Executive Summary: TRYON Technology

Elevator Pitch

Many consumers are afraid to purchase jewelry online because they are unable to try on the product to test how the accessory will fit or complement their hand, fingers, body and skin. A picture or 2D image on a screen does not capture all the properties and details of the product. TRYON uses artificial intelligence (AI), augmented reality (AR) and other mobile technologies to create a virtual jewelry fitting, changing the way people buy jewelry online and enhancing the customer experience which targets the unmet market need. With TRYON Technology, consumers can try on rings, bracelets and watches anytime and anywhere using their smartphones.

Overview

TRYON Technology is a Toronto based company that was co-founded on October 1, 2017 by Andrii Tsok and Natalia Tsok. The AI-enabled start-up specializes in designing AR software for the jewelry e-commerce industry. The company now has four employees' total as they have added software engineers and scrum masters to their team since their inception (LinkedIn, n.d.). TRYON's headquarters are in Toronto and they also have a Development Office in Ukraine. TRYON was originally founded in Ukraine, but since the co-founders received their Canadian start-up visa through the NextAI Program, they moved their headquarters to Toronto in 2018 (TRYON, 2019).

Industry Size/Structure

TRYON competes in the AI and AR computer software industry as they supply companies with cutting-edge mobile technologies to showcase jewelry products. They compete in the industry to help jewelry companies and act as an intermediate between jewelry buyers and sellers. Their customers are jewelry manufacturers and retailers as TRYON's solution offers a tool for these businesses that can stimulate more online purchases.

Since TRYON's headquarters are in Toronto, this is the region where the company operates. They are in the introduction stage as they are focusing on continuous product developments and improvements with the newest advancements in the AI field before concentrating on expanding their client base. According to the co-founder of TRYON, Andrii Tsok, he believes the driving force of AI in Canada are from Canadian universities such as University of Toronto, University of Waterloo, McGill University and many more (TRYON, 2019). They are actively communicating with these universities and considering potential collaborations such as a TRYON AI lab to build a research and development team in Toronto. They have had three funding rounds total, raising $200,700 from five investors with their last funding round on January 15, 2020 (Crunchbase, n.d.).

Since AI, AR and VR are still relatively very new concepts, there is not one particular company that dominates the entire industry since it is too early in the market's development (Merel, 2016). There is still plenty of research and experimentation that needs to be completed in

these AR and VR applications to ensure that they make sense and that the interface is user friendly. Some players in the market today include Microsoft, Niantic, Google and Apple. These large companies are currently investing a large portion of their funds into research and development for their AR hardware and applications (Connolly, 2017)

The global augmented reality (AR) and virtual reality (VR) market is expected to reach $30.7 billion USD in value in 2021 with a compounded annual growth rate (CAGR) of 53.99%, rising to close to $72.8 billion USD by 2023 (Alsop, 2021). This indicates the potential and progression in this industry space that TRYON competes in. The growing demand for VR and AR is expected to continue increasing across several markets such as healthcare, education, jewelry, gaming and entertainment. Further advances in the technology are yet to be seen, especially with the COVID-19 pandemic, to help address continuous evolving changes as remote services and touchless interfaces have become the new norm.

Opportunity

Annual jewelry sales are $400 billion globally, but only roughly 5% of those sales are from online purchases and half of all jewelry returns are due to incorrect sizing (TRYON, 2019). More specifically, according to Shahbandeh (2021), the value of the global jewelry market was $229.3 billion USD in 2019 and is expected to showcase a CAGR of 4.09% as it is forecasted to reach $291.7 billion by 2025. However, only $21.5 billion USD of the total global jewelry market value was derived from online jewelry sales in 2019 (Shahbandeh, 2021). One of the co-founders of TRYON, Andrii Tsok, discussed an issue with the former President of the Canadian Jewellers Association about the jewelry industry being decades behind in terms of innovative technologies (TRYON, 2019). TRYON is able to take advantage of the opportunity of translating these jewelry sales to the online market with their innovative technology solution, especially during the global pandemic where many customers are looking to shop virtually with limited physical contact. They also saw value in helping companies decrease the number of online product returns due to wrong size fittings as customers making purchases online normally need to guess the size that fits their body shape and are unable to determine the exact size that will suit them. This is an opportunity that is timely, durable, attractive and adds values for consumers.

