



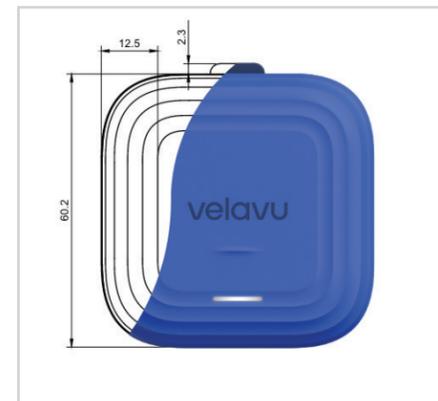
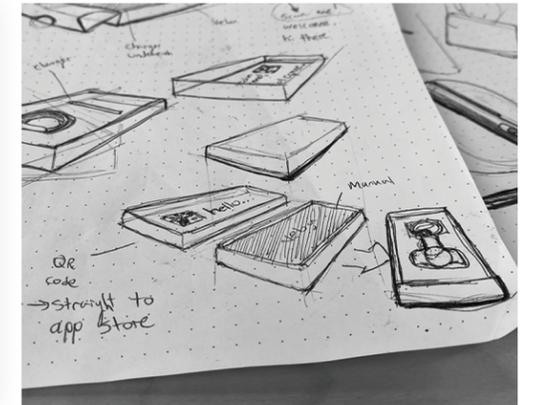
Product Development Guide

Let's get started.

What Starts With an Idea

Every company and every success story begins with a scribble and a rough idea. Product development is its evolution — the set of processes needed to bring that flicker of an idea to market.

Whether it's a completely new concept or modifying an existing product line, product development is complex and iterative in nature. We created this guide to provide transparency and a reliable source of information for new entrepreneurs or existing business owners looking to better understand these processes.



Navigating Your Journey

Every entrepreneur's journey will be different. No matter the entrepreneur or the industry, product development is never linear. Timelines change. Budgets are modified. Priorities alter. But to give you a better understanding of the process and how to navigate its complexities, we've drawn from our many years of engineering, design, and manufacturing experience to guide entrepreneurs through our product development process and provide a frame of reference on what to expect.

How We Can Help

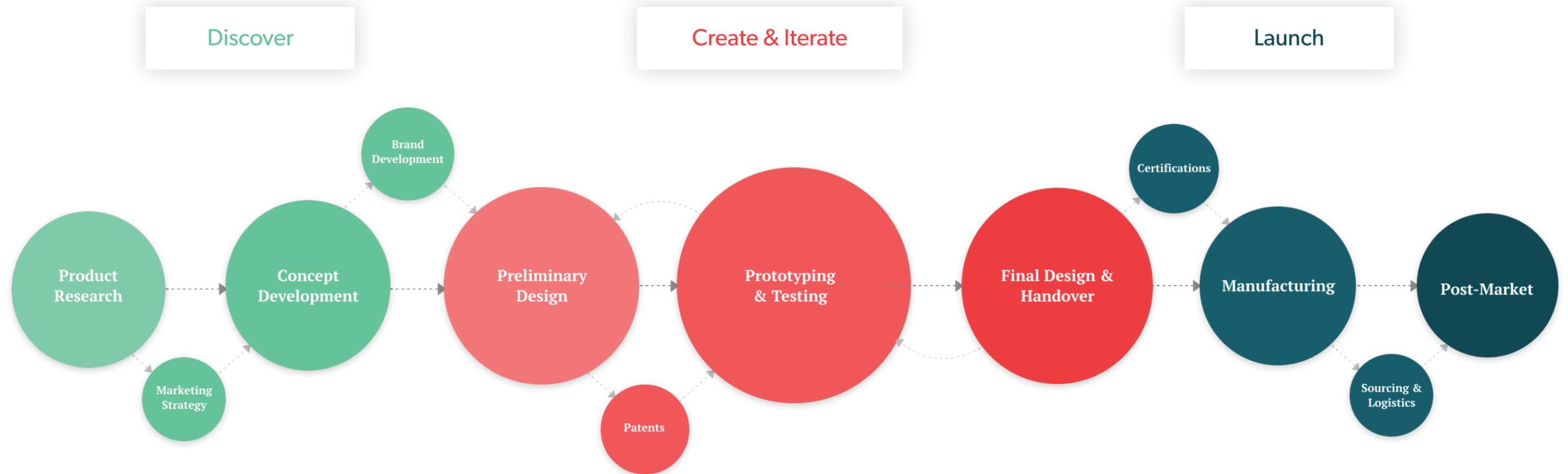
We've partnered with a variety of up-and-coming entrepreneurs, rising startups, and established businesses to create custom and turnkey solutions across industries. With offices in Canada, the United States, and Europe, we're ready to help you — no matter where you are. Whether it's starting your next big idea or revamping an existing one, our team can help you get your ideas off the ground and in motion.



