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Step 0: Getting Started

14 Possible Side Effects of Poor Dental Hygiene

1. Heart Disease
2. Clogged Arteries
3. Stroke
4. Tooth Loss
5. Respiratory Disease
6. Severe Gum Disease
7. Ludwig’s Angina
8. Endocarditis
9. Brain Abscess
10. Mediastinitis
11. Ostemyelitis of the Jaw
12. Facial Cellulitis
13. Pneumonia
14. Sepsis

Step 0: Getting Started

People with cognitive and self-care disabilities often have a hard time with the simple daily task of brushing one’s teeth. Current market toothbrushes require excessive wrist, hand, and arm motion which can be quite difficult for these users. As a result, disabled users need care-takers to help them brush their teeth on a daily basis, as well as increased trips to the dentist.
Step 0: Getting Started

The Technology

Working with the Center for Disability Services in Albany, our team developed an electric toothbrush targeted towards the disabled who had issues with fine motor control. Unlike most electric toothbrushes, our design had a track that followed the curve of the mouth and Collis Curve toothbrush heads to maximize brushing effectiveness. Power was transmitted to a multi-link system through a pre-existing electric toothbrush handle.
Step 0: Getting Started

Knowledge
I graduated from Rensselaer Polytechnic Institute with a dual bachelor’s degree in Mechanical Engineering and Design, Innovation, and Society, as well as a minor in Electronic Arts. Currently, I am enrolled in a M.F.A. program for Industrial Design at Savannah College of Art and Design.

Capability
My undergraduate and graduate education as well as my real world design and engineering experiences have provided numerous research and product development opportunities. Working in a collaborative environment, I have been introduced to design aesthetics, manufacturing, usability, and marketing – and have taken leadership roles in the conceptualization and creation of practical products that will benefit society and foster fun.

Connections
This project was originally developed with a team of mechanical, biomedical, industrial, and material engineers. We had the support of the Center for Disability Services in Albany, including a dentist who work there. Now that I am in graduate school at SCAD I am in contact with many Industrial Designers that can bring the U-Brush to the next level.

Financial Assets
I have some personal assets but I will have to start of relying on angel investors.
Step 0: Getting Started

Name Recognition
I do not have any “name recognition” yet. That is why our company may start off by licensing our product to big name oral care companies.

Past Work Experience
Through internships at Hasbro, Humanscale, and Radio Flyer I have had numerous creative opportunities to enhance my product design and engineering skills.

Passion for a Particular Market
I take pride in my ability to consider how design impacts people’s relationships with their possessions while understanding the technical considerations of producing high quality, cost-effective products.

Commitment
Currently I am busy completing graduate school. However, if I pursue this venture I will drop everything and put 100% of my time and resources towards U-Brush.
Step 1: Market Segmentation

Disabilities Segmentations

Cognitive Difficulties:
Physical, or mental, or emotional conditions that causes a person to have serious difficulty concentrating, remembering, or making decisions

Self-care Difficulties:
People who have difficulty dressing, bathing, or other activities that make independent living difficult

Age Segmentations

Baby: <5
Children/Teen: 5-15
Young Adult: 16-20
Adult (Working Age): 18-64
Senior: 65+

Other Disabilities Less Related to Oral Health

Hearing Difficulties
Visual Difficulties
Ambulatory
Independent Living Difficulties

http://www.disabilitystatistics.org/StatusReports/2012-PDF/2012-StatusReport_US.pdf
## Step 1: Market Segmentation

<table>
<thead>
<tr>
<th>Market Size</th>
<th>Cognitive Difficulties</th>
<th>Self-Care Difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children/Teen</td>
<td>Young Adult</td>
</tr>
<tr>
<td></td>
<td>1.8 Mil (4%)</td>
<td>852k (3.9%)</td>
</tr>
<tr>
<td></td>
<td>463k (1%)</td>
<td>156k (0.7%)</td>
</tr>
</tbody>
</table>

http://www.disabilitystatistics.org/StatusReports/2012-PDF/2012-StatusReport-US.pdf
Step 1: Market Segmentation

Financial Segmentations
The poverty rate of working-age people with cognitive difficulties in the US is:

34.4%

The poverty rate of working-age people with self-care difficulties in the US is:

32.8%

http://www.disabilitystatistics.org/StatusReports/2012-PDF/2012-StatusReport_US.pdf
## Step 1: Market Segmentation

**Prevalence by State Ages 21-64 (%)**

<table>
<thead>
<tr>
<th>State</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>15.5</td>
</tr>
<tr>
<td>Alaska</td>
<td>10.6</td>
</tr>
<tr>
<td>Arizona</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Arkansas</strong></td>
<td><strong>15.8</strong></td>
</tr>
<tr>
<td>California</td>
<td>8.1</td>
</tr>
<tr>
<td>Colorado</td>
<td>8.7</td>
</tr>
<tr>
<td>Connecticut</td>
<td>8.4</td>
</tr>
<tr>
<td>Delaware</td>
<td>10.9</td>
</tr>
<tr>
<td>D.C.</td>
<td>9.8</td>
</tr>
<tr>
<td>Florida</td>
<td>10.3</td>
</tr>
<tr>
<td>Georgia</td>
<td>10.9</td>
</tr>
<tr>
<td>Hawaii</td>
<td>8.7</td>
</tr>
<tr>
<td>Idaho</td>
<td>11.3</td>
</tr>
<tr>
<td>Illinois</td>
<td>8.7</td>
</tr>
<tr>
<td>Indiana</td>
<td>11.3</td>
</tr>
<tr>
<td>Iowa</td>
<td>9.8</td>
</tr>
<tr>
<td>Kansas</td>
<td>11.2</td>
</tr>
<tr>
<td><strong>Kentucky</strong></td>
<td><strong>15.8</strong></td>
</tr>
<tr>
<td>Louisiana</td>
<td>14.0</td>
</tr>
<tr>
<td>Maine</td>
<td>13.7</td>
</tr>
<tr>
<td>Maryland</td>
<td>8.4</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>9.2</td>
</tr>
<tr>
<td>Michigan</td>
<td>12.1</td>
</tr>
<tr>
<td>Minnesota</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Mississippi</strong></td>
<td><strong>16.2</strong></td>
</tr>
<tr>
<td>Missouri</td>
<td>13.1</td>
</tr>
<tr>
<td>Montana</td>
<td>10.7</td>
</tr>
<tr>
<td>Nebraska</td>
<td>8.5</td>
</tr>
<tr>
<td>Nevada</td>
<td>10.6</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>9.9</td>
</tr>
<tr>
<td>New Jersey</td>
<td>7.9</td>
</tr>
<tr>
<td>New Mexico</td>
<td>13.5</td>
</tr>
<tr>
<td>New York</td>
<td>8.6</td>
</tr>
<tr>
<td>North Carolina</td>
<td>11.7</td>
</tr>
<tr>
<td>North Dakota</td>
<td>8.6</td>
</tr>
<tr>
<td>Ohio</td>
<td>12.3</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>14.1</td>
</tr>
<tr>
<td>Oregon</td>
<td>12.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania</td>
<td>11.4</td>
</tr>
<tr>
<td><strong>Puerto Rico</strong></td>
<td><strong>19.1</strong></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>10.6</td>
</tr>
<tr>
<td>South Carolina</td>
<td>12.7</td>
</tr>
<tr>
<td>South Dakota</td>
<td>10.2</td>
</tr>
<tr>
<td>Tennessee</td>
<td>13.9</td>
</tr>
<tr>
<td>Texas</td>
<td>10.4</td>
</tr>
<tr>
<td>Utah</td>
<td>8.7</td>
</tr>
<tr>
<td>Vermont</td>
<td>11.2</td>
</tr>
<tr>
<td>Virginia</td>
<td>8.7</td>
</tr>
<tr>
<td>Washington</td>
<td>10.4</td>
</tr>
<tr>
<td><strong>West Virginia</strong></td>
<td><strong>17.6</strong></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>8.5</td>
</tr>
<tr>
<td>Wyoming</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Step 2: Select a Beachhead Market

Beachhead Market Segmentations

United States Resident: Our company HQ will be in the US, therefore US citizens are the easiest to reach with a focus on the southeast which has higher percentages of users with disabilities.

Cognitive and Self Care Difficulties: Users that are in need of our product.

Working Age: Users that should be at a stage of their life where they can be independent from guardians.

