting class credit for example)/do you think implementing this type of incentive would be effective to get University students interested in our event?
- Should we then consider an entry fee for the climathon then?

- Would you consider making the event bigger (a multi-school event)? What kind of changes to the event would need to happen?
- What could improve our current advertising and promotion?

Follow Up:

• Was there any follow-up involved after the competition was completed?

Appendix B- Semi-Structured Follow-Up Interview Script for Participants Introduction:

We are a group of four students from WPI working with Venice Calls and SerenDPT to help reorganize and restructure the current Climathon Venice Event framework to improve it's ability to generate viable startups from the ideas generated during the event.

Information About Structure of the Event:

Please describe your impression of the structure of the event, what did you like, not like, prefer to stay the same but be altered, etc, please elaborate?

Did you find the Conference and Inspiring Talks to be informative/helpful or would you have preferred to not have had them, please elaborate?

Did you like the 5.5 hour section of teamwork and idea generation with aid from the Team Mentors on the first day, and the 3 hour session the next day?

Did you think that the mentors were helpful/effective, please elaborate?

Did you have an idea ready prior to starting?

Did you think the 5.5 and 3 hour sessions were enough time or too much time to generate/develop your ideas?

Did you like the period of presentation preparation? Was it too long, not long enough?

Did you like the judging process, was it stressful, did it feel fair and impartial?

Did you enjoy/stay for the arts performances after the presenting was over?

Did you like the prizes that were given out or felt that they were worth the price/time commitment of competing?

What did you think about the implementation of an entree fee?

Did you enter just for fun and to compete or with the idea of fully developing your ideas into a startup?

Would you want to pursue startup development if your idea was chosen?

What would make the event better?

General Impressions:

Did you enjoy the event?

What did you like, not like, prefer to change?

Would you compete again next year?

Please feel free to mention anything else that we did not address or that you want to elaborate on further.

Appendix C- Semi-Structured Follow-Up Interview Script for Mentors/Coaches Introduction:

We are a group of four students from WPI working with Venice Calls and SerenDPT to help reorganize and restructure the current Climathon Venice Event framework to improve it's ability to generate viable startups from the ideas generated during the event.

Information About Structure of the Event:

Would you consider altering the amount of time teams had to generate their ideas?

Do you think that your coaching was effective/helpful for teams?

Did you think that you had an adequate ability to answer the questions teams had for you?

Were there any topics or questions that you could not answer?

What topics would you suggest be covered in pre-events or in the curriculum for participants?

Do you think participants were able to adequately manage their time during teamwork?

What was the most common help/advice you gave to teams/participants?

Are there specific event structures that you like or disliked more than others, things that you would like to change?

Please speak freely to mention anything about the structuring of the events that was not previously mentioned or to elaborate on past topics.

General Opinions:

Would you consider the event to be a success?

What would define that success as?

Do you think the event was well advertised, did you think an appropriate amount of the public was aware of it?

What have you done in the past to market/advertise the event?

What would you define your target audience as?

Are you looking to make the event larger?

What is your end goal?

How can we help you to achieve that goal?

What would you like to change/improve?

Please mention anything else that has not been mentioned or that you would like to elaborate on.

Appendix D- Semi-Structured Follow-Up Interview Script for Winners

Introduction:

We are a group of four students from WPI working with Venice Calls and SerenDPT to help reorganize and restructure the current Climathon Venice Event framework to improve its ability to generate viable startups from the ideas generated during the event.

Information About Structure of the Event:

Did you enjoy the workshops?

Did you find the workshops to be helpful/educational?

Did you think they helped to develop your idea?

Did you want to develop your idea into a startup in the first place?

Did you like the structure of the workshops?

Did you think they should be longer/shorter?

What other types of support would you like to receive?

What types of support did the workshops lack?

What skills do you feel like you are still lacking in?

What skills would you like to future develop?

Do you think the workshops helped to define your idea, develop your pitch, stakeholders, etc.?

Would you take more of these workshops?

Did you find them effective/do you think we should include them in next years cycle?

General Opinions:

Did you like the workshops?

What would you change?

Would you participate in the workshops if you won next year?

What else would you like to mention that we did not or elaborate on past topic?

Appendix E- Entry Survey for Participants During Climathon Event

Thank you for attending the Climathon Venice 2021! We will be using this information from this survey to make future events better, so please share your thoughts with us. Thank you!

