Problem

Millions of farmers are having trouble keeping track and maintaining their livestock. Cattle is a very valuable investment for farmers, costing an average of $725 per head. Their health is very important, but the statistics don’t bode well for ranchers. Every 5 years, USDA releases a death census for the cattle industry. It shows how many cattle have died and from what causes. USDA (2015) released the following:

“In 2015, non predator causes accounted for almost 98% of all deaths in adult cattle and almost 89% of all deaths in calves. Respiratory problems accounted for the highest percentage of deaths in cattle due to nonpredators (23.9%), followed by unknown causes (14.0%) and old age (11.8%). Respiratory problems also accounted for the highest percentage of deaths in calves due to nonpredators (26.9%), followed by calving-related problems (17.8%) and digestive problems (15.4%).”

Graph 1

The research shows cattle are not dying due to predators, or any other uncontrollable circumstances. The primary reason they are dying is due to respiratory problems. Farmers need a more effective method of tracking and caring for livestock.

The Product

CowTracker is a new, innovative way of tracking movement, blood pressure, temperature, and location of beef cattle, although it would work for dairy cows as well. The product is comprised of a solar-powered ankle attachment, which is routed to solar-powered control panel. The panel has a 5 mile radius to the ankle attachments. The attachments can be secured on either lower leg of the cattle. There are two carbon fiber straps, which can be tightened and loosened. The monitor itself is encased with neoprene, ensuring the durability of the device. This product has been modified and designed to remain secure to the cow, yet also allows for typical movement. And have we mentioned it’s waterproof? This product is engineered to last a very long time.
Installation

The setup process is simple: You must hold the attachment near the panel and simultaneously press the sync button on both the panel and the attachment. When you hear the attachment beep three times, you are good to go! You can connect any electronic device to the system by downloading the app CowTracker and creating your free account with the specific code on the panel. After your account is made, you have the option to disable others from connecting to your livestock data. The app has many features. You can create a Cow Profile for each of your cows. You can put a name, birthday, weight, and any way to identify the cow on its profile. Once the ankle attachment and control panel are set up, it will begin tracking data for each head of cattle. The data specific to the particular cow (blood pressure, temperature, and miles traveled per day) will be located on Cow Profile whereas the data referencing the whole herd (average blood pressure, average temperature, average miles traveled per day, and GPS map of herd) will be available on a separate section called Herd Data. On Cow Comparison, you can find the cow’s data compared to other cows within the herd. This makes it simple to see how one cow compares to the rest of the herd. This section can be sorted by any statistic measured by the attachment. Cow Profile and Cow Comparison can both be traced back to any day’s data since setup. For cattle farmers with several herds, you can track the statistics of any individual herd and compare those to the averages of the entire operation. This will make it clear which herds are thriving more than others. From there you can determine if it’s due to the environment, breed, grass, or any combination of factors.

What Makes Us Special?

There are many things that set us apart from the competition. Our app has a notification system. It alerts you when a cow is moving significantly less than its average, or has a significantly different blood pressure and/or temperature compared to its average. Our app is heavily refined: Nobody else has our simple to use, yet extensive app. Similar products have failed in the market due to complications regarding the tech and lack of durability. CowTracker’s state-of-the-art technology and strong neoprene casing have outdone any possible competition. Our 5 mile radius from panel to attachment is the highest in the industry, with the nearest competitor at 2 miles. The completely solar-powered devices ease ranchers of any maintenance. One of the most impressive perks of CowTracker is that the ankle attachments are reusable. After a cow is sold or slaughtered, its attachment can be used for the next cow.

Customer Base

Our customer base will be cattle farmers in general, however our expected primary consumers will be large commercial cattle farms. Our product will be found most useful to farms with hundreds, if not thousands of cattle. Large farms like Deseret Cattle and Citrus and King Ranch, owning 42,000 cattle and 35,000 cattle respectively, will find CowTracker incredibly advantageous in managing such a large number of livestock.

