

TRACUS INC.

TRACKING ALZHEIMER'S PATIENTS ONE STEP AT AT TIME

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TRACUS INC.

I. THE BUSINESS IDEA

Description of Business

More than 5 million people in the US suffer from Alzheimer's disease todayⁱ, and this number is expected to constantly increase because of the steady growth in the older population. One of the most dangerous behaviors of patients with this disease is the tendency to lose their way or wander off. According to the Alzheimer's Association, 60 percent of those with the disease will become lost at least once in their lifetimeⁱⁱ, causing additional stress to families.

TracUs Inc. is a developer of Global Positioning System (GPS) satellite tracking and location-transmitting technology devices. The company's mission is to provide products and services using the latest technology that empower people and businesses with the ability to locate loved ones, offering peace of mind to the families of Alzheimer's patients and older adults. TracUs has had initial discussions with a manufacturing design and engineering firm, specializing in location-based technologies, and this feasibility study is the first step in exploring the market potential for a new product aimed at a niche customer.

Description of Team

Kelly Peterson will be the owner of TracUs Inc. Kelly has 10 years of consumer electronics (CE) and high-tech industry experience, including a work background that encompasses all business operations. He has started two companies, including an OEM and retail CE venture which sub-contracted manufacturing in China, as well as software development in India. As an independent consultant, Kelly created the business development and marketing strategies for a local design firm targeting senior living communities. Kelly will receive an MBA from Saint Louis University in 2010 with emphasis in Entrepreneurship. His undergraduate education includes Bachelors of Science degrees in both Marketing and Finance from Iowa State University.

Joining Kelly to help set up the company are future accountants Jose Rodriguez and Aaron Young. Jose Rodriguez graduated from Saint Louis University in 2009, earning a Bachelors of Science degree in Business Administration with a concentration in Accounting. He is currently completing his coursework to earn his Masters in Accounting. Upon graduation in May 2010, Jose will sit for the CPA Exam. He will join a "Big 4" accounting firm to work full-time beginning in Fall 2010. Raised in Miami, Florida, Jose is fluent in both English and Spanish.

Entrepreneur Aaron Young has owned and operated a landscaping business in St. Louis for the past 5 years. In addition, he is also an avid real estate investor in buying and renovating homes within the area. Aaron has been a tax intern with PricewaterhouseCoopers and will be graduating with his Masters in Accounting from Saint Louis University in December 2009.

II. THE PRODUCT/SERVICE

TracUs' location based products consist of hardware and subscription-based Internet data monitoring software and services (data tracking portal). The company is the first to develop, market, and distribute insole inserts that integrate GPS/GPRS satellite tracking and location reporting technology. The inserts will be powered by a piezoelectric generator which harvests energy through human motion. Through continuous heel impact while walking (i.e. the heel of the foot making contact with the insole), energy will be generated and stored within an embedded battery which will enable the device to receive GPS signals and transmit the location data via SMS to a dedicated company server. A mini-USB plug will also be embedded by the battery for traditional plug-in charging.

The company's data tracking portal consists of a monthly subscription-based service and back-end services. Users will subscribe to a recurring service plan to access an Internet portal. Through a computer or Internet-enabled smart phone, individuals will log-in to the secure site and send a 'ping' via SMS to the specific insert. At that moment, the insert will record the location data from the GPS satellites (longitude, latitude, altitude, date, time) and transmit the location information to the subscriber in a visual form via Google Maps to locate and track the user wearing shoes with the insert.

Set up as a Mobile Virtual Network Operator (MVNO), TracUs will charge a monthly service fee (i.e. similar to cell phone data plan) for use of a third-party telecommunication carriers' mobile network to transmit the data from the insert to the server over a GSM cellular network. As a MVNO, revenue is incremental without the infrastructure costs of building a network while offering the flexibility to continuously negotiate contract terms between carriers to get the best data rates and coverage area.

