WOWME DESIGN

12 Steps to Design and Develop your Product

Rapid Guide develop your next successful consumer electronic product.

Contact Us

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WELCOME

We are here to help you
to make your first steps

As an entrepreneur, inventor, or small business owner developing a new consumer electronic product, it is important to have a plan in place to ensure success. Our goal is to assist you in this process by providing guidance on how to validate, design, develop, prototype, manufacture, market, and sell your electronic product. By following our rapid guide, you can be prepared and take the necessary steps to bring your innovative idea to fruition. This plan is designed to help you understand and navigate the development process for any consumer electronic device or product.

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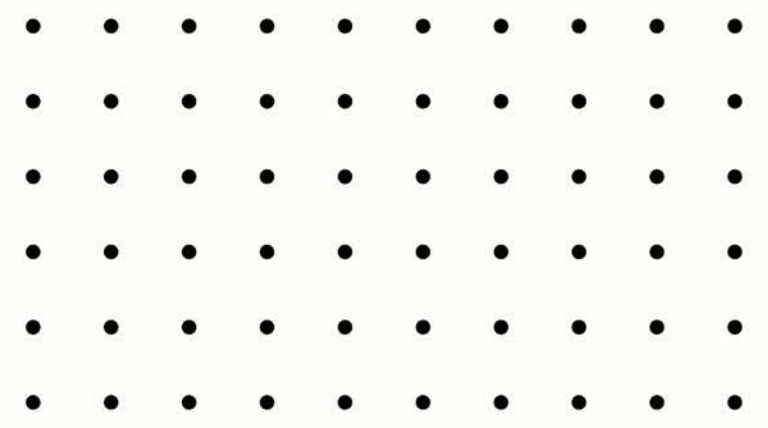
Define your product based on your market research

Defining your product based on market research is an essential step in the product development process. Market research involves gathering data about your target market, including information about their needs, preferences, and behaviours. By using this information to inform the design and positioning of your product, you can increase the chances that it will be successful in the market.
There are several steps you can take to define your product based on market research:

1. Identify your target market: Who is the product for? What are their characteristics, needs, and preferences?
2. Conduct market research: Use various methods, such as surveys, focus groups, and online research, to gather data about your target market.
3. Analyze the data: Look for patterns and trends in your collected data. This will help you understand the needs and preferences of your target market.
4. Define your product: Create a clear and detailed description of your product based on the information you have gathered. This should include information about its features, benefits, and target market.
5. Test and refine your product: After defining your product, it's important to test it with a small group of potential customers to see how it performs and make any necessary adjustments.

Defining your product based on market research can help you create a product that meets the needs and preferences of your target market, increasing the chances of success in the marketplace.

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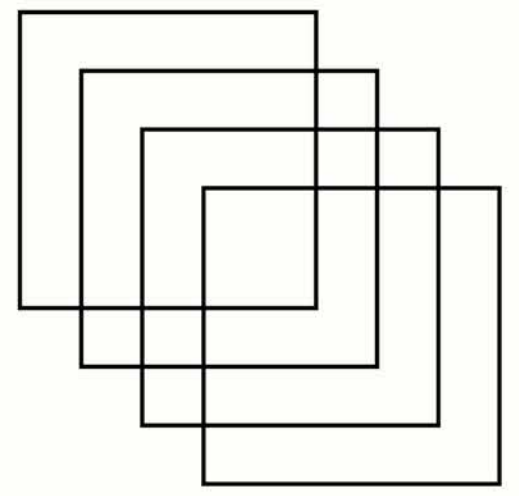
Understand costs & obstacles, then simplify the product as needed

Understanding costs and obstacles is an essential step in product development, as it allows you to identify potential challenges or issues. By understanding these costs and obstacles, you can make informed decisions about your product and take steps to simplify it as needed.

