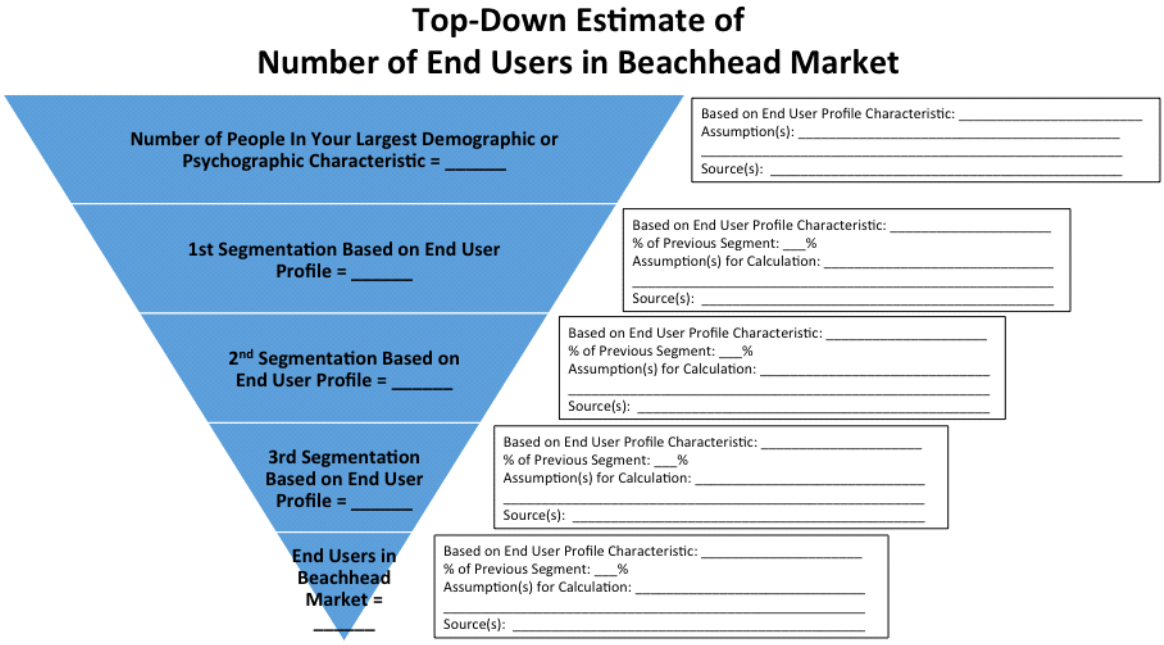
Step #4 Worksheets



I.	**One Time Charge Data Point**	
Ia	Estimation of price per unit	$500
Ib	Number of units needed per end user	1
Ic	Average Life Relevant? (assume repurchase)	Yes
Id	Average Life of Product in year	5 years
Ie	Annualized Revenue (Ia*Ib)/Id (Data Point 1)	$100 per year
II.	**Budget Available Data Points**	
IIa	Current Spend per end user (Data Point 2)	$200 yearly on smart home devices
IIb	Total budget for the end user	$2,000 annually for a middle-income household.
IIc	What % of budget could go to this solution reasonably?	10%
IId	Annualize Revenue (IIb*IIc) (Data Point 3)	$2,000 * 10% = $200 per year
III	**Comparables**	
IIIa	Who are the comparable for your business?	Nest Thermostats (Google), Ecobee, Sense Energy Monitor.
IIIb	What are the comparable products?	Smart thermostats, energy monitors
IIIc	What is the comparable converted to similar annualize revenue (Data Points 4 plus however many more you deem relevant)	With a cost of $250 per unit and a 5-year life expectancy, the annualized revenue for the Sense Energy Monitor would indeed be $50 per year, assuming only energy monitoring without AI optimizations.
IV	**Interpreting the Results**	

IVa	Consensus on estimate of annualized revenue per end user (a range is fine)		$100 to $200
	How did you end up at this number/range?	The lower end ($100) is based on the one-time charge spread over the product's life. The upper end ($200) accounts for potential revenue from subscription services or associated app purchases, considering current spending habits and total budget for home technology and improvement.	

