

## Step 1 (Market Segmentation) Worksheet

### Market Segmentation Matrix Row Definitions:

1	<b>Market Segment Name</b>	<i>Carefully name the market segment so it appropriate captures precisely the group you want and no more; it is okay to be general at first but you will have to narrow this down in time to make real progress</i>
2	<b>End User</b>	<i>This is the person who is actually using the product not the economic buyer or the champion (more on this in step 12) – it is not a company or a general organization but real people</i>
3	<b>Task</b>	<i>What exactly is it that the end user does that you will significantly affect or allow her to do that she could not do before?</i>
4	<b>Benefit</b>	<i>What is the benefit that you believe the end user will get?</i>
5	<b>Urgency of Need</b>	<i>What is the level of urgency to solve the problem or capture the new opportunity for the end user?</i>
6	<b>Example End Users</b>	<i>Who are example users that you can, have or will talk to so as to validate to validate your perceptions on this market segment?</i>
7	<b>Lead Customers</b>	<i>Who are the influential customers (i.e., lighthouse customers) that if they buy, others will take note &amp; likely follow?</i>
9	<b>Willingness to Change</b>	<i>How conservative is this market segment? How open are they to change? Is there something to force change (i.e., impending crisis)?</i>
10	<b>Frequency of Buying</b>	<i>How often do they buy new products? What is their buying cycle look like at a high level?</i>
11	<b>Concentration of Buyers</b>	<i>How many different buyers are there in this market segment? Is it a monopoly? Oligopoly (a small number of buyers)? Or many competitive buyers?</i>
12	<b>Other relevant market considerations</b>	<i>This allows for customization for your segment for relevant considerations such as "high employee turnover", "very low margins/commodity", "high growth industry", "high virality effect (i.e., WOM -Word of Mouth", etc.</i>
13	<b>Size of Market (# of end users)</b>	<i>Estimation of the number of end users to a relevant range (10's, 100's, 1K's, 10K's, 100K's, 1M, etc.)</i>
14	<b>Est. value of end user (\$1, \$10, \$100, \$1K, etc.)</b>	<i>A first pass estimate of the value of each end user, again to a relevant order of magnitude so we can make some relative decisions now but then we will dive much deeper into this and other numbers later</i>
15	<b>Competition/ alternatives</b>	<i>What will be your competition from the end users' perspective? Of course there is the "do nothing option" but who else would be competitors if they analyzed their options?</i>
16	<b>Other components needed for a full solution</b>	<i>Since most customers will only buy a full solution and not components, what are the other elements needed to construct a full solution to achieve the benefits above? These are the complementary assets that you do not currently have but would need to build or acquire to give the end user a total solution.</i>
17	<b>Important partners</b>	<i>Who are the partners or distributors you will have to work with to fit into the work flow (e.g., data must come out vendor A's system and then be picked up at the end by vendor B's system) or business processes (e.g., the end users gets all his product via distribution channel C)</i>
18	<b>Other relevant personal considerations</b>	<i>In many market segmentation analysis, there are additional important factors that should be considered. This could be things like where the market segment is geographically centered, values match to founding team, existing knowledge and contacts in market, etc.</i>

## Market Segmentation Wire Frame Matrix:

Market Segment Name	Residential Homeowners (not limited to those with solar panels)	Blocks of Flats	Government Buildings	Industry and Factories	Commercial Properties
End User	Individual homeowners or families	Apartment tenants and building management	Facility managers and government property administrators	Facility managers, operational managers in manufacturing, processing plants, and industrial settings.	Shopping malls, restaurants, office buildings, hotels, retail stores, and entertainment venues.
Task	Manage and reduce energy consumption in their homes. Interest in integrating renewable energy sources. Identify optimal times for conducting energy-intensive activities to minimize costs.	Improve energy efficiency in shared living spaces Integrate community-wide sustainable energy sources.	Enhance energy efficiency and sustainability in public buildings to reduce costs and meet regulatory standards.	Optimize industrial energy consumption for cost reduction and sustainability; integrate renewable energy sources.	Reduce energy bills, improve operational efficiency, and demonstrating commitment to sustainability.
Benefit	reduction in energy bills increased home efficiency reduced environmental impact (carbon footprint)	Lowered collective energy bills improved energy efficiency across the block enhanced community sustainability.	Reduced taxpayer burden on energy costs; compliance with environmental standards; public leadership in sustainability.	Significant cost savings; improved operational efficiency; reduced industrial emissions and carbon footprint reduction.	Cost savings, improved operational efficiency, reduced environmental impact, and enhanced reputation for sustainability.
Urgency of Need	High, influenced by rising energy costs and increasing awareness of climate change and its impact.	High, influenced by rising energy costs and increasing awareness of climate change and its impact.	High, due to public and legislative pressure for efficiency and sustainability.	High, given industrial energy consumption levels and potential regulatory compliance requirements.	High, driven by rising energy costs, environmental concerns, and regulatory pressure.
Example End Users	Families in urban and suburban areas with or without solar panels	Apartment complexes in urban areas, eco-conscious residential communities.	Municipal offices, hospitals, courthouses, public schools and libraries.	Manufacturing plants, food processing facilities, warehouses with high energy demands (automotive, chemical etc).	Shopping malls, restaurants, office buildings, hotels, retail stores, entertainment venues.
Lead Customers	Eco-friendly community leaders Influential green lifestyle bloggers(Eco-conscious celebrities or public figures).	Property management companies with a strong focus on sustainability; green-certified residential buildings.	High-profile government complexes adopting sustainability practices as a model.	Industry leaders in sustainability; factories with high visibility and commitment to green practices.	Property management companies with a focus on sustainability, commercial real estate developers committed to green building practices.
Willingness to Change	Regulatory mandates (energy efficiency standards/carbon emission reductions). Economic factors (cost saving) May prefer traditional methods	High among residents, variable among management depending on cost and logistics.	Moderate; dependent on budget cycles and public procurement regulations.	Moderate to high, influenced by the potential for cost savings and regulatory compliance. Investments are often carefully evaluated for ROI.	Moderate to high, influenced by economic factors, regulatory requirements, and market trends.
Frequency of Buying	Homeowners upgrade energy solutions every 5 to 10 years based on appliance lifespan and research.	Investments happen every 5 to 7 years, considering budgets and consensus among management, tenants, and owners.	Upgrades occur every 7 to 10 years, following procurement processes, budgets, and governmental priorities.	Upgrades happen every 7 to 12 years, balancing ROI, technology, and regulations, varying by industry and funding.	Businesses review energy efficiency every 3 to 5 years to optimize operations, driven by economics and sustainability goals.

<b>Concentration of Buyers</b>	Many competitive buyers. Diverse range of homeowners. No dominance or small group controlling the market. Not a monopoly or oligopoly.	Fewer, larger buyers (property management companies); not a monopoly but often limited choices within specific geographic areas.	Oligopoly; centralized buying decisions at various levels of government.	Oligopoly; a smaller number of large players dominate the market, each with significant purchasing power and influence.	Diverse range of buyers with no dominant player in the market.
<b>Other relevant market segment considerations</b>	Regulatory landscape regarding energy efficiency standards and renewable energy incentives. Market trends towards smart home automation and IoT integration. Potential for partnerships with utility companies or government initiatives promoting energy efficiency. Potential challenges such as high initial costs and long payback periods.	Energy regulations for multi-dwelling units; potential for bulk purchasing discounts; challenges in retrofitting older buildings.	Compliance with strict procurement and regulatory standards; potential for large-scale implementation across multiple facilities.	Need for systems that can integrate with existing industrial processes, potential disruptions during implementation, and scalability for different production sizes.	Compliance with building codes and energy efficiency standards, potential for partnerships with utility companies or government incentives, challenges in retrofitting existing buildings.
<b>Size of Market (# of end users)</b>	Minimum of 10-20% of households worldwide (200-400 million households)	Tens to hundreds of thousands of blocks, depending on urban density.	Thousands of buildings across federal, state, and local levels.	Thousands of significant industrial sites worldwide, each potentially representing a large-scale deployment opportunity.	Thousands to millions of commercial properties worldwide.
<b>Est. value of end user (\$1, \$10, \$100, \$1K, etc.)</b>	\$250 to \$750 per year.	\$1,000 to \$3,500 per year per building, depending on size and efficiency measures implemented.	\$2,000 to \$6,500 per year per facility, depending on the size and scope of energy efficiency projects.	\$\$20,000 to \$50,000+ per year, depending on the size and complexity of the industrial operation and the extent of the solution implemented.	\$2,500 to \$7,000 per year per facility, depending on the commercial property.
<b>Competition/alternatives</b>	Traditional Energy Management Methods ("do nothing") Other Smart Home Energy Management Systems (smart thermostats, energy monitoring devices, and home automation systems from competitors such as Nest, Ecobee, and Sense.)	Independent energy solutions by tenants; traditional energy management services; less advanced smart building technologies.	Traditional HVAC systems; existing older energy management systems; manual adjustments.	Other industrial energy management systems, in-house developed solutions, manual adjustments, and non-AI driven technologies.	Traditional energy management methods, other smart building technologies, independent energy solutions.
<b>Other components needed for a full solution</b>	Smart Thermostats Energy Monitoring Devices Smart Plugs and Outlets Home Energy Storage Systems Smart Lighting Systems Connectivity Protocols (Wi-Fi, Zigbee, or Z-Wave) Cloud Infrastructure Mobile Applications	Building-wide smart metering systems; central energy management control systems; renewable energy installations for communal areas; efficient heating and cooling systems.	Energy-efficient lighting and HVAC systems; solar panels for on-site renewable energy; smart meters and energy management software.	Industrial-grade smart sensors, IoT devices for equipment monitoring, energy-efficient machinery, renewable energy systems, and robust data analytics platforms.	Building-wide energy management systems, efficient HVAC systems, renewable energy installations, smart meters, and data analytics platforms.
<b>Important partners</b>	Hardware Manufacturers Smart home technology providers Renewable energy companies Utility Companies(Electricity Authority of Cyprus (EAC) installation and maintenance services	Renewable energy providers; smart meter and smart device manufacturers; government and municipal energy	Energy service companies (ESCOs); renewable energy contractors; federal and state energy efficiency grant programs.	Equipment manufacturers, renewable energy providers, specialized energy management consultancies, and technology integration services.	Hardware manufacturers, energy service companies, renewable energy providers, technology integrators.

	Distributors	efficiency programs.			
<b>Other relevant personal considerations</b>	Geographic areas (with high demand or high solar potential or other renewable energy sources Homeowners with a tech-savvy mindset.)	Urban areas with higher population densities and energy use; buildings with modern infrastructure more likely to adopt new technologies.	Buildings located in climates with extreme temperatures may have higher energy demands; historical buildings may have restrictions on modifications.	Industrial hubs with high energy demand, regions with strict environmental regulations, sectors with high energy consumption and potential for efficiency gains.	Location (urban vs. suburban), building age and infrastructure, tenant preferences and lease agreements.

## Step 2 (Beachhead Market Selection) Worksheet

Beachhead Market Selection Worksheet					
Criteria	Market Segment = Residential Homeowners	Market Segment = Blocks of Flats	Market Segment = Government Buildings	Market Segment = Industry and Factories	Market Segment = Commercial Buildings
<b>Rating is Very High (best), High, Medium, Low, Show Stopper (worst)</b>					
1. Economically Attractive	High	High	Medium	Very High	High
2. Accessible to Our Sales Force	High	High	Very Low	Low	Medium
3. Strong Value Proposition	Very High	High	High	Very High	High
4. Complete Product	High	Medium	Medium	Medium	High
5. Competition	High	High	High	Medium	Medium
6. Strategic Value	High	Medium	Very High	Very High	High
7. Personal Alignment	Very High	Medium	Medium	Low	Medium
Overall Rating	High	Medium	High	High	High
<b>Rating for Ranking is 1 (most attractive) to 4 (least attractive) – Key Factors is Most Important Contributor to the Ranking</b>					
Ranking	1	2	5	4	3
Key Deciding Factors	Strong value proposition due to the direct impact on cost savings and the high level of control over energy use. The segment is highly accessible, and personal alignment is strong, given the direct	Challenges include accessibility for individualized solutions and competition from existing building management systems. The economic attractiveness is medium due to the shared cost model.	High strategic value and a strong value proposition driven by regulatory compliance and public image considerations. However, accessibility is a challenge, impacting the overall ranking.	Economic attractiveness is very high due to substantial energy savings potential. The need for a more complete product and direct sales force accessibility reduces its immediate attractiveness.	Strong in terms of its complete product offering and strategic value. It is economically attractive and has a good level of personal alignment.