III. THE INDUSTRY AND MARKET

Current Industry

TracUs has both a hardware and service side as a developer of GPS satellite tracking and location-transmitting technology devices. The hardware platform is classified in NAICS Code 33422 for the communications equipment manufacturing while the location-based services side is classified in NAICS Code 51333 for telecommunications resellers (companies that do not operate (or maintain) their own telecommunications switching equipment or transmission facilities).

According to research firm Canalys, the United States alone accounted for 52 percent of the 41 million Portable Navigation Device (PND) units shipped globally in 4th quarter 2008. This represents a growth of 17 percent in PND shipments in 2008 from 2007ⁱⁱⁱ. Market research firm RNCOS reported that as of 2007, PNDs dominated the GPS device market with more than 90% market share. However, with the introduction of GPS-enabled handsets, this share is expected to drop to around 70 percent of the market share by 2013. The projected growth in shipments of GPS devices is estimated at 24 percent through 2013 which would forecast the GPS device market at \$75 billion worldwide^{iv}.

On the service side, Gartner Inc. estimated worldwide location-based services (LBS) revenue in 2008 at \$998.3 million. The company forecasted LBS subscribers to grow from 41.0 million in 2008 to 95.7 million in 2009 while more than doubling 2008 revenue to an estimated \$2.2 billion in 2009. The United States accounted for \$327.2 million in 2008 and an estimated \$713.7 in 2009^v.

Market Potential

Based on 5 million Alzheimer's patients today and 60 percent wandering rate, there are roughly 3 million families which could use this product. While the Alzheimer's Association states there are over 65,000 care facilities for those with Alzheimer's^{vi}, there are over 39,500 assisted living facilities (e.g. retirement and senior living communities) in the U.S. according to American Association of Homes and Services for the Aging^{vii}. In addition, Andrew Carle, professor at George Mason University and an expert in aging and assistive technologies, estimated the market for microchip-based technology in senior living worth \$5 billion^{viii}.

Trend in Customer Demographics

More than 5 million people in the U.S. and 26 million people worldwide suffer from Alzheimer's disease today. This number is expected to exceed 106 million people by 2050^{ix}, according to researchers at the Johns Hopkins Bloomberg School of Health. Today, one in eight (13 percent) individuals aged 65 and older have Alzheimer's and a new case is diagnosed every 70 seconds^x.

The number of Americans aged 65 and older is expected to grow because of advances in medicine and medical technology as well as social and environment factors. Combined with the increase in the older population that will be created by baby boomers, turning 65 in 2011, this will result in a dramatic increase in the number of new cases of Alzheimer's per year. In 2000, it was estimated that 411,000 new cases of Alzheimer's were expected to develop per year. That number is expected to increase to 454,000 per year by 2010; 615,000 per year by 2030; and 959,000 per year by 2050^{xi}.

Market Penetration

TracUs will primarily focus on establishing relationships with senior living communities, which will account for a majority of its total revenue. Of the senior living communities that offer dementia related services, 97% of these communities are at full occupancy. The national average rent at an assisted living facility is about \$3,000 per month. However, if care is needed for a patient with Alzheimer's/dementia, the average increases to \$4,500 per month^{xii}.

The company feels that the increase in monthly cost is relatively inelastic as it is in the best interest of the Alzheimer's patient. Therefore, if families are willing to spend an additional money on special services that don't include tracking devices for potential wanderers, it is a fair assessment that senior living communities should be able to charge back the cost of the insert and service fee within their per month rate for this additional service and protection. The initial entry in the market will begin with communities that are looking to expand or strengthen their services for Alzheimer's patients.

TracUs will penetrate the senior living industry by offering aggressive pricing on the inserts, attracting bulk purchases. The company will use third party sales representatives who already have established relationships with the different communities and who will work on a commission basis only. TracUs will plan to do little to no advertising and all marketing efforts will be in the form of public relations and kick-backs on the monthly service contracts to customers, if deemed necessary. The public relations campaign will raise awareness within the industry while also generating buzz within the consumer market. Additionally, TracUs will set up an ecommerce site to sale devices directly to individuals at a premium price.