1. Gender

(Options: Male, Female, Prefer not to say)

- 2. Age
- 3. Job Title
- 4. Preferred Social Media

(Checkboxes: Instagram, LinkedIn, Facebook, Snapchat, Youtube, Twitter)

5. How did you hear about us?

(Checkboxes: Through a friend, Climathon Website, Social Media, Other, please specify)

- 6. Have you attended a hackathon or Climathon before? If so, please specify. If no, N/A.
- 7. Did you attend the pre events? If so, were they helpful? Please specify. If you did not attend, why not?
- 8. Was the event easy to register for? (Scale 1-10)
- 9. If difficulties arose, please specify.
- 10. Rank in order of importance.

(Network, Start Up Opportunities, Competition, Content Focus)

- 11. What are you hoping to take away from this experience?
- 12. How informed do you feel about the event?
- 13. If you felt uninformed, please specify.
- 14. Please share any further comments or suggestions you might have.

Thank you for taking the time to fill out our survey! If you would like to provide your name and email address for further questions, please do so below. If not, please type N/A and the survey will remain completely anonymous!

QR code to access the full entry survey:



Appendix F- Exit Survey for Participants After Climathon Event

Thank you for attending the Climathon Venice 2021! We will be using the information from this survey to make future events better, so please share your thoughts with us. All responses will remain completely anonymous. Thank you!

1. What is your level of satisfaction for this event?

(Scale 1-10)

- 2. Which elements of the event did you like the most?
- 3. What, if anything, did you dislike about the event?
- 4. Please indicate your satisfaction with the following aspects:

(Scale 1-100 for aspects of: Venue ,Speakers, Materials Provided, Mentors, Time Allotted for Teamwork, Time Allotted for Breaks, Date & Time of Pre Events, Date & Time of Climathon, Communication of Event)

- 5. Which of these aspects would you prefer more of? Please explain.
- 6. Which of these aspects would you prefer less of? Please explain.
- 7. Please provide any further feedback on these aspects.
- 8. Please write 3 words or phrases that describe your overall experience at the Climathon.
- 9. Are you likely to participate in a future Climathon? Why or why not?

Thank you for taking the time to fill out our survey! If you would like to provide your name and email address for further questions, please do so below. If not, please type N/A and the survey will remain completely anonymous!

QR code to access the full exit survey:



Appendix G- Photo and Video Checklist for Media of 2021 Climathon Venice

***focus on videos rather than photos (can always make photos out of videos)

DAY 1 - OCTOBER 30, 2021

ARRIVAL OF PARTICIPANTS (9:00-10:00)

- Photos of them walking in
- Videos of people getting coffee together
- Try to get videos of people shaking hands
- Videos of people chatting during coffee
- ****during lunch or coffee break, FOOTAGE of ask people quick questions such as why they joined or what they aim to get out of the climathon

WELCOME AND GREETINGS (10:00-10:30)

- Videos of people watching speakers
- Video of everybody sitting down (a lot of videos of this plus zooming in on random participants just for filler video footage for advertisements)
- Video of speakers (back view of speaker to include audience + side view + front view)
- Videos from upstairs through glass to get angle of everybody + extra footage
- ****during lunch or coffee break, FOOTAGE of ask people quick questions such as why
 they joined or what they aim to get out of the climathon

INSTITUTIONAL ROUND TABLE ~ THE CONTEXT OF THE CIRCULAR ECONOMY CHALLENGE (10:30-11:15)

- Footage of the h3 Factory outside and inside before participants and with participants
- Videos of people watching speakers
- Video of everybody sitting down (a lot of videos of this plus zooming in on random participants just for filler video footage for advertisements)
- Video of speakers (back view of speaker to include audience + side view + front view)
- Videos from upstairs through glass to get angle of everybody + extra footage

INSPIRING INTERVENTIONS (11:15-13:00)

- Videos of people watching speakers
- Video of everybody sitting down (a lot of videos of this plus zooming in on random participants just for filler video footage for advertisements)
- Video of speakers (back view of speaker to include audience + side view + front view)
- Videos from upstairs through glass to get angle of everybody + extra footage

CLOSURE AND LAUNCH OF TEAMWORK (13:00-13:30) LUNCH BREAK(13:30-14:30)

- ****during lunch or coffee break, FOOTAGE of ask people quick questions such as why they joined or what they aim to get out of the climathon
- Videos of people talking in line to get food
- People getting food
- People sitting together and eating

People laughing

INTRODUCTION TO THE CLIMATHON AND START OF TEAMWORK (14:30-20:00)

- Teams working together
 - Participants writing
 - Participants showing emotion
 - Looking frustrated/ in thought
 - Looking excited or during breakthrough
 - Participants typing
 - Videos of every separate team + participants within those teams
- Videos of mentors walking around
- Mentors going to tables
- Mentors talking with teammates

