

invisaWear Smart Jewelry: Providing Peace of Mind

“How this didn’t exist until now completely baffles me.”¹

In June 2018 Rajia Abdelaziz, co-founder and CEO of invisawear, reflected on the event that propelled her to start a company with classmate, Ray Hamilton:

Late one evening after attending an event with Ray, I was walking back to the parking garage when a car full of guys rolled down the window and started yelling inappropriate comments. Then the car stopped and one of the guys started to get out. I felt completely helpless. Luckily, I was able to run and get into my car. Although my phone was right inside my purse, I didn’t have a split second to call the police or my friends who were still at the function less than a block away.²

Rajia was not the only college-age female who was nervous to walk alone at night. In fact, as President of the Society of Women Engineers’ UMass Lowell chapter, Rajia had observed that several club members were often reluctant to attend evening meetings. She recalled:

When the seasons changed and it became dark earlier, I noticed our attendance decline. I worried that the members were no longer enjoying the events, and so I asked them what was going on. Their answers were unanimous; they feared for their safety when walking back to their dorm or apartment late at night, especially given all the stories they were hearing on the news.

Unfortunately, Rajia and her members’ fears were not unfounded. In 2011, the *New York Times* published the results of a survey conducted by the National Center for Injury Prevention and Control at the Center for Disease Control and Prevention. The survey reported that nearly one in

¹ Nicole Yi, “This Discreet Alarm for Women Looks Like Jewelry – but Can Actually You’re your Life,” *Popsugar*, February 20, 2018, <https://www.popsugar.com/news/InvisaWear-Smart-Jewelry-Review-44584710>, accessed February 2018.

² Unless otherwise indicated, statements attributed to Rajia Abdelaziz and Ray Hamilton come from interviews conducted by the authors of this case.

This case was prepared by Ruth Gilleran, Senior Lecturer of Technology, Operations, and Information Management and Donna Stoddard, Associate Professor of Technology, Operations, and Information Management, both at Babson College. It was developed as a basis for class discussion, rather than to illustrate either effective or ineffective handling of a management situation. The funding for this case was provided by the Teaching Innovation Fund. It is not intended to serve as an endorsement, a source of primary data, or an illustration of effective or ineffective management.

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five women had been raped or had experienced reported rape.³ Three years later, the Association of American Universities published a survey that showed that 23% of female undergraduate students reported experiencing sexual assault since enrolling in college.⁴

Just two years after the unfortunate event walking back to her car late at night, Rajia and co-founder and CTO Ray Hamilton had created a product that would give women peace of mind in the event of an emergency. After surveying the marketplace and finding only big, ugly panic buttons, they designed a stylish and discreet safety wearable for females.

The Solution

Ray described their solution as follows:

Our product consists of a circular charm, less than one inch in diameter or about the size of a quarter, plated in 14K gold or silver and with the attractive invisawear logo on the top (see **Figure A** below). Customers can order the charm attached to either a bracelet, a necklace, or a keychain. The product's patent-pending technology enables women in danger to send a discreet SOS message to family, friends, and optionally, to the police.

Figure A: invisawear Smart Bracelet, Necklace, and Keychain



Source: Photos provided by invisawear.

³ Roni Caryn Rabin, "Nearly 1 in 5 Women in U.S. Survey Say They Have Been Sexually Assaulted," *The New York Times*, December 14, 2011, <http://www.nytimes.com/2011/12/15/health/nearly-1-in-5-women-in-us-survey-report-sexual-assault.html>, accessed February 2018.

⁴ Morgan Baskin, "Controversial 1-in-5 sexual assault statistic validated in new national survey," *USA Today*, September 21, 2015, <http://college.usatoday.com/2015/09/21/controversial-1-in-5-sexual-assault-statistic-validated-in-new-national-survey>, accessed February 2018.



To use the invisawear product, customers followed four simple steps:

1. Visited the Apple or Google app store and installed the free companion invisawear mobile app
2. Set up a user profile by entering their name, photo, date of birth, gender, race, height, weight, and medical conditions
3. Entered up to five contacts who were immediately sent a text message informing them that they have been added as an invisawear emergency contact and instructing them to visit the website for instructions on how to respond in the event of an emergency
4. Paired the charm to their smartphone using Bluetooth® Low Energy (BLE) and following the instructions within the mobile application

In an emergency, the user pressed the charm twice. The charm's push button antennas emitted a signal (electric current) via a Bluetooth® Low Energy (BLE) module. Assuming the phone was within 30 feet of the charm, the invisawear mobile application sensed the signal. Because a Global Positioning Sensor (GPS) component small enough to fit within the charm did not exist, the system used the GPS within the customer's smartphone to identify her location.

