

Marketing and Customer Requirements Document

Project Axon

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| **REVISION HISTORY** | | |
| REV | DESCRIPTION | Revision Date |
| 1 | Initial Release | ## |
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**Abstract:** This document is an outline of the product strategy and product requirements.

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DIRECTIONS: No black text may be altered. Be sure to update the header with Title, Doc # and Revision. Please delete all blue text, it is for information and direction only. Do use the “styles” set up in word to organize your document. Consider showing the “navigation” pane (found in the ”view” menu) to help you navigate through sections of the document. Throughout this document, if you have images, tables or graphs that would better tell the story, feel free to use them.

This document is not expected to be completed at one time. As the project and information matures, complete additional sections or add detail to existing insights. Sections to complete are as follows:

* Always update section 1
* First complete sections #3 & 8. Section 8 will need to be locked down before product PRD can be completed.
* Next complete sections #4, 5, 6
* Complete sections 2 and 7 as time and information permits.

Write all sections using “normal” style in word.

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# Executive Overview

## Definitions and Abbreviations

|  |  |
| --- | --- |
| Term | Meaning / Definition |
| AAC | Augmentative and Alternative Communication |
| Input Modes | The method that a user uses to interact with the system – input modes may include touch, switch, head movement, eye gaze and EEG. |
|  |  |
|  |  |

# Market Analysis

## Market size

The number of potential customers who would benefit from buying your product — is often measured as an estimated revenue range. For example, you can calculate market size by multiplying the number of potential customers in your market category by their average annual revenue.

## Market share

Refers to the percentage of sales in the industry earned by your product. Divide your product sales by total sales for the market (via industry data) to determine market share.

## Key customer segments

High level overview of potential customer segments that will use your product — segmented by demographics, psychological attributes, geography, or behavior

## Customer challenges

Primary pain points felt by your customers

## Key Drivers/Success Factors

At a high level, what do we need to keep in mind to enable the successful introduction of this product to our target market? Are there relevant market trends to keep in mind?

## Key Barriers

At a high level, what would prevent the successful introduction of this product to our target market? Are there relevant market trends to keep in mind?

## Funding & Revenue Streams

How are products funded in this market segment. Projected revenue of the product (or impact to revenue of new features) .

## Channels

Channels available for communicating with your target market — such as email, website, and referral

# Stakeholder Analysis

## Users

### <Primary User | Archetype>

Who is most likely to interact, use and from this product? Repeat this block for up to 3 persona types

|  |  |
| --- | --- |
| Day in the Life | A high-level description of their day to day experience – focused on interaction with our product |
| Goals | Top 1-3 Goals of this Persona |
| Challenges | Top 1 -3 Challenges that our product could help overcome |
| Likes | Preferences related to products and services that solve their challenges today |
| Dislikes | Dislikes related to products and services that solve their challenges today |
| Trusts information from | Sources they receive information from and respect |
| Influence | Other people that they have influence over and share information with |

## Caregivers

### <Primary Caregiver | Archetype>

Which type of caregiver is most likely to interact, use and benefit from this product? Repeat this block for up to 3 persona types

|  |  |
| --- | --- |
| Day in the Life | A high-level description of their day to day experience – focused on interaction with our product |
| Goals | Top 1-3 Goals of this Persona |
| Challenges | Top 1 -3 Challenges that our product could help overcome |
| Likes | Preferences related to products and services that solve their challenges today |
| Dislikes | Dislikes related to products and services that solve their challenges today |
| Trusts information from | Sources they receive information from and respect |
| Influence | Other people that they have influence over and share information with |

## Clinicians

### <Primary Clinician | Archetype>

Which type of clinician is most likely to recommend, prescribe and benefit this product? Repeat this block for up to 3 persona types

|  |  |
| --- | --- |
| Day in the Life | A high-level description of their day to day experience – focused on interaction with our product |
| Goals | Top 1-3 Goals of this Persona |
| Challenges | Top 1 -3 Challenges that our product could help overcome |
| Likes | Preferences related to products and services that solve their challenges today |
| Dislikes | Dislikes related to products and services that solve their challenges today |
| Trusts information from | Sources they receive information from and respect |
| Influence | Other people that they have influence over and share information with |