There are several key steps you can take to understand costs and obstacles and simplify your product:

1. Identify your costs: Determine the costs associated with developing and producing your product, including materials, labour, and other expenses.
2. Identify potential obstacles: Consider any potential challenges or issues that may arise, such as supply chain disruptions or changes in consumer demand.
3. Evaluate your product: Based on the costs and obstacles you have identified, evaluate your product to determine if any areas can be simplified.
4. Simplify as needed: If you find that aspects of your product are unnecessarily complex or costly, consider ways to simplify them. This may involve reducing the number of features or streamlining the production process.

Overall, understanding costs and obstacles and simplifying your product as needed can help you create a cost-effective and efficient product, increasing the chances of success in the marketplace.

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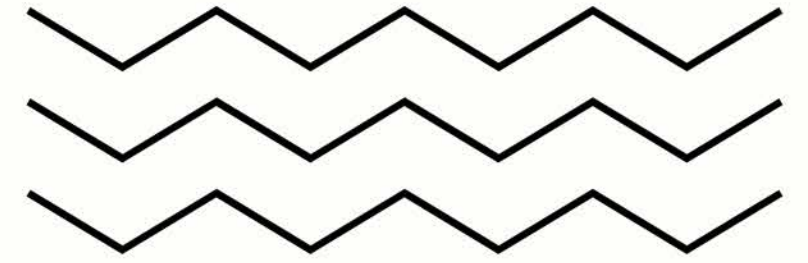
Formulate your plan to surpass those costs & obstacles

Once you have identified the costs and obstacles associated with your product, it's important to formulate a plan to overcome these challenges. This may involve finding ways to reduce costs, streamline the production process, or find alternative solutions to the obstacles you have identified.

Here are some key steps you can take to formulate your plan to surpass costs and obstacles:

1. Prioritise your costs and obstacles: Determine which costs and obstacles are the most important to address and prioritise them accordingly.
2. Develop a strategy: Based on your identified priorities, develop a strategy to overcome the costs and obstacles you have identified. This may involve finding ways to reduce costs, streamline the production process, or find alternative solutions.
3. Create a plan: Turn your strategy into a detailed plan that outlines the steps you need to take to overcome the costs and obstacles you have identified.
4. Implement your plan: Follow your plan to address the costs and obstacles you have identified. Monitor your progress and make any necessary adjustments along the way.

Overall, you can create a cost-effective, efficient, and successful product in the marketplace by formulating a plan to surpass costs and obstacles.

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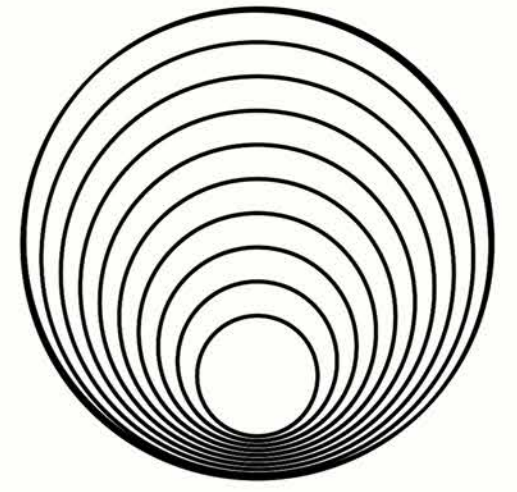
Pick your development strategy and team.

Contact hello@wowme design to help you to make the right choice.

Once you have defined your product and identified a plan to overcome any costs and obstacles, it's time to choose your development strategy and team. The development strategy you choose will depend on several factors, including the complexity of your product, the resources available to you, and the timeframe you have to bring your product to market.
Here are some key steps you can take to pick your development strategy and team:

1. Identify your resources: Determine the resources you have available, including your budget, staff, and any other assets that can be used to develop your product.
2. Assess your options: Consider the different development strategies that are available to you, such as in-house development, outsourcing, or a hybrid approach.
3. Select a development strategy: Based on your resources and the needs of your product, choose a development strategy that will best enable you to bring your product to market.
4. Assemble your team: Depending on the development strategy you have chosen, you may need to assemble a team of in-house staff, contractors, or a combination of both. Choose team members with the skills and experience needed to develop your product successfully.