The system first attempted to contact the user to ensure the call was not a false alarm. The user would also be in the best position to provide the specifics of the emergency. This was the message the user heard:

This is an automated call from invisawear. If this is a real emergency, dial 1 to talk to 911 and to receive help. If this is a false alarm, press * to cancel.

If after 15 seconds the individual could not be reached, her personal contacts were *texted* an SOS alert and her GPS location (see **Exhibit 1** for a sample emergency text). If the user enabled the free and optional 911 feature on the invisawear smartphone mobile application, after the system attempted to contact her, it went down the list of emergency contacts, *phoning* them in order, until someone answered. If no one picked up, the system attempted to call the user again. The emergency contact heard the following message:

This is an emergency call from invisawear. <User's name> has designated you as an emergency contact in the app. The user has activated the emergency procedure. Dial 1 to speak to a 911 operator and to send help to <user's name> location. If you do not dial 1, we will attempt to call the other emergency contacts.

After pressing 1, the system connected the emergency contact to the local police and forwarded the police the user's location, as well as the information she provided when setting up her user profile. If the contacts had simply dialed 911 on their own, they would have been routed to a regional dispatch center, most likely in a different city than the victim. It would then take several minutes to get routed to the local police who could send help to the individual in a potentially life-threatening situation.



The Company's Origins

The inspiration for a line of smart jewelry came from Rajia's summer internship in 2015 at Amazon Robotics, a wholly owned subsidiary of Amazon. Amazon Robotics helped automate fulfillment centers using mobile robots, machine learning, and object recognition. Rajia programmed wearable devices or wristbands for the warehouse workers who were stocking inventory.⁵ Rajia recalled:

Amazon used these wristbands to track the workers' arm movements in order to identify even the slightest process changes that could result in significant cost savings for the company.⁶ As I watched the workers, I began to wonder whether a smart bracelet might be the solution to the safety problem that my peers and I were facing.

In September of 2015, Rajia, a college senior with a double major in electrical engineering and computer science, teamed up with Ray, an electrical engineering major, for their senior year design project. The UMass Lowell engineering program had an entrepreneurial track that encouraged its engineers and business students to work together to create a product that solved a real need. Rajia and Ray's product, a safety bracelet or life alert for women, received praise from both faculty and fellow students alike. When Rajia and Ray presented their product design at a university open house, parents of prospective students offered to give them a blank check if they promised to deliver the product to market. Encouraged by this show of support, Rajia and Ray entered the UMass Lowell DifferenceMaker competition, a program that encouraged students to develop sustainable solutions to real-world "big problems." Despite stiff competition, DifferenceMaker awarded Rajia and Ray 1st place, and a \$4,500 award, in the Innovative Technology Solution category. Spurred on by this achievement, Rajia and Ray declined prestigious job opportunities and decided to dedicate themselves to their line of smart jewelry. In July of 2016, two months after their college graduation, Rajia and Ray founded invisaWear.

MassChallenge

About ten months later, in May of 2017, MassChallenge accepted Rajia and Ray into its startup accelerator program. Each year MassChallenge welcomed 128 startups, who passed a competitive application process, to its headquarters in Boston's seaport district. It gave the startups free office space, access to its prototyping lab, mentoring from industry experts, and educational programs to help grow their business.

John Harthorne founded the non-profit organization in 2010, as he believed in the need for a greater focus on adding value to the economy. As CEO of MassChallenge, Harthorne often commented that since companies were fighting over existing slices of pie – 'pie' being the global economy – a better solution would be to make more pie.⁷ MassChallenge branded itself as "the

⁵ Mark Blunden, "Amazon develops wristbands to track warehouse workers," *MSN Evening Standard*, October 20, 2017, <https://www.msn.com/en-gb/news/newslondon/amazon-develops-wristbands-to-track-warehouse-workers/ar-AAAtKPjR>, accessed March 2018.

