MANGO

PRODUCT DESIGN

PRE-PROJECT CHECKLIST

INTRODUCTION

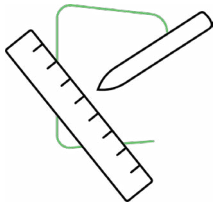
At ManGo Product Design, we work according efficient processes to develop products for our clients. These processes adhere to the standards of ISO 9001, ISO 13485, and ISO 14971. We aim for a well-balanced approach to deliver designs within agreed-upon timelines. Upon delivery of the necessary documents, the production process can commence. Additionally, we offer guidance and assistance with testing and certification to guarantee the safe use of the product. Our process consists of five sequential phases, during which we undertake various actions to arrive at optimal solutions, resulting in appealing, sustainable and profitable products.

The extent of ManGo's involvement in a project varies based on factors such as project status, intended deliverables, deadlines, and your capacity to contribute to the development process if necessary. Not all projects require every phase of the development process.

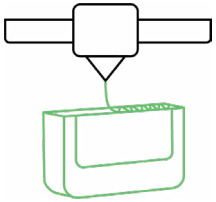
You have the option to fill out this checklist either before or after scheduling an appointment. Rest assured; any information you provide will be treated with the utmost confidentiality by ManGo. Additionally, we offer an NDA template that can be signed beforehand to ensure confidentiality. The details you provide in this checklist will serve as the foundation for a briefing prepared by ManGo. Once the briefing has been mutually discussed and approved, we will proceed to provide a quotation for the design project. If you encounter any difficulties or have trouble understanding any part of this checklist, you'll find links on the last page directing you to blogs on our website that delve into all aspects of product development in depth.

INTRODUCTION

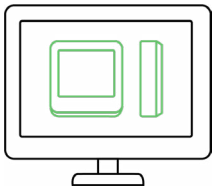
PHASE 1.
Analysis & design strategy



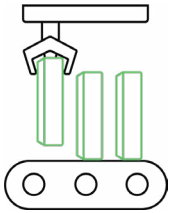
PHASE 2.
Concept development



PHASE 3.
Engineering for prototyping



PHASE 4.
Design for Manufacturing



PHASE 5.
Industrialisation

PHASE 1.
To kickstart your product development journey, we conduct patentability research in collaboration with seasoned patent specialists, if needed. Additionally, we delve into the international regulations the product needs to adhere to, perform market and user research and craft mood boards. This comprehensive research is compiled into a Programme of Demands (POD), serving as the project's foundation, which requires approval from the client.

PHASE 2.
We organize brainstorming sessions with our design team to generate top-notch aesthetics, innovative technical solutions and user-friendly designs. The most promising ideas are consolidated into concept designs, which are then reviewed with the client. Upon selection, a 3D CAD concept is crafted and meticulously refined in close collaboration.

PHASE 3.
During this phase of the development, the innovation takes on a physical shape through the creation of a prototype. Prototypes are crucial for spotting flaws and making enhancements before moving to production. Thorough testing by both clients and users is essential at this stage. It's common to go through several iterations of prototypes to refine the design to its best version.

PHASE 4.
We take care of engineering your product design to prepare it for mass production. After finalizing the 3D CAD model with all intricate manufacturing details, we create 2D CAD drawings that include details like tolerances and material selections. These drawings are crucial for manufacturers to provide quotes for molds and production. For products needing certifications like CE marking, UL, or FDA approval, we can give assistance during the certification process with a Notified Body.

PHASE 5.
Once your product design is finalized, we can assist in coordinating production. You have the option to collaborate with your own production partner or tap into our network of trusted manufacturers. At Mango, we have expertise in various production methods, from small-scale series without molds to large-scale mass production involving intricate molds. We can help oversee mold construction, develop assembly procedures, and implement quality controls to ensure smooth production processes.

CHECKLIST

Client
Project
Date

1. Introduction

Global description (individual, start-up, scale-up, SME, corporate). Goal of the company (mission, vision).

1.1. Global description of the product to be developed.

2. Development

2.1. Does the project concern a new product, an optimization of an existing product?

2.2. What motivates the need for this development or what is the purpose of this product? Name the aspect that makes this product distinctive.

2.3. What is the current status of the project?

2.4. What is the main goal of working with ManGo and what deliverable would you like to achieve?

2.5. Can you refer to a competing or similar product which you regard as being an example of excellence?

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3. Technical aspects

3.1. Are any specific geometric requirements of importance (size, weight, etc.)

3.2. Does the product need to work with or fit onto other devices?

3.3. Are there any specific environmental factors that need to be taken in account (outdoor, low/high temperature range, impact, ventilation etc.)?

3.4. Are there any desired materials that need to be taken into account?

4. Aesthetics & branding

4.1. Is there an existing or new brand identity to which this new product must comply? If not, can you perhaps name some brands (they don't have to be related to your industry) which you see as great design examples?

4.2. Do you have any requirements regarding colours, textures, experiences?

4.3. What are the most important properties the design should express? (Examples: clean, minimal, comfortable, robust, etc.)

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5. Use & ergonomics

5.1. What is the field of use and who are the typical users? (Consumers, professionals, maintenance, hobby, etc.)?

5.2. Describe the most likely user experience (when, why, how often en what for the product is used).

5.3. Describe the most likely environment of use.

5.4. Describe situations when the product is not in use (storage, travel).

5.5. Describe the desired maintenance required for the product (by user/ owner, non-user serviceable, maintenance staff).