Our Product Development Process

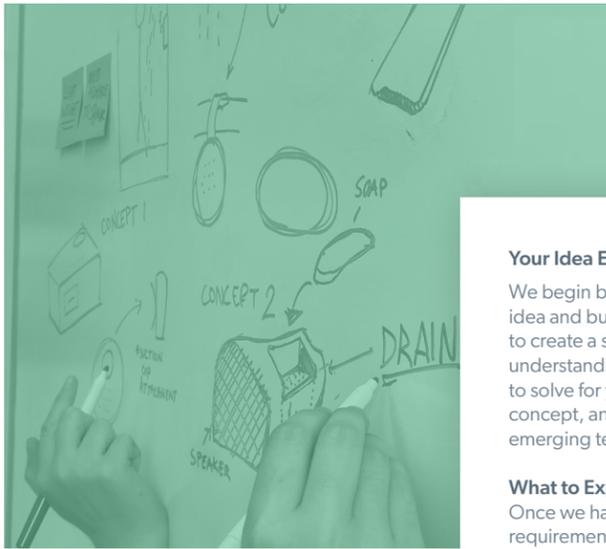
Over our 40+ years of combined experience, we have developed a wide range of expertise and evolved our process to move ideas off the ground and achieve groundbreaking results.

But our process doesn't create a standard or uniform experience. Not every experience will be the same or require every step. Our team can step in at any point, clients are free to work with us for only certain pieces of their development and branding process, or from start to finish. Each client experience is customized but often follows a common trajectory that we have divided into three general phases.



Product development is not a simple path forward — it's an evolution characterized by layers of revisions and unexpected discoveries.

01 Product Research



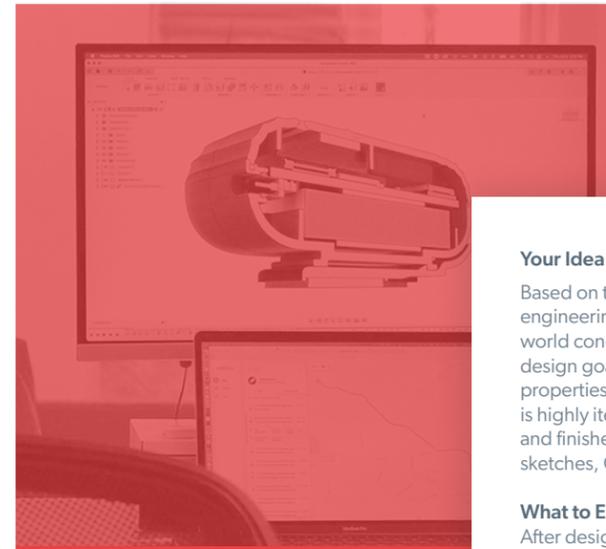
Your Idea Explored

We begin by scheduling an initial touch base with you to discuss your product idea and business objectives. Our goal is to establish product requirements to create a shared vision going forward. This includes gaining a deeper understanding of your ideal customer, and the problem your product is seeking to solve for your customer. We conduct preliminary research to study your concept, and related fields including patent needs, current business environment, emerging technologies, product needs, user needs, etc.