	benefit to homeowners.				
--	---------------------------	--	--	--	--

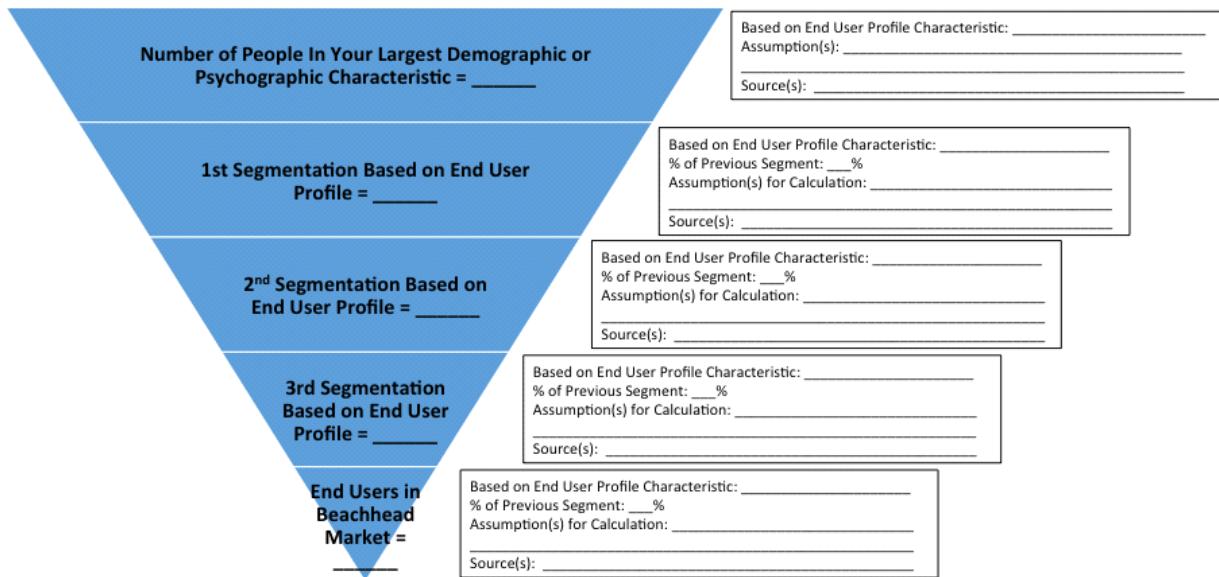
## Step 3 Worksheet

End User Profile for Beachhead Market	
Demographics (be sure to determine which relevant for you situation but some general categories are gender, age, income, geography, job title, education, ethnicity, marital status, political affiliations, etc.)	Gender: All Age: 20-65 years Income: Middle to high income, \$20,000+ Geography: Urban and suburban areas, primarily in regions with high electricity rates or strong sustainability incentives Job Title: Varied, including professionals, executives, and retirees Education: High School-educated or higher Ethnicity: Diverse Marital Status: Both single and married, with or without children Political Affiliations: Possibly leaning towards environmentally conscious policies but not exclusive Home Ownership: Owns their home, possibly with a mortgage
Psychographics (as above this needs to be customize for you situation but examples are aspirations, fears, motivators, hobbies, opinions, values, life priorities, personality traits, habits, etc.)	Aspirations: To live in a comfortable, eco-friendly, and technologically savvy home Fears: High utility bills, environmental degradation Motivators: Cost savings, environmental concern, desire for modern and efficient living spaces Hobbies: Home improvement projects, gardening, technology enthusiasts Values: Sustainability, efficiency, innovation Life Priorities: Family, financial security, health, and environmental stewardship Personality Traits: Forward-thinking, responsible, open to new technologies
Proxy Products (what other products does this end user own and which do they value the most? Which products have the highest correlation with your target end user)	Smart home devices (e.g., Nest thermostat, Philips Hue lights) Hybrid or electric vehicles (e.g., Tesla, Toyota Prius) Renewable energy subscriptions or installations (e.g., solar panels) Energy-efficient appliances (e.g., ENERGY STAR rated products) Electronic Home Tools (Indoor- Dyson V15 Detect cordless vacuum & Outdoor- EGO Power+ electric lawnmower)
Watering Holes (e.g., locations, associations, online platforms – and sequence them in priority and indicate intensity of each)	Online platforms: Social media groups focused on sustainable living, home improvement forums (Intensity: High) Associations: Local environmental or community groups (Intensity: Medium) Locations: Home improvement stores, green living expos (Intensity: Medium) Media: Blogs and podcasts about technology and sustainability (Intensity: High)
Day in the Life (describe a day in the life of the end user and what is going on in her head)	Morning: Wakes up to a comfortably heated home, thanks to Greenify's smart thermostat which adjusted the temperature before the alarm went off. Over breakfast, checks the Greenify app for overnight energy usage and smiles, seeing the savings from yesterday's solar contribution.  Commute: On the drive to work, reflects on how Greenify has not only cut down the energy bill but also reduced the household's carbon footprint.

	<p>Plans to explore more Greenify features, like setting up energy usage alerts.</p> <p>Workday: Shares with a colleague how installing Greenify has made managing home energy use almost effortless. They're impressed by how it integrates with existing smart home devices and offers insights into energy-saving opportunities.</p> <p>Evening: Returns home and appreciates the perfect indoor temperature. After dinner, uses the Greenify app to quickly adjust settings for the night, ensuring energy isn't wasted. Before bed, checks the app one last time, proud of the day's energy efficiency and cost savings.</p> <p>Thoughts: Satisfaction with making a positive impact on both the environment and the monthly budget. Curiosity about how to further optimize energy usage. Pride in leading a smart, sustainable lifestyle.</p>
Priorities (what are your end user's priorities and assign a weighting to each so that it adds up to 100)	<ol style="list-style-type: none"> <li>1. Energy Efficiency and Cost Savings Weighting: 40%</li> <li>2. Environmental Sustainability: Weighting: 30%</li> <li>3. Comfort and Convenience Weighting: 20%</li> <li>4. Technology Adoption and Home Value Weighting: 10%</li> </ol>

## Step #4 Worksheets

### Top-Down Estimate of Number of End Users in Beachhead Market



<b>I. One Time Charge Data Point</b>		
Ia	Estimation of price per unit	€280
Ib	Number of units needed per end user	1
Ic	Average Life Relevant? (assume repurchase)	Yes
Id	Average Life of Product in year	7 years
Ie	Annualized Revenue (Ia*Ib)/Id (Data Point 1)	€40 per year
<b>II. Budget Available Data Points</b>		
IIa	Current Spend per end user (Data Point 2)	€400 yearly on smart home devices
IIb	Total budget for the end user	€40,000 annually for a middle-income household.
IIc	What % of budget could go to this solution reasonably?	2.5%
IId	Annualize Revenue (IIb*IIc) (Data Point 3)	€40,000 * 2.5% = €1000 per year
<b>III Comparables</b>		
IIIa	Who are the comparable for your business?	Voltaware, Nest Thermostats (Google), Ecobee, Sense Energy Monitor.
IIIb	What are the comparable products?	Home Energy Monitor, Smart thermostats, energy monitors
IIIc	What is the comparable converted to similar annualize revenue (Data Points 4 plus however many more you deem relevant)  <b>Voltaware:</b>	With a cost of €220-250 per unit and a 5-year life expectancy, the annualized revenue for the Sense Energy Monitor would indeed be €50

	<b>Annualized Revenue: 30-35% €66-77 per unit.</b> <a href="https://www.amazon.co.uk/Voltaware-Actionable-Automatic-Recognition-Installation/dp/B0CLVBSZ4Y">https://www.amazon.co.uk/Voltaware-Actionable-Automatic-Recognition-Installation/dp/B0CLVBSZ4Y</a>	per year, assuming only energy monitoring without AI optimizations.
<b>IV</b>	<b>Interpreting the Results</b>	
IVa	Consensus on estimate of annualized revenue per end user (a range is fine)	€40-€70
	How did you end up at this number/range?	The estimated annualized revenue per end user ranges from €40 to €60, derived from an analysis of market research, competitor pricing, and potential revenue streams. The lower end (€40) is based on the one-time charge spread over the product's life. The upper end (€70) 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	150 million households in Europe	Source/ Based on:	Gartner ( <a href="https://www.gartner.com/en">https://www.gartner.com/en</a> ) IBISWorld ( <a href="https://www.ibisworld.com/">https://www.ibisworld.com/</a> ) Statista ( <a href="https://www.statista.com/">https://www.statista.com/</a> )
2	Total # of end users in the targeted sub-segment your BHM	30 million households (20% of households have an interest in smart home devices)	Source/ Based on:	Statista ( <a href="https://www.statista.com/">https://www.statista.com/</a> ) MarketResearch ( <a href="https://www.marketresearch.com/">https://www.marketresearch.com/</a> ) Deloitte Insights ( <a href="https://www2.deloitte.com/us/en/insights.html">https://www2.deloitte.com/us/en/insights.html</a> )
3	Annual monetizable revenue per end user	€55	Source/ Based on:	Competitor websites(e.g., Sense, Nest, Ecobee) Bloomberg ( <a href="https://www.bloomberg.com/europe">https://www.bloomberg.com/europe</a> )
4	Estimate of Top-Down TAM (line 2 times line 3)	30 million households * €55 = €1.65 billion		<a href="https://seekingalpha.com/">https://seekingalpha.com/</a> <a href="https://finance.yahoo.com/">https://finance.yahoo.com/</a>
5	Estimate of Range of Profitability for Your Product	20-30% profit margin	Source/ Based on:	IDC ( <a href="https://www.idc.com/">https://www.idc.com/</a> )
6	Estimated CAGR (Compound	15%	Source/ Based on:	IDC ( <a href="https://www.idc.com/">https://www.idc.com/</a> )

	Annual Growth Rate)			
7	Estimated Time to Achieve 20% Market Share	5-7 years	Source/ Based on:	<a href="https://hbr.org/topic/startup-growth-strategies">https://hbr.org/topic/startup-growth-strategies</a>
8	Anticipated Market Share Achieved if You are Reasonably Successful	10%	Source/ Based on:	<a href="https://hbr.org/topic/subject/competitive-strategy">https://hbr.org/topic/subject/competitive-strategy</a>
	What are the 3 top assumptions that could affect the attractiveness of the beachhead market for your product (besides the product itself)?			
	<p>1. A steady increase in consumer willingness to adopt AI-driven energy management solutions.</p> <p>2. Continued or increased government incentives for energy-efficient and smart home technologies.</p> <p>3. Ongoing advancements in AI and IoT technologies that enhance product value and efficiency.</p>			

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

<b>FOR EUROPE</b>	<b>Instance 1: Residential Households with</b>	<b>Instance 2: Households with Solar Panel Installations</b>	<b>Instance 3: New Housing Developments</b>
-------------------	--	--	---

	<u>Internet Access</u>		
<u>Who did you speak to in order to gather this info?</u>	Internet service providers	Solar panel installation companies	Housing developers, construction companies
<u># of end users</u>	130.5 million	23 million	8.5 million
<u># of people in the countable unit</u>	130.5 million households * 2.5 people/household = 326.25 million people	23 million households * 2.5 people/household = 57.5 million	8.5 million households * 2.5 people/household = 21.25 million
<u>Density ratio (# end users / # people in countable unit)</u>	Density ratio = 130.5 million / 326.25 million = 0.4	23 million / 57.5 million = 0.4	8.5 million / 21.25 million = 0.4
<u>How representative of the whole market do you believe this instance is?</u>	Highly representative due to widespread internet adoption, indicating broad market trends.	Trend towards renewable energy adoption, depend on factors like geographical location, regulatory landscape, and consumer preferences.	Growing segment within the housing market that values modern amenities, depend on factors like location, demographics, and broader housing trends.
<u>In this instance, what is your estimate of the annualized revenue per end user?</u>	€50	€55	€60

Based on the above table, what is a reasonable estimate of the end user density?

$$(0.4+0.4+0.4)/3=0.4=40\%$$

What is a reasonable estimate of the annualized revenue per end user? (130.5 m \* €50+ 23 m \* €55 + 8.5 m \* €60) / (130.5 m + 23 m + 8.5 m ) ≈ €51.23

Based on the end user density, what is a reasonable estimate for the number of end users in the market? 130.5 × 0.4 = 52.2 million

Residential Households likely to adopt smart energy management within the next year is 30% of 52.2 million= 0.30 \* 52.2 million= 15.66 million

One out of every eight of the 15.66 million households, totaling 1.9575 million households, are expected to purchase Greenify, considering factors like income level, propensity to spend on green technology, and geographic areas with higher rates of adoption for smart home technology.

What is a reasonable estimate for the TAM (# end users multiplied by annualized revenue per end user)? 1.9575 million × €51.23= €100.33 million.

A reasonable estimate for the Total Addressable Market (TAM) for Europe is approximately €100.33 million

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)	14.5%	Based on:	Growth trends in smart home and renewable energy sectors, technological adoption rates in Europe , 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%	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 €1.65 billion and the bottom-up TAM came to approximately €100.33 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 Europe (possibly at a global scale), while the bottom-up focuses on a more defined, immediate market in Europe. 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 Europe) 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 €100.33 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.

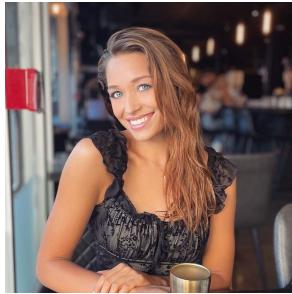
- Economic Factors: Recession or downturns affecting disposable income and spending on smart home technologies.
- Regulatory Changes: New regulations that limit the adoption of certain technologies.

#### 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	<a href="mailto:danai.kosh@gmail.com">danai.kosh@gmail.com</a> +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
<b>Priorities:</b>	
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)	<ol style="list-style-type: none"> <li>1. Self-Care and Healthy - Weighting: 10</li> <li>2. Academic success - Weighting: 9</li> <li>3. Increase the work experiences - Weighting: 9</li> <li>4. Saving money for the future - Weighting: 8</li> <li>5. Relationship - Weighting: 8</li> </ol>
	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 #	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Action	<i>How do they determine need &amp; what is their catalyst to take action?</i>	<i>How do they find out about their options?</i>	<i>How do they analyze their options?</i>	<i>How do they acquire your product?</i>	<i>How do they pay for your product?</i>	<i>How do they install or set up your product?</i>	<i>How do they use and get value out of your product?</i>	<i>How do they determine the value they gain from your product?</i>	<i>How do they buy more of your product?</i>	<i>How do they tell others about your product?</i>
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	Meeting	Direct experience, on-off line research	Feedback / talking/ research	Meeting	Contract	A technician charge	Looking on the app the benefit	Looking on the app the benefit	Searching online and talking	Talking
Misc.	Collaborators		Comparing with other products							

Sketch of How End User Will Use Your Product

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 Provider)

### 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 thorough 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.

# Disciplined Entrepreneurship Workbook

## Step 7: High-Level Product Specification

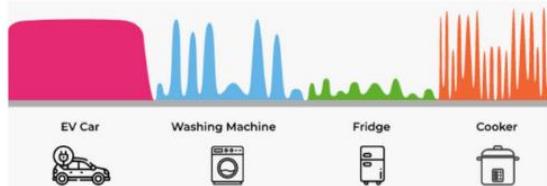
### Worksheets

#### 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.



## Product Alignment with Persona

	<u>How will you deliver a new level of value with respect to this priority?</u>	<u>What features address this priority?</u>	<u>What functions address this priority?</u>	<u>What benefits address this priority?</u>
<b>Persona's #1 Priority:</b> _____	Given the automatic control of consumes	AI tool	Control of the energy use	Persona doesn't have to control all the consumes
<b>Persona's #2 Priority:</b> _____	Given to the persona more time for herself	AI tool	Control of the energy use	Persona can study and think about the University
<b>Persona's #3 Priority:</b> _____	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 makes consistent messaging possible and scalable, so don't just downplay 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.