Above the Poverty Line: Users that have the financial ability to pay for U-Brush.

These market segmentations create a total beachhead saturated market size of about 7.4 million end users.
Step 3: Build and End User Profile

End User Profile
Gender: Male (%50), Female (%50)
Age: 21-64
Location: Southeast United States
Disability Type: Cognitive or Self-Care
Employment: Part-Time
Income: $20k-$40k, average $36,400
Education: High School or GED
Health Insurance: Yes

Motivation
Heros
Fears
Fun
News Sources

http://www.disabilitystatistics.org/StatusReports/2012-PDF/2012-StatusReport_US.pdf
Step 4: Calculate the Total Addressable Market Size for the Beachhead Market

Top 10 Companies
- Procter & Gamble
- Colgate
- Johnson & Johnson
- GlaxoSmithKline
- Philips
- Church & Dwight
- Wal-Mart
- Chattem
- Walgreens
- CVS

Top 10 Brands
- Crest
- Listerine
- Colgate
- Sensodyne
- Oral-B
- Philips Sonicare
- Braun Oral-B
- Colgate Total
- Fixodent
- Colgate 360

Instead of starting a company alone it would be best to license the product to one of the top oral care companies. One of these companies could sell U-Brush under an existing brand or as a completely new brand. This would boost the level of trust in the product as well reduce the risk of finding a reliable manufacturer. Ideally we would like to partner with Procter & Gamble under their Braun Oral-B brand.

Step 4: Calculate the Total Addressable Market Size for the Beachhead Market

**U-Brush Beachhead Market TAM Calculation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults w/Cognitive Disabilities</td>
<td>7,748,800</td>
</tr>
<tr>
<td>Adults w/Self-Care Disabilities</td>
<td>3,494,800</td>
</tr>
<tr>
<td><strong>Total Adults with Disabilities</strong></td>
<td>11,243,600</td>
</tr>
<tr>
<td>That Effect Oral Care</td>
<td></td>
</tr>
<tr>
<td>Adults w/Cognitive Disabilities Below the Poverty Rate</td>
<td>2,665,587</td>
</tr>
<tr>
<td>Adults w/Self-Care Disabilities Below the Poverty Rate</td>
<td>1,146,294</td>
</tr>
<tr>
<td><strong>Total Adults with Disabilities</strong></td>
<td>7,431,719</td>
</tr>
<tr>
<td>That Effect Oral Care Above the Poverty Rate</td>
<td></td>
</tr>
<tr>
<td>Retail Price</td>
<td>$150</td>
</tr>
<tr>
<td><strong>Potential Sales</strong></td>
<td>$1,114,757,850</td>
</tr>
<tr>
<td>Royalty Percentage</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total Royalties</strong></td>
<td>$111,475,785</td>
</tr>
</tbody>
</table>
Step 5: Profile the Persona for the Beachhead Market

Name: Rose Wilson
Age: 24 years old
Place: Kentucky, USA
User: Disabled Patient

Rose Wilson is a young adult who was diagnosed with Multiple Sclerosis (MS) when she was a child. As she aged, Rose began to experience loss in her motor functions, specifically her arms and other extremities. Rose is a cheerful woman and likes to participate in different activities when capable. She loves school and is determined to pursue a master’s degree. There are many friends in her life that help to keep her active. With the advancement of her MS, many times Rose will lose control of her arms which often lead to severe frustration. The ordinary activities of daily living, such as brushing teeth and getting dressed, tying shoelaces seem like an everyday challenge to her. Thankfully for Rose, her older sister Olivia is there to help mitigate many of the challenges and acts as her strongest support and family caregiver. Due to the effects of the disease, her reliance upon others for help requires Rose to continually take note of the small necessities in life like dental care which can put her at higher risk for developing more health related problems.
Step 6: Full Life Cycle Use Case

How will users determine they have a need?
There are many hygienic activities people need to do everyday to stay healthy, including oral care. Many disabled people require to have a caretaker or family member help them do these daily tasks. However, these users are constantly looking for ways to be able to take care of themselves and become more independent.

How will they analyze U-Brush?
We plan on connecting with dentists to act as a channel point for promoting our product. They are frequently in contact with patients providing oral health care services and are looked to as guiding expects on hygiene. In many cases, dentists offer advice on products to use for patients who want to be proactive about how to best maintain oral health.