## Other Stakeholders

### <Primary Stakeholder>

Are there others who will interact with this product? hich type of clinician is most likely to recommend, prescribe and benefit this product? Repeat this block for up to 3 persona types

|  |  |
| --- | --- |
| Day in the Life | A high-level description of their day to day experience – focused on interaction with our product |
| Goals | Top 1-3 Goals of this Persona |
| Challenges | Top 1 -3 Challenges that our product could help overcome |
| Likes | Preferences related to products and services that solve their challenges today |
| Dislikes | Dislikes related to products and services that solve their challenges today |
| Trusts information from | Sources they receive information from and respect |
| Influence | Other people that they have influence over and share information with |

# Competitor Analysis

## <Competitor #1>

Think outside the box here – what is the most likely alternate solution to our product? What would prevent a user from selecting our product for themselves. Repeat this block for up to 3 competitors”

|  |  |
| --- | --- |
| Description | A summary of the organization and any distinguishing features (often found on the company's "About us" page) |
| Products | Products or services they provide |
| Revenue | A rough estimate of company revenue, if available |
| Customers | Their target customers and how they differ from your own |
| Strengths | Areas in which they excel – especially as related to our product |
| Weaknesses | Areas in which they are lacking – especially as related to our product |
| Differentiators | Factors that make them unique or compelling in the market |

# SWOT

Given what we know today, what are the strengths, weaknesses, opportunities and threats we foresee in this market with this product?

|  |  |
| --- | --- |
| Strengths | Weaknesses |
|  |  |
| Opportunities | Threats |
|  |  |

# Product Overview

## Product Goals & High Level Features

Desired long-term impact of our product or new feature set — including metrics for success

## Value Proposition

Why should someone chose our product? Our company?

## Regulatory, Claim & Reimburesement Strategy

What is the regulatory strategy? If there are predicate systems, what are they? If we are going to go for claims, what claims targets do we have? How will we be paid for our product?

## Pricing Strategy

Product pricing (or new pricing based on added functionality)

## Branding & Naming

What is the name of this product? Why was this name chosen. How will it fit into the larger brand architecture of our company?

# Commercialization Plan

## Trademark Plan

What, when will be trademarked?

## Launch

How and where will this product be launched? Is there an ideal event to be targeted? Are there timelines the project team needs to consider?

## Sales Cannels/Distribution Plan

How do we anticipate selling this product? Will this approach change over time?

## Training Plan

Who will be trained and how? Internal stakeholders include: sales, marketing & service teams. External stakeholders include all training required for regulatory compliance.

## Post Market Clinical or Product Research Plan

Once launched, do we intend to do additional research on the product to measure its effect in the market?

## Service & Warranty

How do we expect to support this product post sale? What will the initial factory warranty be? Will there be extended warranties? How will we service this product once in the market?

# Product Requirements

The following section outlines the market and customer requirements for this product. The priority ratings are as follows:

**WHAT not how!**

1 = Must Have – Minimum Viable Product

2 = Desired – Target Goals

3 = Delighters – Stretch Goals

*<Add or delete rows as needed – use Style “Heading 3” to auto-number!>*

## Physical Design | External Design

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should be comfortable to wear for 1 – 2 hours. | 1 |  |
|  | The system should be comfortable to wear for 6-8 hours. | 3 |  |
|  | The system should fit at least 95% of adult heads within normal limits. | 2 |  |
|  | The system should have a self-contained battery life of 2 hours | 1 |  |
|  | The system should provide an extended battery option for 8 hours of standard use. | 3 |  |
|  | The screen on the system should be legible to the user in an indoor and outdoor setting. | 2 |  |
|  | The displayed text on the outside of the screen should be legible to people interacting with the user in an indoor and outdoor setting. | 2 |  |
|  | The audio should be adjustable to be loud enough to be heard in an indoor and outdoor setting. | 2 |  |
|  | The system should be comfortable in a seated and reclined position. | 2 |  |
|  | The system should be comfortable for use in a wheelchair with a headrest. | 1 |  |
|  | The use of the headset should be a pleasant and relaxing experience both from a feel of the headset and the design of the user interface | 2 |  |
|  | The system should enable the user to see their surroundings as well as the graphical interface. | 1 |  |