Everyday farmers will still be able to benefit greatly from CowTracker, especially in today’s farming industry. Chuck Abbott, FERN’s Agricultural Insider, stated the average age of an American farmer is 59.4 years old (2019). While this sounds concerning, it is actually good news for CowTracker. Aging cattle farmers can no longer care for their farm as they used to. Farming,
especially cattle raising, is a very physically strenuous ordeal. You need to tag cattle, vaccinate cattle, herd cattle, and transport cattle. These alone are very taxing jobs, without even mentioning all the other responsibilities farmers have. Our aging farmer population needs help. With CowTracker, their job will be made much easier.

Competition

There are similar products to CowTracker in the market. However, they are specified for dairy cows. I do not expect these products to be used interchangeably. Dairy cows are kept in close quarters and need access to a barn and milking parlour. On the contrary, beef cows are kept in pastures and usually perform rotational grazing year round. The technology used for dairy cows would be ineffective for beef cows. The expansive terrain covered by beef cows would exceed the range of the tech.

HerdDogg is a new company that just released a pilot program to experience their tech. Their product tracks biometrics of beef cows, as does CowTracker. However, HerdDogg lacks a notification system. Customers would have to go onto the app to see if there is a problem. I don’t know about you, but I wouldn’t check the app every day unless there was a problem. Our product will send you a notification when a cow’s statistics do not correlate with its averages. Users will know when there’s a problem the instant it happens. HerdDogg customers will most likely be at work all day and won’t check the app for an extended period of time, in which a cow could have developed a serious health issue.

HerdDogg also lacks the sustainability and eco-friendliness that CowTracker has. HerdDogg’s control device must have its batteries changed every week. What if the batteries are duds and the user loses a whole week of data, and maybe even a cow? The whole purpose of CowTracker’s technology is so you don’t have to be out there nearly as much. The solar-powered devices of CowTracker are both sustainable and eco-friendly. They require zero babysitting.

Tensie Whelan, Founding Director of the NYU Stern Center for Sustainable Business, and Carly Fink, research scholar at Stern Center for Sustainable Business, contributed to a Harvard Business Review article on the appeal of sustainable products. Almost two-thirds of customers across six international markets believe they “have a responsibility to purchase products that are good for the environment and society” (2016). This combined with CowTracker’s affordable prices will take the cattle industry by storm.

Electronic identification (electronic tagging) could be on the rise. Starting May 1 in Virginia, farmers and ranchers can register their livestock for electronic tagging. Each cow will have an electronic chip in their ear. Each cow will have their chip scanned as they move from farms to livestock markets to feedlots to slaughterhouses. The intended purpose is so consumers can know exactly where their meat comes from. It is also capable of tracking a widespread illness to a particular herd or farm. I do not expect this to interfere with the sales of CowTracker. The two products have different intentions. CowTracker is purposed with helping the farmers whereas electronic tagging is purposed with assisting those who purchase the meat. If electronic tagging became mainstream, the two products would be able to coexist in the market.
Market Trends

The meat and livestock volume has been growing steadily for many years in the United States. The industry is worth more than $100 billion and feeds 326 million Americans.

Table 1: United States meat & livestock market volume: million tons, 2013–17

<table>
<thead>
<tr>
<th>Year</th>
<th>million tons</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>39.6</td>
<td></td>
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<tr>
<td>2014</td>
<td>41.9</td>
<td>5.8%</td>
</tr>
<tr>
<td>2015</td>
<td>42.7</td>
<td>1.8%</td>
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<tr>
<td>2016</td>
<td>44.3</td>
<td>4.0%</td>
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<tr>
<td>2017</td>
<td>45.9</td>
<td>3.6%</td>
</tr>
<tr>
<td>CAGR: 2013-2017</td>
<td></td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Source: MARKETLINE

As you can see, the volume of meat and livestock has been steadily increasing since 2013. It is forecasted to be up at 47.7 million tons by 2022. This is good news for CowTracker due to the large and growing industry of cattle farming. The more cattle and livestock in circulation, the more success the product will have.

