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# Boston Telecare: Disruption and Strategy in the Home Healthcare Industry

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## INTRODUCTION

Boston Telecare is a start-up technology company that meets the needs of older adults by helping them live independently while still staying connected 24/7 to their loved ones and healthcare providers.<sup>1</sup> Software developer and successful entrepreneur Camila Garzon founded the company in Boston, Massachusetts, in 2020 after she experienced the challenges of caring for her own aging mother and aunt who both lived several hours away in Hartford, Connecticut. The healthcare industry is being disrupted by remote technology, and a market for remote care is fast emerging.

Through its ForeverMind™ platform, Boston Telecare plans on being a disruptor in home healthcare by offering remote 24/7 health and wellness monitoring using easy-to-use wearable technology that tracks various key health indicators and interacts with the user throughout the day. ForeverMind™ collects real-time data using Internet of Things (IOT) technology, providing its users with their health data, medication reminders, social engagement updates, and reports designed to help family members stay informed and connected.

ForeverMind™ received positive results when pilot-tested at a major hospital system in Hartford. The company currently has a small base of satisfied clients (see Exhibit 1), and surveys of potential customers show a strong likelihood of product adoption and acceptance (see Table 1). Based on these facts, the original equity investors are prepared to financially support a large-scale rollout of ForeverMind™ in the United States. Camila Garzon needs to identify the appropriate business strategy to present to investors for their approval.

## CURRENT ENVIRONMENT

The demands placed on essential workers during the COVID-19 pandemic have resulted in a workforce exodus exacerbating existing staffing shortfalls in the approximately 2.3 million employed home care and home health agency field.<sup>2</sup> Intensifying this staffing deficiency is the demographic reality of an ever-increasing senior population that requires age-appropriate lifestyle assistance and healthcare services (see Exhibit 2). Another impact of the pandemic has been an increase in remote technology-based service outreach by many community-

based organizations that offer medical and social support for seniors, increasing the comfort level for this type of outreach while further growing the remote eldercare market.<sup>3</sup>

The emergence of the pandemic also quickened the pace of growth in the field of digital healthcare. Improvements in technology and the emergence of IoT allow doctors to consult with patients remotely via telehealth appointments while the field of digital therapeutics allows for the use of internet-based health technologies and therapies to encourage changes in patient behavior. Supporting the growth of telehealth and digital healthcare is the insurance industry's willingness to pay for healthcare delivered remotely and patient openness to embracing the benefits of remote care.

Boston Telecare is well-positioned to take advantage of the technological disruptions brought on by a society that has grown more comfortable with the concept of technology-enabled remote care and health monitoring. Additionally, Boston Telecare offers a value proposition uniquely positioned to remediate some of the health, safety, and staffing concerns that exist in the post-pandemic environment.

## **THE PRODUCT**

Boston Telecare competes in the market for remote care, a subset of the emerging field of digital therapeutics. Remote care, which is also called telecare, is a supplement to traditional in-home health care and can provide a 24/7 around-the-clock support system. A remote digital interactive platform, ForeverMind™ collects health data from individuals and electronically transmits that information to the user's family and/or healthcare providers for assessment and possible action.

Monitoring and care services use off-the-shelf wearables, such as bracelets and watches, connecting the wearer to IoT sensors. The advent of IoT technology allows physical devices to connect to the internet to exchange information, collect data, and monitor health conditions.<sup>4</sup> The ForeverMind™ service monitors and interacts with the user throughout the day with data appearing on a smart tablet display or a web-based app.

The data is available to anyone the user grants permission, such as family members or healthcare providers. The remote service tracks daily vital signs, physical movement, and sleep patterns with key health data such as heart rate, pulse, blood pressure, hydration, mobility, and social interaction. In case of an emergency, a one-touch calling feature allows the user to contact members of their inner circle or a physician with a touch of a keypad. Social engagement tools, such as music, photo sharing, and podcasts, are also available on the ForeverMind™ app.