What to Expect

Once we have drawn meaningful conclusions from our research and initial requirements are specified, we map out a timeline so that it can be translated into a manageable reality. This includes the scope of work, patent needs, estimated project costs, product requirements, and so forth.

03 Preliminary Design



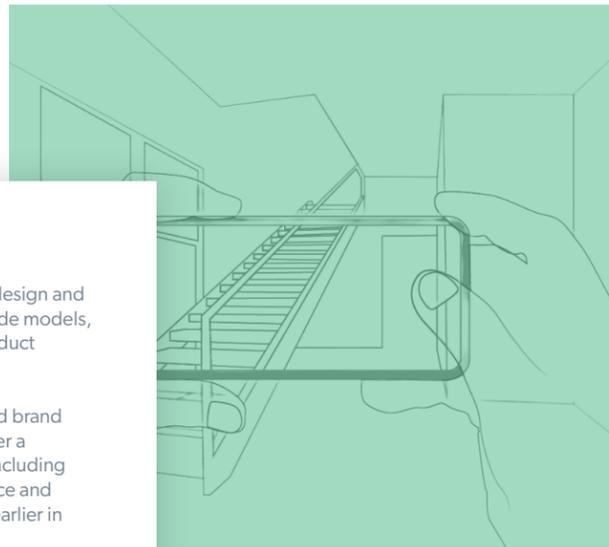
Your Idea Refined

Based on the final concept generated in the previous phase, our design and engineering team will begin turning sketches into 3D models that reflect real world conditions. To do this, we further define the product's characteristics, design goals, and objectives and reflect these in the product's physical properties— while remaining committed to your priorities and vision. This phase is highly iterative; we collectively evaluate shape, proportions, colour, materials, and finishes as well as product branding. This is achieved through digital sketches, CAD models, 3D printing, and low-fidelity renderings.

What to Expect

After design reviews are completed, we provide low-fidelity renders, CAD models, and 3D and/or printed models that provide deeper insight into the design direction proposed.

02 Concept Development



Your Idea Conceptualized

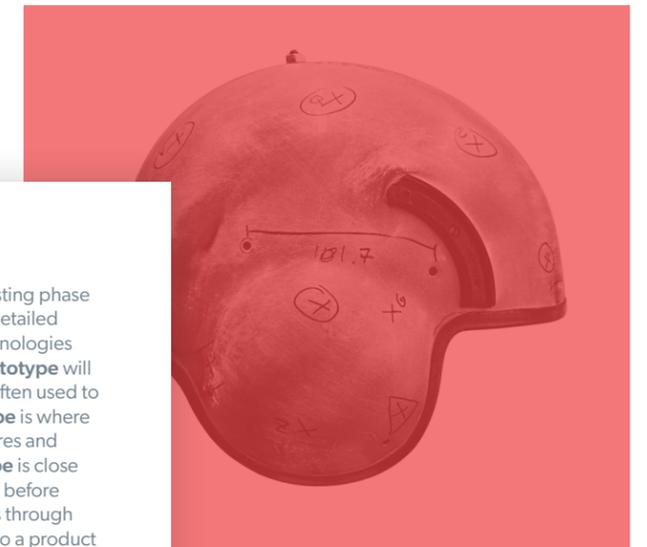
Concept development is an iterative process but together with our design and engineering team, we visualize the abstract. Through sketching, crude models, flow charts, scenarios, and/or wireframes, we create intentional product concepts rendered with style.

During this phase, we offer the option of developing a marketing and brand strategy. Through our strategic branding services, we weave together a cohesive and distinct identity for your product and/or company — including a visual identity like logos, fonts, colours, and a consistent brand voice and personality. This is available at any point but recommended to start earlier in the design process to best reflect your vision.

What to Expect

From here, a final product concept can be selected to move to the next stages of development.