Top-Down TAM Analysis Summary				
1	Total # of end users in the broad market segment	500,000 households	Source/ Based on:	Gartner (https://www.gartner.com/en) IBISWorld (https://www.ibisworld.com/) Statista (https://www.statista.com/)
2	Total # of end users in the targeted sub-segment your BHM	450,000 households	Source/ Based on:	Statista (https://www.statista.com/) MarketResearch (https://www.marketresearch.com/) Deloitte Insights (https://www2.deloitte.com/us/en/insights.html)
3	Annual monetizable revenue per end user	$200	Source/ Based on:	Competitor websites(e.g., Sense, Nest, Ecobee) Bloomberg (https://www.bloomberg.com/europe)
4	Estimate of Top-Down TAM (line 2 times line 3)	450,000 households * $200 = $90 million		https://seekingalpha.com/ https://finance.yahoo.com/
5	Estimate of Range of Profitability for Your Product	20-30% profit margin	Source/ Based on:	IDC (https://www.idc.com/)
6	Estimated CAGR (Compound Annual Growth Rate)	15%	Source/ Based on:	IDC (https://www.idc.com/)
7	Estimated Time to Achieve 20% Market Share	5-7 years	Source/ Based on:	https://hbr.org/topic/startup-growth-strategies
8	Anticipated Market Share Achieved if You are Reasonably Successful	10%	Source/ Based on:	https://hbr.org/topic/subject/competitive-strategy

	What are the 3 top assumptions that could affect the attractiveness of the beachhead market for your product (besides the product itself)?	1. A steady increase in consumer willingness to adopt AI-driven energy management solutions. 2. Continued or increased government incentives for energy-efficient and smart home technologies. 3. Ongoing advancements in AI and IoT technologies that enhance product value and efficiency.

Based on this summary analysis, use the below checklist to assess whether your beachhead market is a good size:

Checklist After TAM Analysis of Beachhead Market

		Yes	No
1	Is the market big enough to be interesting?	X	
2	Is it reasonable in size for us to achieve meaningful word of mouth, meaning it is not too big?	X	
3	Is it possible to get to cash flow positive in this market in a reasonable period of time (typically 3 years but it might be shorter or longer depending on the industry)? Note: This question takes into consideration the extra 4 factors described above	X	
4	Do I still feel good about this beachhead market as our initial market?	X	

If the answer to any of these is no, consider carefully before you move forward. Many of the high-profile entrepreneurs who have access to significant investment capital, or have a very strong personal balance sheet themselves, can ignore #3, but I would advise you to not ignore this question otherwise. It might be the second most important question for your survival. The most important question is the last one, because if you don't feel good about this market, you need to figure out why.

ADVANCED TOPICS: BOTTOM-UP TAM ANALYSIS

As mentioned, a bottom-up analysis is extremely powerful and gives you invaluable insights that are not generally possible through secondary research. Bottom-up analysis is also very time-consuming and difficult to get information for. If you are unsure about your market or your commitment to this idea, skip this part and come back later when you are more confident about your beachhead market

and have a deeper understanding of the market. Most plans rely on top-down analysis, and while I think it's insufficient, it is the reality that bottom-up analysis is much, much harder to do.

The below worksheet uses a concept called "end user density" which allows you to complete a bottom-up analysis without the need to identify every single end user in a market, since that process can be prohibitively expensive in terms of time consumed.

To calculate end user density, you'll first need some way to divide up the market into countable units. For instance, in the SensAble example in *Disciplined Entrepreneurship*, we sold to companies that employed industrial designers, and they defined their countable entity as overall number of employees. Their resulting "designer density" for their market was expressed as the number of designers per thousand employees.

For a consumer product, your countable unit could be population, a specific socioeconomic segment of the population, the number of people who own another product, etc. For businesses it may be number of employees, revenue, products released each year, number of customers that company has, etc. These units depend on your situation. Clever choice of countable unit for density will give credibility to your TAM estimate, so spend some time to optimize your choice on this unit, understanding it is still an estimate.

Once you have defined your countable unit, go to three instances of this unit and "count noses," determine exactly how many end users are within that countable unit. Also determine how many people overall are in that countable unit.

Then, for each instance, determine what the annualized revenue per end user is, based on the unique circumstances of each instance. Do not guess, ask the people from this instance of the countable unit!

Bottom-Up TAM Analysis Worksheet

What countable unit are you using for end user density? Internet access subscriptions

What are three instances of this countable unit you will be using to "count noses"?

