

Team Seattle

Kate Kujawa – Team Lead

Debbie Jung – IxDG

Calvin Fu – IxDS

Hannah Keiper – VisD

Sofia Hennessey - ID

Executive Summary

The goal of the *Light Rink* is to increase the user's enjoyment and interaction with ice rinks. Whether this is through learning a new routine, staying on the ice longer with friends during open skate, or being blown away by a spectacular enhanced performance of theater on ice. A lot of issues our users run into with normal ice rinks are that during ice hockey or figure skating practices, the ice is very cluttered with people, there is little organization, and it is difficult to learn new capabilities efficiently. With open skate, there are multiple skaters on the ice with variable ice-skating capabilities. Our users should feel comfortable skating on the ice and should have some sort of additional entertainment that could keep them ice skating for hours. Theater on Ice events do not get that much publicity and do not really have an audience outside of the ice-skating community. The *Light Rink* aims to solve all of these problems by increasing interactivity and creativity between the user and their ice rink.

Introduction of the Product Idea and its Project Parameters

The *Light Rink* is an ice rink that displays multiple Light-Emitting Diodes (LEDs) underneath an ice rink to help solve problems that athletes, coaches, skaters, and audiences alike face when using regular ice rinks. There are multiple applications for this product such as improving the efficiency and entertainment value to theater on ice shows, hockey plays, ice skating routines and open skate entertainment.

The first version of the Light Rink will come equipped with the following capabilities...

- A rainbow of light color selections
- An interface where the director can draw on the ice with the light
- Pre-set individual moves to assembly for a unique routine

The interactive touchscreen will..

- Connect to Spotify, Youtube and Apple Music so the user can log in with their credentials and select a song from their personal library
- Allow the user to select the light color
- Allow the user to select their saved drawings to light up on the ice again

Some early concerns from our stakeholders in marketing as well as health and safety were the purchase and implementation of Light Rinks right after COVID-19. Ice rinks and other entertainment venues around the world have been shut down for weeks. Everyone is encouraged to practice social distancing and not gather in large groups of people. Even once a cure is found, social gatherings will slowly be re-introduced, and a large new opening of an interactive ice rink would not be safe for the public's health. This brings up some concerns regarding the timeline of our product's release.

Research Methods and Rationale

During our research process, we used research methods such as focus groups, stakeholder meetings, individual interviews, and public observation through YouTube videos.

First, we conducted focus groups in order to gain a general understanding of the experiences of people from multiple backgrounds. Our focus group consisted of recreational and athletic skaters, as well as a potential buyer and potential director of our product. We were able to record the honest opinions and experiences thanks to the

natural flow of the conversation in a group setting. We also made sure to phrase our questions in an open-ended way. This allowed participants to share as much information as they wanted and gave us ideas that we had not previously thought of before as well. It also reduced the amount of bias in responses due to the implication of desired answers for certain questions.

In addition to focus groups, we conducted stakeholder interviews to gain an understanding of the expectations and perceptions stakeholders had of the purpose of our product. It was important to clarify the stakeholders' stance on this since functionality and aesthetics are both very important for our product.

We also conducted individual interviews in order to avoid the possible pressures of group dynamics. We conducted individual interviews with recreational skaters, athletes, and directors to get more personalized information and create a more appropriate setting to give individual attention. We again made sure to phrase our questions in a way that allowed interviewees to share about their personal experiences and mindsets in an ice-skating environment without asking them to give us direct advice on what to do when designing our product.

Because we were not able to conduct observations in person, we collected YouTube videos recording various kinds of skaters, i.e. hockey players, figure skaters, and recreational skaters, at the rink. Observing the typical activity of these skaters gave us an understanding of skater behavior without self-reporting errors. We used multiple videos in order to have a greater sample size and take note of common phenomenon versus unusual activity particular to a certain skater.

Summary of Research Findings

One of the first methods of research we implemented were our focus group and conducting stakeholder interviews. We heard that stakeholders need a few key aspects from our brand that we had previously not considered. To highlight some of our findings of what we heard in this stage of research, here is a list of a few examples. One stakeholder concern is to “get the people away from the boards” in order to keep more people on the ice longer. Another thing we heard is that coaches could have a more clear and efficient method for drawing plays on the ice to avoid confusion on a whiteboard. One thing we heard that seemed to stand out above the rest is they really highlighted that a more interactive ice experience would bring more people to the rink.