⁶ "Amazon patents wristband that can track warehouse workers' hands in real time," *Tech Now*, February 02, 2018, <https://www.irishexaminer.com/breakingnews/technow/amazon-patents-wristband-that-can-track-warehouse-workers-hands-in-real-time-826079.html>, accessed March 2018.

⁷ Taylor Soper, "How MassChallenge wants to create 'a factory for startups' and change economic models," *GeekWire*, March 27, 2017, <https://www.geekwire.com/2017/masschallenge-wants-create-factory-startups-change-economic-models>, accessed March 2018.



most startup-friendly accelerator on the planet”⁸ because it did not ask for equity; instead, it relied on funding from corporations, government agencies, foundations, and universities to run its programs.

During their time at MassChallenge, Rajia and Ray formed several strong relationships that strengthened their business network. As engineers, they eagerly took part in training sessions on topics such as social media marketing and intellectual property management. They met with industry mentors, including investors, engineering and wearables experts, lawyers, and marketing executives. By late fall of 2017, Rajia and Ray had raised over half a million dollars from banks and angel investors. With the resources and knowledge they needed to be successful, they confidently entered the Internet of Things (IoT) marketplace.

IoT

The IoT is an environment in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.⁹ IoT products called for complex interdisciplinary systems engineering design. They consisted of devices embedded with electronics, software, sensors, and connectivity that enables them to connect to the cloud and exchange information. In short, the IoT is a giant network of connected ‘things.’ Since 2015, the IoT marketplace had grown rapidly and cloud suppliers, such as Microsoft, PTC, IBM, and Amazon were providing platforms to support this growth. In 2017, Bain & Company predicted that IoT applications would generate about \$470 billion in 2020, up from \$195 billion in 2015. Of the \$470 billion, consumer applications were expected to account for \$150 billion and business-to-business (B2B) applications would be worth twice that amount, with more than \$300 billion in anticipated revenues.¹⁰ (See **Figure B** below.)

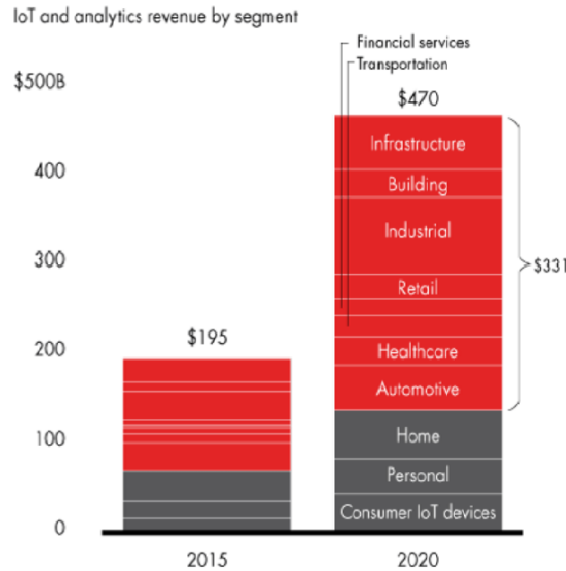
⁸ MassChallenge, <https://masschallenge.org/media?mp=&my=2017%0D%0A&mt=&mc=&page=30>, accessed August 2018.

⁹ Margaret Rouse, “internet of things (IoT),” Tech Target, <https://internetofthingsagenda.techtarget.com/definition/Internet-of-Things-IoT>, accessed March 2018.

¹⁰ Peter Bowen et al., “Choosing the Right Platform for the Industrial IoT,” *Bain & Company*, September 28, 2017, <http://www.bain.com/publications/articles/choosing-the-right-platform-for-the-industrial-iot.aspx>, accessed March 2018.



Figure B: IoT Segment Analysis



Source: Peter Bowen et al., “Choosing the Right Platform for the Industrial IoT,” *Bain & Company*, September 28, 2017, <http://www.bain.com/publications/articles/choosing-the-right-platform-for-the-industrial-iot.aspx>, accessed March 2018.

In 2015 when Rajia and Ray came up with the idea for invisawear, few were thinking about how to embed IoT capability in fashion jewelry. However, as IoT components became smaller and smaller, Rajia and Ray acknowledged that it just might be possible to manufacture a *smart* charm.