1. _Households with Internet Access_ 2. _Households with Solar Panel Installations__ 3. New Housing Developments_____

FOR CYPRUS	**Instance 1: Households with Internet Access**	**Instance 2: Households with Solar Panel Installations**	**Instance 3: New Housing Developments**
Who did you speak to in order to gather this info?	Internet service providers	Solar panel installation companies	Housing developers, construction companies
# of end users	450,000	100,000	9,000
# of people in the countable unit	500,000	500,000	27,000
Density ratio (# end users / # people in countable unit)	450,000 / 500,000 = 0.9	100,000 / 500,000 = 0.2	9,000 / 27,000 = 0.333
How representative of the whole market do you believe this instance is?	High becuase internet access is prevalent in modern households.	Trend towards renewable energy adoption, depend on factors like geographical location,	Growing segment within the housing market that values modern amenities, depend on factors like

		regulatory landscape, and consumer preferences.	location, demographics, and broader housing trends."
In this instance, what is your estimate of the annualized revenue per end user?	$200	$250	$220

Based on the above table, what is a reasonable estimate of the end user density? (0.9+0.2+0.33)/3=0.476=47.6%

What is a reasonable estimate of the annualized revenue per end user? (450,000 * $200 + 100,000 * $250 + 9,000 * $220) / (450,000 + 100,000 + 9,000) ≈ $207

Based on the end user density, what is a reasonable estimate for the number of end users in the market? 500,000×0.476=238,000

What is a reasonable estimate for the TAM (# end users multiplied by annualized revenue per end user)? 238,000×€207=€49,266,000

Four additional factors to consider:			
Estimate of Range of Profitability for Your Product	30-40%	Based on:	Detailed cost analysis and pricing strategy.
Estimated CAGR (Compound Annual Growth Rate)	12-18%	Based on:	Growth trends in smart home and renewable energy sectors, technological adoption rates in Cyprus, and regulatory.
Estimated Time to Achieve 20% Market Share	6 years	Based on:	Market acceptance, competitive landscape complexity, effectiveness of marketing and partnership strategies, and speed of scaling production and distribution networks.
Anticipated Market Share Achieved if You are Reasonably Successful	15-20%	Based on:	Market size, segmentation strategy effectiveness, competitor activities, and innovation pace

1. Comparing your top-down and bottom-up analyses, which do you believe has more credibility? Why?

The top-down TAM was estimated at $90 million and the bottom-up TAM came to approximately €49.27 million, meaning that there is a significant difference between each method that highlights the importance of context. The top-down method captures a broader potential market in Cyprus (possibly at a global scale), while the bottom-up focuses on a more defined, immediate market in Cyprus. Considering factors such as solar panel installations and new home developments adds

realism and credibility into bottom-up analyses , offering a comprehensive understanding of market dynamics. In contrast, the top-down approach starts with a broad market size and narrows it down using various assumptions and percentages to arrive at the TAM. While it can provide a quick estimate and is useful for understanding the overall market potential, it often relies on broader assumptions that not fully account for the specific dynamics of the market segment being targeted.

2. **If you blend the two estimations, what is your final TAM size? What factors would make the TAM lower than you calculated? What are the factors that would drive the TAM much higher?**

To find a middle ground, one could weigh these estimates against the expected market reach and scalability of the product or service. For instance, if the product is initially launching in a smaller, more defined market (like Cyprus) but has the potential for global scale, the final TAM could be considered in stages—starting with the bottom-up estimate for initial market entry and expanding towards the top-down estimate as the product scales globally.

Considering the initial stages of market entry and focusing on scalability, a reasonable approach would be to use the bottom-up TAM of $49.27 million as the starting point, with a long-term view towards expanding into the larger market potential indicated by the top-down analysis.

Factors That Could Lower the TAM:

- Market Saturation: Entry of new competitors or saturation in the smart home device market.
- Economic Factors: Recession or downturns affecting disposable income and spending on smart home technologies.
- Regulatory Changes: New regulations that limit the adoption of certain technologies.

Factors That Could Drive the TAM Higher:

- Expansion and Scalability: Successful entry into new markets beyond the initial focus, leveraging the broader market potential seen in the top-down analysis.
- Technological Advancements: Innovations that enhance the product's appeal or introduce new functionalities, expanding the use case and customer base.
- Regulatory Incentives: Government policies that encourage the adoption of energy-efficient technologies, increasing market demand.