## Quantified Value Proposition

“As Is” State

#1 Priority of Persona = \_\_\_\_\_

Result In “As Is” =  
\_\_\_\_\_

Results in “Possible” =  
\_\_\_\_\_

Summary of Benefits  
\_\_\_\_\_

Reason for Benefits  
\_\_\_\_\_

“Possible” State

(Editable Version provided in additional Powerpoint file)

## Step 9 (Identify Your Next 10 Customers) Worksheets (3):

### Worksheet #1: Summary of Next 10 Customers

Summary of Next 10 Customers												
#	General Info				Fit					Engagement		
	Customer Name	Relevant Info	Title	Email/Phone	Demo-graphic	Psycho-graphic	Use Case	Value Prop	Overall	Contacted	Level of Interest – Letter of Intent?	Source
1	Vicky	EAC connection	Mrs	Can't Share GDPR	Homeowner	Lifestyle	Greenify App	Costs Reduction	Positive	YES	HIGH	
2	Maria	Government Employee	Mrs	Can't Share GDPR	Apartment	Values	Greenify Solution	Green environment	Positive	YES	HIGH	
3	ANDREAS	Gov Employee	Mr	Can't Share GDPR	Appartment	Attitude	Greenify App	Costs Reduction	Negative	YES	LOW	
4	George	Retiree	Mr	Can't Share GDPR	Homeowner	Personality	Greenify App	Costs Reduction	Indifferent	YES	MEDIUM	
5	Stella	Accountant	Mrs	Can't Share GDPR	Homeowner	Values	Greenify Solution	Green environment	Positive	YES	HIGH	
6	Nicolas	Police Officer	Mr	Can't Share GDPR	Apartment	Values	Greenify Solution	Green environment	Positive	YES	HIGH	
7	Soulia	Financial Investigator	Mrs	Can't Share GDPR	Home	Attitudes	Greenify App	Costs Reduction	Indifferent	YES	MEDIUM	
8	Antigone	Financial Manager	Mrs	Can't Share GDPR	Home	Lifestyles	Greenify App	Costs Reduction	Negative	YES	MEDIUM	
9	Stelios	Insurance	Mr	Can't Share GDPR	Apartment	Values	Greenify App	Costs Reduction	Positive	YES	MEDIUM	
10	Andreas 2	DJ	Mr	Can't Share GDPR	Apartment	Lifestyle	Greenify Solution	Green environment	Positive	YES	HIGH	

Note -1: Like with other worksheets, this is meant to give some structure but it can and should be customized as appropriate for your situation

Note – 2: Relevant Info is other relevant info that is not captured elsewhere, such as “Total Megawatts Installed” for the Methane Capture example from Disciplined Entrepreneurship.

## Worksheet #2: Notes From Conversation With Potential End User

(Make a copy of this worksheet for each end user you talk to)

Demographics (be sure to determine which relevant for you situation but some general categories are gender, age, income, geography, job title, education, ethnicity, marital status, political affiliations, etc.)	60, female, High Income, Cypriot, married
Psychographics (as above this needs to be customize for you situation but examples are aspirations, fears, motivators, hobbies, opinions, values, life priorities, personality traits, habits, etc.)	Lifestyle improvement
Proxy Products (what other products does this end user own and which do they value the most? Which products have the highest correlation with your target end user)	Metered Connection at Home
Watering Holes (e.g., locations, associations, online platforms – and sequence them in priority and indicate intensity of each)	Connection in EAC, can help promote the product to reach their marketing department.
Day in the Life (describe a day in the life of the end user and what is going on in her head)	Must drive cost down
Priorities (what are your end user's priorities and assign a weighting to each so that it adds up to 100)	1. Cost reduction _____ Weighting: 100 2. _____ Weighting: _____ 3. _____ Weighting: _____ 4. _____ Weighting: _____ 5. _____ Weighting: _____

Feedback on Full Life Cycle Use Case	Enjoys the concept
Feedback on High Level Product Specification	Interesting, innovative approach that can help reduce electric bills
Feedback on Quantified Value Proposition	A bit hesitant at first, then leaned into it once understood
General thoughts/conclusions/questions the end user has	Wants to see evidence
Your notes after the conversation	Good demographic to target 60y homeowner couples.

## Worksheet #3: Lesson Learned from Identifying the Next 10 Potential Customers

How did you source people to talk to in this step?

Random Connections, People in the street

How many did you speak to?

10

How did you filter them to make sure they fit your end user profile?

Tried to go for all ages, people that are living in a home or an apartment.

What was your yield rate to get to the final list (how many did you try to contact, and how many did you get useful info out of)?

Tried to Contact 20, 50% connection rate

<u>Step</u>	<u>Hypotheses you tested during this step (you can test more or fewer hypotheses for each category than what is listed here)</u>	<u>What conclusions did you reach about the hypothesis? (Validated/ Invalidated/ Still Unclear – Needs More Work)</u>	<u>What is your next action related to this hypothesis?</u>
<u>2 – Beachhead Market</u>	<u>Homeowners care want this</u>	<u>Validated</u>	<u>Ensure they're a key target audience</u>
<u>3 – End User Profile</u>	<u>Wealthier people care less</u>	<u>Invalidated, actually, they care more</u>	
<u>4 – Beachhead TAM</u>			
<u>5 – Persona</u>			

<u>6 – Full Life Cycle Use Case</u>	<u>People don't care about green disposal</u>	<u>Validated, people didn't even ask, but were excited when this was brought up</u>	<u>Promote green disposal in future</u>
<u>7 – High-Level Product Spec</u>			
<u>8 – Value Prop</u>	<ol style="list-style-type: none"> <li>1. <u>People Care about Saving Money</u></li> <li>2. <u>People Care about Greener Environment</u></li> </ol>	<u>Both are true, though less people would do it for environmental causes</u>	<u>We need more cost savings evidence, to further promote this product with higher success rate</u>
<u>Other Key Assumptions</u>			

## Step 10: Define Your Core

### Worksheet

Think long, hard and creatively about what assets your team and new venture have. They can include capabilities, connections, branding opportunities, personal attributes, personal wealth, intellectual property, unique insights, key customer commitments or something else.

Defining Your Core Worksheet		
	What is your value proposition (from Step 8)? Greenify helps homeowners reduce their energy bills by up to 20% and monitor their energy consumption in real-time via a user-friendly app, promoting both cost savings and environmental sustainability.	
What assets does your team have? Prioritize from strongest to weakest.		
1.	Expertise in IoT and energy management software	Strongest
2.	Strong relationships with homebuilders and real estate developers	
3.	Innovative, proprietary software for energy management	
4.	Team with extensive experience in renewable energy sectors	
5.	Partnerships with major energy companies	
6.	Patents pending on specific technologies for energy efficiency	
7.	Dynamic, scalable cloud infrastructure for data handling	
8.	Aggressive, focused marketing team	
9.	Responsive customer service department	
10.	R&D department actively developing next-gen features	Weakest
What are your proposed moats for your business?		
1.	Exclusive partnerships with key homebuilders for pre-installations	Strongest
2.	Advanced, proprietary algorithms for energy usage optimization	
3.	Strong brand recognition in eco-friendly home technology	
4.	First-mover advantage in integrating with multiple smart home platforms	
5.	Long-term customer contracts with locked-in pricing	
6.	Ongoing customer engagement through app-driven updates and energy-saving tips	Weakest
What are potential Cores for your business?		
1.	Proprietary energy management software	
2.	Strong industry partnerships and network	
3.	Brand reputation as a leader in sustainable home technology	
4.	Exclusive data analytics and customer insights	
Decision:		
1.	What is your proposed Core from these choices?  Proprietary energy management software: this includes unique algorithms that not only manage but also predict energy usage patterns, allowing for preemptive adjustments and real-time, actionable insights into energy usage.	
2.	Why is or will this Core be unique?  It utilizes unique algorithms that not only manage but predict energy usage patterns, allowing for preemptive adjustments, unlike any competitor.	

3.	Why is it important to your target customer? How does it relate to your value proposition?	The software directly relates to the value proposition by enabling significant cost savings and providing real-time, actionable insights into energy usage, which is crucial for customers looking to reduce costs and environmental impact.
4.	How does it grow over time relative to competitors in a way that competitors can't simply catch up once they realize it?	Continual updates and enhancements from our R&D team will keep it ahead, along with the integration of machine learning for smarter predictions and adjustments, making it difficult for competitors to quickly replicate.
5.	What was your second (or third) choice, and why is your first choice a better selection? Compare and contrast.	Second choice: Strong industry partnerships and network. While partnerships are valuable and provide leverage, the proprietary software offers a more sustainable competitive advantage as it is harder to replicate and directly impacts product efficacy and customer satisfaction.

The decision on the Core can take a while and may seem a bit frustrating as you want to move ahead and continue to make progress. I completely understand. Isn't getting sales a great thing?

But you must understand that making sales without a Core is not sustainable if you want to be a high-growth company, because you success will only draw attention to the opportunity you have identified, and then competitors will rush in. At that point, your beautiful new venture will turn out to have been built on a foundation of sand and it will come sliding down.

So even if you aren't sure what is the best selection for Core, pick a few candidates for the Core and realize you have to solve this riddle soon. Some of your potential Cores may end up as strong moats, but the most important thing is that you are thinking ahead and protecting yourself, and it is also highly relevant as you proceed to Step 11, Chart Your Competitive Position.

## Step 11: Chart Your Competitive Position

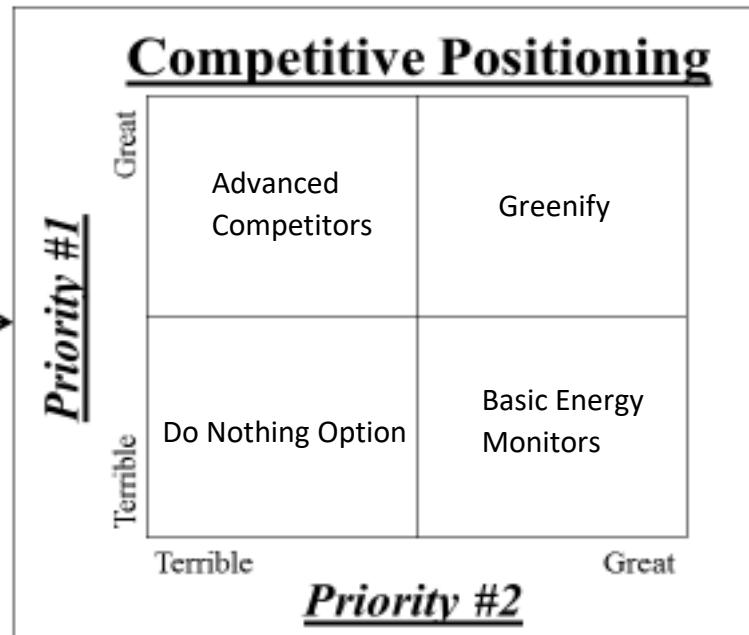
### Worksheet

Now apply the same framework to your new venture and tie back to Step 10, Define Your Core, in the final question.

#### Chart Your Competitive Position

**Target Customer Priorities**

1. Cost savings on energy
2. Ease of integration and use



= Greenify

**Where are you positioned relative to your competition, including the “do nothing” option? Are you in the upper-right corner? If not, why do you think that is? If other competitors are close to you on the chart, why?**

Greenify is positioned towards the upper-right corner of the chart, indicating a high value and differentiation relative to competitors. This positioning reflects Greenify's strong focus on integrating advanced energy management technology with user-friendly interfaces. Compared to doing nothing, Greenify offers significant savings on energy costs and an increased sense of control over home energy use, which is a compelling argument for homeowners concerned about costs and environmental impact. If competitors are close on the chart, it is likely due to their also incorporating smart technology into home energy solutions. However, Greenify differentiates itself through its proprietary algorithms and strong customer insights, which provide more tailored energy management solutions than competitors.

**What about your Core enables you to deliver so much more value that you are in the upper-right corner and your competitors are not? Explain precisely and make the linkage clear.**

**Proprietary Energy Management Software:** Greenify's core advantage lies in its advanced software that not only monitors but also predicts and optimizes home energy usage based on user behavior and preferences. This enables more efficient energy use and greater cost savings, setting it apart from competitors who may offer more basic monitoring tools.

**Exclusive Data Analytics and Customer Insights:** The data-driven approach allows Greenify to continuously improve its offerings based on real-world usage data. This capability is not only a selling point but also a barrier for competitors, as it requires extensive data collection and analysis to replicate.

**Strong Industry Partnerships:** By collaborating closely with homebuilders and real estate developers, Greenify ensures that its solutions are integrated into homes from the construction phase, which can often be more effective than retrofitting existing homes. This early integration is a unique approach that many competitors do not have.

**Brand Reputation:** As a leader in sustainable home technology, Greenify's brand is associated with innovation and responsibility towards the environment, which appeals to a growing segment of eco-conscious consumers.

# Disciplined Entrepreneurship Workbook

## Step 12: Determining the Customer's Decision-Making Unit (DMU)

## Worksheet

--	--	--	--	--	--	--	--	--	--

**Qualitative Summary: How would you qualitatively summarize the DMU in three sentences or less?**

The Decision-Making Unit (DMU) consists of an end user, Danai Kosh, who prioritizes smart energy management to reduce costs while enhancing convenience, a financially-conscious economic buyer seeking tangible returns on energy savings, and a tech-savvy champion enthusiastic about AI-driven smart home technology. Each persona is influenced by their respective circles, including family, tech blogs, and financial advisors, all seeking a solution that is easy to use, compatible with existing smart devices, and capable of significant long-term savings. Their combined priorities and influences underscore the importance of a product that is cost-effective, user-friendly, and offers advanced energy control features.

Note that one of the limitations of this worksheet is that it is static, as the roles in an acquisition process can change over time. As you map out the Process to Acquire a Paying Customer in Step 13, you may find it necessary to create additional persona profiles to encompass the multiple stages inherent in some decision-making processes.