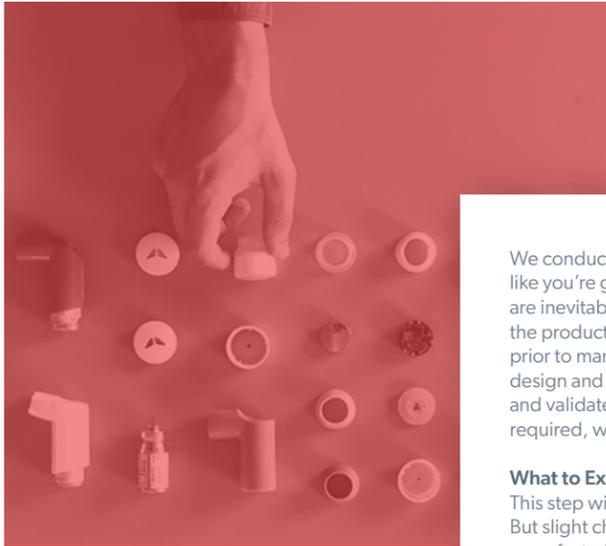
04 Prototyping & Testing I



Your Idea Brought to Life

We develop several prototype iterations in the prototyping and testing phase before reaching production-readiness. Our team will complete a detailed assembly of manufacturable components, using cutting-edge technologies to produce three key prototypes. The initial **proof-of-concept prototype** will verify and validate the feasibility of the envisioned product and is often used to secure more funding and gain market traction. The **alpha prototype** is where the product will begin to fully form — together we decide on features and design elements to include in the final product. The **beta prototype** is close to being production ready. It is meant for adjusting any final details before investing in large-scale tooling. Each one of these prototypes goes through comprehensive rounds of testing and will get you one step closer to a product that is customer ready. With the proof-of-concept, we complete all testing internally. With the alpha prototype, testing will be done by our internal team and by trusted partners. Lastly, with the beta prototype, testing will be done by initial customers and early adopters.

04 Prototyping & Testing II

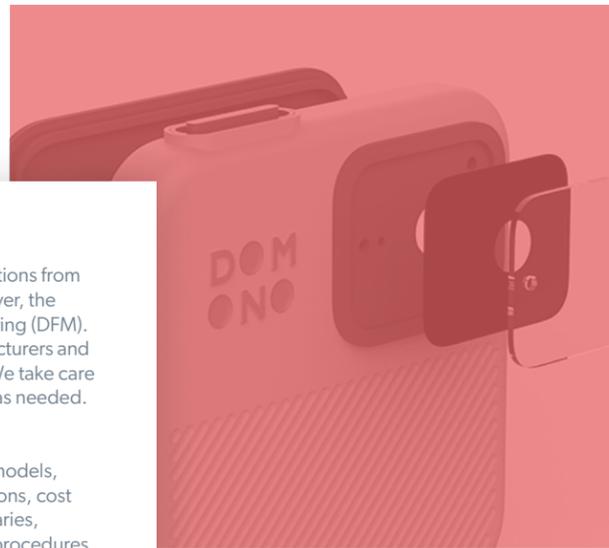


We conduct multiple rounds of testing, product changes and iterations. It may feel like you're going in reverse to go forward, but changes in design and engineering are inevitable. Finding any bugs, design flaws, or discovering customers are using the product in unintended ways will happen— the key is to catch this early on and prior to manufacturing. Throughout this phase, we also conduct a multitude of design and engineering reviews to optimize product reliability and performance and validate all proposed iterations. Depending on the industry and if patents are required, we offer support services to navigate and complete these requirements.

What to Expect

This step will result in a fully functional prototype close to your final product. But slight changes, such as exact materials used, often occur in product manufacturing. Documentation such as product specifications, product drawings, bill of materials, product labelling, and instructions for use will also be prepared and completed by the end of this step.