Step 5 Worksheeet (Persona):

Persona Profile for Beachhead Market

Add a photo of the Persona here

Name	Danai Kosh
Address	Chistou Tsarsta
Email and phone	danai.kosh@gmail.com +49 1625976580
Title (if appropriate)	High school, finishing bachelor
If B2B, where they exist in the overall org chart	-
Demographics:	
Gender	Female
Age	23
Income	Working student, 15k
Education level	High School
Education specifics (schools, majors, awards, etc.)	Business Administration and Management
Employment History (companies, jobs, awards, etc.)	Consulting and digital transformation (4 years)
Marital Status	Single
Kids & other family info	-
Ethnicity	European
Political Affiliations	-
Other Demographic 1:	-
Other Demographic 2:	-
Other Demographic 3:	-
Other Demographic 4:	-
Psychographics:	
Why do they do this job or live the life they do	Because she has high social skills and ambitious.
Hobbies	Dancing, diving, biking water cycle, swimming, fitness
Heroes	Walt Disney

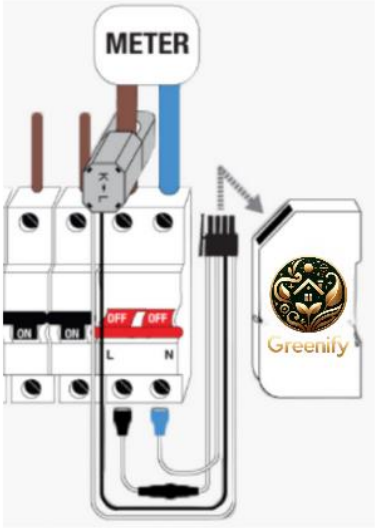
Aspirations in life	If you can dream it, you can do it
Fears in life	Die alone
Personality Traits	Empathic, Creative, Analytic
Interesting habits	Listening Ted Talks every morning
Other Psychographic 1:	-
Other Psychographic 2:	-
Other Psychographic 3:	-
Other Psychographic 4:	-
Proxy Products (Which products have the highest correlation with your Persona)	
Is there a product or products that the Persona needs to have in order to get benefit from yours?	To fully leverage the capabilities of our home automation system, owning a smartphone or similar device for remote control, a Wi-Fi station for connectivity, as well as a reliable electrical setup for integrating household appliances in general are necessary
Are there products the Persona uses that embody the psychographics & demographics from the end user profile?	The Persona has a rented house, a car, subscriptions to TV series and gym memberships
Any other unusual or interesting products of note that the Persona has?	Drone with active track, that has specific skills base on AI to realize contents for Social Media
Watering Holes (Real or virtual places where the Persona interacts with others like herself):	
Favorite sources for news (e.g., which newspapers, TV shows, websites, blogs, etc.)	Social Media and News Apps
Places where they congregate with other similar people	University, Work and Gym
Associations they belong to and the importance of each	-
Where does the Persona go for expert advice and/or to get questions answered?	Google, University lectures, friends, parents, partner
Day in the Life (describe a day in the life of the end user and what is going on in her head):	
What are the typical tasks the Persona does each day with the amount of time associated with each?	Work, University courses, finishing assignments, studying and fitness
Which of these typical tasks are habits?	Fitness

Which require the most effort?	University and work
Which does the Persona enjoy?	Fitness and finishing assignments
Which does the Persona not enjoy?	Studying (sometimes)
What makes it a good day for the Persona?	Finishing my workout and complete all my tasks I planned for the day
What makes it a bad day?	If she doesn't complete her tasks
Who is the Persona trying to please the most?	Herself
What is the top priority of the person/people the Persona is trying to please?	Health and Personal Goals
Priorities:	
Priorities (what are your Persona's priorities – focus first on biggest fears, then biggest motivations – and assign a weighting to each so that it adds up to 100)	1. Self-Care and Healthy - Weighting: 10 2. Academic success - Weighting: 9 3. Increase the work experiences - Weighting: 9 4. Saving money for the future - Weighting: 8 5. Relationship - Weighting: 8
	Now, revisit the General Information Worksheet and update as needed, especially for items 3, 4, 6, and 7.