The jewelry industry did not grow with the e-commerce boom because it was one of the few industries where customers wanted to personally visit the retail stores to browse and try on various designs or models (Jadeja, 2019). This became a pressing issue when COVID-19 hit as physical jewelry retail stores had to shut down to prevent the spread of the virus. Jewelry sales had dropped 82% during the beginning of COVID-19 when everyone was required to quarantine at home, with global sales at $2.65 billion in February 2020 and only $470 million in April 2020 (Giosue, 2020).

Additionally, it’s often time consuming and difficult for consumers to try different brands and travel between brick-and-mortar locations to experiment with different types of gems and stones. This limits the customer’s ability to explore different types of jewelry, styles and companies that are in the jewelry business. According to O'Dea (2020), there are currently roughly three billion smartphone users worldwide today and with just one tap on their screens,

AR can change the way people buy jewelry can change forever by giving them access to a vast collection of products to virtually try on.

Product/Solution

AR provides consumers with an engaging experience as it combines the functionalities of a smartphone camera, an app and the real-world environment to produce something that appears to be real from the lens of a smartphone (TRYON, 2019). This technology creates an opportunity for TRYON to be customer centric as this digital experience will mimic what customers would experience in the physical retail stores. TRYON is able be innovative by being one of the few companies to implement and introduce this technology to the entire jewelry market, transforming customer's experiences in their jewelry purchase that allows the process to be more convenient, efficient and user-friendly for them.

The technology at TRYON can detect sizes of rings, bracelets, watches and other jewelry items with deep neural networks in real time which not only helps improve the shopping experience as discussed earlier, but this will help reduce the number of product returns that companies normally receive from their online shoppers due to incorrect sizing orders. TRYON's technology and app can also recommend personalized recommendations to users based on their previous search activities, virtual fittings and preferences by using AI and focusing on user data (TRYON, 2019). This helps customers explore other options and styles in jewelry that would have remained unnoticed and it allows the shopping experience to be seamless from the comfort of their homes at any time. TRYON offers an exclusive application and business that will improve relationships between jewelry companies and their clients with the help of AI, AR and other mobile technologies.

Technology

AI and deep neural networks are the basis of AR technology that displays objects in 3D. TRYON is designing a hybrid rendering engine for realistic visualization of jewelry and uses a low-level programming Metal and OpenGL ES/Vulkan, raytracing and develops particular shaders to achieve accurate jewelry rendering (TRYON, 2019). AutoML Vision Edge Object detection is also embedded in their platform as it aids in doubling productivity by reducing the resources and time for managing internal infrastructure (TRYON, 2019). The company is actively using 28 technologies for its website and app which includes Viewport Meta, iPhone and Mobile Compatible, and SSL by Default (Crunchbase, n.d.). Their website includes a dashboard where clients are able to experiment with TRYON's prototype and how they are integrating their systems together to create their final application. As their technology works in real time on both IOS and Android devices, it creates a realistic and seamless experience for customers which is a unique approach to representing products in e-commerce.

In September 2019, a beta version of TRYON's Dashboard and iOS app was launched for their clients to try out their new technology (TRYON, 2019). The company plans to release new features such as the virtual try-on and sizing on a constant basis after the launch.

Company

The NextAI is one of the largest programs in North America for teams worldwide who are specializing in AI research and want to build global companies. Near the end of the program, TRYON raised $130,000 in investments for their business idea in developing AR technology for users to virtually try on jewelry in real time with their smartphone (TRYON, 2019). After TRYON had graduated from the NextAI accelerator development program in Toronto, the company got accepted into the DMZ in April 2019 where the start-up's focus was to commercialize its technology, open a seed investment round and increase its clientele. The DMZ is a leading tech accelerator in Toronto that assists high potential start-ups to grow into world-class businesses (TRYON, 2019).