# Disciplined Entrepreneurship Workbook

## Step 13: Map the Process to Acquire a Paying Customer

### Worksheets

Process to Acquire a Paying Customer										
Stage #	1 <i>Determine Need &amp; Catalyst to Action</i>	2 <i>Find Out about Options</i>	3 <i>Analyze Options</i>	4 <i>Acquire Your Product</i>	5 <i>Pay</i>	6 <i>Install</i>	7 <i>Use &amp; Get Value</i>	8 <i>Determine Value</i>	9 <i>Buy More</i>	10 <i>Tell Others</i>
General Description of Stage	Evaluates energy bills and identifies inefficiencies in home energy consumption	Customers search for available options in the market for a solution	Compares features, checks user reviews, and contacts vendors for demos	Places an order online or through a representative	Confirms payment details and pays via preferred method	Follows the installation guide or seeks professional help	Configures preferences and monitors energy consumption	Reviews energy bills, assesses user experience, and compares with initial goals	Evaluates upgrades or related products based on their experience	Writes reviews, recommends the product to friends and family, and shares on social media
Who is involved from the DMU?	End User, Economic Buyer, Champion	End User, Economic Buyer, Champion	End User, Economic Buyer, Champion	End User, Economic Buyer, Champion	End User, Economic Buyer, Champion	End User, Economic Buyer, Champion	End User	End User	End User	End User
Budget limits & other considerations	Constraints may include the current budget allocated to smart home devices or competing financial priorities	Customers may be influenced by existing brand loyalty or product compatibility	Budget needs to be balanced with expected returns	Payment terms, shipping costs, and warranties need to be considered	Payment should be secure, and multiple payment methods should be supported	Installation costs or technical skills required may influence the customer's perception	The product should deliver on promised value, otherwise, dissatisfaction might arise	High expectations can affect customer satisfaction if not met	Budget limits or competing financial priorities may affect repeat purchases	Customer advocacy programs can incentivize sharing
How much time will this stage take? (give a range)	At most 2 weeks	Few days	1 week	1 week	At most few hours	1-2 days	All the time	Some months	Variable	Variable
Action plan to accomplish stage	Provide educational content and resources to help customers understand the need and the benefits of a home energy management system	Maintain a strong online presence and provide comparison guides to demonstrate differentiation	Offer free demos	Ensure a seamless ordering process and provide transparent terms	Ensure secure and varied payment options	Provide a clear installation guide and offer tips for maximizing the value	Provide onboarding guides and offer feedback for improvements	Send follow-up surveys and encourage feedback for improvements	Promote add-ons or subscription services to complement the main product	Encourage user-generated content and offer rewards for referrals
Risks	Insufficient awareness or urgency around	Customer confusion due to a wide	Analysis paralysis due to over	Issues with shipping or unclear	Payment gateway issues or customer	complicated setup or incompatibility with	Low perceived value or	Misalignment between expectations and real-	Perceived lack of new features or	Lack of customer motivation to share



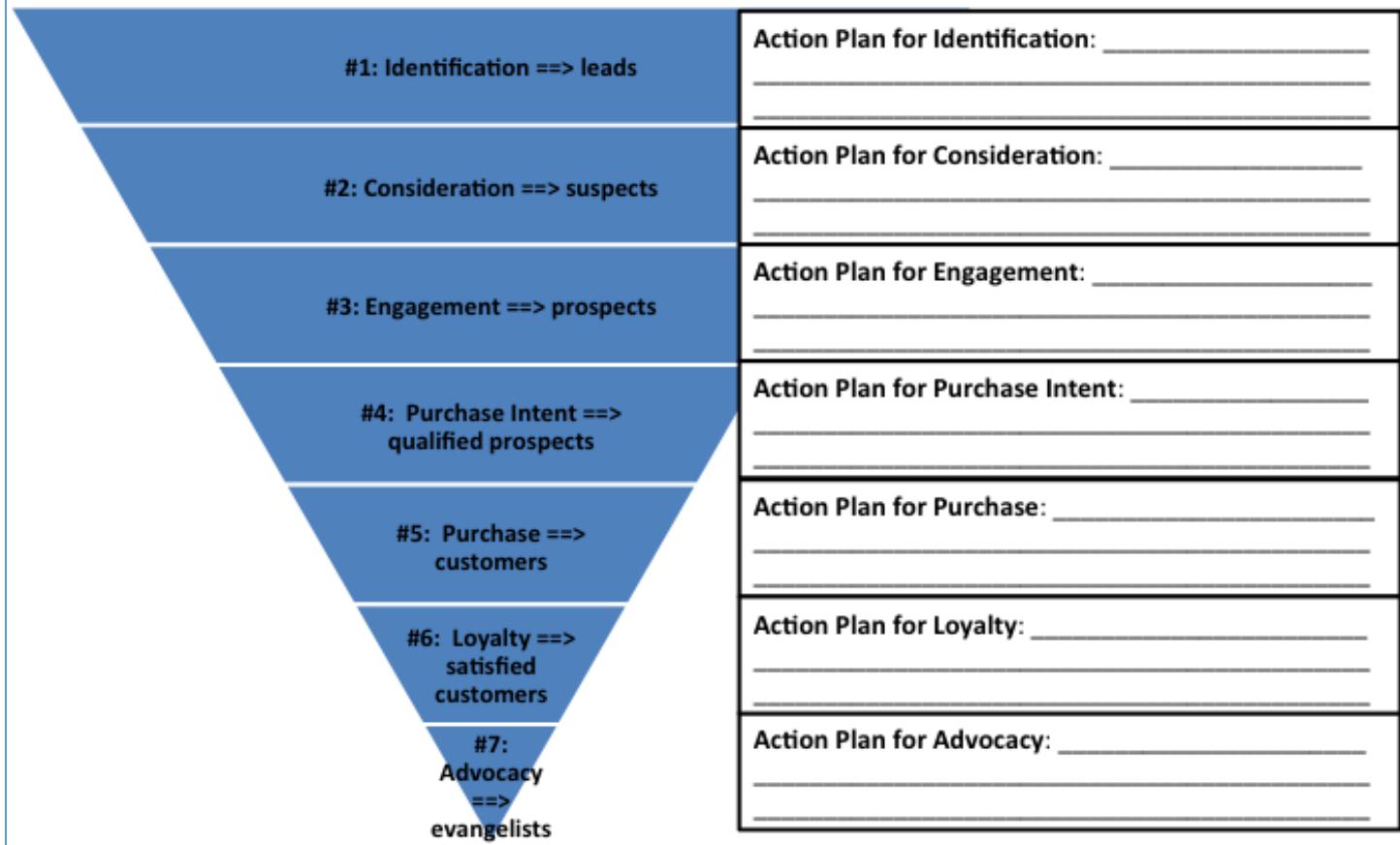
## Convert to a First Draft Sales Cycle Length Analysis Summary

### Sales Cycle Length Estimate

For all time estimates except for lead generation, use the numbers from your Process to Acquire a Paying Customer table above. Make a reasonable estimate for lead generation.

Sales Funnel Element	Full Life Cycle Use Case Stage	Estimated Time to Complete
#1 – Identification: Lead Generation <i>Output: Leads</i>	n/a	At most one month
#2 – Consideration: Create Awareness to Potential Customers <i>Output: Suspects</i>	#1 - Determine Need & Catalyst to Action & #2 - Find Out about Options	Few weeks
#3 – Engagement : Develop Initial Dialogue Output: Prospects & # 4 – Purchase Intent: Develop Interest to Intent <i>Output: Qualified Prospects</i>	#3 - Analyze Options	Few days, up to one week
#5 – Purchase: Close Deal & Pay <i>Output: Customers</i>	#4 - Acquire Your Product & #5 – Purchase: Close Deal & Pay <i>Output: Customers</i>	Less than a day
<i>Total time for sales cycle:</i>		Around one month, at most two

# First Draft Sales Funnel



## Qualitative Summary: How would you qualitatively summarize the Process to Acquire a Paying Customer in three sentences or less?

The process to acquire a paying customer involves identifying a need for home energy management, generating leads, and raising awareness of the product's benefits. It then moves into engaging with potential customers to provide tailored recommendations, establishing trust, and ultimately closing the deal. By streamlining the sales cycle and providing strong customer support, the process ensures that customers find value quickly and remain satisfied.

## **Which areas of this process are you comfortable that you have mapped out well?**

The engagement phase is clearly defined, with a structured dialogue that ensures customers receive the information needed to make an informed purchase.

The awareness and educational strategies help to effectively guide customers toward understanding the value of smart energy management.

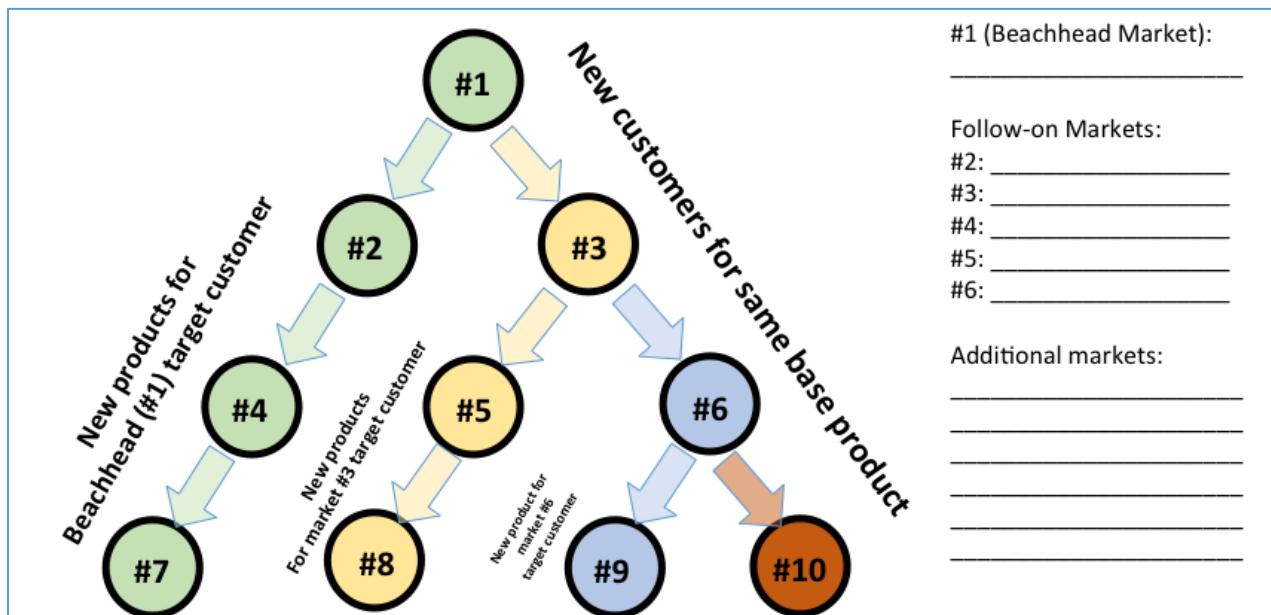
## **Which areas of this process are you concerned about that you will want to keep an eye on as you proceed?**

Installation and adoption of the system may require additional support and customer education to mitigate potential challenges and deliver promised value.

## Disciplined Entrepreneurship Workbook

### Step 14: Estimate the Total Addressable Market Size for Follow-on Markets

#### Worksheet



Summary of Follow-on TAM Estimate and Priorities								
	<u>Candidate</u>	<u>How it Leverages Your Core</u>	<u>Same Product or Same Customer?</u>	<u>Pros of Selling to This Market</u>	<u>Cons of Selling to This Market</u>	<u>TAM Est.</u>	<u>Other Considerations</u>	<u>Rank</u>
	Household	The product directly addresses household energy efficiency needs and provides comprehensive data on electricity usage	Same product, same customer	Direct benefit to homeowners through energy savings and environmental impact	Low switching costs for customers, leading to possible churn	Around 22,5 millions	Partnerships with complementary smart home companies	1
	Households with solar panel	Integration	Same customer,	High upfront cost	High upfront cost for	Around	Collaborations with solar panel	2

	with solar panels enhances energy efficiency while complementing existing renewable energy installations	requires integration with existing solar systems	for customers who already invested in solar energy	customers who already invested in solar energy	5 millions	companies can increase adoption	
	New Housing developments	Offers pre-installed energy management systems for new homeowners during construction or initial occupancy	Same product	Opportunity to standardize smart energy management from the start	Developers may hesitate due to increased construction costs	Around 0,5 millions	Highlight regulatory incentives for developers promoting eco-friendly initiatives and strategic partnerships
	New Customers every year	As before	Same products			100 millions	
							4

#### Individual Worksheet for Each Follow-on Market Segment - #2

Follow-on Market Segment Candidate Name: \_\_\_\_\_ Household \_\_\_\_\_

<u>Estimate # of Users</u>	<u>Estimate Revenue per year per user</u>	<u>Estimate TAM Range</u>	<u>Compound Annual Growth Rate (CAGR) Estimate</u>	<u>Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments</u>

450,000	50 euros	Around 20-30 millions		
---------	----------	-----------------------	--	--

Individual Worksheet for Each Follow-on Market Segment - #3				
<b>Follow-on Market Segment Candidate Name:</b> _____ Households with solar panel _____				
<u>Estimate # of Users</u>	<u>Estimate Revenue per year per user</u>	<u>Estimate TAM Range</u>	<u>CAGR Estimate</u>	<u>Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments</u>
100000	50 euros	Around 5 millions		

Individual Worksheet for Each Follow-on Market Segment - #4				
<b>Follow-on Market Segment Candidate Name:</b> _____ New Housing developments _____				
<u>Estimate # of Users</u>	<u>Estimate Revenue per year per user</u>	<u>Estimate TAM Range</u>	<u>CAGR Estimate</u>	<u>Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments</u>
10000	50 euros	Around 500k		

Individual Worksheet for Each Follow On Market Segment - #5				
<b>Follow-on Market Segment Candidate Name:</b> _____ New Customers every year _____				
<u>Estimate # of Users</u>	<u>Estimate Revenue per year per user</u>	<u>Estimate TAM Range</u>	<u>CAGR Estimate</u>	<u>Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments</u>
2 millions	50 euros	Around 100 millions	2 millions every year	

Individual Worksheet for Each Follow On Market Segment - #6				
<b>Follow-on Market Segment Candidate Name:</b> _____				
<u>Estimate # of Users</u>	<u>Estimate Revenue per year per user</u>	<u>Estimate TAM Range</u>	<u>CAGR Estimate</u>	<u>Other Considerations (profitability, time to conquer, potential market share, investment required, competition, etc.) and Other Comments</u>

## Disciplined Entrepreneurship Workbook

### Step 15: Design a Business Model

#### Worksheet:

## Step #15 Worksheet: Key Considerations in Choosing a Business Model

<p>Looking at the DMU, what is important? _____ DMP? _____ Preference for upfront (capital) or recurring (operating) expense? _____ Other considerations: _____</p>	<p><b>Customer</b></p> <p>How much value do they get? _____ When? _____ How risky is it? _____ Other considerations: _____</p>	<p>Who is comp &amp; what biz model do they use? _____ How locked in are they? _____ Could I disrupt the industry? Risks? _____ Other considerations: _____</p>
<p><b>Value Creation</b></p> <p>Effect on Sales Cycle? COCA? _____ LTV? _____ Distributors? _____ Cash Flow _____ Operations &amp; other considerations: _____</p>	<p><b>Competition</b></p>	<p><b>Internal</b></p>

#### **Identification of Different Units of Product You Can Charge For (if appropriate)**

What are the different potential units you could charge for? (e.g., individual product, number of users, usage, site license, etc.)