NOTE: Persona Profiles for Multisided End User Market Requires All Sides

Step 6 (Full Life Cycle) Worksheet

Sketch of How the End User Currently Solves Their Problem (or Doesn't)



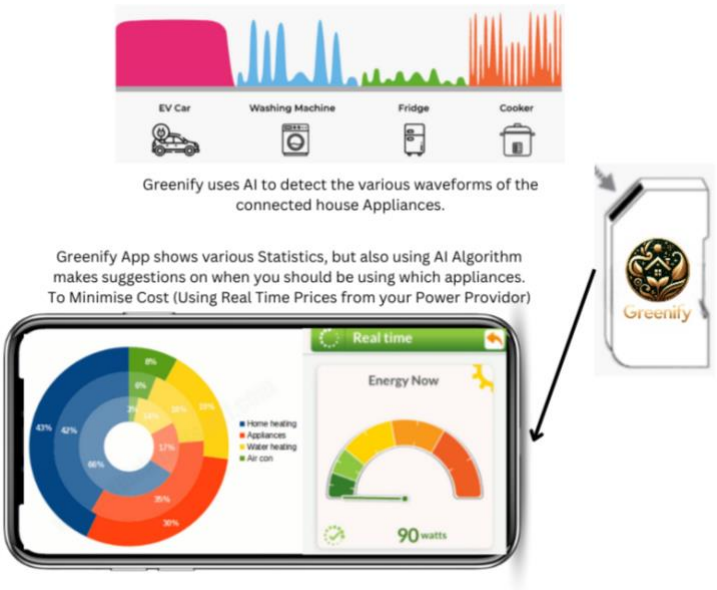
The Greenify installation is very simple, just connect to your Power Box the card next to your meter.

Full Life Cycle Use Case Worksheet << NOTE TO TYPESETTER: MAKE THIS LANDSCAPE / FULL PAGE >>

Stage #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Action	***How do they determine need & what is their catalyst to take action?***	***How do they find out about their options?***	***How do they analyze their options?***	***How do they acquire your product?***	***How do they pay for your product?***	***How do they install or set up your product?***	***How do they use and get value out of your product?***	***How do they determine the value they gain from your product?***	***How do they buy more of your product?***	***How do they tell others about your product?***
Who is involved	Customers (businesses private people) Our Company	Customers Promoters Marketing	Cust. Programmers	Cust. Promoters Sellers	Cust. Bank	Cust. technicians	Cust. Analysts	Cust. Analysts	Promoters	Cust. Promoters
When	Planning/ exposure	Always searching	When needed	Appointment	Appointment	Appointment	Every moment	Every moment	Every moment	Exposure/ Random talk
Where	Office/ exhibitions	Online/ exhibitions	Online/ Office/ exhibitions	Online / Office/ exhibitions	Online/office	House/ apartments	App on device / feedback	App on device / feedback	Online / exposure	Exhibitions / Direct talk Cust. to Cust.

How	Metting	Direct experience, on-off line research	Feedback / talking/ research	Mettin g	Contract	A technici an charge	Looking on the app the benefit	Looking on the app the benefit	Searchin g online and talking	Talking
Misc.	Collaborato rs		Compari ng with other products							

Sketch of How End User Will Use Your Product



Reflection on Full Life Cycle Use Case

1. Looking at these worksheets now, where do you see the gaps in your understanding?

One potential gap in understanding could be the extent of regulatory and compliance requirements associated with developing and selling the AI device that controls energy usage in the home. Understanding the specific regulations related to energy management devices, as well as any data privacy or safety standards that may apply, is crucial for ensuring the product meets legal requirements and consumer expectations. This includes researching and complying with relevant laws and certifications, which may vary depending on the target market and jurisdiction.

2. How do you intend to fill those knowledge gaps?

We searched on internet, and we found explanation on the videos on YouTube that we found.

To address the gap in understanding regarding regulatory and compliance requirements for the AI device controlling energy usage in the home, it's essential to conduct through research, seek guidance from experts, stay updated on regulations, integrate compliance into the development process, and maintain detailed documentation of compliance efforts.

3. Which stages of the Full Life Cycle Use Case are you most concerned about as posing risks to the adoption of a new solution?

The stages of the Full Life Cycle Use Case where adoption risks for the AI project might be most concerning include Requirement Analysis and Planning, Design and Development, Testing and Quality Assurance, Deployment and Integration, Training and Support, and Monitoring and Maintenance.