ForeverMind™ also provides a check-in feature for visitors, which tracks the arrival and departure time of companions such as hired caregivers and cleaning services. These visitors can also leave video updates for family members on the app. Interviews with family members have shown that this feature is highly valued as it provides assurance that the caregivers assigned to their loved one actually showed up at their scheduled time and provided the required services (see Exhibit 1). The app also offers audible and written reminders to the user to take their medications, eat their meals, and engage in beneficial activities. These reminders are customizable to the user's schedule and must be acknowledged by the user, providing a record of their activities.

## **CUSTOMERS AND TARGET MARKETS**

Boston Telecare's remote care service meets the needs of three distinct groups of customers covering the growing demographics of the aging.

## **Group 1: Elderly Individuals and Their Families**

The U.S. population of adults older than 65 has increased from 38.8 million in 2008 to 54.1 million in 2019 and is expected to reach 94.7 million by 2060.<sup>5</sup> Many of these seniors live independently either alone or away from their families. The primary customers in this segment are either the elderly individuals themselves or their children and relatives that Boston Telecare refers to as the “family circle.”

Boston Telecare’s remote health products offer around-the-clock monitoring and reporting that infrequent in-home visits from a home healthcare worker or a family member cannot address. The ForeverMind™ app allows the family circle to be more involved in the daily life of their aging relative while adding to their peace of mind knowing that their relatives are being properly cared for. These family members often do not have the time or geographic proximity to be with the ForeverMind™ user every day, yet they want to stay connected and informed daily. The ability to provide 24/7 remote monitoring support to their aging loved ones is a major benefit of the ForeverMind™ product and helps relieve the stress and feelings of guilt often felt by the family circle that they are not doing enough to take care of their elderly loved ones.

## **Group 2: Home Healthcare Provider (HHPs)**

HHPs provide in-person care at a customer’s home. HHP employees assisting with bathing, administering medications, and doing light housekeeping while also providing companionship and social interaction. This type of care is usually offered at an hourly rate. In 2022 there were approximately 450,000 HHPs in the U.S., an increase of 5.5% since the start of the year, with no one company either independently owned or franchised having more than 5% market share.<sup>6</sup> (see Exhibit 3 for additional information on the HHP segment). Wages are the largest single expense line for HHPs at 51% of total revenue, creating a business model heavily reliant and impacted by staffing to meet objectives and customer expectations.<sup>7</sup> Due to disruptive trends and staffing shortages in the industry, the climate is favorable for HHPs to supplement their business model by offering remote health monitoring technologies as a means to differentiate their services from competitors and reduce reliance on labor while delivering modern and relevant services to their customers.

## **Group 3: Assisted Living Facilities (ALFs)**

Assisted living facilities provide housing, cleaning, companionship, meals, and social interaction to their residents and do not use on-site nursing facilities.<sup>8</sup> In 2021 there were approximately 30,000 assisted living communities in the U.S., with nearly one million licensed beds and an average of 33 beds per community.<sup>9</sup> The U.S. ALF market is estimated at \$83.2 billion in 2020 and is expected to grow at a compound annual rate of 5.3% from 2021 to 2027.<sup>10</sup> See Exhibit 4 for additional information on the ALF segment. Residents in these facilities receive tailored support and care based on their medical requirements, intellectual and developmental needs, and physical condition.

In a recent survey, 99% of ALFs said they were facing widespread staffing shortages, forcing them to reduce new admissions, cut back on services, and increase overtime shifts.<sup>11</sup> Based on these staffing shortages, ALFs may be interested in adopting remote monitoring technologies as a means of lessening their staffing burdens while increasing on-site resident tracking capabilities. This ability to monitor and report the status of a resident 24/7 could be a valuable new product offering to modernize services and increase confidence that residents are being well-cared for using the most up-to-date practices.