Smart Jewelry

Like all smart products, invisawear’s jewelry consisted of a physical product, smart components, and internet connectivity to pass the data that was being collected. The physical components were the product’s mechanical and electrical parts.¹¹ Rajia and Ray created prototypes of the charm that encased both the physical and the software components, in the MassChallenge makerspace. They used the SOLIDWORDS design software to create the digital design file and a Formlab printer to build the prototype. By early 2018, Rajia and Ray had created several prototypes and were becoming increasingly confident about their idea. Ray noted:

Now the charm is actually a fraction of the size of our initial prototype because people have continuously told us that they like small things. In contrast to many fitness tracking devices, we were determined to design a fashionable piece of jewelry that would also keep women safe.

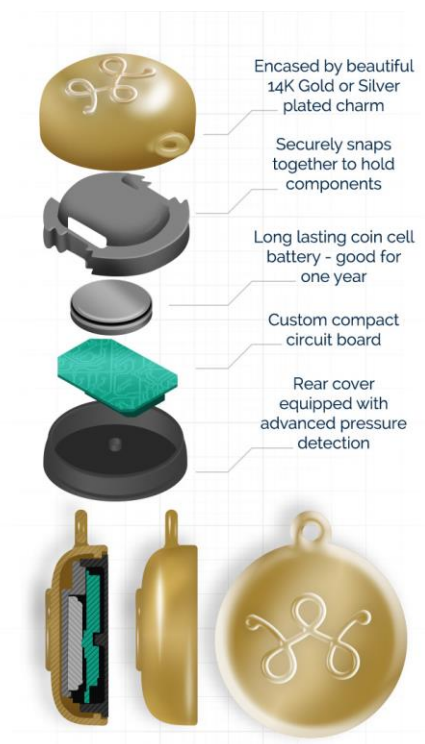
¹¹ Michael E. Porter and James E. Heppelmann, “How Smart, Connected Products Are Transforming Competition,” *Harvard Business Review*, November 2014, <https://hbr.org/2014/11/how-smart-connected-products-are-transforming-competition>, accessed March 2018.



While the 3-D prototypes were constructed of plastic, invisaWear produced the finished products using an injection molding process to achieve a polished look and to ensure that the components inside remained secure. Brass was heated and casted and then coated in the customer's choice of either 14K gold or silver. Plastic was placed underneath the metal so the gold or silver would not interfere with the Bluetooth® signal. The mold was created and the charms were manufactured in China.

The back of the charm had an opening to insert a small circuit board (see **Figure C** below). The board, assembled in the United States, housed the smart components, for example, the power, microprocessor, software, and communication elements. The charm was powered by a battery with a one-year life, at which time the invisaWear mobile application would notify the customer that it was time to purchase a replacement charm, priced at \$65.

Figure C: The Inner Workings



Source: invisaWear co-founders. Used with permission.



Critical Partnerships

By early 2018, invisawear had four critical hardware and software partners: Arrow Electronics, Accutronics, DMC and Zco (see **Table A** below).

Table A: Critical Partners and their Value Add

	Partner	Value Add
Hardware	Arrow Electronics	Battery, processing components, Bluetooth® Low Energy (BLE) module
Assembly	Accutronics	Circuit board assembly
Software	DMC	Firmware
	Zco	Mobile application

Source: Casewriters’ table based on interviews with the invisawear co-founders.

invisawear became aware of Arrow Electronics through Arrow’s sponsorship of the UMass Lowell Innovation Hub lab. Arrow took great pride in the close partnerships it formed with its clients and provided invisawear with both hardware and engineering advice. For example, when Ray first visited Arrow, he came with a specific battery. Arrow advised him that better batteries were available in the marketplace and with this recommendation, the hardware design was substantially improved. invisawear outsourced the electronic component assembly to Accutronics, a contract manufacturer located in Lowell, MA. Accutronics employed 3-D imaging technology to ensure that the components were securely attached to the circuit board and all the connections were made. DMC, an engineering firm focused on software development and control systems, provided the firmware. Firmware, or software installed on the circuit board, provided instructions on how to operate the hardware. Zco Corporation, a custom software development firm, designed and developed the smartphone mobile application that sent the user’s location and profile data to the 911 system.