DAY 2 - OCTOBER 31, 2021

INTRODUCTION OF THE NEW DAY (9:00-10:00)

- Photos of them walking in
- Videos of people getting coffee together
- Try to get videos of people shaking hands
- Videos of people chatting during coffee
- ****during lunch or coffee break, FOOTAGE of ask people quick questions such as why they joined or what they aim to get out of the climathon

TEAM WORK (10:00-13:00)

- Teams working together
 - Participants writing
 - Participants showing emotion
 - Looking frustrated/ in thought
 - Looking excited or during breakthrough
 - Participants typing
 - Videos of every separate team + participants within those teams
- Videos of mentors walking around
- Mentors going to tables
- Mentors talking with teammates
- Preparation of their final pitch and decisions

LUNCH BREAK (13:00-14:15)

- ****during lunch or coffee break, FOOTAGE of ask people quick questions such as why they joined or what they aim to get out of the climathon
- Videos of people talking in line to get food
- People getting food
- People sitting together and eating

• People laughing

PREPARATION OF PRESENTATIONS (14:15-16:00)

- Videos of practicing presentations and getting prepared
- More videos of them discussing together, similar footage to teamwork sections

PRESENTATION OF PROJECTS TO THE JURY (16:00-17:30)

- Standard videos of every presentation
- Livestream of the presentations?
- Added footage of different angles of presentations and people watching
- People nodding
- People clapping
- People looking nervous about to present or whispering with each other
- Judges nodded or approving looks

ARTISTIC PERFORMANCE WITH CARLOS FERNANDO ABELLO, MATTIA CARACCIOLO, AND IAKO - *CURATED BY FILIPPO ROCCATO OF THE VENICE CALLS ART, MUSIC AND ENTERTAINMENT DIRECTORATE* (17:30-18:00)

- Standard video of the artist performance
- Footage of other angles of artist performance
- Footage that gets performance and audience in at once
- Videos of audience intently watching/ showing emotion

DURING THIS TIME, THE JURY WILL EVALUATE THE PROJECTS IN A PRIVATE ROOM

• Footage of audience looking nervous or chatting

CLOSING CEREMONY ~ PRESENT AWARDS (18:00-18:30)

- Livestream of award ceremony
- Audience clapping
- Team hugging
- Team getting excited
- Other teams shaking hands or congratulating each other

Appendix H- Climathon and Hackathon Case Study Observations

Tallinn, Estonia:

- Includes 1-2 "warm-up" events in October
 - Speakers, interviews, and Q&A sessions over an evening
 - About ~20 minutes per event
 - Helps people get to know each other and the organizers
 - Helps introduce them to the challenges Tallinn is facing
- Main event is 24 straight hours
 - Fairly structured event, some team building activities, catered food, and development sessions (pitches, mentoring)
 - Concludes with pitching session and announcement of winners
- Follow-up event for the winning teams in mid-late November
 - Not much information but says it allows for more connection and discussion around the topics from the main event
- Organizer: Cleantech Estonia
 - Looks like a similar organization to Venice calls, just bigger and older
 - Lots of startups that they have supported (\sim 60)
 - All working towards climate: air/water/waste tech, agriculture, material production, energy, construction, transport
 - Lots of industry resources to help boost startups (connections, mentors, investors, etc.)

Zurich, Switzerland:

- One day event (27 hours)
- "Brainstorming Event" divided into multiple phases:
 - Team Building
 - A moderated team building process where participants find a team to tackle the challenge of choice
 - Understanding Phase: Expert Phase I
 - Learning more about your challenge with the help of their city challenge experts
 - Research Phase: Expert Phase II
 - Learning more about topic -> discuss possible directions, research, conduct expert interviews, learn more about needs and issues behind your topic
 - Ideation Phase
 - Brainstorm, develop ideas, discuss first directions and refine (help of coaches and experts)

- Prototyping Phase
 - Making ideas tangible (with support of experts and coaches)
- Business Modeling Phase
 - Refining your idea and thinking of how to create a self-sustaining concept around your project
- Iterate and Refine
 - Using calm time to rethink your ideas, develop your project further and prepare the pitch
- Pitch Preparation Phase
 - Prepare your pitch presentation for the festival of ideas
- Final Pitch Refining Phase
- Festival of Ideas
 - Final pitch in front of their Jury -> each team has 5 minutes to pitch & answer questions from the Jury
- Creates a better structure for team -> encourage them down a more organized and direct path
 - Likely produces better pitches and/or business models
- Have workshop & networking sessions throughout sessions throughout the event:
 - Open Market Place
 - Pitch Training Workshop
 - Business Modeling Workshop
 - Pitch Training Session
 - Closing Networking Brunch
- Creates educational opportunities and helps to produce better results from the competition
- Allows for networking opportunities amongst participants -> added incentive