Another trend that bodes well for CowTracker is the overwhelming number of people every year that prefer green products over non-eco friendly products. This has resulted in an astonishing insurgence in the value of sustainable products.

Graph 2: Projected sales value of sustainable products in the United States from 2019 to 2021 (in billion U.S. dollars)

Source: Nielson 2019 © Statista
As the graphic displays, the sustainable products industry is projected to soar by 2021. The value of sustainable products is projected to be between 142.3 and 150.1 billion US dollars by 2021. The projected value for 2019 is between 132.9 and 135.3 billion US dollars. This will have an extremely positive impact on the growth of the company. **CowTracker’s strict solar energy usage will leverage many customers to the product.**

Vegetarianism and veganism is a trend which could potentially hurt the company. In recent years, we have seen a surge in people with these dietary restrictions. In 2016, more than a fourth of U.S. Millennials had considered the label “vegan” as an important factor for purchasing food products (newschannel10.com). Another study in 2018 found 5% of respondents in the United States said they considered themselves vegetarian, while 3% said they were vegan (Gallup). While this may not sound like a lot, it has grown exponentially in recent years.

**Graph 3: Percentage of self-identified vegetarians in FooDS surveys from May 2013 to May 2018**

This graphic shows the amount of people who self-identified as vegetarians from May 2013 to May 2018. The number of self-identified vegetarians was 4.7% in May 2013. The last recorded value of self-identified vegetarians was 8.8% in May 2018. While the percentage rises and falls often, the line-of-best-fit shows a gradual increase in the number of self-identified vegetarians.

**CowTracker is expected to show growth over time.** From the time of entry into the market, the product should find success in the short-term. While the spark of vegans and vegetarians is concerning, the product’s future in the market should find success. The upward trends of both cattle inventory and the sales value of sustainable products show more promise than the spike of vegans and vegetarians shows discouragement.
Company Strategy

If CowTracker is to find success, it will need investments of capital to start-up production of prototypes. When a prototype encompasses the necessary components and has the desired capabilities, a patent must be secured for the solar-powered attachment and solar-powered control panel. This would prove vital in ensuring no company can copy our design. When these are accomplished, an advertising campaign can commence. A meeting should then be secured with large farms, like King Ranch and Deseret Cattle and Citrus. The meeting would be to discuss the product and if the farms have any interest in buying it. If they seem particularly interested, the next step would be to get CowTracker into stores, like Rural King and Tractor Supply Co. After this, a meeting should take place with representatives from large corporations like Cargill Beef Packing and Tyson Foods. This would be to discuss a possible deal for CowTracker.

Two possible bottlenecks for the success of CowTracker have been identified. Money is the most fundamental bottleneck. CowTracker being a tech product inevitably makes it more expensive to produce. It would be easy to deplete capital during the prototype-phase. Once the product gets up and running, the company should be able to fulfill orders regularly based on the profit made. The second bottleneck is labor. Assuming the product gains momentum in the market, production will be difficult by hand. This bottleneck could be eliminated with a larger labor force.

An initial investment of $250,000 will suffice. The capital will be used to buy a warehouse, develop and launch a prototype, and start producing. Fixed expenses are expected to be mortgage for the warehouse, utilities, payroll and employee benefits, and the amortization cost for the patent. The only variable expense is expected to be the direct supplies dependant on the sales volume. CowTracker attachments cost approximately $100 each to produce and will be sold at $175 individually. The control panel costs approximately $65 to produce and will be sold at $120. The company will be issuing an annual service fee of $50 per control panel. The estimated revenue for year one is $40,000. The company expects to gain publicity due to effective advertising which should result in approximately $200,000 for the second fiscal year. Investors should expect to get their money back in full by the third fiscal year, if not sooner. The product’s combination of affordable prices, eco-friendliness, and practicality on any ranch makes it a promising product for the market.


HerdDogg's Competitors, Revenue, Number of Employees, Funding and Acquisitions. (n.d.). Retrieved from https://www.owler.com/company/herddogg#overview