##### 1. Individual Product

Pros: Allows for flexible pricing based on individual customer needs. Easy to understand for customers.

Cons: May limit potential revenue if customers opt for lower-priced options.

##### 2. Subscription-based Pricing

Pros: Provides recurring revenue stream. Encourages customer loyalty and retention.

Cons: Some customers may be hesitant to commit to ongoing payments.

### 3. Usage-based Pricing

Pros: Aligns pricing with actual usage, providing value for money. Can incentivize customers to use the product more.

Cons: Predicting usage patterns and setting pricing tiers accurately can be challenging.

Summary of Business Model Candidates										
#	Option	Unit	Cust. Fit	Value Creation Fit	Comp. Fit	Internal Fit	Pros	Cons	Grade	
1	Individual Product	Individual purchase	Medium	Medium	Low	High	Flexible pricing, easy for customers to understand	May limit revenue potential	B	
2	Subscription-based	Subscription	High	High	High	High	Recurring revenue, customer loyalty and retention	Some customers may hesitate to commit to subscriptions	A	
3	Usage-based Pricing	Usage metrics	Medium	High	Medium	Medium	Aligns pricing with usage, incentivizes increased usage	Predicting usage patterns can be challenging	B	
4	Site License	Per site	High	Medium	Medium	High	Ideal for businesses with multiple locations or franchises	Limited scalability for smaller businesses	B	
5	Tiered Pricing	Feature tiers	Medium	Medium	High	Medium	Offers options for customers with varying needs and budgets	Complexity in managing multiple pricing tiers	C	

*Note: Do not forget to consider creative hybrid models if appropriate.*

## 1. Initial Decision and Rationale

Which business model did you choose and why?

We have chosen the Subscription-based business model. This decision is based on several factors. Firstly, a subscription model aligns well with Greenify's value proposition of continuous updates and support for energy management solutions. Secondly, it offers a recurring revenue stream, which can enhance financial stability and predictability. Thirdly, subscription models are known to foster customer loyalty and retention, which are crucial for long-term success in the competitive market. Lastly, this model provides flexibility in pricing tiers to cater to different customer segments and their varying needs and budgets.

## 2. Tests to Validate

- a. What hypotheses are you assuming to be true for the business model(s) you have chosen?
  - Customers are willing to subscribe to Greenify's services for energy management.
  - Subscription-based pricing will lead to higher customer retention and lifetime value.
    - b. What experiments will you run to test your hypotheses?
  - Offer different subscription plans with varying features and pricing to a sample group of potential customers.
  - Track customer retention rates and lifetime value metrics over a defined period for both subscription and non-subscription users.
    - c. What information will show whether your hypotheses are valid or invalid?
  - Number of subscriptions sign-ups and conversion rates.
  - Customer feedback and satisfaction levels with subscription plans.
  - Comparison of retention rates and lifetime value between subscription and non-subscription users.
  - d. How long will you give the experiments to run?

We will run the experiments for a minimum of 3 months to gather sufficient data and assess the effectiveness of the subscription-based model. This timeframe will allow us to observe trends and make informed decisions regarding the scalability and viability of the chosen business model.

## Disciplined Entrepreneurship Workbook

### Step 16: Set Your Pricing Framework

#### Worksheet

## Step #16 Worksheet: Key Considerations in Pricing

Looking at the DMU, what is important? \_\_\_\_\_  
DMP? \_\_\_\_\_  
What spending limits are there? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Customer DMU/DMP

How much value do they get? \_\_\_\_\_  
When? \_\_\_\_\_  
How risky is it? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Value Creation

How strong is your core today compared to comp? \_\_\_\_\_  
Will it get stronger over time? If so when? \_\_\_\_\_  
Do you believe you will be able to raise prices in the future? If so why? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Strength of Core

What is the customer segment? \_\_\_\_ Techie (tech) \_\_\_\_ Early Adopter (ego) \_\_\_\_ Early Majority (ROI, some risk) \_\_\_\_ Late Majority (ROI, low risk) \_\_\_\_ Laggard (avoid risk)  
How do you know? \_\_\_\_\_  
Often it is %'s & then how will you id each type in your customer segment? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Nature of Customer

Who is comp & what are their prices? \_\_\_\_\_  
Which is the best comparable? \_\_\_\_\_  
What does that indicate your price range should? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Competition

Has your product & value proposition been validate in the eyes of the customer? \_\_\_\_\_  
Do they see your company as high risk? \_\_\_\_\_  
What kind of flexibility can you do for your first customer to decrease the real risk & perceived risk in the market? \_\_\_\_\_  
Other considerations/Summary: \_\_\_\_\_

### Maturity of Your Product

#### • Initial Decision and Rationale

- What unit of product are you using for pricing (carried forward from Step 15, Design a Business Model)?

Greenify will use a subscription-based pricing model for its AI-driven energy management system. This model supports continuous customer engagement through regular updates and dedicated support, essential for a tech-driven product that evolves based on user feedback and advancements in AI technology. The subscription model ensures a predictable revenue

stream while enhancing customer loyalty by consistently adding value over the product's lifecycle.

- Based on your analysis, what is the price range that is most appropriate and why?

Greenify's product is priced at €280 per unit, a rate determined by considering the high value of its AI functionalities which include predictive analytics and smart home integration. The price reflects the balance between cost coverage, including production and operational expenses, and market competitiveness against similar products like the Nest Thermostat or Ecobee. Additionally, the annualized revenue per unit is set between €40 to €70, accounting for both one-time sales and recurring subscription income.

- In the first year, what do you believe your initial listed price will be, and what will be the effective price to the market and why? (The "effective price" is the actual price your customer pays after discounts.)

The initial listed price of €280 is strategically set to attract early adopters, with effective prices potentially lowered through introductory discounts aimed at accelerating market entry and adoption rates. For example, Greenify will offer a 10% discount during the launch month to boost initial sales and quickly build a customer base, effectively reducing the consumer cost to €252 during the promotional period.

- Sanity Check: What is your expected estimated marginal cost (cost to produce a unit of product, excluding one-time setup costs)? Does your price per unit significantly exceed your estimated marginal cost in the long term?

The pricing strategy ensures that the sale price significantly exceeds the estimated marginal production cost, maintaining profitability and covering additional expenses such as R&D, marketing, and customer service. This margin is crucial for funding continuous improvements and innovation within the product range, ensuring Greenify remains competitive and can sustain its market position in the long term.

- **Test to Validate**
- In setting your pricing framework, what hypotheses are you assuming to be true?

Greenify is assuming that customers will perceive the value of the AI-driven energy management system to justify the cost of the subscription, leading to high acquisition and retention rates. Specifically, the hypotheses posit:

- a. A basic subscription at a lower price point will attract more first-time users but may have lower long-term retention.
- b. A premium subscription offering bundled services at a higher price will attract fewer initial subscribers but achieve higher retention due to perceived value.

For example, Greenify will offer a basic subscription for €200/year that includes essential features and a premium subscription for €300/year that includes additional services like real-time energy consumption analysis and priority customer support.

- What experiments will you run to test your hypotheses?

Greenify will conduct A/B testing where:

- a. Group A receives the basic subscription offer.
- b. Group B receives the premium subscription offer.

The performance of each group will be monitored over the test period, assessing both initial uptake and retention after several billing cycles. Additionally, promotional offers such as a first month free or a discount on the annual payment might be used to observe the elasticity of demand for each subscription type.

- What information will show that your hypotheses are valid or invalid?

To determine if the hypotheses hold true, Greenify will monitor:

- a. Subscription Rates: The number of new sign-ups for each group during the testing period.
- b. Customer Feedback: Direct feedback and satisfaction ratings collected via surveys focusing on pricing satisfaction.
- c. Retention Metrics: Percentage of users who renew their subscriptions after the initial period.

For example, if the premium subscription shows a 40% higher retention rate than the basic subscription despite a lower initial signup rate, it could validate the hypothesis that customers are willing to pay more for added value.

- How long will you give the experiments to run?

The testing period is set for a minimum of three months. This duration allows enough time to track initial reactions to the pricing strategy and observe retention trends after the first few billing cycles. This period is important to gather data across a representative sample of billing events and seasonal variations in energy usage, which may impact customer perception of value.

## Disciplined Entrepreneurship Workbook

### Step 17: Estimate the Lifetime Value (LTV) of an Acquired Customer Worksheet

#### Inputs to the Worksheet

##### One-Time Charge(s)

What will your one-time charges be for each customer? (e.g. initial purchase price of product)

**Greenify charges €280 for the initial purchase.**

What is your estimated profit margin on your one-time charges? ( (One-Time Charge – Marginal Production Cost) / One-Time Charge = Profit Margin -- e.g. if your one-time charge is \$100 and the cost to make that one unit of product is \$20, your profit margin is  $(100-20)/100 = 80\%$ ) (General estimate is fine and don't add more precision than is appropriate at this point – it can be misleading)

**The cost to produce the device is €140, the profit margin would be  $(280 - 140) / 280 = 50\%$ .**

What is the life of the product before a customer has to repurchase the product?

**7 years**

**What % of customers will repurchase? 25% of customers will repurchase a new device after 7 years due to upgrades or replacements.**

What will your recurring revenue streams be?

**€100 annual subscription fee for ongoing services and updates.**

What is your profit margin on your recurring revenue streams?

**70% profit margin on its recurring revenue streams. This is based on the assumption that once the initial hardware is installed, the ongoing costs for software updates, cloud services, and customer support are relatively low, while the subscription fees continue annually. This high margin reflects the low variable costs associated with digital services and the high perceived value of continuous improvements and energy savings delivered to the customers.**

What is your retention rate for your recurring revenue streams?

**After 1<sup>st</sup> year: 91% - This high retention in the first year reflects initial customer satisfaction and the immediate benefits realized from using Greenify's energy management system.**

**After 2<sup>nd</sup> year: 86% - A slight drop as the novelty wears off, but most customers continue to find value in the service.**

**After 3<sup>rd</sup> year: 80% - Further attrition as some customers may seek new technologies or alternative solutions, or they might move homes and discontinue the service.**

**After 4<sup>th</sup> year: 74% - Continued decrease as competitive pressures and customer lifecycle factors influence retention.**

**After 5<sup>th</sup> year: 70% - By this point, the retention rate stabilizes, but continues to decrease slightly, accounting for market saturation and potential obsolescence or need for significant product updates.**

What other revenue sources will you have? What will your profit margin be, and is there a yearly retention rate applicable to them?

**Energy Optimization Consultations:** Greenify can offer personalized energy optimization consultations tailored to individual usage patterns, using the data collected by their systems. This service would carry an 80% profit margin due to low operational costs, primarily involving expert time rather than material resources. Customers might opt for these services annually, with an expected retention rate of 60%, as ongoing adjustments and optimizations can provide substantial value in terms of energy savings and cost reductions.

**Premium Support Packages:** Greenify could provide premium support packages that include priority customer service, immediate technical support, and regular system check-ups. This would likely see a 75% profit margin, reflecting the high value and low incremental cost of service provision. The retention rate for such a service could be around 50% annually, as experienced users may eventually choose to opt out once they are comfortable with system management.

**Smart Home Integration Services:** To enhance user experience, Greenify could offer integration services that connect its energy management system with other smart home devices. This service could have a 70% profit margin and would appeal primarily to tech-savvy customers looking to create a fully integrated smart home environment. This revenue stream may not have an annual retention rate, depending on whether upgrades or new integrations are necessary over time.

**Hardware Upgrades and Add-Ons:** Greenify can expand its product line with hardware upgrades and add-ons that enhance the original system's functionality or introduce new features. These products would typically have a 65% profit margin and could see a repurchase rate of 30-40% over five years as customers look to stay up-to-date with the latest technological improvements.

**Workshops and Training Programs:** Lastly, Greenify could conduct workshops and training programs focused on energy conservation, smart home usage, and maximizing the benefits of their systems. With an 85% profit margin, these programs would be relatively inexpensive to run, especially if offered online. A 40% annual retention rate could be expected, as interest might wane as customers become more adept at managing their systems independently.

What will your cost of capital be? (If you don't know, assume 50%. If you do know, explain below why you think your cost of capital will be different.)

**Generally, tech companies in growth phases, especially those in emerging industries like smart home technology, typically see a cost of capital that ranges from 8% to 12%. This range accommodates the risk associated with rapid technological change and market adoption uncertainties. If Greenify utilizes a balanced mix of equity and debt financing, the cost might lean towards the lower end of the typical tech industry range. Assuming moderate debt levels, the interest costs would influence the overall**

**cost of capital.** Given Greenify's innovative product line and the potential high demand for energy-efficient solutions, the risk is moderated by the substantial market growth potential and government incentives for green technologies. Current low-interest rates and supportive policies for green technologies can further help reduce the cost of capital. Considering these factors, a realistic cost of capital for Greenify would likely be around 10%. This rate strikes a balance, being higher than average corporate rates to account for startup and technology innovation risks but much lower than the exaggerated 50% placeholder.