The Mobile Application

invisawear discovered Zco, a custom software development firm, through a MassChallenge networking event. Rajia and Ray were initially attracted to the company because of its work with a map-based application – PublicEye – that allowed first responders to view the information they needed when responding to an emergency. For example, when a police officer received a 911 call, his or her mobile device displayed data such as building floorplans, surrounding areas of interest, and data on past violence in the area.

According to Kyle Mallinger, Director of Marketing, the Zco developers adopted the Scrum agile software development methodology. This method was committed to feature-driven development and a goal of delivering small pieces of working software at set intervals. Development of the invisawear iOS and Android mobile applications took place over a period of six months, with four interim deliverables. During this time, Rajia and Ray provided continuous feedback.

Since Rajia and Ray wanted the mobile application to highlight their premium brand, they worked closely with Zco’s User Experience/User Interface (UX/UI) designers. The Justinmind



UI prototyping tool was used to create mockups of the mobile app screens (see **Exhibit 2** to view the invisaWear mobile application screens). The open source Swift programming language developed by Apple was used for coding the iOS version while the Android app was coded in Java. The data was stored in a MySQL database on the Amazon Web Services (AWS) platform. In the event of an emergency, the user's location and profile data was passed to the 911 system by calling an Application Programming Interface (API) provided by RapidSOS. The RapidSOS Emergency API pushed data from any connected device to the 911 operators and first responders several minutes faster than a direct call to 911. As noted earlier, direct 911 calls were delayed because they were initially routed to regional 911 centers. (See **Exhibit 3** to learn more about RapidSOS.)

invisaWear planned to continue its relationship with Zco, especially for support on operating system upgrades, after the product went live in June of 2018. The Android environment was particularly challenging given the number of manufacturers (for example, Google, Motorola, and Samsung) that operated on this platform. (See **Exhibit 4** to learn more about Zco Corporation.)

Patent Protection

Initially, both Rajia and Ray were unsure whether to file for a patent. Rajia recalled, "When we first came up with this idea, we did not think we had anything patentable because of all the other safety devices on the market, and we were like, well, we're not the first ones to come up with a panic button." Things changed, however, when Rajia and Ray sought legal counsel from the Boston law office of Foley and Lardner. Not only was Foley and Lardner a MassChallenge sponsor, but one of its partners was a UMass alumnus. The firm's recommendation was clear – patent the product before someone else does.

After conducting research on their invention to find differentiators, Rajia and Ray filed for a provisional patent with the United States Patents and Trademark Office. Within a year, they planned to file a design and a utility patent. The design patent would be on how the product looked, including how invisaWear was able to satisfy the demands of its target market for a small-sized charm that held all the necessary technical components. In 2018, according to Rajia, "the invisaWear charm was the smallest certified Bluetooth® module on the market." The product's interchangeability was a distinct advantage as the charm could be attached to a bracelet, a necklace, or a keychain. The utility patent would be on how the system worked together as a whole, that is, how the jewelry alerted the smartphone mobile application to notify loved ones and the police.

The Competition

In 2018, the product's indirect competition consisted of the smartphone and the college campus blue light security system. However, close examination revealed that neither was a viable alternative. In an emergency, there was a good chance that a person battling with an adversary would be unable to access her phone. By the time they struggled with their clothing or pocketbook to reach and unlock their phone, it would probably be too late. The college blue light security systems, a standard stop on most campus tours, contained a speakerphone with a button that directly called campus police. The problem with this system, however, was that the blue lights were often spaced far apart and, therefore, were generally more beneficial to someone searching to get help for the injured.

Direct competition for invisaWear consisted of four companies: React Mobile Sidekick, Revolar, ROAR for Good, and Safelet.¹² As can be seen in **Table B** below, all companies notified family and friends of a

¹² Susan Harrow, "10 Best Gadgets to Prevent Rape," *HuffPost*, April 7, 2017, https://www.huffingtonpost.com/entry/10-best-gadgets-to-prevent-rape_us_58e799c4e4b06f8c18beae4, accessed March 2018.



loved one’s location in the event of an emergency but only two companies, invisawear and React Mobile Sidekick, notified the police as well. The other differentiator for invisawear was its multi-use, for example, a bracelet, a necklace, or a keychain. Finally, only one product, Revolar, was multi-purpose. Revolar tracked footsteps, in addition to safety data.¹³ According to Ray, “During our market research, we found that people really wanted a single-purpose device and so we focus on safety and we don’t try to compete with the healthcare or fitness tracking devices.”