05 Final Design & Handover



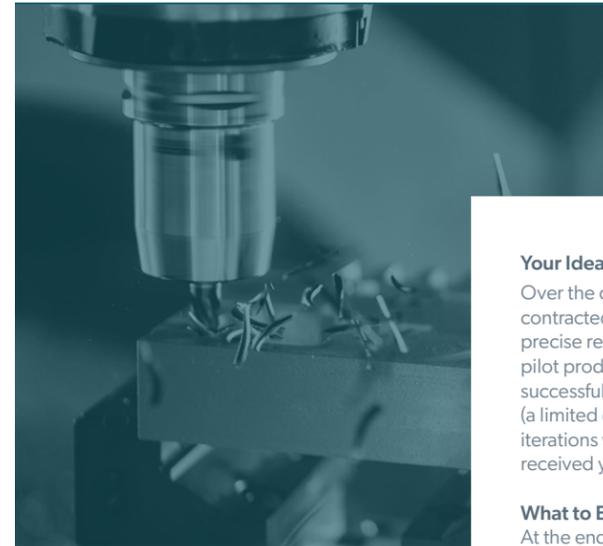
Your Idea Finalized

The following step is considered the conclusion to the string of iterations from the previous step. There may be very slight form refinements, however, the main objective of this step is to prepare a final design for manufacturing (DFM). Once satisfied with the final design, we can begin to source manufacturers and obtain quotes depending on quantity, price, timing, and location. We take care of all the tooling, part sourcing, assembly, packaging, and logistics as needed.

What to Expect

Handover to manufacturing will include renders, full-scale finished models, detailed design reports, full presentation boards, assembly instructions, cost structure breakdown, design guidelines, a user manual, pattern libraries, graphical elements, etc. We also conduct quality checks and verify procedures before manufacturing begins.

06 Manufacturing



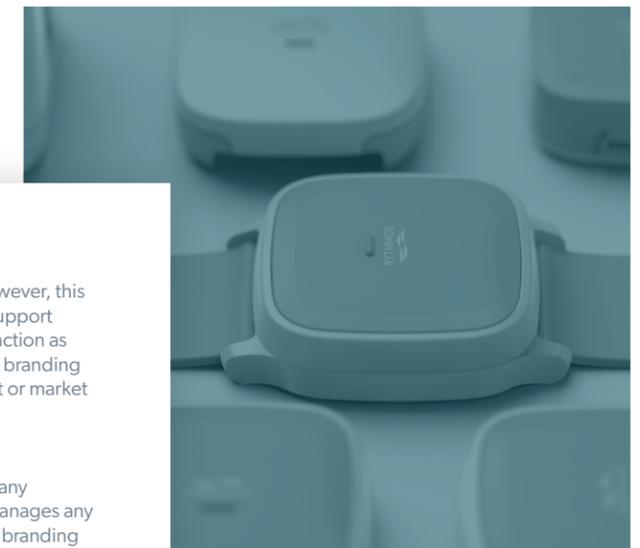
Your Idea Becomes Commercial Ready

Over the course of this phase, we source, then receive several samples from a contracted manufacturer — making modifications until the product meets your precise requirements. If the product sample received aligns with your vision, pilot production can begin. Our team will ensure manufacturing is completed successfully and efficiently by supervising the product's pilot production run (a limited quantity of the product are initially manufactured), and suggesting iterations where needed. Once small tweaks have been made and we have received your final approval, mass production can begin.

What to Expect

At the end of this step, the manufacturer will have met all required expectations with all necessary resources and processes in place to do so.

07 Post-Market



Your Idea Sustained

At this point in time, core development is considered finished. However, this does not signify an end to our relationship. We provide ongoing support as production continues, including any corrective and preventive action as required, known as sustaining engineering. We also offer ongoing branding and marketing services at any point in your product's development or market lifecycle.

What to Expect

Sustaining engineering can include software updates, addressing any technical bugs, or overall product maintenance. Our team often manages any new product versions/ upgrades and/or extended marketing and branding services.