## **CHOOSING A BUSINESS MODEL: THE OPTIONS**

Using the target market data Boston Telecare CEO Camila and her team went to work to determine the best option for their ForeverMind™ go-to market strategy to share with their equity investors. The two product launch options being considered include selling directly to end users—business to consumer (B2C) or selling to/through HHPs and ALFs (B2B). These two options are described next.

### **Option I: Business to consumers(B2C): Sell to end users**

In this B2C model, Boston Telecare would market directly to individual users and acquire these customers directly. This model would offer many benefits, foremost among these that the company would not rely on partners to build out the business. It would offer higher profit margins as all revenue that Boston Telecare would retain and will not be shared with partners. Direct personal contact with the customer would allow for immediate feedback on what is working and what is not, giving the company valuable data that can be acted upon to improve the product and create additional services. Also, by selling directly to the end users, the Boston Telecare brand will gain more visibility in the consumer marketplace.

The B2C model would have some challenges. Reaching and converting individual prospects into paying customers would require expensive marketing, advertising, and acquisition infrastructure. Boston Telecare would have to provide technical guidance and individualized customer support to its users and would need to establish a robust back-office system to support direct to consumer billing and collection. Lastly, working directly with end users has the risk of alienating the HHPs and ALFs who currently serve these elderly users and who may see independently offered remote care services as a threat to their own business.

### **Option II: Business to business (B2B): Sell to/through HHPs and ALFs**

In this B2B model, Boston Telecare would market and sell ForeverMind™ to and/or through HHPs and ALFs, who would then offer these services directly to their customers. By successfully partnering with these companies, Boston Telecare would gain access to their large client base and quickly gain a national reach. This approach would reduce sales and marketing expenses, as the partners would handle promotion and sales to end users.

By freeing up the company's time and money to focus on research and development, Boston Telecare could work on improving the overall product experience. Also, by partnering with HHPs and ALFs, the company can gain valuable insights into this segment's consumer behavior, product requirements, and rival product offerings, all data points that can be used in product improvement. Boston Telecare could build on each HHP's and ALF's knowledge of their individual customer base to offer tailored solutions, increasing satisfaction with the end product.

The B2B model has some challenges. Most importantly, Boston Telecare would need to convince HHPs and ALFs of the value of a partnership, as some may see the ForeverMind™ service as a threat to their business model or an infringement on their business. There is also a risk that Boston Telecare could lose control of the customer experience and miss out on customer insights if it allows marketing and customer interaction to be handled by others. Lastly, if Boston Telecare becomes dependent on powerful HHPs and ALFs for sales revenue, they could be exposed to revenue loss if these partners decide to change contract terms, start offering competitor's products, or stop offering ForeverMind™ altogether.

## **Analyzing Cost Structure**

Due to the incubator status of the product, the ForeverMind™ product will be expected to cover only the additional portion of fixed and variable costs resulting from the product launch (see Tables 3 and 4). If the ForeverMind™

launch is successful, the company will revisit the cost structure to determine if additional indirect and operating costs currently being absorbed by the company's other products should be allocated.

To understand the feasibility of each business model under consideration, Camila went to work to determine the breakeven sales target for both product launch options. By understanding the breakeven target, Camila can determine the number of units of ForeverMind™ needing to be sold and the amount of sales revenue needing to be generated to cover the costs of making the product. Once Camila has determined the level of revenue needed to get to a profit of zero, meaning all identified fixed and variable expenses and costs are covered, she can assess if this minimal sales target is achievable based on the options being considered.

Speaking with her accounting team Camila was told that the first step toward determining the breakeven sales point is to understand the contribution margin of each option under consideration. The contribution margin is the amount of sales revenue remaining once variable expenses have been deducted. Using product pricing data (see Table 2), expense data, and a pro forma income statement (see Table 4), Camila and her team went to work to determine how many units needed to be sold under each option to cover the identified expenses. Once the breakeven information is understood, Camila and her team can then discuss the relationship between contribution margin, sales, and fixed expenses to achieve their desired profit margin utilizing cost volume profit (CVP) analysis for each option under consideration. This accounting information, coupled with marketing, sales, and strategic perspectives will help determine the best path forward.