## Input Mode Design

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should allow for input modes of head movement and visual evoked potentials. | 1 |  |
|  | The system should allow for input modes of eye tracking | 2 |  |
|  | The system should allow the user physical methods such as a joystick or mouse to focus on a visual target (instead of head pose, for example) | 3 |  |
|  | The system should enable the use of a switch for quicker selection regardless of input mode being used. | 2 |  |
|  | The system should be able to measure user’s ability to use the input modes available and transition between them with minimum interaction from the user. | 3 |  |
|  | The system should allow a number of different vocabulary approaches (language systems) including alphabetic, schematic and visual scene (assisted reality – eg bottle of water on table – system ids water) | 1 |  |
|  | The system should allow the user to customize the layout of the internal screen | 2 |  |
|  | The system should be able to accommodate users with excessive movement and difficulty moving. | 2 |  |
|  | The system should be adaptable for color-blind users or vision issues (e.g. lazy eye) | 3 |  |
|  | The system should be adaptable for users who wear glasses | 2 |  |
|  | The system should be adaptable for users with hearing peripherals | 3 |  |
|  | The system should provide an opportunity for the user to rest between selections (e.g. empty space) and pause providing input altogether. | 1 |  |
|  | The system should leverage the user’s entire visual field capacity, preferably adjustable by the user. | 2 |  |
|  | The system should allow a setting that auto magnifies buttons as they are selected/”moused over”, (e.g. creating a larger dwell target, when the cursor rests on the “a” button, the button enlarges and “pops out” by a set percentage, as selected in a setting menu) | 2 |  |
|  | The system should show examples of the setting change while in the setting menu (e.g. font changes as font is adjusted without requiring the user to exit out of the settings menu) | 2 |  |

## Display & Navigation

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should help the user understand where they are “pointing” and what is being selected | 1 |  |
|  | The system should be able to provide visual, auditory and/or haptic feedback to indicate key information (e.g. such as knowing that a selection is being made and/or has been selected.) The type of feedback provided should be adjustable in settings. | 1 |  |
|  | The system should employ assistive aids for target selection. | 1 |  |
|  | The system should allow the user to control display elements such as font size, speed of cursor, selection method and assistive aids. | 1 |  |
|  | The menu and display elements should consistently be in front of the user’s eyes. | 1 |  |
|  | The menu and display elements should easily be toggled on and off screen to allow user to look at the outside world unobstructed. | 2 |  |
|  | The system should adapt to user state by transitioning between input modes. Users should have the option to override or to require confirmation for mode changes. | 3 |  |
|  | The system should achive desired outcomes with a minimum of user interaction (effort). E.g. minimize the number of selections | 1 |  |
|  | The system should allow the user to quickly and easily activate re-centering or re-calibration. | 1 |  |
|  | The system should allow the user to enable screen reading capabilities of navigation elements to assist with low vision users. (e.g. if cursor dwells over “settings”, the system announces “settings”), ideally different from the text-to-speech voice. | 3 |  |
|  | The system should have simplified settings menu, easily configured by end users or caregivers. | 2 |  |
|  | System layout and configuration should be accessible prior to acquisition of the physical device. | 2 |  |