Table A: Critical Partners and their Value Add

	Price	Notify family	Notify police	Bracelet	Necklace	Keychain	Tracks health statistics
invisaWear	\$129.00	X	X	X	X	X	
Roar for Good Athena	\$129.00	X				X	
React Mobile Sidekick	\$69.99	X	X			X	
Revolar	\$79.99	X				X	X
Safelet	\$34.95 to \$79.95	X		X			

Source: Created by casewriters based on interviews and web research. April 2018.

Indiegogo Campaign

After conducting focus groups, giving the device to several individuals to test, and iterating on the product design, Rajia and Ray launched a crowdfunding campaign on Indiegogo in February of 2018. Since the founders had already raised \$500,000 from start-up competitions, a local bank, and angel investors, the goal of the campaign was less about fundraising and more about public relations, assessing demand, and determining product mix. Rajia and Ray chose the Indiegogo platform for two reasons. First, Indiegogo had launched security products in the past, so invisawear hoped to gain traction from those campaigns, and second, invisawear had a contact at Indiegogo.

invisawear hired a crowdfunding manager to handle all the pre- and post-launch activities. To attract backers, Rajia and Ray posted Facebook ads and launched an email marketing campaign to the 10,000

¹³ Breanna Wilson, “The Best Wearable Safety Devices For Solo Travelers,” *Forbes*, May 31, 2017, <https://www.forbes.com/sites/breannawilson/2017/05/31/the-best-wearable-safety-devices-for-solo-travelers/#223383d03e09>, accessed March 2018.



contacts they had amassed over the years. Prominently displayed on the main campaign website was a certificate from Arrow Electronics verifying that invisaWear was prepared to sell a device that was viable and feasible to manufacture.

The company set a campaign goal of \$20,000 and reached 80% of its goal within 48 hours. This was partially due to the tremendous press invisaWear received before and during the campaign. Local newspaper and TV stations, as well as popular online technology websites like Digital Trends, Geek, and Wearables, praised the product and the company's success.

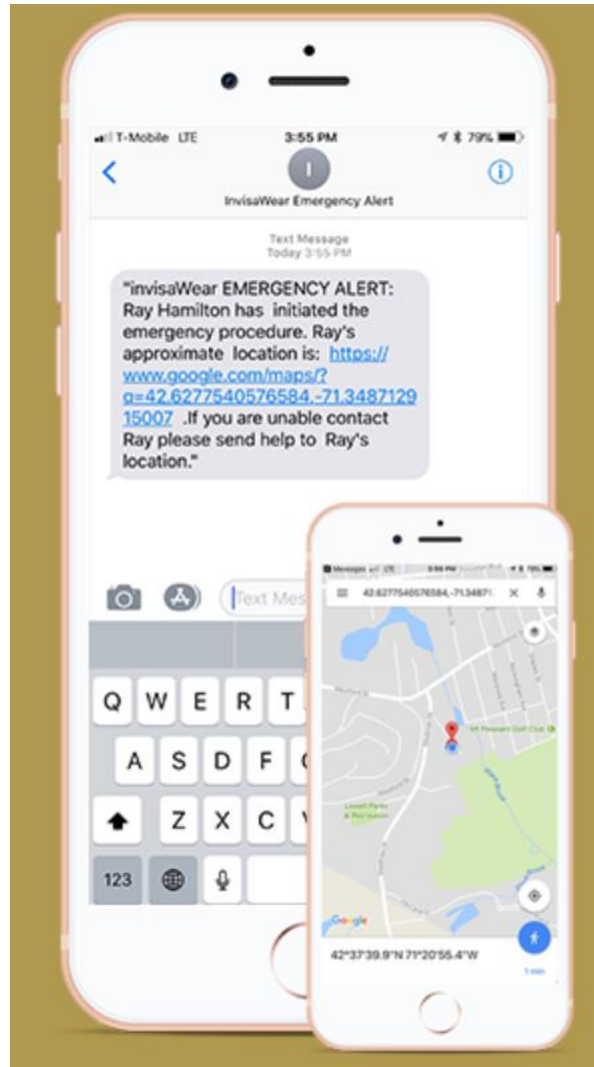
Customers could pre-order a single product or packs of two to twenty units at a discount ranging from 23% to 46%. They could also choose between 14K gold and silver. By the end of the campaign, the company had raised \$37,288 or 186% of its goal, and 333 individuals had backed its campaign. In addition to gauging consumer interest in its smart jewelry, the campaign provided some surprising information about product and metal preferences. Customers preferred keychains to bracelets and necklaces, and silver to gold. It also revealed the need to clearly explain the 911 feature as several questions were raised on this topic. Finally, the campaign exposed a new target market segment. Because the price point was deemed too high for teens, invisaWear realized that it needed to target the teenagers' parents as well.