Overall, picking the right development strategy and the team is crucial for the success of your product. By carefully considering your resources and the needs of your product, you can choose a development strategy and team that will enable you to effectively bring your product to market.

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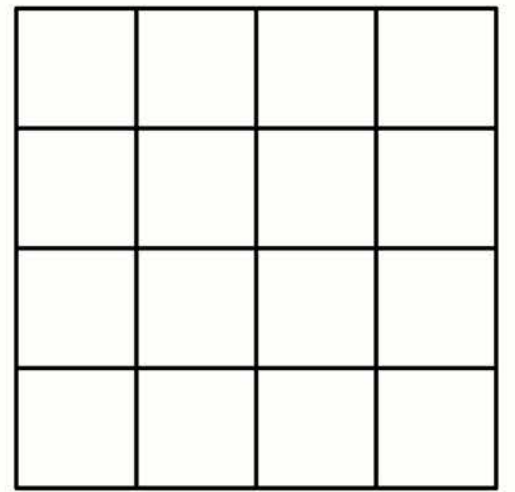
Design a schematic circuit diagram for the electronics

Designing a schematic circuit diagram for electronics involves creating a visual representation of the electrical circuits in a device or system. Schematic circuit diagrams are used to troubleshoot and repair electronics and are an essential part of the design process for any electronic device.

Here are some steps you can follow to design a schematic circuit diagram for electronics:

1. Determine the purpose of the circuit: What does the circuit need to do? What are the inputs and outputs? Understanding the purpose of the circuit will help you determine what components are required and how they should be connected.

2. Identify the components: Choose the electronic components that will be used in the circuit, such as resistors, capacitors, and transistors.

3. Create a list of components: Make a list of all the components that will be used in the circuit, including their values and specifications.

4. Draw the diagram: Using a drawing tool, such as schematic capture software or a pencil and paper, create a visual representation of the circuit. Start with the power source and work your way through the circuit, connecting the components as needed.

5. Check the diagram: Once the diagram is complete, review it carefully to ensure that it is accurate and all components are properly connected.

Following these steps, you can create a clear and accurate schematic circuit diagram for your electronics.

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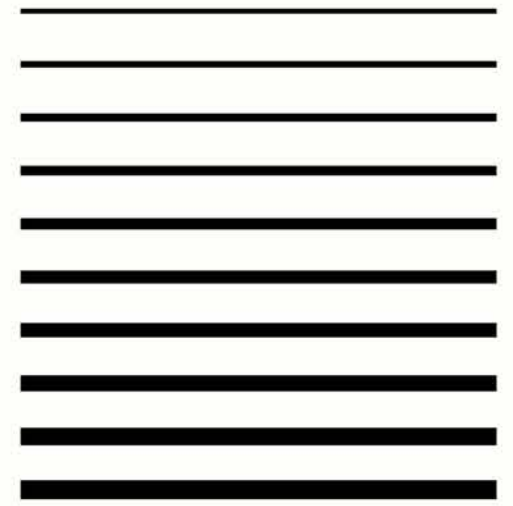
Generate the Bill of Materials (BOM) for the electronics

A bill of materials (BOM) is a list of all the components and materials needed to build a product, in this case, electronics. It is an important tool in the product development process, as it allows you to track the cost and availability of each component, as well as ensure that you have everything you need to complete the project.

Here are some steps you can follow to generate a BOM for your electronics:

1. Identify the components: Make a list of all the components that will be used in your electronics, including their values, specifications, and quantities.
2. Determine the cost of each component: Research the cost of each component and add it to your BOM. This will help you track the total cost of the project.
3. Check availability: Check the availability of each component to ensure that you can obtain them in a timely manner.
4. Organise the BOM: Organize the BOM in a logical manner, such as by component type or by the order in which they will be used in the assembly process.
5. Add images of each component by using your CAD or existing online libraries.
6. Review the BOM: Review the BOM to ensure that it is complete and accurate. Make any necessary changes or additions.