## Speech Generation

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The speech generated should be adjustable in volume and speed. | 1 |  |
|  | The user should be able to specify whether speech is generated as each letter, word or phrase is created. | 1 |  |
|  | The speech generated should be loud enough to be heard in an indoor and outdoor setting. E.g. in a restaurant. Ideally consistent with human dynamic range. | 1 |  |
|  | The speech generated should be repeatable with a single action (i.e. the phrase is repeated – visually and/or auditorily – every time the play button is pressed) | 1 |  |
|  | The system should allow for user personalization of synthesized voice (e.g. banking of voices) before a system is assigned or used. | 3 |  |
|  | The system shall support pre-recorded utterances for later use. | 2 |  |
|  | The system should provide a variety of selectable standard differentiated voices (e.g. differentiated pitches, speeds and resonance) that can be selected as default and used regardless of connectivity status of the system. | 2 |  |
|  | The system’s synthesized voice should maximise consistency with the user’s desired voice. | 3 |  |
|  | The system should provide a variety of keyboard layouts (e.g. ABC, QWERTY, Linotype, etc.) | 2 |  |
|  | The system should generate speech with a minimum of “interactions” (e.g. space between words should be added automatically when a word is selected or the system is aware that a word has been created) | 2 | N/A  Design Goal |
|  | The system should allow speech to be generated visually and/or auditorily – as preferred by the user. | 1 |  |
|  | The system should be able to indicate both visually and auditorily, per user preference, that the user is composing speech. (e.g. Please be patient while I compose my message.) | 1 |  |
|  | The system should include a method for rapidly accessing pre-defined user phrases that can ideally be played with a single click without removing the composed message in the main window. (e.g. a phrase might be “please give me a minute to compose my reply”) | 2 |  |
|  | The system should allow user to organize their phrase inventory and create shortcuts. | 2 |  |
|  | The system should allow users the option of auto clearing speech that has already been generated. | 2 |  |
|  | The system should enable to pause vocalization during readback and edit to react to interruptions or discussion. (The intent is to allow users to engage in natural conversations – e.g. turn taking, indicating a “let me finish” or “good point”) | 3 |  |
|  | The system should allow the user to enter a “speaker mode”wherein they can compose and save long segments of speech that could be played back in the form of a speech, and paused periodically to enter “conversation mode”. | 3 |  |

## Language System

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should provide contextual predictions based on environment (e.g. geographical location, weather, activity). | 3 |  |
|  | The system should provide contextual predictions based on utterance history (for example, if a user is talking about a trip to Hawaii, ideally the predictions will tend to enable continued discussion on that topic). | 3 |  |
|  | The system should provide predictive words and phrases that adjust with each additional input (of a letter or word). | 2 |  |
|  | The system’s word prediction should adapt to user utterances & corrections to utterances over time. (e.g. the user increasingly finds the predicted words/phrases relevant & selects them) | 3 |  |
|  | The system should provide a number of “standard phrases”, configurable by the user – including comfort questions, documenting their journey and end of life planning. | 2 |  |
|  | The system should allow the user to receive auditory feedback in either “private” mode for their own purposes (e.g. vocalizing typing letter by letter or commands to alexa), or “public” mode for communicating with others. | 3 |  |
|  | The system should allow users to repair/correct sentences and words with minimum “interactions” (e.g. deleting or inserting words in the middle of a sentence or suggesting synonyms/corrections when the cursor hovers over the word). | 1 |  |
|  | The system shall be usable by Spanish speakers in the United States. | 3 |  |
|  | The system shall be usable by English speakers in the United States. | 1 |  |
|  | The system should be able to accept and add new “words” to the dictionary (e.g. ability to add unusual names and have them be predicted). | 1 |  |
|  | The system should generate speech composed within 0.5 seconds of the user pressing “play” and allow the user to increase that delay in settings. | 2 |  |
|  | The system should enable an auto-correct feature, to be turned on or off by the user. | 2 |  |
|  | The system should be able to translate composed phrases into different languages using internet translation systems. | 3 |  |
|  | The system should provide predictive phrases that customarily come before and after each word typed by the user. | 3 |  |

## Connectivity & Compatibility

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should generate speech even when not connected to the internet. | 1 |  |
|  | The system should be able to access banked voices even when not connected to the internet. | 2 |  |
|  | The user should be able to control their environment with the system through internet connected devices (such as alexa) | 1 |  |
|  | The system should be able to leverage existing voice banking repositories (e.g. SAPI5) | 2 |  |
|  | The system should enable the user to send messages electronically – at a minimum via text. | 3 |  |
|  | The system should be able to provide user connectivity to the internet and entertainment systems (e.g. Netflix) | 3 |  |
|  | They system should enable use of a cell-phone as a hot-spot. | 3 |  |