Key Challenges Ahead

In June of 2018, Rajia and Ray were pleased with how far they had come since their college graduation just two years ago. They now had a staff of five: a director of sales and marketing, a social media manager, a part-time accountant, and two sales representatives. Their innovative product had earned them acceptance into the MassChallenge startup accelerator program, \$500,000 in funding, and a top 100 Startup of the Year ranking from Tech.Co, a West Coast start-up accelerator. It also led to a successful Indiegogo campaign, having raised close to \$40,000. Getting to this point had been exhausting, yet exhilarating.

Like the many entrepreneurs they strategically chose to surround themselves with, Rajia, Ray, and the invisaWear team members worked long hours, seven days a week. Now they were ready to begin selling their product online. Anxious to get their smart jewelry into the hands of as many college-age females as possible, Rajia and Ray began to ponder the challenges that lay ahead, namely, sales, marketing, and distribution. As they relaxed over a glass of wine, they contemplated how to meet these challenges and how best to grow the business.

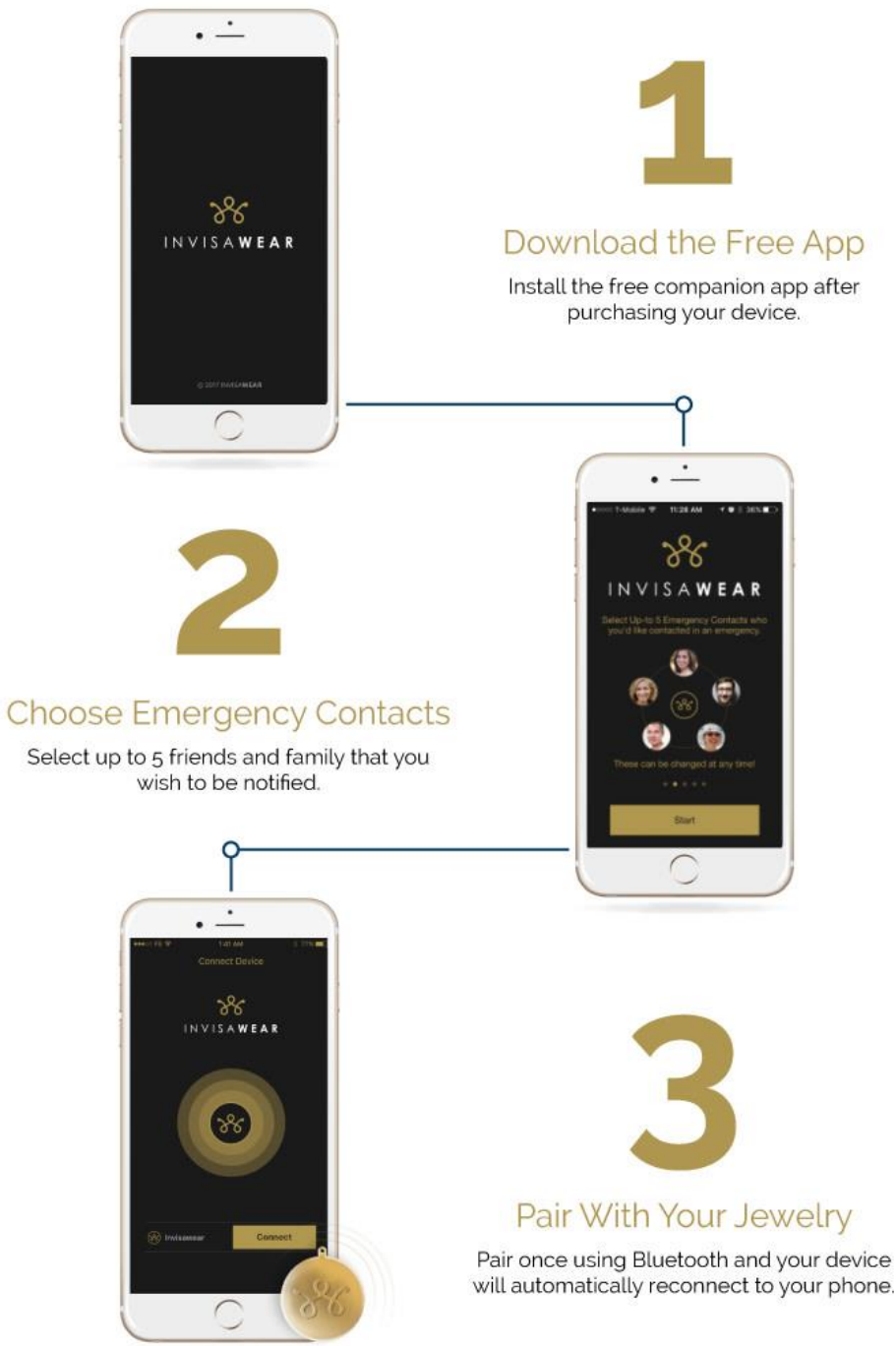
Exhibit 1: Emergency Alert Text



Source: invisawear, "How it works," <https://www.invisawear.com/pages/how-it-works>, accessed August 2018.



Exhibit 2: The invisawear Mobile Application



Source: “invisaWear Smart Jewelry That Could Save Your Life,” *Indiegogo*, <https://www.indiegogo.com/projects/invisaWear-smart-jewelry-that-could-save-your-life#>, accessed March 2018.



Exhibit 3 About RapidSOS

RapidSOS, headquartered in New York City, was an advanced emergency communication and analytics platform. The company was founded in 2012 with a mission to “work with the public safety community to speed response time and enhance the data available to the 911 system and first responders.”¹⁴ Prior to RapidSOS, when a direct 911 call was placed, it was routed to a regional operations center known as a Public Safety Answering Point or PSAP. Unfortunately, when phoning the PSAP from a cell phone, the analog-based 911 system built in the 1960s, was unable to pinpoint the most important piece of information in an emergency—the caller’s location.