Calculations to Estimate the LTV						
<u>Input</u>	<u>t = 0</u> (Today)	<u>t = 1</u> (1 year)	<u>t = 2</u> (2 years)	<u>t = 3</u> (3 years)	<u>t = 4</u> (4 years)	<u>t = 5</u> (5 years)
A. One-time Revenue Amount	€280 (cost of the device)					
B. - One-time Revenue Profit Margin (%)	50%					
C. - One-time Revenue Profit (row A * B)	€140					
D. Recurring Revenue Amount		€100	€100	€100	€100	€100
E. - Recurring Revenue Profit Margin (%)		70%	70%	70%	70%	70%
F. - Recurring Revenue Profit (row D * E)		€70	€70	€70	€70	€70
G. Other Revenue Amount		€50	€50	€50	€50	€50
H. - Other Revenue Profit Margin (%)		80%	80%	80%	80%	80%
I. - Other Revenue Profit (row G * H)		€40	€40	€40	€40	€40
J. Sum of Profit for time period	€140	€110	€110	€110	€110	€110
K. Default cost of capital factor: Discount factor to NPV (@50%/year and assuming units of time = years)	1.0	.67	.44	.30	.20	.13
L. NPV of each item (row J * K)	€140	€100	€90.9	€82.6	€75.1	€68.3
<b>M. Sum of All NPVs (sum of all cells in row L)</b>	<b>€556.9</b>					

## Interpretation of Estimation

- What would you round your LTV estimation to? What range do you feel comfortable with?

**Given the calculations, rounding the LTV estimation for a Greenify customer to €560 seems appropriate. A comfortable range considering potential variations in retention rates and profit margins could be €500 to €600. This range accounts for possible fluctuations in market conditions, customer behavior changes, and potential cost variations.**

- Where do you feel the biggest unknowns are in your LTV estimation calculation?

The most significant unknowns in Greenify's LTV calculation include:

- a. Customer Retention Rates: Assumptions about retention heavily influence LTV. Changes in customer satisfaction or emerging competitive solutions could alter these rates.
  - b. Technological Advancements: As Greenify relies on tech-driven solutions, rapid innovation in the smart home or energy sectors could either make its products more essential or obsolete.
  - c. Economic Factors: Fluctuations in the economy that impact consumer spending habits, especially on non-essential goods, can affect subscription renewals and additional service uptake.
- Does the number seem reasonable?

The estimated LTV of €556.9 appears reasonable given Greenify's business model, which leverages both one-time sales of energy management devices and recurring revenues from subscriptions. The value proposition of saving on energy costs makes the product attractive, justifying the LTV figure. Continuous market validation and financial analysis will be crucial to maintaining this assessment's accuracy.

- What are the key drivers of the LTV if you want to increase it?

To increase LTV, Greenify can:

- a. Improve product integration: Developing features that integrate more seamlessly with major smart home platforms like Google Home or Amazon Alexa could enhance the product's appeal and usage longevity.
  - b. Upsell premium services: Introducing tiered subscription models with additional features such as more detailed energy usage analytics or integration with solar panel systems could increase average revenue per user.
  - c. Enhance customer support and satisfaction: High-quality, responsive customer support can improve retention rates, especially if support includes proactive tips for energy savings and regular updates on new features.
- Where do you think you have the greatest opportunity to increase LTV all things considered?

Greenify's greatest opportunity to increase LTV lies in leveraging the growing trend towards sustainable living. By enhancing features that help users not only monitor but also reduce their carbon footprint effectively—such as predictive analytics for solar energy usage or automated adjustments based on utility rate fluctuations—Greenify can appeal to environmentally conscious consumers. Additionally, expanding into commercial markets, such as providing solutions for small businesses or eco-friendly companies, could significantly increase the user base and deepen market penetration, driving up LTV with higher-tier commercial subscription plans

# 2<sup>nd</sup> Draft Sales Funnel with Actions for Short Term

## #1: Identification Output: Leads

**Lead Gen:** Implement SEO strategies and run PPC campaigns on platforms like Google and social media to target homeowners interested in energy efficiency.

**Watering Holes:** Engage with communities on platforms like Home Energy forums, sustainable living blogs, and LinkedIn groups focused on green technology.

**Who:** The marketing team, led by the digital marketing manager like Big Leap or WebFX.

## #2: Consideration Output: Suspects

**Find Out About Options – Initial Dialogue:** Offer webinars and interactive demos that showcase the benefits and functionalities of Greenify's systems.

**WoO/Triggers & Confirms General Value Prop:** Use case studies and customer testimonials to highlight energy cost savings and environmental impact reduction.

**Who:** Sales representatives initiate these discussions, supported by technical experts for detailed inquiries.

## #3: Engagement Output: Prospects

**Analyze Options I – Confirms Value Prop for Them:** Personalize presentations to potential customers based on their specific energy usage patterns and needs using CRM tools like Salesforce or HubSpot.

**Confirms Budget:** Discuss and negotiate pricing and payment plans; provide financing options using finance software like QuickBooks or Xero

**Who:** Discuss and negotiate pricing and payment plans; provide financing options.

## #4: Purchase Intent Output: Qualified Prospects

**Analyze Options II – Qualify & Proposal:** Create detailed proposals that include ROI calculations and environmental benefits using PandaDoc or Proposify.

**Verbal Close & Objection Handling:** Address any concerns or objections with data-backed responses and reassurances.

**Who:** Senior sales executives handle these negotiations and closings.

## #5: Purchase Output: Customers

**Physically Acquire Product I – Secure Full Commitment, e.g., Purchase Order:** Finalize the sales process with official purchase orders or contracts.

**Pay for Product:** Process payments via online transactions or through financing arrangements.

**Who:** Sales support staff manage the logistics and financial transactions.

## #6: Loyalty Output: Satisfied Customers

**Physically Acquire the Product II – Ship/Install:** Coordinate the delivery (FedEx) and professional installation of the system.

**Customer Support - Use, Get Value, Determine Value:** Offer ongoing support and regular check-ins to ensure customer satisfaction and optimal use of the product, using support software like Zendesk or Freshdesk.

**Who:** Logistics teams handle shipping and installation; customer service teams provide post-purchase support.

## #7: Advocacy Output: Evangelists

**Buy More:** Promote additional products or upgrades to existing customers with special offers or exclusive first-look at new features, using platforms like Mailchimp or Marketo.

**Tell Others:** Implement a referral program like ReferralCandy or Ambassador that rewards customers for bringing new clients to Greenify.

**Who:** Marketing and sales teams collaborate to develop and implement upsell strategies and manage the referral program.

# 2<sup>nd</sup> Draft Sales Funnel with Actions for Medium Term

## #1: Identification Output: Leads

**Lead Gen:** Expand lead generation strategies to include partnerships with eco-friendly home builders and real estate agents, alongside continued online campaigns like Home Depot or Lowe's.

**Watering Holes:** Explore new platforms and community events where Greenify can have a physical presence, such as green tech conferences and local eco-friendly expos.

**Who:** Marketing strategists work with business development teams to forge new partnerships and sponsorships.

## #2: Consideration Output: Suspects

**Find Out About Options – Initial Dialogue:** Incorporate an AI chatbot on Greenify's website to provide immediate, interactive responses to initial customer inquiries 24/7.

**WoO/Triggers & Confirms General Value Prop:** Utilize dynamic, targeted content personalization on the website and in email campaigns based on user behavior and preferences gathered from data analytics.

**Who:** Customer service managers oversee AI integration while content managers tailor the value proposition based on analytics insights.

## #3: Engagement Output: Prospects

**Analyze Options I – Confirms Value Prop for Them:** Develop customer journey mapping to offer more customized solutions and follow-ups based on individual customer interactions and feedback.

**Confirms Budget:** Start introducing flexible pricing models that adapt to customer feedback and competitive market analysis using a software like PROS Pricing.

**Who:** Account managers, with support from a customer insights team, utilize advanced CRM tools to deliver personalized experiences.

## #4: Purchase Intent Output: Qualified Prospects

**Analyze Options II – Qualify & Proposal:** Refine proposals using DocuSign to include loyalty discounts for repeat customers or bundle offers that encourage larger purchases.

**Verbal Close & Objection Handling:** Train sales teams on new objection handling techniques based on common feedback received in the short term.

**Who:** Pricing specialists collaborate with sales leaders to implement flexible pricing strategies.

## #5: Purchase Output: Customers

**Physically Acquire Product I – Secure Full Commitment, e.g., Purchase Order:** Streamline the purchase process with enhanced e-commerce capabilities, such as a mobile-friendly purchasing platform.

**Pay for Product:** Introduce more payment methods (PayPal), including digital wallets and financing options, to reduce friction in the payment process.

**Who:** E-commerce managers upgrade the online transaction system with support from IT specialists.

## #6: Loyalty Output: Satisfied Customers

**Physically Acquire the Product II – Ship/Install:** Partner with FedEx Supply Chain and optimize logistics to reduce delivery times, improve installation scheduling flexibility, and enhance customer communication regarding order status.

**Customer Support - Use, Get Value, Determine Value:** Implement a proactive support system where customer service contacts customers to offer help and collect feedback regularly.

**Who:** Logistics coordinators and customer service team leaders focus on operational efficiency and proactive engagement.

## #7: Advocacy Output: Evangelists

**Buy More:** Introduce a membership program that rewards ongoing purchases with points that can be redeemed for discounts or exclusive services (Shopify).

**Tell Others:** Enhance the referral program to provide tiered rewards, increasing incentives as customers refer more people.

**Who:** Loyalty program managers and referral program coordinators work to develop and enhance these programs.

# 2<sup>nd</sup> Draft Sales Funnel with Actions for Long Term

<b>#1: Identification</b> <b>Output: Leads</b>	<p><b>Lead Gen:</b> Invest in advanced analytics to refine target demographics and explore international markets for global expansion (IBM Watson or SAP).</p> <p><b>Watering Holes:</b> Establish partnerships with global environmental organizations and participate in international green technology summits (World Green Building Council, UN Climate Change Conferences).</p> <p><b>Who:</b> The strategic marketing team collaborates with international business development managers to explore and establish global market presence</p>
<b>#2: Consideration</b> <b>Output: Suspects</b>	<p><b>Find Out About Options – Initial Dialogue:</b> Implement augmented reality (AR) experiences that allow potential customers to visualize energy savings and device functionality in their homes before purchase (Microsoft HoloLens or Google ARCore).</p> <p><b>WoO/Triggers &amp; Confirms General Value Prop:</b> Develop sophisticated machine learning models to personalize marketing messages and offers based on extensive customer data over time (Amazon Web Services (AWS) Machine Learning).</p> <p><b>Who:</b> Technology innovation teams develop AR tools and machine learning capabilities for a personalized customer journey.</p>
<b>#3: Engagement</b> <b>Output: Prospects</b>	<p><b>Analyze Options I – Confirms Value Prop for Them:</b> Use predictive analytics to provide future energy-saving scenarios and cost analyses tailored to individual patterns and preferences (Google Cloud AI or Oracle Analytics).</p> <p><b>Confirms Budget:</b> Implement dynamic pricing models that adjust based on market conditions, customer loyalty, and predictive analytics.</p> <p><b>Who:</b> Data scientists and account managers work together to harness big data for predictive modeling and tailored customer communications.</p>
<b>#4: Purchase Intent</b> <b>Output: Qualified Prospects</b>	<p><b>Analyze Options II – Qualify &amp; Proposal:</b> Proposals include integration with next-generation smart home ecosystems and future updates on services and technology advancements.</p> <p><b>Verbal Close &amp; Objection Handling:</b> Equip sales teams with AI-driven tools like Salesforce Einstein for real-time data to handle objections and customize closing strategies.</p> <p><b>Who:</b> Pricing strategists and senior sales executives use advanced tools to refine pricing and sales tactics.</p>
<b>#5: Purchase</b> <b>Output: Customers</b>	<p><b>Physically Acquire Product I – Secure Full Commitment, e.g., Purchase Order:</b> Enhance the customer online interface to include fully automated, seamless purchase processes that require minimal input and offer maximum customization (Shopify Plus).</p> <p><b>Pay for Product:</b> Incorporate cryptocurrency and other blockchain-based payment methods to cater to a global audience and tech-savvy customers.</p> <p><b>Who:</b> E-commerce and IT development teams ensure cutting-edge technology integration for easy and secure transactions.</p>
<b>#6: Loyalty</b> <b>Output: Satisfied Customers</b>	<p><b>Physically Acquire the Product II – Ship/Install:</b> Implement a global logistics network (DHL) to ensure efficient product delivery and installation services worldwide.</p> <p><b>Customer Support - Use, Get Value, Determine Value:</b> Establish a customer success team dedicated to ensuring customers achieve the advertised energy savings and satisfaction.</p> <p><b>Who:</b> Global logistics managers and customer success teams focus on delivering consistent and high-quality service.</p>
<b>#7: Advocacy</b> <b>Output: Evangelists</b>	<p><b>Buy More:</b> Create exclusive Greenify community benefits for repeat customers, such as memberships in sustainable energy initiatives and discounts on future products (LoyaltyLion or Yotpo).</p> <p><b>Tell Others:</b> Develop a brand ambassador program (Ambassador or ReferralCandy) that empowers the most loyal customers to share their experiences through various channels, including social media, workshops, and conferences.</p> <p><b>Who:</b> Community relations managers and customer engagement specialists curate and manage loyalty and ambassador programs.</p>

## Disciplined Entrepreneurship Workbook

### Step 19: Estimate the Cost of Customer Acquisition (COCA) Worksheets

#### Worksheets

##### Assumptions for COCA Estimation

- a. What was the time interval you defined for the following phases in Step #18, Worksheets Section, Item II?
1. Short Term \_\_\_\_ 140 Euro
  2. Medium Term \_\_\_\_ 370 Euro
  3. Long Term \_\_\_\_ 556.9 Euro

##### Total Sales and Marketing Expenses List

List the expected sales and marketing expenses, and their costs. This input will be used when estimating the cost of customer acquisition.

Sales Expenses	Short Term	Medium Term	Long Term
<b>Cost for Device -140 Euro</b>	<b>145,000 Euro (1000 Units)</b>	<b>355,000 Euro (2500 Units)</b>	<b>705,000 Euro (5000 Units)</b>
<b>Inventory – 1000 x 140 = 140 000 Euro</b>  <b>Warehouse Costs Low (less than 5k a year) due to small compact size</b>			

Marketing Expenses	Short Term	Medium Term	Long Term
<b>Revenue x Marketing Percentage (25%)</b>	<b>70,000 Euro</b>	<b>350,000 Euro</b>	<b>1,400,000 Euro</b>

### Estimate the Cost of Customer Acquisition (COCA)

	Time Period (default is year but can change)				
	Year 1	Year 2	Year 3	Year 4	Year 5
New Customers forecasted	1000	3000	5000	10000	20000
All Sales expenses for period	145,000	425,000	705,000	1,400,000	2,800,000
All Marketing expenses for period	70,000	210,000	350,000	700,000	1,400,000
Total Marketing & Sales expenses for period	215,000	635,000	1,055,000	2,100,000	4,200,000
COCA for the period	215	211	211	210	210

### Convert Estimation into Short, Medium and Long Term

Understanding these numbers are not precise, create a range you are comfortable with for the short, medium and long term (as defined in I(c) above) from the worksheet above.