5.6. Do you have any specific requirements for user testing or focus group analysis during the product development process?

6. User interface / interaction UI/UX

6.1. Is there also an user interface to be redesigned (buttons, sliders, screen, GUI, etc.)

6.2. What signals should be communicated by the device and how can users give their input? (LED's, screen, vibration, sound, etc.)

7. Electronics & firmware

7.1. Are there any new electronics (PCBA + firmware) to be developed or already under development? Or existing to be used?

7.2. In the case of new electronics developments: Who will develop the hardware and software; Client, Development partner of the client, or do you prefer to work with one of the developers from the Mango network?

7.3. Globally describe the tasks to be executed by the electronics.

8. Regulations & certification

8.1. Of which regulations are you aware that your product needs to comply?

8.2. Are there any specific approvals which you need or desire for the product? For example, CE-marking, FDA, FCC, etc.

8.3. Will you as client take care of the certification process with the Notified Body, possible trials (if required) or do you need assistance for this?

ManGo Product Design always works according regulations for sustainable product development, material use and recycling, for example: RoHS, REACH, WEEE, NEN 15270, NEN 62075, etc.

9. Sustainability

9.1. Besides the above mentioned regulations (if applicable) are there any additional sustainable requirements and/or desires for your development?

9.2. Are there any requirements concerning minimizing or compensating CO2 emissions on production and logistics?

10. Marketing & sales

10.1. Where will the products be made available?

10.2. How will the product be sold (B2B / B2C, shop, online, crowd funding, etc.)?

10.3. How many years of warranty do you want/need to give on the product?

11. Packaging & manual

11.1. Is a fitting packaging also to be designed for the product?

11.2. Are there materials you want to use or avoid in the packaging (sustainable image etc.)?

11.3. Design of the manual by the client or is it desired to use a specialized partner from ManGo's network?
Please note that the content and language of manuals are subject to legal requirements.

11.4. Copywriting for both packaging and manual provided by client or a specialist third party?
Note that copywriting for many products is subject to legal requirements.

12. Production & price

12.1. How does the product price-wise relate to competing products?

12.2. What are the target manufacturing and sales prices of the product?

12.3. What are the expected production numbers?

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12.4. Is there a budget available for tooling / molds and if so how much?

12.5. Where is the product preferred/expected to be produced/assembled?

12.6. Do you have any preferred suppliers to be used or have certain components/materials already been selected?

13. Patents

13.1. Has research for patent infringements already been done?

13.2. Is a patent or design registration desired for this product?

14. Planning

14.1. When and where do you want to present first results / prototypes?

14.2. When do you want introduce the product on the market?

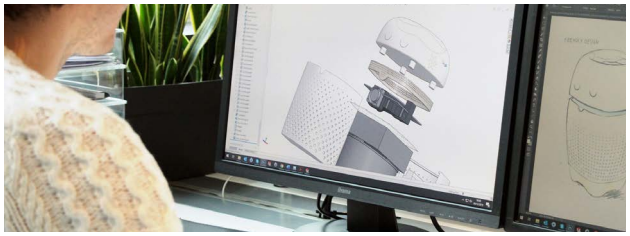
15. Other

Other comments.

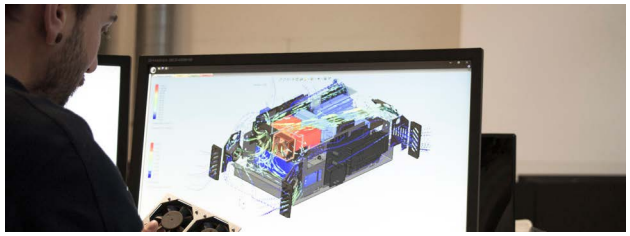
APPENDIX - PROCESS EXPLANATION

We can imagine that certain aspects of the product development process are new to you, making it hard to fill in the checklist. The following blogs on our website explain everything you need to know.

DELIVERABLES IN THE DESIGN PROCESS



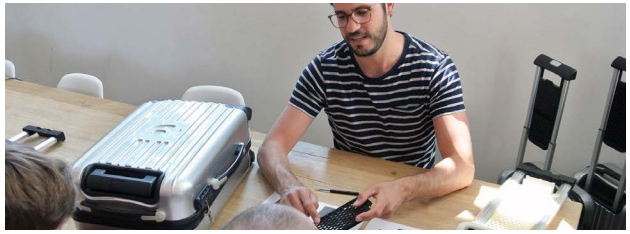
FROM IDEA TO PRODUCT: HOW THE INDUSTRIAL DESIGN PROCESS WORKS



PRODUCT DEVELOPMENT COSTS: WHAT YOU NEED TO KNOW

PCB DESIGN, HOW DESIGNERS COLLABORATE WITH ELECTRONICS ENGINEERS

MOULDING A BETTER PRODUCT, EVERYTHING ABOUT MOLD DESIGN



BEGINNERS GUIDE TO PATENTING A PRODUCT OR IDEA

HOW TO CONTROL MANUFACTURING COSTS IN PRODUCT DESIGN

CERTIFICATION PROCESS OF PRODUCTS

IMPORTANT ASPECTS OF PRODUCT PACKAGING DESIGN

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