## THE DECISION

CEO Camila is meeting with the investors soon and will need to give them a clear direction for the company's rollout strategy. There are some crucial decisions that need to be made. Both business models under deliberation bring opportunities and challenges that the company needs to consider. Disruption in the telecare industry based on a growing acceptance of remote interactions and the ongoing healthcare staffing shortages provide Boston Telecare with a unique confluence of events that could prove to be a sales bonanza but only if they act fast.

It is now time to decide. What will be the strategy to roll out ForeverMind™ in the U.S. marketplace? Will the company pursue a B2C model or a B2B model? What are the financial, strategic, and marketing factors? Camila does not have much time to evaluate her options and propose the best path forward to the investors.

## ENDNOTES

<sup>1</sup> Boston Telecare is a fictitious company. Survey data in Tables 1 and 2 display actual consumer feedback collected by the authors.

<sup>2</sup> Tyler, D., Hunter, M., Mulmule, N., and Porter, K., 2021, "COVID-19 Intensifies Home Care Workforce Challenges," Washington, DC: U.S. Department of Health and Human Services.

<sup>3</sup> Kaplan, D. B., and Berkman, B. J., 2021, "Older Adults Living Alone," *Merck Manual*, <https://www.merckmanuals.com/professional/geriatrics/social-issues-in-older-adults/older-adults-living-alone>.

<sup>4</sup> OMRON, 2021, "What is IoT?" <https://components.omron.com/sensor/about-iot>.

<sup>5</sup> The Administration for Community Living, 2021, "2020 Profile of Older Americans," Washington, DC, U.S. Department of Health and Human Services. <https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2019ProfileOlderAmericans508.pdf>.

- <sup>6</sup> IBISWorld, 2022, Home Care Providers in the US - Number of Businesses 2002–2027, <https://www.ibisworld.com/industry-statistics/number-of-businesses/home-care-providers-united-states/>.
- <sup>7</sup> IBISWorld, 2022, Home Care Providers in the US - Number of Businesses 2002–2027, <https://www.ibisworld.com/industry-statistics/number-of-businesses/home-care-providers-united-states/>.
- <sup>8</sup> Seniors Guide, May 21, 2020, “The Difference Between a CCRC and Assisted Living,” *Seniors Guide*, <https://www.seniorsguide.com/active-adult-communities/the-difference-between-a-ccrc-and-assisted-living/>.
- <sup>9</sup> American Health Care Association, 2021, “Assisted Living Facts & Figures,” <https://www.ahcancal.org/Assisted-Living/Facts-and-Figures/Pages/default.aspx>.
- <sup>10</sup> Grand View Research, 2021,. “U.S. Assisted Living Facility Market Size, Share & Trends Analysis Report, And Segment Forecasts, 2021 - 2027,” San Francisco: Grand View Research.
- <sup>11</sup> Muoio, D., 2021, *Staffing shortages force long-term care facilities to limit admissions, hire agency workers*, <https://www.fiercehealthcare.com/hospitals/staffing-shortages-force-long-term-care-facilities-to-limit-admissions-hire-agency>.

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**Table 1. Likelihood of Telemedicine Adoption by Potential Customers**

	For my parents, family or friends		For myself or my spouse		Total	
	n	%	n	%	n	%
Extremely unlikely	3	1.8%	10	5.3%	13	3.6%
Somewhat unlikely	4	2.4%	15	8.0%	19	5.3%
Neither likely or unlikely	16	9.4%	29	15.0%	45	12.6%
Somewhat likely	61	35.9%	61	32.6%	122	34.2%
Extremely likely	86	50.6%	72	38.5%	158	44.3%
<b>Total</b>	<b>170</b>	<b>100.0%</b>	<b>187</b>	<b>100.0%</b>	<b>357</b>	<b>100.0%</b>

Note: Data is from survey of potential telecare users by the authors conducted in 2020. .