How will they find out about U-Brush?
We are going to give dentists free units to demonstrate to customers how to use our product. There will also be information online listing the specifications and benefits of U-Brush.

How will users acquire U-Brush?
Users will be able to buy our product online or in-store from specialty pharmacies. The product will typically be purchased by the family member or caretaker that assists the end user and keeps track of the end user’s financials.
Step 6: Full Life Cycle Use Case

How do you use U-Brush?

1. Pick up U-Brush from the charging stand
2. Apply your desired amount of toothpaste, a thin coating on all bristles is recommended
3. Insert the U-Brush into your mouth so all the bristles line up with your top row of teeth
4. Press the power button on the handle to start the U-Brush
5. Leave the U-Brush in your mouth for about 1 minute
6. Turn the U-Brush off
7. Remove the U-Brush from your mouth
8. Flip the U-Brush over and insert it back into your mouth lining it up with your bottom row of teeth
9. Press the power button again
10. Leave the U-Brush in your mouth for about 1 minute
11. Turn off the U-Brush
12. Remove the U-Brush from your mouth
13. Rinse the U-Brush off using running water
14. Place the U-Brush back on the charging stand
Step 6: Full Life Cycle Use Case

How will they determine the value of U-Brush?
• Does it clean their teeth better than other products?
• Can they use it independently?
• Can they reduce the amount of times required to visit the dentist?

How will they receive support for your U-Brush?
To answer frequently asked questions, all U-Brushes will come with a manual that can also be found online. If the user needs more personal help they can also talk with their dentist about the proper way to use U-Brush. Lastly, if they want to speak with the company directly the U-Brush website will include a number for customer service.

How will they pay for your product?
Since the end user is most likely requires a family member or caretaker to assist with self-care needs, this same person is also most likely in charge of the end user’s financials. The caretaker or family member would be the one to purchase U-Brush most likely using a credit card. Cash is also acceptable, but rare when it comes to purchases of this size.

How will they buy more units?
Users will only need to buy full new units every several years or so. However, they will need to replace the brush heads every several months when the bristles wear out. You will be able to buy the replacement heads in packs of three from the same locations where the original U-Brush units are sold.

How will they spread awareness?
They will spread awareness mostly through word of mouth. Although, though modern version of “word of mouth” is social media, like twitter or Facebook.
Step 7: High Level Product Specifications

**U-Shaped Brush** to reach the maximum number of teeth possible at a time

**Replaceable Brush Head** to reduce cost once the bristles have worn out

**Collis Curved Bristles** to reach multiple sides of each tooth

**Thick Handle** to make the U-Brush easier to hold

**Battery Powered** so you do not have to do any work

**Rechargeable** so you can use U-Brush over and over again
Step 7: High Level Product Specifications

Technical Drawings (Part 1)
Step 7: High Level Product Specifications

Technical Drawings (Part 2)
Step 8: Quantify the Value Proposition

<table>
<thead>
<tr>
<th>Feature</th>
<th>Manuel Brush</th>
<th>Powered Brush</th>
<th>Vibrating Mouth Guard Brush</th>
<th>U-Brush</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powered</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Replaceable Brush Head</td>
<td>N/A</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Large Handle</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Multi-teeth Brush</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>No Vibration</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Vibration</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Vibration</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Step 9: Identify Your Next Customers

- Children w/ Disabilities
- Teens w/ Disabilities
- Young Adults w/ Disabilities
- Seniors w/ Disabilities
- Adults w/out Disabilities
- Adults w/out Disabilities
Step 10: Define Your Core

We are the only company that manufactures consumer products geared towards helping disabled users become self sufficient with their oral hygiene.
Step 11: Chart Your Competitive Position

The Oral Care Market

- Oral care sees current value growth of 2% in 2013, to reach $7.6 billion
- Electric toothbrushes see the strongest growth, rising by 4% in current value terms to reach $764 million
- The Procter & Gamble Co remains the leading player in oral care in 2013, accounting for a retail value share of 33%
- Oral care is expected to see a value compound annual growth of 2% at constant 2013 prices over the forecast period

