HARDWARE ROADMAP

From Idea to Manufacturing

How this course is organized:

MODULE 1 – RESEARCH STAGE

MODULE 2 – PLANNING STAGE

MODULE 3 – DESIGN STAGE

MODULE 4 – PROTOTYPING STAGE

HARDWARE
ACADEMY

Step 1

Validate Your Idea

PREDICTABLE

Validate Your Idea

➢ Research the competition

➢ Get a provisional patent

➢ Don't be too secretive!

➢ Share your idea to get feedback

➢ Feedback from retailers and sales reps

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D E S I G N S

Validate Your Idea

- ➢ Build a Proof-of-Concept prototype

- ➢ Build an audience

- ➢ Conduct surveys

- ➢ Create a sales page test

- ➢ Start a waiting list

PREDICTABLE
D E S I G N S

Validate Your Idea

➢ Pre-sell your product

➢ Build a Minimum Viable Product (MVP)

➢ Crowdfunding

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DESIGNS

Step 2

Define Your Product

Define Your Product

➢ Purpose of the product

➢ Specify electronics, software, and enclosure requirements

➢ List of features ranked by priority

➢ Target retail price

➢ Product dimensions & weight (priority)

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Define Your Product

- ➢ Operating environment

- ➢ Power source(s)

- ➢ Battery life requirements

- ➢ Specific use cases

- ➢ Processing performance

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D E S I G N S

Define Your Product

- ➤ Display size/resolution

- ➤ Operating range (wireless)

- ➤ Number of discrete devices

- ➤ Product appearance (priority)

- ➤ Mobile app requirements

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DESIGNS

Define Your Product

- ➢ Packaging specifications

- ➢ Identify similar products (reference)

- ➢ Target countries (power/wireless)

- ➢ Mechanical design

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D E S I G N S

HARDWARE ACADEMY

Step 3

Estimate the Major Costs

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Development Costs

- ➢ Electronics Design

- ➢ Software Programming

- ➢ Mechanical Design

- ➢ Prototypes

- ➢ Testing / Debug

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D E S I G N S

Scaling Costs

➢ Electrical certifications

➢ Manufacturing setup

➢ Injection molds

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Estimate the Major Costs

➤ FCC (USA)

➤ UL (USA)

➤ CSA (Canada)

➤ CE (Europe)

➤ RoHS (Europe + California)

➤ IEC

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Know your manufacturing cost ASAP

➢ Determines profit potential

➢ Sets the retail price

➢ Cost of inventory

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Manufacturing cost

- ➢ Electronic components

- ➢ Printed Circuit Board (PCB)

- ➢ Mechanical components

- ➢ Product assembly

- ➢ Testing

- ➢ Manufacturer's profit

- ➢ Scrape & Returns

- ➢ Duties & Logistics

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D E S I G N S