1. Short Term COCA Range \_\_\_\_\_ 215 \_\_\_\_\_
2. Medium Term COCA Range \_\_\_\_\_ 211 \_\_\_\_\_
3. Long Term (steady state) COCA Range \_\_\_\_\_ 210 \_\_\_\_\_

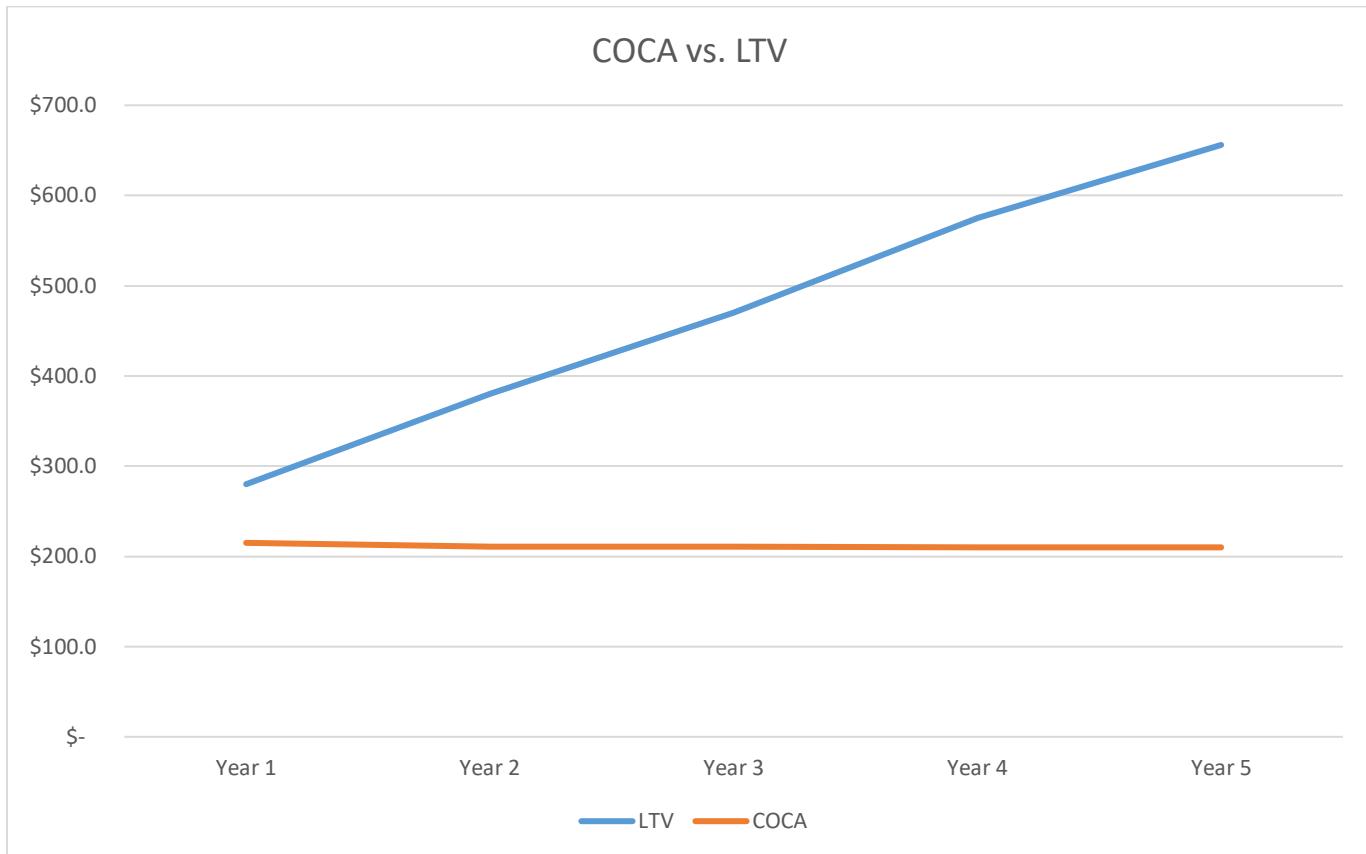
<b><u>Key Drivers of COCA and Ways to Decrease It</u></b>				
#	<u>Item</u>	<u>Effect</u>	<u>Action Possible to Decrease</u>	<u>Risk</u>
1	Production/Inventory Cost	HIGH	Find ways to make the product cheaper, since larger batches cost less	Low, the product supply might be affected negatively, and lose meeting demand if factory production is offset
2	Marketing	Medium	Marketing Costs can be decreased when we identify which platforms are more profitable to get customers from, therefore our COCA will reduce by investing more in that platform for advertising etc.	Low – Don't put all our eggs in one basket

<b><u>Example: Key Drivers of COCA and Ways to Decrease It</u></b>				
#	<u>Item</u>	<u>Effect</u>	<u>Action Possible to Decrease</u>	<u>Risk</u>
1	Field Sales	High	Decrease number and increase Inside sales	High in short term – need to see how market adopts product; lack of direct sales people will definitely slow adoption
2	Field Sales internationally	High	Use third-party resellers	Low in short term/High in long term because we don't have direct connection with customers
3	Advertising Budget	Medium	Build up in-house social media and other capability	Medium but probably worth it in long term
4	Field and Inside Sales	Medium	Supplement and reduce numbers with stronger Internet sales investment	Medium in short term and if works, low in long term
5	Tradeshows	Medium	Eliminate and find a guerilla market approach at 10% of expense	Medium in that our customers expect us to be at these shows and it gives our company credibility; Still something can probably be done here

### Comparison of LTV and COCA Over Time

Label the axes with the appropriate numbers and units, and then plot the LTV and COCA on the graph based on your calculations from this step and from Step 17, Calculate the Lifetime Value (LTV) of an Acquired Customer. Draw a line to connect the three LTV points, and another line to connect the three COCA points.

(Editable version of the graphic below is available in additional Powerpoint document)



### Overall Interpretation of Unit Economics – Bringing it All Together

Now you have done all the hard work, let's pull it together and consolidate what we know and what we should do now.

- A. **Basic 3X Test:** Is your LTV more than 3 times your COCA for your long-term time period? This is essential because COCA only deal with marketing and sales. The LTV must produce enough excess profit to also pay for research and development (R&D) as well as general and administrative (G&A) costs. The R&D costs can be significant. The 3X rule of thumb was created for software as a service companies, so the specifics of your industry may require a higher ratio in order to be successful. Does your LTV to COCA ratio clear the basic 3X threshold by a little, a reasonable amount, or a lot?

\_\_\_\_\_ Yes it does, just a bit higher than x3 \_\_\_\_\_

- B. R&D Factor:** Is your R&D expense going to be above or below that of an average software as a service company? For instance, a biotech company's R&D expenses will be much higher. If so, then your ratio needs to be higher to compensate for this. For biotech companies it can be over 100x and for consumer goods, it can be less. What is your situation and do you feel comfortable there will be enough profit to cover R&D expenses? (G&A expenses fluctuate as well if there is a regulatory component but they do not fluctuate as much as R&D so we will focus on R&D as the proxy for G&A as well):

**As number of sales increase, the profit margin is gets even larger, as this is a low estimate of our COCA, since we don't account for reduction in manufacturing costs and higher market reach, and it is sufficient enough to allow for our R&D stage.**

**Adjustments May Be Necessary But You Are Ready:** There is a good chance that your initial unit economics don't work. Don't overreact and don't underreact. You are prepared now to go back and iterate. Go back and make adjustments like you started to list in the Key Drivers of COCA worksheet. Make adjustments until the numbers work. It is great to be passionate and that is essential, but well thought-out numbers have a stubborn way of telling the truth in business. Don't ignore them. If in the end, you can't make the unit economics work, you won't have a sustainable business no matter how hard you try. But most of the time you can fix it now that you are equipped with this knowledge.

Once you have iterated and the plan works, like in Step 18, list the top 3 risk factors for the unit economics and how you plan to deal with them below:

1. COCA Risk Factor #1 and Mitigation Plan:  
High Inventory Costs, Sales need to match expected outcome  
Metrics to Watch: Sold Products  
Potential Intervention Strategy: Improve Marketing Efficiency, Stop Production
2. COCA Risk Factor #2 and Mitigation Plan:  
Cancelled Subscriptions  
Metrics to Watch: Cancelled subscription numbers  
Potential Intervention Strategy: Change Terms of Service, Reduce Subscription Price, Collaborate with other services for joint subscription fees
3. COCA Risk Factor #3 and Mitigation Plan:  
Changes in Warehouse Costs  
Metrics to Watch: Price of storage per unit  
Potential Intervention Strategy: Build or Rent out our own Warehouse once high revenue starts to flow in

If you are an engineer like me, you are now getting to the fun part. Now we can build the product with confidence that it can be the basis of a great company. That being said, it all makes sense but we are not sure until it really happens. Now we move to the design and build stage in Step 20, Identify Key Assumptions.

## Disciplined Entrepreneurship Workbook

### Step 20: Identify Key Assumptions

#### Worksheet

Identify Key Overall Assumptions					
#	Assumption (in prioritized order)	Meets Criteria: <b>1) Specific 2) Singular 3) Important 4) Measurable 5) Testable</b>	Related Step(s) from the 24 Steps	Risk Level	Potential Impact if Assumption is Wrong
1	People do not mind subscribing if that saves them money in the long run	1,2,3,5	9,14	HIGH	This could disrupt the business plan completely, no subscriptions means less sustainable revenue
2	People care about solutions that help reduce their carbon footprint enough to use the app to its fullest	1,2,5	9	MEDIUM	If people don't care enough about their carbon footprint, we lose a small part of our business if this is not the case, and it could end up resulting in big inefficiencies
3	The AI used will be able to accurately predict consumption based on patterns of the power profile	1,2,3,4,5	1,2,3,4	HIGH	This is a key assumption, that we need to be very thorough when developing and testing, to ensure that our product is reliable and efficient, otherwise the whole business collapses due to a valueless product.
4	We can get the patent in a timely manner	1,2,3,4		HIGH	This is very important, getting the patent to prevent our competitors from swooping in after we prove the business model works for them, this is an expensive and timely process, that if we fail to get properly, can bankrupt our startup.

This is in many ways a “catch your breath and digest what you have produced” step. It does not involve a lot of new work but it is important to set yourself up for the next step as well which is to test these assumptions. It is nice to have a step that is a bit easier, isn’t it? You are getting close to the end now – hang in there!

## Disciplined Entrepreneurship Workbook

### Step 21: Test Key Assumptions

#### Worksheet

Test Key Overall Assumptions				
#	<u>Empirical Test (in order from most important to least important, based on the risk levels of the related assumption(s))</u>	<u>Related Assumption(s)</u>	<u>Resources Required for Test</u>	<u>What Outcome(s) Would Validate Your Assumption(s)?</u>
1	People will subscribe if they can save money		Uber Eats Global statistics	Percentage of People using Uber Eats subscribed to Uber One, to reduce their costs.
2	People care about solutions that help reduce their carbon footprint		Recycling Statistics in Countries where it's not mandated i.e. Cyprus, vs where it's mandated i.e. Belgium	If the numbers are relatively comparable, it means that enough people care enough about the environment to take small actions to protect it
3	AI will be able to accurately predict consumption based on voltage profile		We need to be able to have a demo of the product available, test it against a household consumption that we can know in advance	If with appropriate training we can get accurate results of consumption profile, that would validate.
4	We can get the patent in a timely manner		The "test" for this is actually the process of doing it, we can see other attempts to estimate the time it will cost us, but we can't be 100% unless we go through with the process.	Being able to get the Patent within 2 years.

Results from Testing Key Assumptions			
#	<u>What did you learn from the test?</u>	<u>Did the test validate your assumption? (Yes, No, or Not Knowable At This Point)</u>	<u>What will you do as a result of this test? (e.g. revisions to work done in previous steps, additional testing of assumptions, etc.)</u>
1	15 million Subscribers in Uber One, vs 86 million users, using Uber eats. That means, 17.4% of users are subscribed.	The test validates that if people use a certain feature long enough they are willing to pay for services that reduce costs.	We will not change our business model, and we might try to make the deal sweeter by coordinating our subscription fee together with other services/products.
2	Belgium Recycling Rate is 54%, Cyprus is 41.6%, additionally from 1960, 7% of global population recycled, but in 2024 32% recycle	Yes, we can see a global trend of increased recycle and care for the environment, there's activist groups , laws and	We will attempt to promote the green effect of our product to the planet, maybe even collaborate with activist groups to promote it.

		growth that can back our assumption.	
3	Can't test until development	Not knowable at this point	
4	Can't test until we file for a patent, but patterns show that we should be able to do it in a timely manner	Not Knowable at this point	

After having completed these two steps, you have de-risked your product at the level of individual assumptions as much as you reasonably can. This accomplishment does not mean that when all the assumptions are put into one product that the fully assembled solution is assured of being successful in the market. In addition, there are some assumptions that will never be able to be fully tested until there is a product and it is put into production. That testing comes in the next two steps.

## Step 22: MVBP

How Your Proposed MVBP Meets the Three Objectives of an MVBP	
Objectives	How, specifically, does your MVBP meet this objective?
1. <b>Value:</b> Provides value to end user consistent with Step 8	The system uses real-time data to optimize energy use tailored to individual user behaviors and preferences, offering potential savings on energy bills and contributing to environmental sustainability.
2. <b>Pay:</b> Prove that the economic buyer will pay something for the product placement	Market research indicates current spend on related smart home devices and energy management solutions, suggesting that buyers are already investing in this technology and are likely to pay for advanced, more efficient systems.
3. <b>Feedback:</b> Creates meaningful feedback loop with customer (end user, economic buyer and champion)	Integration with a mobile app and possibly other smart home interfaces ensures that users receive timely updates and can adjust their preferences, enhancing satisfaction and engagement. They can also send feedback through the mobile app.