We learned from multiple stages of research that this industry thrives on things like fun, engagement, and interactivity. Potential customers and users expressed that there is a desire for engagement and entertainment on the ice to counteract the potential for boredom on the ice. We took into consideration the customer wants so we could adapt these ideas to understand what the customer needs. For instance, while conducting individual interviews, it was expressed by multiple users that it is difficult to hold and maintain the attention of the younger audience. There was an expressed desire for something that catches the attention of children, so we discovered that this desire expresses a need for design features that engage younger audiences. For this reason, we decided it would be crucial to include a custom drawing feature and it gave us the idea to include a musical aspect into our design.

In research on the current market / industry for products that already exist that are similar to ours, we discovered that there are products involving solid and unmoving

LEDs under a rink. Another similar product is projected lights onto a rink. We took these existing products into account when deciding on the features of our own product, and how we can improve the functionality and interactivity of what already exists. We learned that the stakeholders think that the recreational users are the most important users, as this is what brings in the most people and profit to the rink.

During our conduction of the individual interviews, we discovered some previously undiscovered needs of our customers and users that other phases of research failed to uncover. Some of these needs were keeping the attention of younger skaters and ensuring they don't get bored. Individual skaters expressed that learning a new play or move can be very repetitive, which we took into account when designing our product to be engaging enough to counteract the redundancy of the learning process. Another vital piece of information discovered during all of the individual interviews is that casual ice skaters hate falling, but more importantly, they can sense when they are about to fall approximately 1-5 seconds before they actually hit the ice. To decrease the falling and increase pleasure while skating some sort of notification system could appear on the ice to notify the skater that they appear to be unbalance and therefore might fall. One other need that we learned from the observational phase of our research is the need for space between skaters on the ice. The design feature of customization will allow our users to section off parts of the ice, which could help distance the skaters from one another.

One barrier to success of production and marketing concerns. In the midst of a global pandemic, one of our biggest concerns is the safety of our customers and users. In the US, there is currently a ban on gatherings of more than 10 people. Using our

product in today's current market would put our users' health and safety at risk. The impact of this concern on our brand could be mitigated by delaying the timeline and product release date until it is safe to gather in a Light Rink.

Personas:

Personas are archetypes that describe the various goals and observed behavior patterns among potential users and customers. They are a specialized type of composite model resulting from cross-case analysis, using primarily inductive reasoning. When creating personas, team Seattle gathered all the research information from our interviews, focus groups and public observations. That data was then modeled in an activity tree and taxonomy diagrams to determine the key characteristics for our users.

Herbert Slater

Director-Ice Hockey Coach



Herbert Slater is an Ice Hockey coach for the USA men's Olympic ice hockey team. He grew up in Wisconsin and has been playing ice hockey since he was 6. Herbert was on the Olympic team in the 80's that beat the Soviet Union and won gold in the 1980 Winter Olympics.

He is married to Shelly and has three kids, two girls and one boy. The oldest daughter Jackie (10) would like to be a professional hockey player like dad, and her younger sister Lucy (7) wants to be a figure skater like her mom. The baby of the family, Tommy (5) hates ice skating and is always fussy when the family goes to the rink. Herbert and Shelly take their kids to open skate on every Tuesday because that is the night Herbert has off from practice.

Herbert watches game film all the time and is always looking for new drills to bring to practice. He is determined to win the 2020 Tokyo Olympics and hopes to train his team to the best of their abilities. Herbert's team comes from all over the US and all of his players have had different training styles growing up. For some of them, English is not their first language, or two different players will have different names for the same move.

Most practices start in the smelly locker room where Herbert draws out the drills for that day's practice. The beginning of practice often frustrates Herbert because sometimes the guys are unfocused because they are still putting on their gear-this delays the efficiency in the practice. Also, some of the boys on the team have gotten hit too many times in the head so sometimes what's drawn out on the whiteboard doesn't click right away when they walk out on the ice.

Goals:

- Win the 2020 Tokyo Olympics
- Maximum time on the Ice and minimize time in the classroom learning plays/drills
- Have specialized training programs for each position (attack, mid, defense, GK)
- Have Tommy enjoy family open skate

Elisa Angeli

Figure Skater



Background:

ELISA ANGELI is an Italian ice dancer with recognition from the Italian Federation for Ice Skating, who studied Ballet at the Gibney Dance Center. She also studied Modern and Contemporary Dance at the Open Dance Center, New York. Her expertise as a circus arts specialist allows Elisa to bring a unique element of excitement when skating as a principal performer and aerialist with Ice Theatre of New York.