2013 Sales

<table>
<thead>
<tr>
<th>Product Type</th>
<th>2013 Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Toothbrushes</td>
<td>$1,134.8 Mil</td>
</tr>
<tr>
<td>Battery Toothbrushes</td>
<td>$370.9 Mil</td>
</tr>
<tr>
<td>Replacement Heads</td>
<td>$124.5 Mil</td>
</tr>
<tr>
<td>Electric Toothbrushes</td>
<td>$763.9 Mil</td>
</tr>
<tr>
<td>Replacement Heads</td>
<td>$352.6 Mil</td>
</tr>
</tbody>
</table>

Step 11: Chart Your Competitive Position

Cleaning Ability

Ease of Use

Step 12: Customer’s Decision Making Unit

- **End User**
  - Disabled Person

- **Primary Influencer**
  - Dentist

- **Champion**
  - Primary Buyer
  - Purchaser
  - Family Members

- **Secondary Influencer**
  - Caretaker

- **Veto Power**
  - Food and Drug Administration
Step 13: Map the Process to Acquire a Paying Customer

**U.S.** is required to make a 510(k) submission at least 90 days prior to offering the device for sale, even though it may have been under development or clinical investigation before that date.

We plan on connecting with dentists to act as a channel point for promoting our product. They are frequently in contact with patients providing oral health care services and are looked to as guiding experts on hygiene.

The end user likely requires a family member or caretaker to assist with self-care needs, this same person is also most likely in charge of the end user’s financials. Therefore, a caretaker or family member would be the one to purchase U-Brush.

The end user has the opportunity to have a higher quality of oral health.
### Step 14: Calculate the Total Addressable Market Size for Follow on Markets

**U-Brush Follow on Markets TAM Calculation**

<table>
<thead>
<tr>
<th>Market</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beachhead Market</td>
<td>7,431,719</td>
</tr>
<tr>
<td>Adults with Disabilities That Effect Oral Care</td>
<td>11,243,600</td>
</tr>
<tr>
<td>Children with Disabilities That Effect Oral Care</td>
<td>2,291,100</td>
</tr>
<tr>
<td>Young Adults with Disabilities That Effect Oral Care</td>
<td>1,007,900</td>
</tr>
<tr>
<td>Seniors with Disabilities That Effect Oral Care</td>
<td>7,484,800</td>
</tr>
<tr>
<td><strong>Total People with Disabilities That Effect Oral Care</strong></td>
<td><strong>22,027,400</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Price</th>
<th>Potential Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>$150</td>
<td>$3,304,110,000</td>
</tr>
</tbody>
</table>

Our business model is identical to existing electric toothbrushes with a one time up front charge for the U-Brush, plus consumable charges every time a user needs to replace their brushhead due to bristle wear.
### Step 15: Design a Business Model

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key Activities</th>
<th>Value Proposition</th>
<th>Channels</th>
<th>Customer Segments</th>
</tr>
</thead>
</table>
| **Users** | Manufactures consumer products geared towards helping disabled users become self sufficient with their oral hygiene. | U-Brush is for those mentally and physically disabled, caretakers and family, and home health and medical professionals who need oral hygiene care products that better fit the ability of those disabled. U-Brush enables greater independence for individuals with disabilities and their caretakers by providing an easy to use oral health care product that cleans and maintains the health of an individual’s teeth and gums. This is unlike current market toothbrushes that require greater and excessive wrist, hand, and arm motion, our product relieves and minimizes those excesses while maximizing cleaning efficiency and ease of use. | **Awareness** | Children  
Teens  
Young Adults  
Working Adults  
Seniors  
(all with cognitive or self care disabilities) |
| The Disabled | | | **Dentists** | |
| Retailers | CVS | Walgreens | Rite-Aid | |
| Influencers | Dentists | Caretakers | Family Members | |
| Govt. Agencies | FDA | | | |
| **Key Resources** | Prototype | Engineers | Designers | |
| **Key Relationships** | To customers via trusted dentists | | | |
| **Cost Structure** | Development | Patent | Manufacturing | |
| **Revenue Streams** | Sales of U-Brush | Sales of U-Brushheads | | |
| | Distribution | Marketing | | |
Step 16: Set Your Pricing Framework