FIRST Game Jam:

- Held a few workshops in the weeks leading up to the event
- Set up a website with instructional videos for the event
- Registration:
 - Register with a team -> necessary because they needed to know how many teams (hire a certain amount of people to assist teams)
 - Individuals sign up too complicated for game jam
- Advertising:
 - They just used normal FIRST robotics lines
 - Reach out to out to university students do not do physical marketing

- Market as a startup university students/young adults will likely be the most excited
- Social media is always an option try to get a list of past competitors or circles they are in
- Workshops Beforehand:
 - Workshops were hands-on and could talk to someone that was helping them
 - Website was not very helpful more helpful to just mess around (tutors are more useful)
 - Middle ground is videos
 - Create recordings of people coming up with ideas and how to transform them into a startup
- Funding is necessary, materials for a prototype

Combat Robotics Hackathon:

- Ran some workshops beforehand and teams built tiny robots that were 3D printed
- Spent all weekend using makerspace to design robots
- Idea of doing design and implementing those skills hands on was fairly new to students
 - Workshops put them in a position to be more successful during hackathon
 - Important that students were motivated because it was an ongoing thing where every week the students would want to improve on their design
- Workshops about how to take ideas further, brainstorming, how to do ideation, coming up with successful ideas and being creative
 - Workshops immediately give participants good mindset prior to competition and make them more successful
- Major Expenses: intentionally free besides filament for 3D printers
 - Did not want to have any barriers to keep people from participating

Robotics Event Coordinator - Colleen Schaver:

- Expertise:
 - If you want to target actionable things, you need to target people that can help earlier on
 - Possibly bring in advisors or industry experts to each group to help guide them
 - Bring in the information that participants do not know that they do not know
 - Experts that can universally advise all the participants
- Newsletters:
 - Anything we can give them beforehand is good
 - Anything we want them to achieve, we have to use to judge them

- Should give judgment requirements ahead of time
- Ex: judging based off business plan -> give them business plan modules
- Want to try to standardize the way we will judging so that the only difference between teams will be the ideas
 - Give them a business template so that they will all be the same as well as for them to spend more time developing actual ideas

Structure:

- People are not good at managing their time -> manage it for them and give detailed schedule of when to move on
- Structure of the climathon should be specific
- Central theme to guide them is necessary:
 - Hard to judge when ideas are very broad
 - Could pick on of three themes: winner for each theme
 - More winners -> more incentive -> more ideas -> more startups

- Audience:

- Market as being qualified to join incubation program
- Take them more seriously by being able to collaborate with incubator
 - People want to start businesses and it will bring in talented/passionate/serious people
- Two different brackets -> novice class and expert class
- If not limiting age, could be difficult for younger people to participate
- Charge money to compete as a way to take it seriously
 - People who do not want to pay can just join the program and connect and learn about the program (just experience it)
- Do not want money to be barrier to entry
- People who do not pay can still present
 - Learning process for younger/non paying group
 - Not burdening judges but they still do the whole process
 - Present to each other or have a global fair type thing
- Reach out to student clubs in Venice: environmental, entrepreneurship, innovation, climate change, business

- Teams:

- When organizing teams -> creates a lot of extra work
- Throwing people together for a serious outcome such as equal sharing and startups
 - Hard to organize teams for such a real outcome
- Could do something like create a discord channel for people that wanted to do it but did not have anyone else to do it with

- Provide a type of platform for people to meet other people prior to assigning teams so that it is not on the sponsor
- Sponsor should not have a hand in matching people because if there's a later disagreement who takes the developed idea
- Contract with team leader about distribution of intellectual property
- Partially formed teams can enter channel and ask for specific skills
- Singles event

<u>Innovation Challenge:</u>

- In the process of developing an innovation challenge in january (public interest tech)
 - Embedding tech in work, enviro sust, ethics
 - Develop workshops (a couple) prior to event (design thinking, value creation) -> set the stage and tone for the mindset of the challenge
 - Identifying the problem to be able to develop a solution (how is this going to solve a problem)
 - What kind of value to the consumer to make it successful and viable in the startup world
 - Innovation challenge workshop timeline
 - Start the day before
 - 36 hours to do innovation challenges
 - Offer workshops in days leading up
 - What is the submission? Their pitch/idea (5 minute)
 - Halfway through they offer an hour of mentoring
 - Utilize resources
 - Who are the participants
 - Our idea is to reach out to universities
 - Held 3 innovation challenges
 - 3 categories of topics
 - Almost anything goes
 - Keep it broad but give them some ideas about some of the chal;lenges out there
 - Do inspirational talks (not a big fan of these) -> it is not engaging
 - Want it to be experiential and active
 - Fireside chats -> want it to be more of a panel (need to engage the audience more of a conversation)
 - How to make an amazing student experience on campus
 - Gave ideas of different areas of focus
 - Want collaboration