Following these steps, you can generate a comprehensive and accurate electronic BOM.

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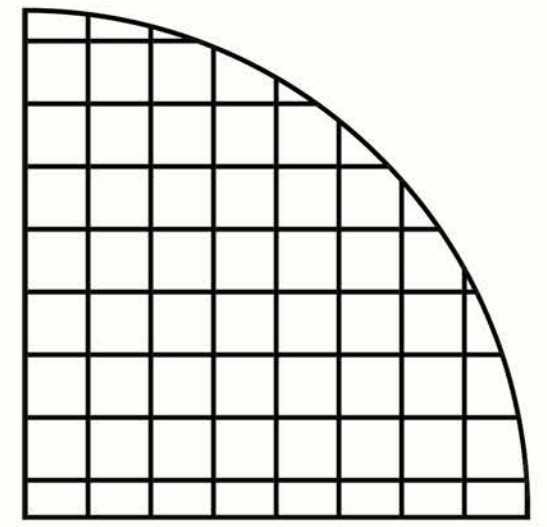
Design the Printed Circuit Board (PCB) for the electronics

Designing a printed circuit board (PCB) involves creating a physical layout of the electrical components and connections in an electronic device. PCBs are used to connect and support the components of an electronic device and are an essential part of the product development process for any electronic product.
Here are some steps you can follow to design a PCB for your electronics:

1. Create a schematic circuit diagram: Begin by creating a schematic circuit diagram, which is a visual representation of the electrical circuits in your device. This will serve as the blueprint for your PCB design.
2. Determine the size and shape of the PCB: Consider the size and shape of the PCB based on the size and shape of the electronic device, as well as the placement of the components.
3. Place the components: Using the schematic circuit diagram as a guide, place the components on the PCB in their proper locations. Consider the physical size and placement of each component to ensure that the PCB will be functional and efficient.
4. Draw the traces: Using a PCB design software or a pencil and paper, draw the electrical connections, or traces, between the components. Consider the length and width of the traces to ensure that the PCB will be reliable and efficient.
5. Check the design: Review the PCB design to ensure that it is accurate and complete. Make any necessary changes or adjustments.

Overall, by following these steps, you can design a functional and efficient PCB for your electronics.

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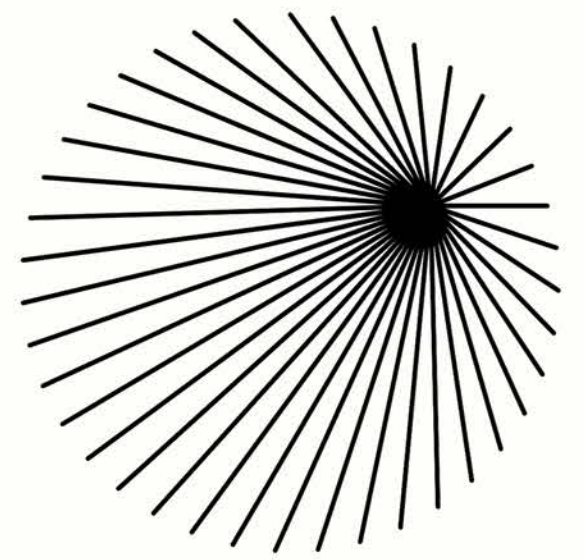
Developing the firmware and software

Developing the firmware and software for electronics involves creating the code that controls the behaviour of the device. Firmware is the code that is stored on the device itself, while software is the code that is run on a computer or other device to interact with the electronics.