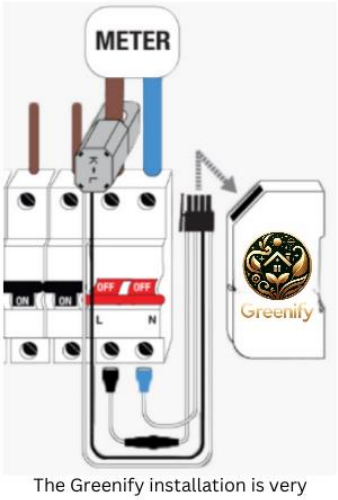
You have completed your first draft of the Full Life Cycle Use Case! You are probably at least a bit uncomfortable with some aspects of it, and that's understandable; plan to circle back to it as you complete additional steps and gain more understanding. But let's keep moving forward and start to define what your product would be within this overall context.

Step 7: High-Level Product Specification

Worksheets

Visual Representation of Product

In the space below (and use more sheets if need be, but keep it to less than three sheets) build a visual representation of your product and how it works. Annotate your drawings, but do not burden them with too much detail.



The Greenify installation is very simple, just connect to your Power Box the card next to your meter.

Greenify uses AI to detect the various waveforms of the connected house Appliances.

Greenify App shows various Statistics, but also using AI Algorithm makes suggestions on when you should be using which appliances. To Minimise Cost (Using Real Time Prices from your Power Providor)

Product Alignment with Persona

	How will you deliver a new level of value with respect to this priority?	**What features address this priority?**	**What functions address this priority?**	**What benefits address this priority?**
Persona's #1 Priority: _____	Given the automatic control of consumes	AI tool	Control of the energy use	Persona doesn't have to control all the consumes
Persona's #2 Priority: _____	Given to the persona more time for herself	AI tool	Control of the energy use	Persona can study and think about the University
Persona's #3 Priority: _____	Given the appropriate level of consume and respect the money budget	AI tool	Control of the energy use	Persona can save money for herself

Ready for Action?

a. Is the high-level product specification ready to review with your Persona? (circle one) (Yes) No

b. Have you done so? What feedback did the Persona provide?

"As a potential user reviewing the high-level product specification for this AI device, I appreciate the thoroughness and clarity provided. The specifications outline the device's functionality, features, and intended benefits effectively. However, I would appreciate more details regarding the user interface and ease of use, as well as any potential privacy or security considerations. Overall, the specification provides a solid foundation, but additional information in key areas would enhance my understanding and confidence in the product."

c. Have you iterated based on the Persona's feedback at least once? What changes did you make as a response to the Persona's feedback? (Hopefully you will iterate with the Persona more than once.)

We can enhance the user interface, improve privacy and security features, offer more detailed documentation, provide comprehensive user training and support, and implement a feedback mechanism.

d. Has the Persona concluded that the high-level product specification is interesting and satisfies the Persona's priorities?
(circle one) (Yes) No

ADVANCED TOPICS: HIGH LEVEL PRODUCT BROCHURE

Once you have iterated on your high-level product specification, you may want to build a trifold brochure that more clearly outlines the benefits your product provides. Some people will wait to make a brochure until they have iterated the specification with other customers in Step 9, Identify Your Next 10 Customers, but others find a brochure useful at this stage.

A good brochure should have the following items:

- ☐ First draft of company name and tag line
- ☐ Name of product and tag line
- ☐ Picture of product so it is clear what it is
- ☐ Clearly identified benefits aligned with the Persona's #1 priority (don't be subtle – it should come out in the tag lines and even names of your product)
- ☐ Two additional benefits (if appropriate) that don't dilute the impact of the first benefit
- ☐ Provide a sense of the magnitude of the benefit to be expected by the end user
- ☐ Provide a sense of the value the customer will gain from your product – use your work from the Step 6 Full Life Cycle Use Case
- ☐ Some other information might be relevant, but always be diligent about not diluting your main message – if you say too much, you say nothing in particular
- ☐ Have a clear call to action
- ☐ Everything should be fully aligned with the customer's priorities and will resonate with them in all elements (e.g. names, taglines, pictures, benefits emphasized, fonts, colors, word choice, language, references, call to action, etc.)