## Virtual Assistance

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should provide a method to send a message to the company requesting customer support. | 2 |  |
|  | The system should provide a method to receive real-time customer support from the company. | 3 |  |
|  | The system should allow the company to provide technical support in a virtual manner (e.g. ability to “take over” the headset UI to trouble shoot/repair/train). | 3 |  |
|  | The system should enable the user’s circle of care to see what the user is seeing from another device. | 2 |  |
|  | The system should enable the user’s circle of care to control the the user’s system from another device. | 3 |  |
|  | The system should provide speech generation performance data for the user’s circle of care. | 3 |  |
|  | The system should provide more-than-the-minimum required training of the user within the device. | 2 |  |
|  | The system should provide training of the user in a way that is enticing for the user (e.g. via games vs wall-of-text) | 3 |  |
|  | The system should provide an “admin” mode for clinicians and caregivers to customize the experience for the user. | 3 |  |
|  | The system should allow clinicians and caregivers to change and organize saved phrases in an efficient manner. | 2 |  |
|  | The system should include “how-to” videos to assist with basic operation of the unit. | 2 |  |
|  | The company should provide training and tools to enabe the user, caregivers and clinicians to operate the device. | 1 |  |

## Service

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should be serviceable by the company. | 2 |  |
|  | If service is needed, the user should not be left without a speech generating system for longer than one (1) week. | 2 |  |
|  | The system should provide a 1 year manufacturer’s warranty and support. | 2 |  |
|  | The company should provide extended warranty and support options. | 3 |  |
|  | The system should include a number of field replacable parts for those items of the design most likely to break, such that it maximises the time that the user can use the system. | 1 |  |
|  | The system should include “how-to” videos to assist with basic maintenance and simple repairs of the unit. | 2 |  |
|  |  |  |  |
|  |  |  |  |

## Metrics

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The user and caregiver should be able to provide feedback on the system within the system. | 2 |  |
|  | The system should enable the tracking of use metrics that protect the users identiy. | 3 |  |
|  | The system should send feedback on errors and bugs to the company while protecting the user’s identity. | 3 |  |
|  |  |  |  |

## Alarms, Alerts, Indicators

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should indicate low battery status when 30 minutes of standard use remain and critical battery status when 10 minues remain. | 2 |  |
|  | The system should alert the user that imput mode is changing based on user’s fatigue with current mode. | 3 |  |
|  | The system should alert the user if re-centering or re-calibration is needed. | 2 |  |
|  | The system should provide a means for the user to easily call for help | 1 |  |
|  | The system should provide a means for the user to call 911 | 3 |  |
|  | The system should alert the user and shut down if it detects excessive heat or other system parameters that could cause harm to the user. | 1 |  |
|  | The system should indicate battery and internet connectivity status | 1 |  |
|  | The system should allow user to see and change as many standard system settings as possible (e.g. volume level, system brightness, font size, cursor and dwell color, dwell type, etc.) | 1 |  |
|  |  |  |  |

## Patient Safety & Regulatory Requirements

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system shall meet standard regulatory and ISO standards. | 1 |  |
|  | The system shall meet standarAAC (Augmentative and Alternative Communication) requirements | 1 |  |
|  | The system shall meet requirements for funding | 2 |  |
|  | The system shall meet all HIPPA and cybersecurity requirements | 2 |  |
|  | The system shall be developed and launched under the company’s Product Development Process. | 1 |  |

## Miscellaneous

*<Insert Section Description>*

| Req # | Requirement Description | Priority  (1,2,3) | PRD # |
| --- | --- | --- | --- |
|  | The system should allow the addition of other applications on the device. | 3 |  |
|  |  |  |  |

# Document Approval

The following members of the Team have reviewed and agreed to the details outlined in this document.

|  |  |  |  |
| --- | --- | --- | --- |
| **Functional Area** | **Name** | **Signature** | **Date** |
| Core Team Lead |  |  |  |
| Clinical  Lead |  |  |  |
| Downstream Marketing  Lead |  |  |  |
| Manufacturing  Lead |  |  |  |
| Quality  Lead |  |  |  |
| Regulatory  Lead |  |  |  |
| Technical  Lead |  |  |  |
| Upstream  MarketingLead |  |  |  |
| Clinical Lead |  |  |  |