Here are some steps you can follow to develop the firmware and software for your electronics:

1. Determine the functionality: What does the device need to do? What are the inputs and outputs? Understanding the functionality of the device will help you determine the requirements for the firmware and software.
2. Choose a programming language: Select a programming language that is appropriate for the device and your skills. Some common languages for embedded systems (firmware) include C and C++, while languages such as Python and Java are often used for software development.
3. Write the code: Using the programming language you have selected, write the code that will control the behaviour of the device.
4. Test the code: Test the code to ensure that it is functional and correct. Make any necessary changes or adjustments.
5. Debug the code: Debug any issues or errors that are found during testing.
6. Document the code: Document the code to make it easier for others to understand and maintain.
7.

Overall, by following these steps, you can develop the firmware and software that is needed to control the behaviour of your electronics.

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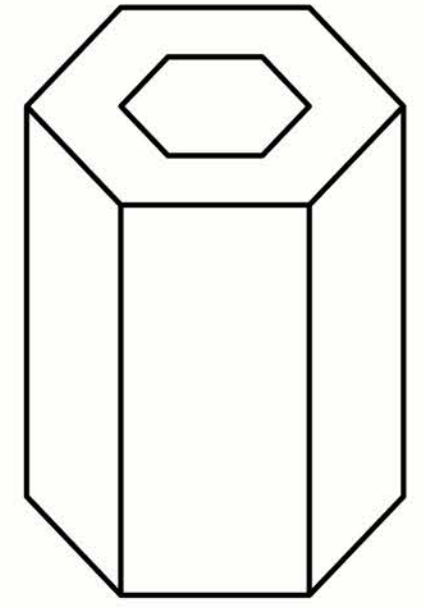
Design a 3D computer model for the product's enclosure.

*Contact hello@wowme design to help you with this stage*

Designing a 3D computer model for the enclosure of a product involves creating a digital representation of the physical housing that will contain the product. A 3D model is an important tool in the product development process, as it allows you to visualize the enclosure and make any necessary changes before building a physical prototype.

Here are some steps you can follow to design a 3D computer model for the enclosure of your product:

1. Determine the dimensions: Measure the dimensions of the components that will be housed in the enclosure, including their height, width, and depth. This will help you determine the size and shape of the enclosure.
2. Choose a 3D modeling software: Select a 3D modeling software that is appropriate for your needs and skills. Some popular options include SolidWorks, Fusion360, Rhino or other.
3. Create the 3D model: Using the 3D modeling software, create a digital representation of the enclosure. Start with basic shapes and build upon them to create the desired shape and features of the enclosure.
4. Add details: Add details to the model, such as holes for buttons, screws, and connectors.
5. Check the model: Review the 3D model to ensure that it is accurate and complete. Make any necessary changes or adjustments.

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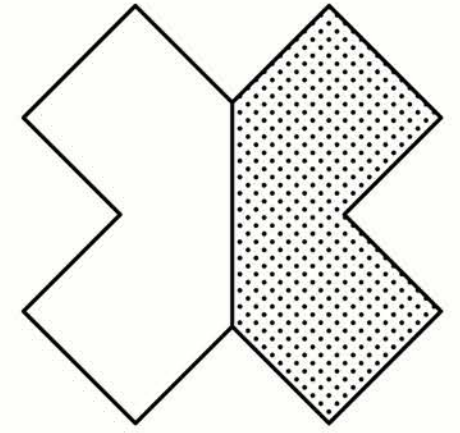
Prototyping the PCB and enclosure

Prototyping the PCB and enclosure for electronics involves creating physical models of these components to test and validate their functionality and design. Prototyping is an important step in the product development process, as it allows you to identify any issues or improvements that need to be made before mass production. Here are some steps you can follow to prototype the PCB and enclosure for your electronics:

1. Gather materials: Gather the materials and tools that you will need to build the prototypes, including the PCB, components, and enclosure.
2. Assemble the PCB: Using the PCB design as a guide, solder the components onto the PCB to create a functional prototype.
3. Test the PCB: Test the PCB to ensure that it is functioning correctly and all components are working properly. Make any necessary changes or adjustments.
4. Assemble the enclosure: Using the 3D model as a guide, build a physical prototype of the enclosure. This may involve 3D printing, machining, or hand-assembling the enclosure from individual components.
5. Test the enclosure: Test the enclosure to ensure that it fits and functions as intended. Make any necessary changes or adjustments.