- Adding music
- Providedworkshops lasted 2 or 3 days
- Talking about issues on campus (tell stories, bring it to life, inspire people)
 - Design thinking workshop human centered design, having empathy, focus on finding the problem rather than the solution ideating, choosing a problem, reframing it through customer insight then ideate on the solution (Joe Doiran) go from need to solution
 - Value creation (Len Polizzotto) how to create a value proposition
 a good framework for pitching your value proposition, thinking about the right issues and frame the problem correctly, focus on how to bring problem to life (story telling, statistics) go from the need to the solution
 - Solution needs to have a good business model with it to be successful (who is the competition, why is your solution better/unique)
- Have forums practice after developing would you buy this (why or why not), would you invest - provide feedback
- How to bring pitches to life NABC framework (make it fun, interesting, and
- Mentoring and office hours do we want to have mentors?
 - Open to everyone and get feedback do not give solutions but get them thinking
 - Work with mentors to guide how much information they should provide
- Event Promotion
- Dance Off about teamwork, want to make your partner look amazing
 - Brigns group together and have fun
 - Innovation is juicier when we are safe and making riskier decisions
- Provided a roadmap
 - Speed dating for those who did not come in with a team (do we want to be involved in this?)
 - Provide networking, meet new people, meet other people with a similar passion
 - Open space a conference where the agenda is driven in a set by the audience
 - Overarching theme
 - 30 seconds to pitch what you want to do

- Now everyone else can choose where they want to go - brings people around common passions
- A marketplace of ideas
- Hoppin platform
- Something to be said about documentation video pitch
 - Workshop on how to create this
- Winning prizes
- Winning prizes: money for first and second
- Provide participants with the judging criteria want projects to advance to the next level
 - Emphasize that there are resources to move forward
- Want to issue out incentives connecting people with mentors or experts in the area - networking itself is huge (want to bring the community together and be inspired)
- Show how teams can be diverse (need all different types of skills)
- Higher quality outcome for moving forward workshops, space them out, target audience, timing
- Takes time to advance these ideas forward
 - What are the opportunities to take projects to the next level?
 - Maybe on project can feed into another opportunity
 - Connect to the inactus organization could feed into other opportunities
 - Bui;d that culture of collaboration and merging ideas (serendpt inactus)
 - Looking for ways for students to get credit working on their own innovations

Advisors

- Do not want advisors to come up with the ideas
- Wanted the ideas to be coming out of the students
- Allow them to reach out to receive feedback
- Want to try to make things as fair as possible
- Corporations that are part of the team -> a recruiting sort of thing
- Separation of participants
- Talk to a lot of people to bounce their ideas off of them try to interview as many people as we can
- Interviewing is more valuable than surveys
- Find out what motivates people
- MIT Solve -> a marketplace for social entrepreneurship
 - They have a ton of money to put into this
- Have videos of solutions to promote future competitions

- Have contestants to a video and a pitch or play the pitch and open for q&a
- Zoom celebration -> shark tank vibe

Appendix I- Summary Sheet of Observation Data From 2021 Climathon Venice Arrival:

- There was no check in, as there was no table set-up for check in, instead one of the participants went around and asked for the names and emails of each person present at the event
- The front door was open for participants to enter with just the agenda taped to the front door to indicate that the event was in the building. The second day we as a team sat next to the door in order to direct participants and to check their green cards (no one's card was actually checked, all of the participants lived in Venice and were confused when we asked)
- The flyers were never printed (we didn't receive them until around 6:20 the night before and the print shop closed at 6:30
- There were no signs anyway in order to guide participants
- The first participant that arrived on day one had to be greeted by us when she entered because nothing was set up yet, and not even we knew where to direct her
- The agendas were issues per table rather than per person
- In the cafeteria a makeshift bar for coffee and tea and basic snacks like apples, and cookies were set up for participants (this set up was occurring as participants watched)
- No one loitered in the church and instead went to the cafeteria
- Very few of the volunteers appeared to know what they were supposed to be doing, mostly on their phones.
- There was no trash can, only one for paper and plastic recycling.
- Tables only had three chairs each despite many teams having more members than that, so people moved chairs around themselves to accommodate.
- Participants appeared a bit lost.