**Track**

**Part Information**
- Quantity: 10,000
- Material: Nylon 66, Impact Grade
- Envelope X-Y-Z (in): 3.00 x 5.00 x 1.00
- Weight (oz): 2.41
- Tolerance (in): Moderate Precision (<=0.01)
- Surface Roughness (µin): Normal Polish (Ra <= 16)

**Cost Summary**
- Injection Molding
  - Material Cost: $5,122 ($0.52 per part)
  - Production Cost: $4,043 ($0.41 per part)
  - Tooling Cost: $20,245 ($2.01 per part)
  - Total Cost: $29,409 ($2.94 per part)

**Brushes**

**Part Information**
- Quantity: 50,000
- Material: Nylon 66, Impact Grade
- Envelope X-Y-Z (in): 1.00 x 0.50 x 0.25
- Weight (oz): 0.07
- Tolerance (in): Moderate Precision (<=0.01)
- Surface Roughness (µin): Normal Polish (Ra <= 16)

**Cost Summary**
- Injection Molding
  - Material Cost: $613 ($0.12 per part)
  - Production Cost: $2,003 ($0.40 per part)
  - Tooling Cost: $5,090 ($1.02 per part)
  - Total Cost: $7,706 ($1.54 per part)

**Full Brushhead Cost Estimate**
- $4.48 Per Brushhead

**U-Brushhead 3 Pack**
- Retail Price: $50.00
- 30% Retail Markup: ($15.00)
- Manufacturing Cost: ($13.44)
- Profit: $21.56
Step 16: Set Your Pricing Framework

Oral-B

$219.00

$29.99

PHILIPS

$219.99

$69.99
Step 16: Set Your Pricing Framework

U-Brush

- Standard: $150.00
- Deluxe: $250.00
- Brushhead 3-Pack: $50.00
Step 17: Calculate the Lifetime Value of an Acquired Customer

**U-Brush Lifetime Value Calculation**

<table>
<thead>
<tr>
<th>Product</th>
<th>Minimum 5 year lifetime value</th>
<th>Maximum 5 year lifetime value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U-Brush</strong></td>
<td>$94.50</td>
<td>$236.25</td>
</tr>
<tr>
<td>2-5 year lifetime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63% Profit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>U-Brushhead 3-Pack</strong></th>
<th>Minimum 5 year lifetime value</th>
<th>Maximum 5 year lifetime value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-6 month lifetime per brushhead</td>
<td>$71.67</td>
<td>$143.33</td>
</tr>
<tr>
<td>9-18 month lifetime per pack</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43% Profit</td>
<td>$21.50</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Total</strong></th>
<th>Minimum 5 year lifetime value</th>
<th>Maximum 5 year lifetime value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 year lifetime</td>
<td>$166.17</td>
<td>$379.58</td>
</tr>
</tbody>
</table>

**Average 5 Year Lifetime Value** $272.88
Step 18: Map the Sales Process to Acquired a Customer

How will users determine they have a need?
There are many hygienic activities people need to do everyday to stay healthy, including oral care. Many disabled people require to have a caretaker or family member help them do these daily tasks. However, these users are constantly looking for ways to be able to take care of themselves and become more independent.

How will they learn about U-Brush?
We plan on connecting with dentists to act as a channel point for promoting our product. They are frequently in contact with patients providing oral health care services and are looked to as guiding expects on hygiene. In many cases, dentists offer advice on products to use for patients who want to be proactive about how to best maintain oral health.

How will they find out about U-Brush?
We are going to give dentists free units to demonstrate to customers how to use our product. There will also be information online listing the specifications and benefits of U-Brush.

How will users acquire U-Brush?
Users will be able to buy our product online or in-store from specialty pharmacies. The product will typically be purchased by the family member or caretaker that assists the end user and keeps track of the end user’s financials. They would purchase U-Brush most likely using a credit card. Cash is also acceptable, but rare when it comes to purchases of this size.
Step 18: Map the Sales Process to Acquired a Customer

**Short Term**
- Website
- Through dentist offices

**Mid Term**
- Website
- Through dentist offices
- Specialty pharmacies

**Long Term**
- Website
- Through dentist offices
- Specialty pharmacies
- Regular Pharmacies
- Mass merchandising stores
## Step 19: Calculate the Cost of Customer Acquisition