Following these steps, you can create functional prototypes of the PCB and enclosure for your electronics, which can help you identify any issues or improvements that need to be made before mass production.

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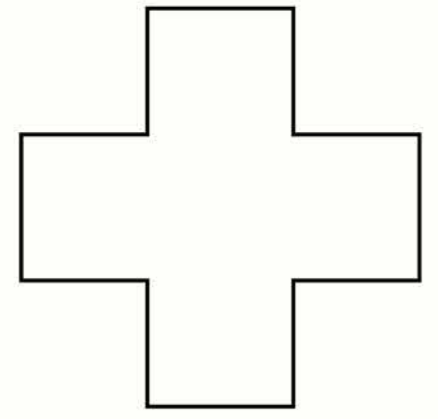
Evaluate the PCB and enclosure prototypes.

Evaluating the PCB and enclosure prototypes is an essential step in the product development process, as it allows you to identify any issues or improvements that need to be made before mass production. There are several key factors to consider when evaluating these prototypes:

1. Functionality: Test the prototypes to ensure that they are functioning correctly and all components are working properly.
2. Reliability: Evaluate the reliability of the prototypes by subjecting them to various stress tests and environmental conditions to see how they hold up.
3. Efficacy: Consider the efficiency of the prototypes, including the layout and placement of components on the PCB and the size and shape of the enclosure, to ensure that they are as efficient as possible.
4. Cost: Evaluate the cost of the prototypes, including the cost of the components and the production process, to ensure that they are cost-effective.
5.

Based on the results of the evaluation, you may need to revise the prototypes to address any issues or make improvements. This may involve making changes to the component values, trace lengths, layout of the PCB, or size and shape of the enclosure.

Overall, by evaluating the PCB and enclosure prototypes and revising as needed, you can create a functional, reliable, and cost-effective product that is ready for mass production.

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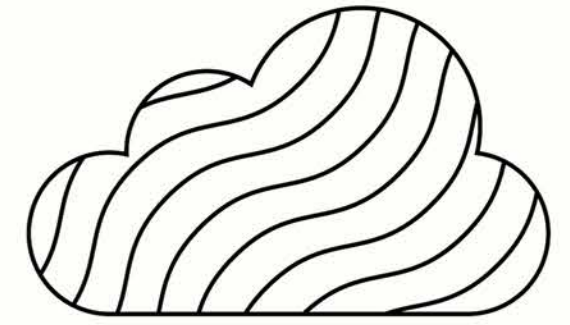
Get required certifications (FCC, UL, CSA, CE, RoHS, etc.)

Obtaining required certifications is an important step in the product development process, as it demonstrates that your product meets certain standards and regulations. Depending on the type of product you are developing and where it will be sold, you may need to obtain a variety of certifications, including FCC, UL, CSA, CE, and RoHS. Here are some steps you can follow to get the required certifications for your product:

1. Determine the required certifications: Research the regulations and standards that apply to your product and determine which certifications are required.
2. Prepare for the certification process: Gather the documentation and materials that will be needed to apply for the certifications. This may include product specifications, test results, and other information.
3. Apply for the certifications: Submit the required documentation and materials to the certification bodies to apply for the certifications.
4. Test the product: If required, have the product tested by an accredited laboratory to ensure that it meets the standards for the certifications.
5. Obtain the certifications: If the product passes the necessary tests, the certification bodies will issue the certifications.

Our Services

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- Prototyping & DFM

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- Branding
- Packaging

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- Graphic Design
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- Supply Chain
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