### Minimizing Investment and/or Speeding Time to Market – Concierge Opportunities

Is there anything that can be concierged in your MVBP to reduce the initial investment required to achieve the above three objectives and/or decrease time to get to market with an MVBP? Time maybe even more important than money.

To reduce initial investment and accelerate market entry, a concierge approach could involve partnering with utility companies to integrate the energy management system with their products. This partnership could leverage existing customer bases and distribution channels, significantly cutting down development and marketing costs.

We can also leverage any governmental incentives for adopting green and smart technologies in homes. Partnering with these programs can significantly reduce initial costs and increase the product's appeal to end-users.

And in the end for the end-users we can offer consumers flexible payment options, such as subscription plans or financing, which can lower the initial purchase barrier and enhance the product's accessibility.

## Step 23: Are Your Customers “Eating the Dog Food”?

So what numbers should you look at?

1. **Initial Interest:** Once your target customer is exposed to your value proposition, what percentage of them actively seek to learn more? On a website, you can measure the clickthrough rate from a page that details the benefits of the product to a subsequent page.
2. **Conversion Rates:** Once the target customer is in the sales funnel, the yield rates going from section to section of the funnel are extremely important numbers to understand, both the absolute numbers but also the trends.
3. **Purchase and Pay:** The ultimate conversion. Whether the customer pays for your product is one very important indication of whether the customer is getting value. How long it takes the customer to pay, and what percentage of customers end up not paying after making an initial commitment (the “default rate”), are also interesting numbers to watch.
4. **Retention Rates:** It is always telling to monitor retention rates, often referred to in the negative modality of “churn rate,” especially in subscription businesses. One way to measure retention rates is through support or maintenance contracts for post-purchase support. If the customer buys the product but doesn’t sign up for a maintenance contract at the end of the warranty period, in some industries that is a bad sign and you should take note immediately.
5. **Customer Advocacy:** There is a huge difference between a satisfied customer and a very happy, evangelizing one. The latter is at least one order of magnitude if not more valuable to you. The simplest and most commonly used way to measure customer advocacy is the Net Promoter Score (NPS), developed by Bain & Company, Satmetrix Systems, and Fred Reichheld. You gather the necessary data by asking customers a single question – On a scale of 1 to 10, with 10 being the highest, how likely is it that they would recommend your product to a friend or colleague? By tallying the percentage of responses that are 9s and 10s (“Promoters”) and subtracting the percentage of responses that are 6s and below (“Detractors”), you get your score, which can be as low as -100 (all Detractors) and as high as 100 (all Promoters).
6. **COCA and LTV:** Estimate these numbers again now that you have some sales. They are much easier to calculate the second time around! They are valuable, albeit imperfect, indicators of your success. If there are surprises in these numbers, then quickly dive into it and understand why.
7. **Gross Margin:** Your gross margin, the difference between what it costs to make one unit of product and what you sell that unit of product at, should go up over time, indicating that you are getting strong word of mouth for your product. If it goes down, then you are possibly providing too many discounts on your product, so the number of customers may be going up because the price is artificially low. The gross margin trend is an imperfect indicator on its own (much like the other indicators here), but make sure you monitor it.
8. Don’t feel constrained by this list. There are plenty of other metrics that will be equally or more valuable for your situation.

## Worksheet

What time period(s) will you measure metrics for (give duration and units – e.g. 2 weeks, 2 months, etc.) 3 months

Are Your Customers “Eating the Dog Food”?				
<u>Stage in Funnel (starting at top)</u>	<u>Est. Industry Conversion Average (%)</u>	<u>Your Conversion Goal (%)</u>	<u>Actual Conversion Rate (% and trend)</u>	<u>Next Steps if your actual conversion rate is lower than your goal</u>
#1 – Identification (leads)	10%	12%	9%	Refine lead-generation campaigns and increase outreach through partnerships and targeted ads.
#2 – Consideration (suspects)	25%	28%	26%	Conduct A/B testing on website landing pages and refine messaging to improve conversion to prospects.
#3 – Engagement (prospects)	20%	22%	21%	Expand webinars and offer free trials to maintain and increase engagement.
#4 – Purchase Intent (qualified prospects)	30%	33%	28%	Address objections during sales calls and offer limited-time incentives for conversions.
#5 – Purchase (customers)	35%	37%	36%	Streamline the purchase process and emphasize value-added features.
#6 – Loyalty (satisfied customers)	50%	55%	50%	Create a rewards program for repeat purchases and promote new features through email campaigns.
#7 – Advocacy (evangelists)	20%	25%	18%	Encourage satisfied customers to refer friends/family via incentives and request reviews/testimonials.

## Gross Margin, LTV, COCA

	Expected for Short Term	Actual for Short Term	Next Steps
Gross Margin	35%	32%	Reduce production costs through optimization and

			consider adjustments to pricing.
LTV	1000€	950€	Increase cross-selling and upselling opportunities with existing customers.
COCA	150€	175€	Optimize digital marketing campaigns and partnerships for lead generation.

#### Define and Test Other Metrics

List Custom Metrics Here:	Expected for Short Term	Actual for Short Term	Next Steps
<b>NPS (Net Promoter Score)</b>	40	35	Conduct surveys to identify areas for improvement and develop an actionable plan to address customer feedback.

## Disciplined Entrepreneurship Workbook: Step 24 Worksheets

### Step 24: Develop a Product Plan

#### Worksheets

Product Plan – Version 2 for the Beachhead Market						
#	Feature/Function	Benefit		How does it leverage your Core?	Priority	Est. Resources Needed to Develop
1	Energy Monitoring Dashboard	Real-time monitoring of home energy consumption with detailed analytics.		Proprietary energy management software provides comprehensive insights.	High	Medium development effort for UI/UX and back-end data analytics.
2	Predictive Energy Optimization	Automatic energy usage adjustments based on predictive algorithms.		Utilizes exclusive data analytics and proprietary software.	High	High development effort involving R&D.
3	Smart Device Integration	Seamless integration with existing smart home devices and platforms.		Partnerships with smart device manufacturers.	Medium	Moderate integration work with APIs.
4	Energy-Saving Tips and Recommendations	Personalized tips to reduce energy consumption and costs.		Data analytics and customer insights.	Medium	Moderate development effort (data analysis and content creation).
5	Automated Reporting and Alerts	Regular energy usage reports and alerts for abnormal usage.		Data analytics.	Low	Low development effort (back-

						end programming).
6	Energy Consumption Benchmarking	Allows customers to compare their energy consumption with similar homes to identify areas of improvement.		Data analytics and proprietary benchmarking algorithms.	Medium	Medium development effort (data analysis and UI/UX design).

Product Plan – Version 3 for the Beachhead Market						
#	<u>Feature/Function</u>	<u>Benefit</u>	<u>For Whom?</u> <u>EU, EB, Champ</u>	<u>How does it leverage your Core?</u>	<u>Priority</u>	<u>Est. Resources Needed to Develop</u>
1	Advanced Predictive Energy Optimization	Further refined predictive algorithms to optimize energy use.	Enterprise Customers	Advanced proprietary software and R&D.	High	High development effort (R&D and machine learning).
2	Advanced Smart Device Integration	Integration with the latest smart devices and platforms.	Homeowners and Property Managers	Partnerships with smart device manufacturers.	High	High (expanding API integrations).
3	Custom Reports and Alerts	Reports tailored to specific needs and alerts configured to unique preferences.	Enterprise Customers	Proprietary analytics software.	Medium	Medium (report generation and customization).
4	Energy Efficiency Score and Recommendations	A score system measuring the home's energy efficiency, coupled with personalized recommendations for improvement.	Homeowners	Customer insights and predictive algorithms.	Medium	Medium (data analysis and software development).
5	Multi-User Support	Allows different users in the same household or	Homeowners and	Advanced analytics and software.	Medium	Medium (UI/UX and

		building to manage energy use based on personalized settings.	Commercial Customers			software architecture).
6	Enhanced Security and Privacy Features	Stronger security protocols to protect user data and privacy.	Enterprise and Individual Customers	Advanced software and data management practices.	High	Medium (software development and testing).

#### Other Activities Beyond Functionality for the Beachhead Market

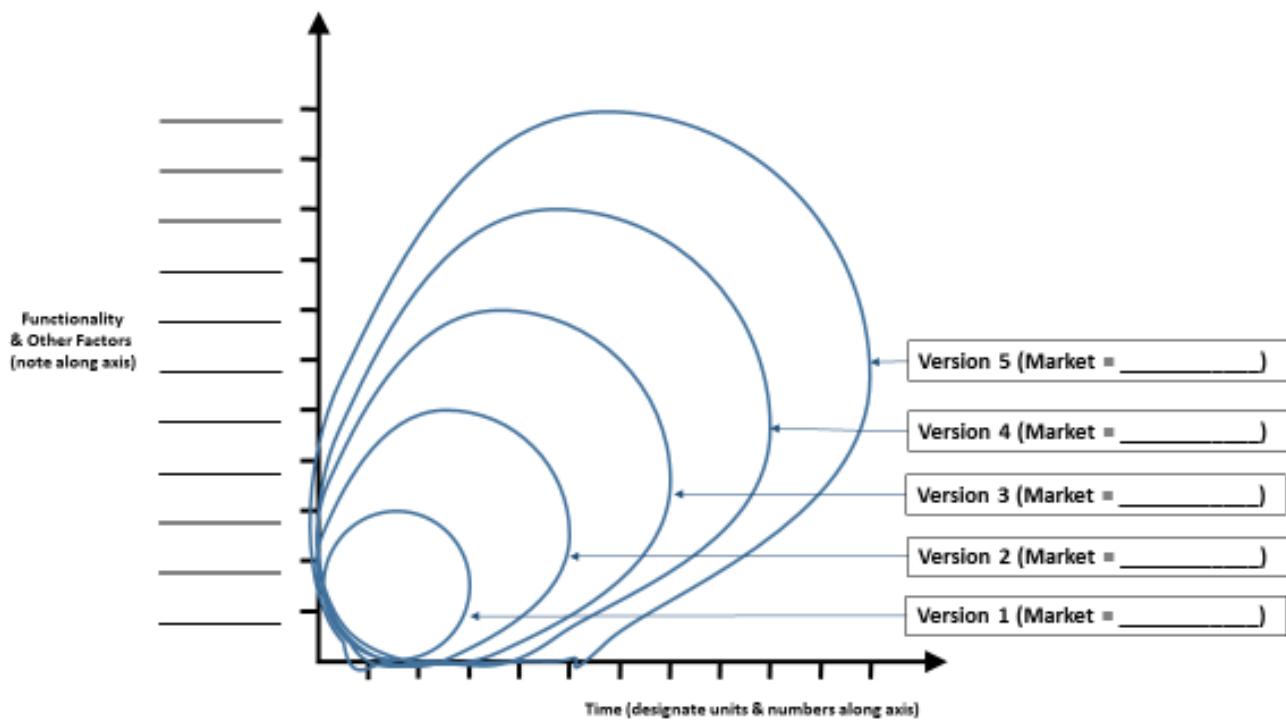
What other activities do you anticipate doing related to the product to help it scale after Version 1.0 for the beachhead market? (e.g., go-to-market activities, regulatory matters, additional complementary services to support the product, additional sales channels, etc. – anything not related to product functionality listed above)

1. Form partnerships with real estate developers and homebuilders to integrate Greenify systems into new homes during the construction phase.
2. Ensure compliance with local, state, and federal energy efficiency regulations and obtain necessary certifications.
3. Partner with utility companies to offer Greenify as part of their energy-saving initiatives and expand reach to utility customers.
4. Develop a robust support system, including online resources and training sessions, to help customers make the best use of Greenify's features.
5. Run targeted marketing campaigns to establish brand awareness and generate demand among eco-conscious homeowners.

		Moving Beyond the Beachhead Market – Analysis & Prioritization of Follow-on Market Candidates									
#	Name	Which market does it follow from?	Pros	Cons	Does it leverage your Core? (Y/N)	Priority	Key Factors Needed to Succeed	Resources Required	Risk	Reward	
1	Household Market Expansion	Extends from the Beachhead Market with energy monitoring dashboards.	Direct homeowner benefits from comprehensive energy usage insights, offering immediate energy savings.	Low switching costs may result in customer churn.	Yes, by using proprietary energy management software.	High.	Collaborate with smart home companies to create valuable partnerships.	Medium for data analytics improvements.	Moderate due to low customer switching costs.	High potential market size (22.5 million households).	

2	Households with Solar Panels	Extends from the Beachhead Market with advanced smart device integration.	Enhances energy efficiency and complements renewable energy installations.	High upfront costs for customers who invested in solar panels.	Yes, through partnerships with solar panel companies.	High.	Collaborate with solar panel companies to increase adoption.	High for API integrations.	High due to reliance on customers' existing investment in solar panels.	Substantial potential market size (around 5 million households).
3	New Housing Developments	Pre-installed energy management systems during construction.	Standardizes smart energy management from the start.	Developers may resist increased construction costs.	Yes, via energy management software.	Medium.	Emphasize regulatory incentives for eco-friendly developments.	Medium for strategic partnerships.	Moderate due to possible resistance from developers.	Moderate (around 500,000 new homes).
4	New Customers Every Year	Expands from predictive energy optimization.	Existing products can reach new users annually.	High upfront costs to onboard and educate new customers.	Yes, with data analytics and predictive algorithms.	Medium.	Strengthen targeted marketing to establish brand recognition.	High due to significant marketing and customer education needs.	Medium from high customer acquisition costs.	High due to ongoing annual growth.
5	Property Management Market	New customer base involving energy usage optimization in multi-unit buildings.	Enables property managers to optimize and manage energy use centrally.	High costs to integrate across diverse building systems.	Yes, through proprietary predictive software.	Medium.	Develop API integrations for various building management systems.	High to build and integrate with diverse systems.	Moderate due to high initial integration effort.	High by addressing a new market segment.

## Product Plan Overview



Wow! The good news is that you have made it through the 24 Steps. Congratulations! That is quite an accomplishment, and you are so much better off for it. Now the bad news: It never ends. You are constantly updating what you have done. Life never stands still, nor does business. You must use this framework constantly to refresh your business so that another startup does not come along and take your market share. But more good news to end the chapter: It is much easier the second time around, and it will continue to get easier with more repetitions.