Experiences:

In 2009, Elisa participated with ITNY at the Premiere of "Wintuk" by Cirque du Soleil at Madison Square Garden. In Italy, she was an aerialist with the tour "Italian Champions on Ice," with Ghiaccio Spettacolo, and performed in Munich with Spotlight Productions. Elisa also works with Cirque-tacular Entertainment as an aerialist (since 2014), with which she performed in the show "The Art of Circus" in September 2016.

Concerns:

She sometimes forgets the next dance move while performing on stage.

It also takes a long time to practice before performing due to the number of members in the team. All team members are required to remember their own dance moves without making mistakes. Collaboration is the key in Ice Theater.

She hopes to bring a better experience and impression to the audiences with visual effects.

Lauren Lucky

Casual Skater



Lauren (right) is a 19-year old college student from Buffalo, New York attending the University at Buffalo and majoring in psychology. Although she has not received any formal training in skating, she goes skating 2-3 times each year to have fun with her friends and family.

She bought her own skates when she was in 8th grade and have worn them since to open skate. Lauren is outgoing and likes to skate without worrying about if she will fall down or not. She has fallen down before and did not find that falling actually hurt, so she does not care if she falls down anymore. When she is with a group of her female friends. she tends to skate at a steady pace near them around the rink and talk with them. When she is with her siblings, i.e. her brother and sister, she becomes slightly competitive and skates more quickly in a less regular path in order to race them.

She gets frustrated when there are too many people at the rink and it is crowded. She also does not like when advanced skaters zip too quickly past her or her friends because she feels as though they could crash into her or cause her to trip. Each time she goes to the rink, she usually skates for 1-1.5 hours and takes breaks when she needs to drink water or go to the bathroom. She likes to grab something light afterwards like ice cream or a hotdog.

Liza Garcia

Theater On-Ice Performer



Skills -

- Basic Skills level 1-6
- Free skate levels 1-6
- Moves in the field gold medalist
- Freestyle gold medalist
- Dance gold medalist
- International competitor for Theater on Ice
- Cast member of Disney on Ice - preferred role is Anna from Frozen

Experience -

- Has been skating for 13 years-is currently 19 years old
- Mother is an ice-skating coach
- Teaches learn to skate to children ages 3-16
- Only skates recreationally in college 1-3 times a week
- Goes to BU with a major in Biochemistry and Minor in Molecular Biology
- Dabbles in Synchronized skating along with painting

Goals -

- Find an easier and more structured approach to coaching children
- Learn choreography more easily and efficiently
- To coach one student through all the free skate levels
- Successfully train a student to perform a routine
- Improve her own skills as an athlete
- Pass on information and training to her students, who can improve as athletes



TIMOTHY STUART

ICE HOCKEY PLAYER

SKILLS AND EXPERIENCE

- Been playing the sport since he was 5 years old
- Played all throughout grade school, middle school and high school
- Currently playing at a Division 1 University
- Helped coach a pee wee team when in high school
- Gives teammates direction and help when needed
- Has experienced many different types of teaching techniques
- Access to equipment and facilities is very good

GOALS

Easier and Effective Learning Experience

- Wants to be able to learn plays and sets easier because sometimes it can get jumbled on a white board or skating freely through the ice
- Find in practice there is a lot of wasted time because people cannot grasp the plays easy enough

Clear Skating Boundaries

- Wants to be able to find his teammates and the boundaries he needs to be in easier and quickly

Get Better

- The overall goal is that he wants to become a better all around player and athlete in hopes of becoming a professional player one day.

Context Scenarios and Requirements

Elisa is an ice dancer and an ice theater performer. After waking up, she goes to the rink to practice her dance move with other team members. They use the LED light on the rink to arrange different members' positions for the performance. The LED light will guide team members to different directions, which helps them easily follow and practice. In order to provide the audiences with a better experience, they use the light to show different colors including red, blue, orange, yellow, etc. The LED light will also match with their footsteps as Elisa and other team members move.

Requirement:

Ability to show different colors

Ability to match with performers' footsteps

Ability to move to different directions with built-in program

Ability to show some cool visual effects (Explosion, ocean wave)

Ability to have sensor when people step on the ice

Experience Attributes

Light Rink is a corporate brand that is centered around consumer satisfaction with our products and services meeting or surpassing customer and user expectations. As a brand, customer centricity is our main goal by implementing what we have learned from the research phase and our consumers. When presenting information to our various stakeholders and interviewees, we got feedback on what exactly they would want to see out of a brand such as ours. Asking them questions and allowing them an open platform to build off one another's ideas gave us an opportunity to structure our character. They suggested to us to be very open to hearing from our focus groups and

interviewees to be able to narrow down our design ideas and really structure how we can effectively improve the product's design to meet the needs of our clients.