Welcome:

- The Welcome did not start on time, 13 minutes late.
- The projector was small and difficult to see with participants marking it a 4/10 for legibility
- Presentations were being edited while participants could see
- One team did not have a table unlike the rest of the groups
- It was difficult to see the speakers with the lights off for the projector.
- A light for either the speaker or the projector was introduced at 10:20 but it was difficult to tell which it was for considering it didn't provide any improvement
- Ludo ended speaking at 10:21, so 8 minutes.
- Then Julie began and ended at 10:23, 2 minutes.
- Fabio began, and the mic backfired aggressively, we were introduced at 10:26, and we gave the mic back to Ludo who spoke until 10:29.

- Then CMCC spoke and finished at 10:31, the livestream began at 10:32 with a zooming speaker on the projector.
- No questions were asked or periods offered for the asking of questions.

Presentations:

- It was difficult to hear the speaker that was zooming in at times, while the livestream occasionally left the speakers face to show the room.
- He began speaking at 10:32 and finished at 10:45, no questions being asked.
- The next speaker remained seated to speak about the Venice Urban Lab and ended at 11:04.
- The apparent panel of that speaker and fabio were seated at the same level as the participants, slightly out of place?
- There was no english spoken to accommodate english speakers at all.
- Multiple groups were talking amongst themselves or working on slides as the panel was speaking
- As Fabio began speaking at 11:04, people began to rub their hands together, one put on a scarf and notably no one in the event room was without a coat.
- Fabio finished at 11:11 and Ludo spoke until 11:19, five minutes over time.
- When he ended at least 7 people got up to go to the bathroom or smoke,
- As the next speakers began there were major technical difficulties, and in the back we struggled to hear the speakers over zoom and with terrible echo.
- The WIFI name and password was written on the wall at 11:25.
- There was a ton of feedback and echoing from the microphone.
- The next speaker began at 11:25 and finished by 11:31.
- Ludo took a call in the front of the room while the speaker was talking.
- Emmanuele began helping with the technical difficulties.
- Ludo began speaking until 11:39, and there are still difficulties changing sounds on the projector screen, with the livestream being extremely echoey and difficult to hear.
- Fab Lab speaker began at 11:39 and struggled at times to change the slides.
- A participant came up to tell us the room was very cold.
- There was no speaker to participant interaction or questions during this time.
- Ludo then spoke for two minutes until 11:57 then gave the mic back to the fab lab lady, and then back to Ludo at 11:58, who spoke until 12:01.
- Ludo walked in front of the projector as she said goodbye and spoke with a still scratchy mic.
- Julie googled something on the projector as Ludo spoke, which was the Venice Calls Website since it was not linked in the presentation.
- Ludo then looked at his phone while speaking at 12:11.
- A question came at 11:12 since he stopped to allow questions.

- He then stopped speaking at 11:17 to introduce the circular fashion speaker who began at 12:19 on zoom and finished at 12:32.
- Ludo then spoke until 12:39.

Notes: a lot of people left the event room to go to the bathroom or smoke multiple times.

People were found in the courtyard hanging or talking to others during the presentations.

Almost all of the presentations were virtual.

A dress rehearsal to get rid of for technical difficulties is NECESSARY in the future.

Teamwork:

- Almost every single team left the event room to work in a separate room alone or with one or two other groups.
- Some teams like COSMO who only spoke english didn't seem to know what they were
 doing since lunch occurred after the presentation ended and teams just randomly split up
 to go work?
 - Ludo may have explained to the Italian participants what they should do after lunch but at this point it is unclear.
 - A brief period of gathering after lunch may be helpful to explain to participants what they should be doing after the break.
- The two teams in the cafeteria were very engaged and focused, the same went for the teams in the courtyard.
- Some teams only worked on their laptops while others like the ca foscari group asked for large poster paper and used sticky notes as well, who seemed to be collaborating more than other teams that were just working on laptops.
- In the larger teams there were apparent splits into smaller groups to discuss, a large team may be effective but could also provide times where not everyone's voices/ideas are heard.
- There was no apparent structure to the teamwork section (though again it was not completely obvious because of the language barrier)
- Day 2: Teams arrived between 9:30 and 10:15 and got to work fairly quickly on their projects.
- They split into the separate rooms again, two teams in spider, two in cafeteria, one in the back room, and COSMO in church

Mentors:

- For us at least it was nearly impossible to tell who was a mentor and who was participating since there were no name tags or other distinguishing features.
- There were roughly seven-eight mentors (again difficult to tell)
- On the first day the mentors split into two massive groups

- The larger mentor group spent nearly 45 minutes with just the caFoscari group, and didn;t make it to COSMO or the team in the spider room until the end of the day, and spent close to just 15 minutes with them.
- They were able to help the COSMO team in english however to understand what systems were already in place in Venice and how to focus on the problems that needed to be fixed.
 - Furthermore, it would be difficult to introduce teams from outside the region as many of these issues are specific to Venice itself.
- Feedback from Ludo initially left Cosmo slightly confused but they were able to recoup and move on quickly.
- Some of the mentors visibly dominated conversations so it may be better to implement that they go solo or with one other person, and to have a schedule so that they don't overlap or spend too long or too short of a time with one group.