In May 2019, a month after their acceptance to the DMZ, TRYON was also selected among a large number of start-ups to compete in the Fundica Roadshow, which is a Canadian pitch competition that educates, funds and inspires entrepreneurs (TRYON, 2019). They became one of the 2019 Fundica Roadshow City Winners in Toronto and were invited to compete in the finale hosted in Montreal for a chance to win the equity investment award. TRYON also participated in the 2019 Collission Conference in Toronto, which is North America's fastest-growing tech conference, where they were able to present their innovative technology to guests and receive feedback (TRYON, 2019).

In April 2020, TRYON became a member of the Canadian Jewellers Association, as well as the Jewelers of America, the leading non-profit jewelry association in the United States (TRYON, 2019). TRYON's company mission is to democratize AR technology for jewelry companies, from small local business to world-known brands, in order to enhance customer engagement and boost online sales. The company has been a part of many conferences, events, programs and associations in order to become a big winner in the AI and AR space within the jewelry industry. There is no doubt that TRYON will continue to push beyond their comfort zone to gain exposure, build a positive brand name and improve their technology in order to make a beneficial impact in the AR world.

Leadership

The two co-founders of TRYON are Andrii Tsok and Natalia Tsok. Natalia also holds the role of Chief Product Officer (CPO), while Andrii holds the role of Chief Technical Officer (CTO). The team demonstrates all three elements of the talent triangle which includes business acumen, operational excellence and domain knowledge. Both Andrii and Natalia possess business acumen as they are both co-founders of the company and combine both of their previous unique experiences together to manage and oversee the day-to-day responsibilities of the company for business development.

Andrii achieves operational excellence at TRYON as he is the CTO and has been in the technology industry for over 10 years while holding various senior management roles (LinkedIn,

n.d.). His experience in the technology and AI industry covers a large variety of disciplines which includes telecommunications, entertainment and education. His comprehensive expertise in this realm is a strong asset to TRYON. Andrii also has a master's degree in computer science and software for automated systems.

Natalia takes the lead for demonstrating operational excellence as she is the CPO and focuses on the development, delivery and creation of the product application at TRYON. Prior to establishing the start-up, Natalia worked at several IT companies as a web UI/UX designer, graphic designer and digital consultant (LinkedIn, n.d.). She is skilled at combining her expertise with modern AI technologies.

TRYON has a group of talented founders and employees with unique experiences in the field that qualifies them for the role that they play in the company. Their determination, passion, expertise and skills will lead them to continuous growth and success where they can help shift the jewelry industry with their AR technology.

Appendix

An **unmet market need** is when current available products or services do not fulfill customer's demand, creating an opportunity to introduce something new to the market that brings value to customers.

A **start-up** is a novel organization formed to search for a repeatable, scalable and sustainable business model.

Compounded annual growth rate (CAGR) is the rate of return that would be required for an investment to grow from its beginning balance to its ending balance, assuming the profits were reinvested at the end of each year of the investment's lifespan.

An **innovative** entrepreneur is someone who introduces new, original and creative ideas, products or processes that improves efficiency, effectiveness and application of a concept.

An **opportunity** is an approving set of circumstances that provide the entrepreneur with potential to achieve an idea.

Value is the relative worth, utility, importance and benefit that someone receives from a product or service in exchange for its price. It is one of the four essential qualities of an opportunity.

Timely is one of the four essential qualities of an opportunity. This describes when the market is ready an entrepreneur's product, service or idea.

Durable is when a concept is able to exist for a long period of time without significant deterioration in value or quality. In the entrepreneur's case, it will last enough to generate a positive return of investment. It is one of the four essential qualities of an opportunity.

Attractive is one of the four essential qualities of an opportunity and describes a huge profit potential in a product, service or idea.

Customer centric is an approach to doing business that focuses on creating a positive experience for the customer by maximizing service or product offerings and building relationships.

An **entrepreneur** is the person who perceives an opportunity and creates an organization to pursue it.

The **talent triangle** consists of three elements needed for a successful management team which include business acumen, operational excellence and domain knowledge.

Business acumen is the knowledge of how to run a business and how to deal with business situations, risks and opportunities in a manner that leads to a good outcome.

Operational excellence is the execution of the product and business strategy consistently and reliably with low risk and low operating costs to increase revenue.

Domain knowledge is the knowledge of a specific discipline, profession, activity or industry and understanding how and where to sell the product.

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