	1. Product Research	2. Concept Development	3. Preliminary Design	4. Prototyping & Testing	5. Final Design & Handover	6. Manufacturing	7. Post-Market
Responsible	Design, Engineering & Client	Design, Engineering & Client	Design, Engineering & Client	Design, Engineering & Client	Design, Engineering, Client & Contract Manufacturer	Contract Manufacturer, Brash Team & Client	Contract Manufacturer Brash Team & Client
Key Activities	<ul style="list-style-type: none"> - Conducting initial client meetings and briefing. - Exploring the user problem and aligning on product specifications. - Conducting user interviews, analyzing research articles, completing a competitor review, patent review and literature review. - Identifying the innovative technology that can bring your product to life. - Creating a product development timeline and budget. 	<ul style="list-style-type: none"> - Transforming the problem into testable concepts because it is unproven and no testing has been performed. - Brainstorming, quick sketching, crude models, flow charts, scenarios, adaptation of technology, wireframes. 	<ul style="list-style-type: none"> - Further defining specific design goals, product characteristics and objectives. - Turning sketches into 3D models. - Developing CAD models, low-fidelity renderings and 3D printed models. - Exploring ergonomics, human factors and form. 	<ul style="list-style-type: none"> - Building functional prototypes for design and engineering validation. - Mechanical Feature Models. - Working Software Models. - Colors, Materials, Finishes. - Computer-Aided Design (CAD). - Technical Drawings. - Renders for reference. - Surfacing. - Internal and external bench testing, alpha testing, beta testing, user interface trials, refinement, surveying. 	<ul style="list-style-type: none"> - Final design enhancements: form refinement and detailing. - Selection of materials. - Detailed Computer-Aided Design (CAD). - Design for Manufacturer (DFM). - Trial building. - Ensuring full manufacturing readiness with Contract Manufacturer. 	<ul style="list-style-type: none"> - Sourcing: Collecting data on quality sources of goods and services, negotiating contracts and product testing for quality. - Supervising initial production runs. - Updates to design for manufacturing process. - Pilot production. - Mass production. - Launch into market. 	<ul style="list-style-type: none"> - Sustaining Engineering. - Post-market surveillance.
Prototype	N/A	N/A	N/A	<ul style="list-style-type: none"> - Proof-of-Concept. - Alpha Prototype. - Beta Prototype. - Packaging Prototype. 	<ul style="list-style-type: none"> - Final Design. (Pre-production prototype) 	<ul style="list-style-type: none"> - Final Design. (Production prototype) 	N/A
Quality Management	N/A	N/A	N/A	<ul style="list-style-type: none"> - Risk Assessment Report. - Process Failure Modes and Effects Analysis (FMEA). 	<ul style="list-style-type: none"> - Completion of: <ul style="list-style-type: none"> - Design History File. - Risk Management Report. - Device Master Record. - Conduct Management Review of Quality Management System (QMS). - Process Validation Reports. - Documentation and control of management equipment. - Conduct Facility Audits. 	<ul style="list-style-type: none"> - Implementing Quality Management System: quality procedures and checks. 	<ul style="list-style-type: none"> - Control of non-conformances. - Managing customer inquiries and complaints. - Corrective and preventative action (as required).
Regulatory Support	<ul style="list-style-type: none"> - Defining which standards may be required and establishing requirements from these standards. - Developing regulatory strategy. 	<ul style="list-style-type: none"> - Providing insights on the industry regulations and certifications that may be required for the product to be sold in its geographic area. 	N/A	<ul style="list-style-type: none"> - Patent application and submission. 	<ul style="list-style-type: none"> - Regulatory approval and certification received. 	<ul style="list-style-type: none"> - Declaration of Conformity (production verification and certification). 	N/A
Manufacturing Activities	N/A	N/A	<ul style="list-style-type: none"> - Beginning some planning such as material selection and possibility of receiving feedback on manufacturing feasibility. 	<ul style="list-style-type: none"> - Manufacturing sourcing and research. 	<ul style="list-style-type: none"> - Selection of Contract Manufacturer (CM). - Trial tooling design and build. - Completion of materials including: renders, full scale models, detailed design report, full presentation boards, cost structure breakdown, patent applications, pattern libraries, graphical elements and design guidelines. 	<ul style="list-style-type: none"> - Overseeing supply chain and logistics. 	<ul style="list-style-type: none"> - Continuing full-volume production.
Exit Criteria	<ul style="list-style-type: none"> - Sufficient research has been completed to conceptualize the idea, initial requirements are specified and a project timeline has been mapped out. 	<ul style="list-style-type: none"> - Design concepts have been developed and a final concept has been selected and presented to the client. 	<ul style="list-style-type: none"> - Digital sketches, low fidelity renderings, 3D printed and/or CAD models have been created. - Design reviews have been completed. 	<ul style="list-style-type: none"> - Functional prototype. - Product Specifications complete. - Product drawings & Bill of Materials (BOM). - Product labelling, packaging and Instructions for Use (IFU). - Final Design Review complete. 	<ul style="list-style-type: none"> - Full manufacturing readiness for the Contract Manufacturer (CM). 	<ul style="list-style-type: none"> - Core development is finished. 	<ul style="list-style-type: none"> - Ongoing support.