¹⁵ This was a great concern as approximately 70% of emergency phone calls were made from wireless phones.¹⁶ RapidSOS, through its Application Programming Interface, solved this problem by improving the location data sent to the 911 system. In addition to the smartphone, RapidSOS was sending data from wearables, connected cars, and home security systems. RapidSOS transformed the 911 system from a voice-only system to one that could now accept data.

¹⁴ RapidSOS, <https://rapidsos.com/publicsafety/>, accessed April 2018

¹⁵ “9-1-1 Origin and History,” *NENA*, <https://www.nena.org/?page=911overviewfacts>, accessed March 2018

¹⁶ “911 Wireless Services,” *FCC*, <https://www.fcc.gov/consumers/guides/911-wireless-services>, accessed April 2018



Exhibit 4: About Zco Corporation

Zco Corporation was founded in 1989. In 2018, it employed over 300 individuals worldwide. Approximately 30 employees were located at its headquarters in Nashua, New Hampshire including the executive staff, project leaders, and sales and marketing personnel. The technical staff, about 280, were located in Kochi, India. The company had software development experience with everything from back-end or enterprise systems to, more recently, games and mobile applications. At the end of each project, Zco's customers owned the code and all rights to it.

In 2018, Zco had successfully completed more than 500 projects across all platforms.¹⁷ All their work was custom except for the one project they developed, known as PublicEye. This product was described on their website as follows:

The one and only product we distribute ourselves, rather than develop for clients, is a revolutionary public safety tool called PublicEye®. From governors to mayors, police and fire chiefs, first responders, volunteers, and even the public, PublicEye® enables everyone working together for public safety. There are over a billion smartphones and tablets in the world. Businesses using mobile devices experience faster response times, increases in productivity, and budgetary savings. These advantages are now available for everyone in public safety with our product, PublicEye®.¹⁸

¹⁷ Zco Corporation, <https://www.zco.com/about.aspx>, assessed April 2018.

¹⁸ Ibid.