There are great individuals and agencies you can hire to design brochures, and you're not expected to become an expert in design. But you want to think through the content and make sure it is compelling and addresses the Persona's priorities. That way, if you choose to delegate or outsource the design, you can give them good direction and not settle for an inferior brochure.

Ultimately, the brochure is the most commonly and widely given elevator pitch about your product because it can be done when you are not in the room and even when you are sleeping. It make consistent messaging possible and scalable, so don't just down play it as "marketing hype." It really matters.

You also have to back it up with a great product, but that is coming. First, you have to make sure you are building the right product for your customer, and this process really helps to communicate that to all sides.

Disciplined Entrepreneurship Workbook

Step 8: Quantify the Value Proposition Worksheets

Axis to Measure Value Proposition

a. What is the Persona's #1 priority?

Self-care and healthy

b. What units should it be measured in?

When prioritizing self-care and health, measurements should align with specific aspects being assessed. For example, physical activity can be measured in duration (minutes or hours), intensity (METs or heart rate), and distance (miles or kilometers). Nutrition is quantified by portion size (grams or ounces), nutrient intake (grams, milligrams, or micrograms), and caloric intake (kilocalories). Sleep is measured in duration (hours), efficiency (percentage), and cycles. Stress management involves gauging stress levels (on a subjective scale), heart rate variability (in milliseconds), and cortisol levels (in micrograms per deciliter). Mental health is evaluated through psychological well-being (on standardized scales), cognitive function (scores or reaction time), and mood (self-reported rating). Hydration can be monitored by fluid intake (liters or milliliters), urine output (milliliters), and electrolyte levels (in millimoles per liter). Body composition encompasses weight (in kilograms or pounds), body fat percentage, and muscle mass (in kilograms or pounds). Biometrics like blood pressure (in millimeters of mercury), heart rate (in beats per minute), and blood glucose levels (in milligrams per deciliter) are also vital metrics. Selecting appropriate units depends on the specific goals and available measurement tools.

General Verbal Description of the "As Is" State and the Opportunities for Improvement

In the current state of the business, the market primarily focuses on residential homeowners seeking to manage and reduce their household energy consumption. This demographic encompasses a diverse range of potential end-users, including both urban and suburban homeowners, regardless of whether they have existing solar panels installed. The urgency of this market's needs is heightened by rising energy costs and increasing environmental consciousness among consumers. Furthermore, the business has identified a subsegment within this market comprising homeowners interested in integrating renewable energy sources. This subset presents an opportunity for the AI device to offer additional benefits to those already engaged in sustainable practices, thereby enhancing its value proposition within the residential energy management market.

Opportunities for improvement lie in leveraging AI technology to create a more intelligent and efficient energy management system for households. This includes developing algorithms that analyze energy consumption patterns, optimize usage based on real-time data, and adapt to users' preferences and behaviors. Integration with smart home devices and renewable energy sources could further enhance the system's capabilities, offering homeowners a comprehensive solution for reducing energy costs and environmental impact. Additionally, there's potential for streamlining installation and user interface processes to make the system more accessible and user-friendly, thereby expanding its market reach and impact. Overall, there is considerable room for innovation and improvement in the realm of AI-driven household energy control.