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales People @ 70k each</td>
<td>$170k</td>
<td>$210k</td>
<td>$420k</td>
</tr>
<tr>
<td>Support People @ 50k each</td>
<td>$100k</td>
<td>$150k</td>
<td>$300k</td>
</tr>
<tr>
<td>Travel Expenses</td>
<td>$20k</td>
<td>$30k</td>
<td>$60k</td>
</tr>
<tr>
<td>Entertainment</td>
<td>$10k</td>
<td>$15k</td>
<td>$30k</td>
</tr>
<tr>
<td>Promotional Events</td>
<td>$45k</td>
<td>$40k</td>
<td>$35k</td>
</tr>
<tr>
<td>Website Cost</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Consultant</td>
<td>$50k</td>
<td>$50k</td>
<td>$0k</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$396k</td>
<td>$496k</td>
<td>$846k</td>
</tr>
</tbody>
</table>

| Number of Customers         | 25,000  | 100,000 | 250,000 |
| COCA for Year               | $15.82  | $4.96   | $3.38   |
Step 20: Identify Key Assumptions

**Product**
- Lifetime
- Ability to clean teeth
- Cost to manufacture
- Has no existing patents

**End User**
- Will be able to use the product independently
- Will feel comfortable using the product daily
- Can’t use current teeth cleaning tools

**Purchaser**
- Views the price as a good value
- Feels like the product is safe for the end user to use
- Hasn’t already come up with an alternate solution to common teeth cleaning tools
- Better value than current number of visits to the dentist

**Seller**
- Thinks people will purchase the product
- Will be satisfied with profit gained from sales
- Dentists will be okay with promoting the product
Step 21: Test Key Assumptions

**Product**
- Lifetime: QA testing
- Ability to clean teeth: QA Testing
- Cost to manufacture: work with vendors to figure out a detailed bill of materials and costs
- Has no existing patents: hire lawyer to do a detailed patent search

**End User**
- Will be able to use the product independently: use a large pool for user testing
- Will feel comfortable using the product daily: use a large pool for user testing and focus groups
- Can’t use current teeth cleaning tools: focus groups with end users comparing other teeth cleaning tools

**Purchaser**
- Views the price as a good value: focus groups with expected purchasers
- Feels like the product is safe for the end user to use: focus groups with expected purchasers
- Hasn’t already come up with an alternate solution to common teeth cleaning tools: focus groups with expected purchasers
- Better value than current number of visits to the dentist: focus groups with expected purchasers

**Seller**
- Thinks people will purchase the product: meet with expected sellers and give sales pitch
- Will be satisfied with profit gained from sales: discuss retail price margin with sellers
- Dentists will be okay with promoting the product: focus groups with dentists
Define the Minimum Viable Business Product

Step 22: Define the Minimum Viable Business Product

The original design for the U-Brush was already created around having the minimum number of features yet still be functional. There will be a “deluxe” model in the future but that has not yet been designed and will not be created until there is applicable feedback from the standard U-Brush model.

- **Collis Curved Bristles** to reach multiple sides of each tooth
- **U-Shaped Brush** to reach the maximum number of teeth possible at a time
- **Thick Handle** to make the U-Brush easier to hold
- **Replaceable Brush Head** to reduce cost once the bristles have worn out
- **Battery Powered** so you do not have to do any work
- **Rechargeable** so you can use U-Brush over and over again
Step 23: Show That “The Dogs Will Eat the Dog Food”

In the beginning we will do a soft release of U-Brush to a series of dentists who commonly work with people who have cognitive or self-care disabilities. The dentists will be able to introduce the product to several of our end users showing the end users how to use the product as well as observe the end users use the product. Using their expert knowledge we will be able to gauge if end users will be able to and want to use our product.
Step 24: Develop a Product Plan

**Beachhead Market**
We will start off with our beachhead market and MVBP to collect applicable data about our product.

**All Ages**
Next we will design different sizes of handles and brushheads so people of all ages can use our product.

**All People**
Eventually we want our product to be inviting enough that even users without cognitive or self-care disabilities will use U-Brush.

**Luxury Product**
Lastly, we will luxury models integrating smart tech and optimal aesthetic design for upper class customers.
THANK YOU