The Competition

There are many competitors is in the PND market, ranging from Garmin and TomTom to GPS shoe specific GTX Corporation. However, there are only a few competitors focusing on the senior living market: GTX, LIFEWatch USA and Qualcomm inGeo. As there are few barriers to entry, any number of PND manufacturers could develop GPS devices to target our niche customer segments at any time.

Below is a quick pricing chart between the TracUs product and four competitors.

| | TracUs | GTX ^{xiii} | LIFEWatch ^{xiv} | Qualcomm inGeo ^{xv} | Rock Mountain Tracking ^{xvi} |
|------------------------------|------------------------------|---------------------|--------------------------|------------------------------|---------------------------------------|
| GPS product | Shoe insert | Shoe-design | Pendant | Box | Pendant |
| MSRP | \$69 - \$89* \$99 - 149** | \$200-300 | \$0 | \$199 | \$599 |
| Monthly service fee | \$19.99 | \$20-30 | \$39.95 – \$44.95 | \$59.99 - \$79.99 | \$19.95 – 99.95 |
| Activation fee | \$0 | - | - | \$45 | \$35 |
| Access to real-time tracking | 24/7 | 24/7 | no | 24/7 | 24/7 |

* Business customer suggested price

** Individual customer suggested price

The table below compares the strengths and weaknesses of the two main competitors and highlights the differentiating features of TracUs.

| Competitor | Strengths | Weaknesses | Differentiating Features of TracUs |
|-------------------------|--|--|--|
| GTX | <ul style="list-style-type: none"> • First mover advantage • Technical know-how through all proprietary software | <ul style="list-style-type: none"> • Customer limited to using specific pair of shoes • Poor battery life • No specific focus, targeting all markets and value chains | <ul style="list-style-type: none"> • Customer able to use insert in any toed shoe • Battery always charged when being used |
| Qualcomm inGeo platform | <ul style="list-style-type: none"> • Endorsed by Alzheimer's Assoc. • Established company identity • Superior technology – gpsOne • Extended battery life • Product can be taken anywhere | <ul style="list-style-type: none"> • Pocket sized device • Expensive hardware and monthly service charge | <ul style="list-style-type: none"> • Better serves Alzheimer patients to remember to use device (e.g. put on shoes) • Cheaper device and monthly charges |

IV. PROFITABILITY

As mentioned above, TracUs is classified in NAICS Code 33422 (communications equipment manufacturing) and NAICS Code 51333 (telecommunications resellers). According to Bizminer.com, the industry average on gross profit for communications equipment manufacturers and data communications services was 38.9%^{xvii} and 55.3%^{xviii}, respectively. TracUs' profits will come from a two-prong sales strategy that focuses on:

1. Business customers (e.g. senior living communities):
 - a. Hardware being aggressively priced (0 – 25% gross profit) to result in bulk purchases
 - b. Minimum service contract of 1-year per unit
2. Individual customers:
 - a. Hardware priced at 60% gross profit sold via e-commerce
 - b. Minimum service contract of 6-months, offering rebate incentive on hardware for 1-year and 2-year service contracts

Furthermore, TracUs' profits would be determined by the ability to keep operating expenses to a minimum, using third-party sales reps working on commission-only, and signing 1-3 large business customers within the first year of operation. Based on preliminary market data, TracUs estimates to break-even by the end of year 2.

Start-Up Capital

To start the business, TracUs will need to have enough start-up capital to cover the necessary hardware and software development costs and equipment, as well as the telecommunications partner license fee. The capital will also need to cover initial inventory (2,500 pieces) and operating expenses for the first six months as the company will not have any revenue before product is available for shipment. The amount needed is estimated to be roughly \$415,000.

| | |
|---|------------------|
| Licensing & permits | \$300 |
| Product/Service Development Costs | |
| Initial Development Costs | \$40,000 |
| Mechanical/electrical design | |
| Working/non-working mock-ups | |
| PCB layout, plastic tooling | |
| Telecommunications Network Partner | \$100,000 |
| License fee | |
| Operations Hardware | \$20,000 |
| Server – up to 5,000 users | |
| Customized Software Application | \$20,000 |
| Including internet portal | |
| Initial Inventory | \$155,000 |
| 2,500 pieces @ \$62 – BOM, SIM card, FOB US | |
| Patent Search & Filing | \$20,000 |
| Operating Funds – Up to 6 months | \$60,000 |
| Total | \$415,300 |

Sources of Start-Up Capital

The start-up capital of \$415,300 is composed of 19 percent (or \$80,000) of the owner's personal savings, 41 percent (or \$170,000) of a bank loan, and remaining 40 percent (or \$165,300) through equity investors.