Day 2:

- Mentors were still traveling in larger groups rather than individually or in a small group, there were a few exceptions but a group of four mentors was still traveling together.
- It is still difficult to determine who is a mentor vs. participant, so it is especially difficult is say Cosmo wanted to ask a mentor a question outside of the times that mentors approach them, which was slightly more frequently on the second day.
- By 11:30 or so the mentors began to split up more and were able to talk to more groups individually or in small groups (allowing them to reach more groups, but spending less time with each group
- At one point however a mentor approached Cosmo and asked what their idea was only to have another mentor fifteen minutes later approach and ask the same question, and for that to happen a third time after that
 - A schedule is extremely important!

Before and After:

- The coffee was drunk very regularly on both days
- The food items were eaten fairly quickly, as they ran out just before lunch on day 2 (good timing).
 - They were just snack foods like cookies (three types), apples, almonds etc.
- There was not a large amount of materials provided, besides the cold, working in the church would've been extremely difficult as the acoustics are not conducive and there were not nearly enough plugs or extension cords for participants to have charged their devices.
 - There were only pens, and sticky notes provided, and if asked for poster paper.
- We have no actual way of telling how many people registered vs. those who did not show up as there was no formal check-in process (a participant (a friend?)) was going around asking for names and email addresses with their teams.

- If participants wanted to move to a room that didn't have a table they had to move it themselves, along with chairs.
- On the second day one of the tables in the cafeteria had been replaced with a small wooden one.
- One other material was requested which was a mouse/clicker to move the slides which we did not have.

Event Room:

- The Church was unheated and with the sliding door being constantly opened it was extremely cold and some participants even came up to tell us how cold they were.
 - People rubbed hands together, made comments about it, put their jackets and scarves back on, and most notably no one stayed in the church to work besides the Cosmo team.
- The lighting was fairly dim, it was slightly difficult to see the projector from the back of the room and the in person speakers were also fairly dim.
 - The light added to illuminate the speaker did nothing.
- The space felt slightly cramped, but it also felt that there was wasted space, the tables and chairs came across as random and messy.
- The projector was not level and there were major technical difficulties on day one
 - Less tech difficulties on day two, but the mic was still firing feedback, or the speakers on zoom were incredibly loud.
 - Audio testing lasted half an hour and was done in front of participants which was often loud or shrieky.
 - The screenshare for the zoom was not set up after the group had gone to present.
 - Seats were rapidly moved in the church for the final presentations, delaying them, despite only one team using the space during the day.
- The only sign to indicate where to go was the taped (pink duct tape) agenda booklet to the front door (no flyers were printed), with pen writing.

Appendix J- Translated 2021 Climathon Venice Agenda

Agenda Climathon Venice 2021

October 30-31, 2021 | Online and in-person

DAY 1 ~ Saturday October 30, 2021 ~ Ex-Church of SS. Cosma and Damiano

9:00 - 9:30 - CHECK-IN & ARRIVAL OF PARTICIPANTS AND GUESTS

9:30 - 10:00 - COFFEE AND TEAM PREPARATION

10:00 - 10:30 - WELCOME AND INTRODUCTION TO THE CHALLENGES \sim START

STREAMING

- Venice Calls, Ludovico Dejak, Lead Project Manager Climathon Venice
- Venice Calls, Julie Pellizzari, Researcher & Project Manager Climathon Venice
- SerenDPT, Fabio Carrera, President
- CMCC Foundation, Andrea Staccione, Researcher & PhD candidate

10:30 – 11:15 - ROUND TABLE ~ THE INNOVATION ECOSYSTEM OF VENICE

15 minutes each: Moderator Ludovico Dejak, Innovation Department Venice Calls

- VeniSIA, Carlo Bagnoli, Scientific Director & Prof. of Strategic Innovation at UniVe
- SerenDPT, Fabio Carrera, President, Venice Project Center & Prof. WPI
- IUAV, Sergio Pascolo, Prof. of Architecture and Innovation & Creator of the Venice Urban Lab