**Table 2. Monthly Acceptable Product Price Range for Telemedicine**

Price Range	n	%
<\$10	19	5.3%
\$10<\$20	37	10.4%
\$20<\$30	42	11.8%
\$30<\$50	58	16.2%
\$50<\$100	76	21.3%
\$100<\$175	52	14.6%
\$175<\$250	30	8.4%
\$250<\$400	26	7.3%
>\$400	17	4.8%
<b>Total</b>	<b>357</b>	<b>100.0%</b>

Note: Data is from survey of potential telecare users by the authors conducted in 2020. .

**Table 3. Variable and Fixed Costs Incurred for Each Option Per Month**

Variable Expenses per Unit Incurred Per Month		
	Option I- B2C	Option II- B2B
Deployment	\$ 23	\$ 22
Trouble Shooting	\$ 17	\$ 18
Training Support	\$ 20	\$ 20
Customer Support	\$ 45	\$ 15
<b>Total</b>	<b>\$ 105</b>	<b>\$ 75</b>
Fixed Expenses Incurred Per Month		
	Option I- B2C	Option II- B2B
Salaries (2 Developers)	\$ 25,000	\$ 25,000
Website Hosting	\$ 5,000	\$ 5,000
Sales	\$ 11,000	\$ 10,000
Marketing	\$ 14,500	\$ 8,500
Customer Support	\$ 19,000	\$ 10,000
Customer Training	\$ -	\$ 8,000
<b>Total</b>	<b>\$ 74,500</b>	<b>\$ 66,500</b>

**Table 4. Boston Telecare Pro Forma Contribution Income Statement by Option**

<b>Pro Forma Contribution Income Statement</b>		
<b>Sales of 1 Unit</b>		
<b>Option</b>	<b>Total</b>	<b>Per Unit</b>
<b>Option I- B2C</b>		
Sales price (1 unit)	\$175	\$175
Variable production expenses	\$40	\$40
Variable selling and administrative expenses	\$65	\$65
Contribution margin	\$70	\$70
Fixed production expenses	\$30,000	
Fixed selling and administrative expenses	\$44,500	
Net operating profit (loss)	(\$74,430)	
<b>Option II- B2B</b>		
Sales price (1 unit)	\$125	\$125
Variable production expenses	\$40	\$40
Variable selling and administrative expenses	\$35	\$35
Contribution margin	\$50	\$50
Fixed production expenses	\$30,000	
Fixed selling and administrative expenses	\$36,500	
Net operating profit (loss)	(\$66,450)	

**Exhibit 1. Feedback From Relatives of Current ForeverMind™ Users**

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"We take care of my 86-year-old mom. For us, the most valuable feature is the video that the caregivers record when they check in and checkout. There is a lot of trust in having strangers in your mom's house and we are leaving her in the hands of people we don't really know. These videos hold a caregiver accountable."

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"I loved how I could get an update about my mom right on the app. If I was away, I didn't have to call anyone and get the information, they could leave it for me in the check in video."

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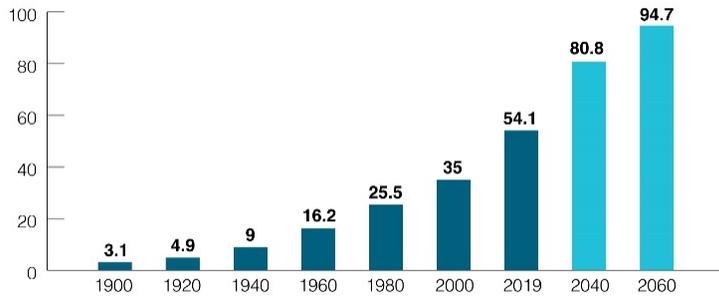
"When we see the videos the caregivers leave, even if it was a bad report, we know our mom was taken care of. Using ForeverMind™ lowered our stress tremendously."