V. OVERALL ASSESSMENT OF FEASIBILITY

Created to offer peace of mind to the families of Alzheimer's patients and older adults, TracUs has a unique product that can deliver on its mission and help society. The company is favorably positioned to: 1) capitalize on an aging market segment, 2) grow customer demand through aggressive pricing yet still reach profitability through service contracts, and 3) change the way GPS units are deployed and powered. Potential issues include the number of possible competitors entering this market, including one direct competitor in the industry that has a patent on GPS-enabled shoes. Additional obstacles are the unknown acceptance of new technology (e.g. GPS-enabled insert) and

future network carrier costs for MVNO agreements. The product, service and market segment are all very feasible. Further to discussions with a lawyer on the potential patent on the product or obstacles in securing the patent are needed, a business plan should be developed for this idea as the next step. This will be used to present to potential investors to see if the start-up funds will be available. Also, even if a patent is unattainable, a cross-license deal can be structured to pursue this idea.

ⁱ Wong, Grace (2009, June 10). GPS shoe to track Alzheimer's patients. *CNN*. Retrieved from <http://www.cnn.com/2009/HEALTH/06/10/gps.shoes/index.html>

ⁱⁱ Alzheimer's Association. *2009 Alzheimer's Disease Facts and Figures*. Retrieved from http://www.alz.org/national/documents/report_alzfactsfigures2009.pdf

ⁱⁱⁱ Canalys (2009, March). Retrieved from <http://gpsobsessed.com/garmin-retains-market-share-lead-in-q4-but-gps-makers-face-a-tough-2009/>

^{iv} RNCOS (2009, April). *World GPS Market Forecast To 2013*. Retrieved from <http://www.reportlinker.com/p0116472/World-GPS-Market-Forecast-to-2013.html>

^v Gartner (2009, June). *Dataquest Insight: Consumer Location-Based Services, Subscribers and Revenue Forecast, 2007-2011*. Retrieved from www.gartner.com/it/page.jsp?id=1059812

^{vi} Alzheimer's Association. *2009 Alzheimer's Disease Facts and Figures*. Retrieved from http://www.alz.org/national/documents/report_alzfactsfigures2009.pdf

^{vii} AAHSA

^{viii} Hom, Kathleen (2009, August 11). GPS-equipped shoes keep track of wanderers. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2009/08/10/AR2009081002269.html>

^{ix} Wong, Grace (2009, June 10). GPS shoe to track Alzheimer's patients. *CNN*. Retrieved from <http://www.cnn.com/2009/HEALTH/06/10/gps.shoes/index.html>

^x Alzheimer's Association. *2009 Alzheimer's Disease Facts and Figures*. Retrieved from http://www.alz.org/national/documents/report_alzfactsfigures2009.pdf

^{xi} Alzheimer's Association. *2009 Alzheimer's Disease Facts and Figures*. Retrieved from http://www.alz.org/national/documents/report_alzfactsfigures2009.pdf

^{xii} IBISWorld Industry Report (2009). *Retirement & Assisted Living Communities in the US: 62331*

^{xiii} <http://www.gtxcorp.com>

^{xiv} <http://www.lifewatch-usa.com/cellularalarm.html>

^{xv} <http://www.alz.org/comfortzone/shop.asp>

^{xvi} <http://www.rmtracking.com>

^{xvii} BizMiner (2008 July). *Small Business Industry Financial Report, Receiver-Transmitter Units*

^{xviii} BizMiner (2008 July). *Small Business Industry Financial Report, Data Communications Services*