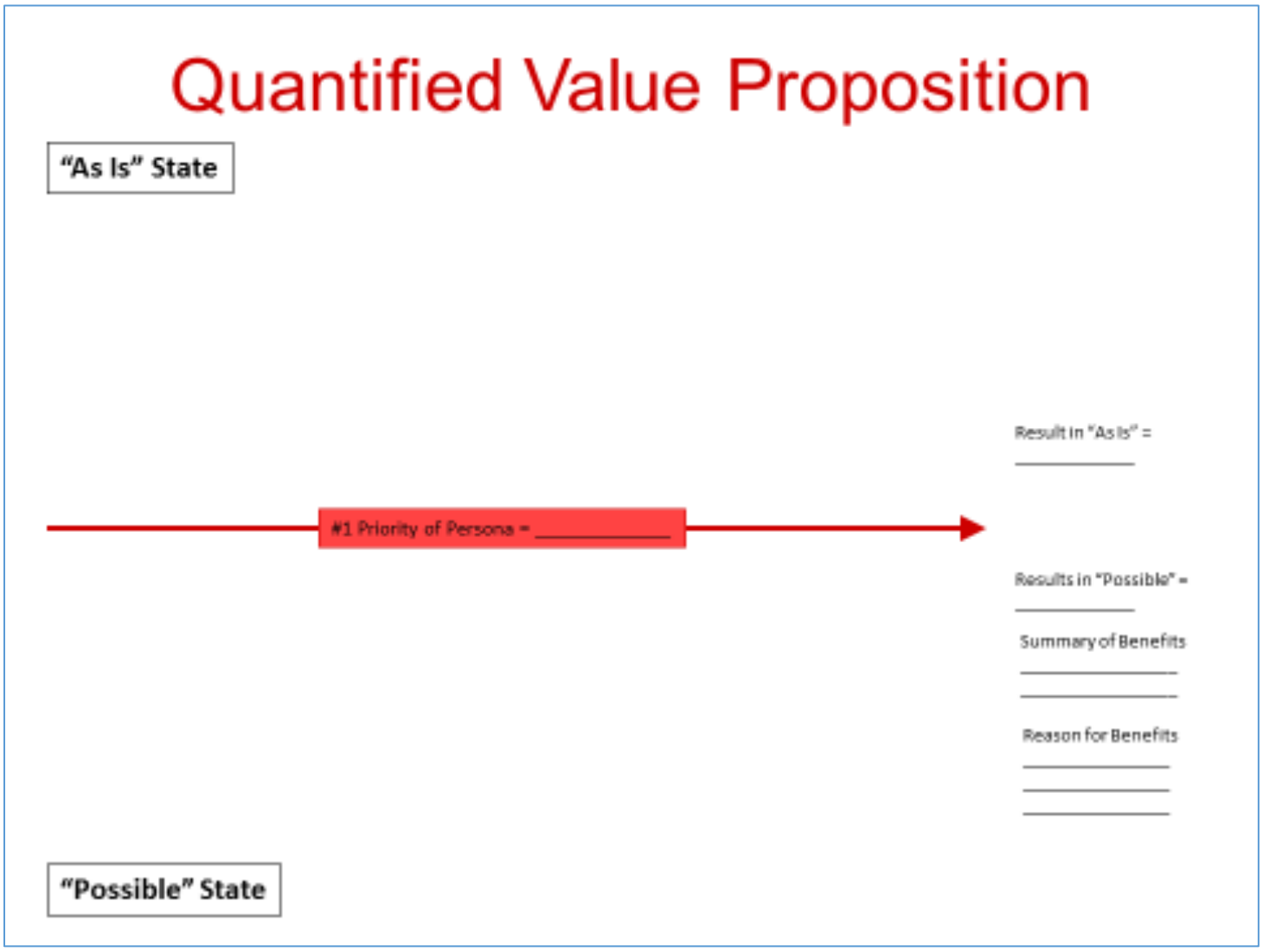
General Verbal Description of the "Possible" State and the Opportunities for Improvement

In envisioning the "possible" state and opportunities for improvement, the business could expand its market reach and enhance its offerings within the residential energy management sector. One avenue for growth involves leveraging

advanced AI technologies to tailor energy solutions to individual homeowner needs more precisely. By refining the AI algorithms, the device could provide personalized recommendations for optimizing energy usage based on factors such as household size, occupancy patterns, and weather conditions. Additionally, there's an opportunity to deepen engagement with homeowners by integrating features that promote energy conservation and sustainability practices. This could include real-time monitoring of energy usage, actionable insights on potential cost savings, and gamification elements to encourage behavior change. Moreover, enhancing compatibility with existing smart home ecosystems and renewable energy infrastructure could further differentiate the device in the market and increase its appeal to environmentally-conscious consumers. Furthermore, partnerships with utility companies or government initiatives could unlock access to subsidies or incentives for homeowners adopting energy-efficient technologies. By positioning itself as a strategic ally in the broader sustainability ecosystem, the business could solidify its market presence and foster long-term customer loyalty. Overall, by innovating on both technological capabilities and strategic partnerships, the business can elevate its position within the residential energy management market and capitalize on the growing demand for sustainable living solutions.

Visual One-Page Summary of Quantified Value Proposition

On the page below, draw diagrams that represent the “as is” state and “possible” state, and summarize the benefits to the customer.



(Editable Version provided in additional Powerpoint file)