11:15 – 13:00 INSPIRING INTERVENTIONS AND INTRODUCTION TO THE CHALLENGES

15/20 minutes each: Moderator Julie Pellizzari, Innovation Department Venice Calls

• 9-Tech Startup: Pietro Giovanni Cerchier, Startup Finalist of VeniSIA

The Three Thematic Focuses:

- 1. SOCIAL INNOVATION
 - Surprise!
- 2. CREATIVITY & CRAFTSMANSHIP
 - FabLab Venezia: Alberta Menegaldo, Project Coordinator
- 3. CIRCULAR FASHION
 - Circular Fashion Events: Andrea Vittone, Event Experience Manager Italy, Vinokilo

13:00 – 13:30 - CLOSURE AND LAUNCH OF THE COMPETITION - END

STREAMING

13:30 - 14:30 - LUNCH BREAK (Alle Botti restaurant or packed lunch)

14:30 - 20:00 - TEAMWORK AND HELP FROM MENTORS AND EXPERTS

---- Doors close at 20:00 -----

DAY 2 ~ October 31, 2021 ~ Ex-Church of SS. Cosma and Damiano

9:00 - 9:30 GUEST ENTRANCE AND ARRIVAL

9:30 - 13:30 INTRODUCTION TO THE NEW DAY AND TEAMWORK WITH MENTORS

13:30 - 14:30 - LUNCH BREAK (Pizza da Medea or packed lunch)

14:30 - 15:45 - PREPARATION OF PRESENTATIONS

15:45 - 16:00 - COFFEE BREAK

16:00 - 16:15 - GENERAL TESTING OF PRESENTATIONS

16:15 - 17:30 - PRESENTATION OF PROJECTS TO THE JURY - in person - *START STREAMING on YouTube*

Ludovico Dejak and Julie Pellizzari

17:30 - 18:00 - ARTISTIC PERFORMANCE ~ By the Venice Calls Artistic Department while the Jury evaluates projects

Jury:

- 1. FabLab: Francesco Bortolato, Collaborator & Senior Team Member
- 2. Euro-Mediterranean Center on Climate Change (CMCC): Andrea Staccione, Researcher & PhD Candidate
- 3. PInK, Ca' Foscari's Knowledge Transfer Office: Daniela Pavan, Researcher
- 4. SerenDPT: Luca Giuman, CEO
- 5. Tondo Association on Circular Economy: Francesco Castellano, Co-Founder
- 6. Venice International University (VIU): Alessandra Fornetti, Executive Director of the TEN Program on Sustainability
- 7. VER-V & Cosmo: Emanuele Wiltsch Barberio, Co-Founder and Coordinator

APERTIF AND CLOSING PARTY

Appendix K- Media Release Form

In English:

I, the undersigned, do hereby grant permission to WPI and Venice Calls to post my photo, video, or other item hereby referred to as "Materials", I submit to and for the usage in the IQP Project "Climathon Venice: Creating an Annual Event Framework to Facilitate the Creation of Startups" and the Venice Calls and Climathon Venice websites, Instagrams, and Facebook accounts. I hereby release you, your representatives, employees, managers, members, officers, parent companies, subsidiaries, and directors from all claims and demands arising out of or in connection with any use of said "Materials", including, without limitation, all claims for invasion of privacy, infringement of my right of publicity, defamation and any other personal and/or property rights. I acknowledge and agree that no sums whatsoever will be due to me as a result of the use and/or exploitation of the "Materials" or any rights therein. Please sign your full name and date below.

In Italian:

Io, il sottoscritto, con la presente concedo il permesso a WPI e Venice Calls di pubblicare la mia foto, video o altro elemento qui indicato come "Materiali", sottopongo a e per l'utilizzo nel progetto IQP "Climathon Venice: Creazione di un Event Framework per facilitare la creazione di startup" e i siti web, Instagram e Facebook di Venice Calls e Climathon Venice. Con la presente esonero te, i tuoi rappresentanti, dipendenti, manager, membri, funzionari, società madri, sussidiarie e direttori da tutte le rivendicazioni e richieste derivanti da o in connessione con qualsiasi uso di detti "Materiali", inclusi, senza limitazione, tutti i reclami per violazione della privacy, violazione del mio diritto alla pubblicità, diffamazione e qualsiasi altro diritto personale e/o di proprietà. Riconosco e accetto che nessuna somma mi sarà dovuta in conseguenza dell'uso e/o sfruttamento dei "Materiali" o di qualsiasi diritto sugli stessi. Si prega di firmare il nome completo e la data di seguito.