Furthermore, they allowed us the freedom to design our product in compliance with the customer needs based on our research. As a brand, it is an intricate part to be able to convey these ideas into characteristics we can express through visual and industrial design in order to make our brand as successful as possible.

We were able to implement user data and personas to narrow down what we think is meaningful for our customers by taking similar ideals across the board and combining them to create our brand characteristics. As we were able to pick apart different personas and affiliations, we considered what other successful brands these customers relied upon and used that knowledge to create an improved version of ours. Utilizing all of these important aspects will allow our brand to be visually identifiable and build brand equity reinforcing our consistent set of brand values. In other words, our experience attributes. Experience attributes are considered to be visually oriented adjectives that describe the messages or personality the product should convey. The experience attributes that we have highlighted for our brand are described in detail below.

The first experience attribute that we wanted to highlight for our brand is universal. The universal attribute is defined as being applicable to and in all cases. In the case of our product, Light Rink, we want it to be able to be accessible / usable across all ice rinks, environments, and individuals. For example, if a Hockey coach wanted to use it on an ice rink to draw up plays for her players, it would be reliable to perform this. If an ice rink owner wanted to increase business and entertainment at their

rink, using this product would provide a means to accomplish this as well. We want our product to be able to be used for various situations that will broaden our customer market and make it more appealing to our market.

Another experience attribute of our product is the fact that it is customizable, allowing our users to modify and suit a particular desire they have such as different colors, patterns, etc. displayed on the rink. This attribute was brought to light by our design team when compiling the various personas we wanted to cover without product. We think that customizability is an important part of being able to satisfy the needs of our consumers.

Another experience attribute that we think is essential to our brand is engagement. We want our product to provide entertainment and perform essential tasks for our users and captivating them in this product will allow them to do so. This product's success is based on keeping the casual skaters and the entertainment side of our market engaged in our product without overwhelming them and making sure they are comfortable. Making sure this product provides entertainment and amusement to our recreational skaters is essential. This attribute came to our attention in a focus group, when one of the participants mentioned that it would be an essential aspect of our design idea to be able to keep customers attention. Many others came into the conversation agreeing that it would be a critical part of our brands success.

Additionally, we see that being able to be an arranged and organized brand will benefit us. One of the main goals in the production of our product was that it is easy to learn and be a good teaching mechanism. A large part of our market would be directors and coaches of hockey players or figure skaters and allowing them the opportunity to

easily learn and master routines and plays. Being able to be easily understandable and comprehensible will be effective not only for us but for our users as well. This was an attribute that we saw throughout the stakeholder meetings, focus groups, and research. It was a common theme with these because no one likes to use a product that is hard to understand and not effective. In order to build our brand we want to be known as straight-forward and an understandable product.

Lastly, as a brand we see to it that being reliable and dependable as a brand is essential. Looking throughout our market and the different places we want to reach we saw that other brands that our users work with are all considered to be reliable. Customers want to make sure that the brand they are buying into can count on to give them what they want in a product. Some other requirements that this product must account for is being able to adapt to different situations asked of it such as if it is on a public rink, private rink, skating lessons, ice hockey team, and many other situations. It also must be a high-quality product since we know that it is going to be expensive to put into a rink and to make all features, we want applicable in the design.

Colophon

The team had two Zoom meetings to discuss this project. The first meeting is where we talked about all the research we had conducted and compiled it into one Word document. During the second meeting the team modeled this plethora of information into taxonomies, flow diagrams and decision trees. Individually, the team worked on the jobs listed below.

Kate Kujawa - Team Lead

- Organized the team and assigned sections accordingly
- Created the Herbert Slater Persona
- Wrote the Executive Summary, Introduction to Product Idea and it's Parameters and the Colophon

Debbie Jung – IxDG

- Created the Lauren Lucky Persona
- Co-wrote the Research Methods and Rationale
- Co-wrote the Context Scenarios and Requirements

Calvin Fu – IxDS

- Created the Elisa Angeli Persona
- Co-wrote the Research Methods and Rationale
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Hannah Keiper – VisD

- Created the Timothy Stuart Persona
- Co-wrote the Summary of Research Findings
- Co-wrote the Experience Attributes
- Asked for clarification in #help channel via Slack

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