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"ForeverMind™ helped tremendously for our peace of mind and our own well-being mentally."

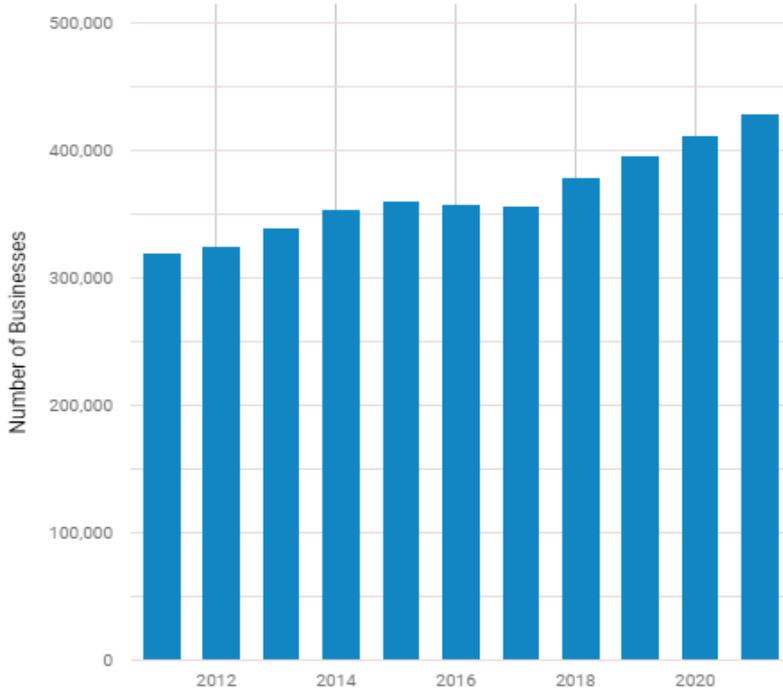
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**Exhibit 2. Number of Persons Aged 65 and Older, 1900 - 2060 (in millions)**



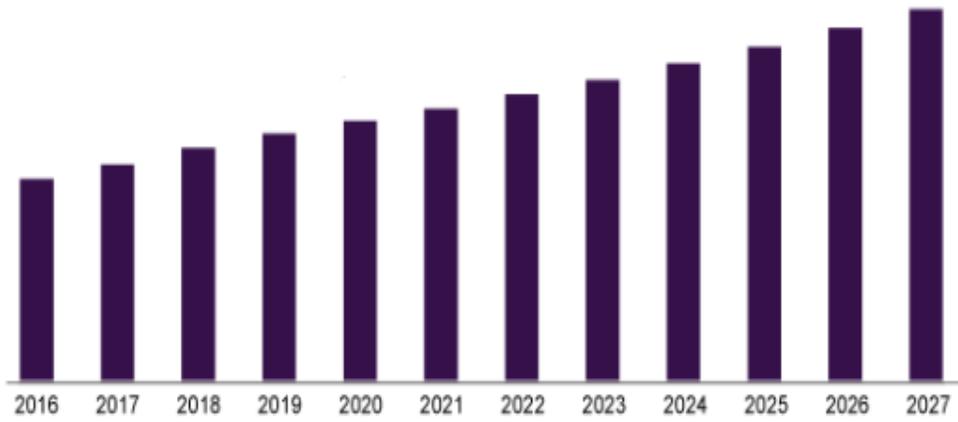
Source: U.S. Census Bureau, Population Estimates, and Projections.

**Exhibit 3. Home Care Providers in the U.S. (2011-2021)**



Source: IBIS World, 2021.

**Exhibit 4. Assisted Living Facility Market Size in the U.S. (2016-2027)**



Source: [www.grandviewresearch.com](http://www.grandviewresearch.com).