Our Philosophy

Conceptualized by you, made by us.

We coordinate all seven steps of the product development process under one roof. Our in-house design, engineering, branding, and marketing professionals work cohesively together. We have developed strong communication protocols and supporting processes that create a well-integrated experience across department lines — streamlining the product development process.



We adopt a user-centred approach.

We elevate products through a user-centred approach. In every facet of our design, marketing, branding, and engineering we focus on the user. Our team researches, analyzes, and innovates to solve your user's problem through the creation of remarkable products and experiences —and always with style.



Solutions tailored to your needs.

No matter the industry or size of project, whether you're building a new idea or revamping an existing one, everything we create is done to a high standard of excellence and customized to the unique needs of each one of our clients. We approach every project with out-of-the-box thinking and strive for innovation that sets our clients apart from their sector.



Our Work

Tracking made simple with Velavu™.

Our work with the award-winning asset management company, Velavu, exemplifies the end-to-end solutions we provide. We developed all hardware in their ecosystem of tracking products, the software and mobile app, visual design, branding and marketing/communications work needed to move this startup off the ground.



Ensuring proper dosage with BreatheSuite™.

BreatheSuite partnered with Brash for an inhaler add-on + app that collects data and provides feedback on inhaler use. Our team designed the firmware, hardware, PCB and developed enhanced algorithms to enhance the machine's learning capabilities and make it smarter. We also created BreatheSuite's cohesive branding experience.



Reducing neck injury with the Department of National Defence.

In response to the prevalence of neck pain present for aircrew personnel with the Canadian Armed Forces, we were contracted by DnD to research and developed a novel solution that unloads headgear induced forces acting on the neck. Our design, the Helmet Support Exoskeleton (HSE), addressed operational concerns, such as quick-release functionality and minimal product interference operating within the cockpit environment and with user movements during flight.



How much will my project cost?

Our team knows that finding a partner who works within your budget is a must. However, each project's cost is highly dependent on the project scope, requested features, and client requirements. Let's chat so we can provide you with a detailed cost breakdown and quote based on your product needs and business objectives before beginning the process.

How long will it take to bring my product to market?

Each project will vary in time and depending on the complexity of your project and the regulatory approval required, timelines will vary. However, we provide our clients with an estimated timeline before initiating project kickoff once we have determined the scope of your project.

Do I have to go through all steps of the product development process to work with you?

No, we can jump in at any point in the process! You may not need all steps in the process for your product, and you do not need to use our service for every part either to partner with us.

Can I still work with your team if I am not located near a physical office?

Yes, we are an international firm and many of our clients are located in other countries. With video conferencing and other forms of electronic communication, we are able to create your products and regularly update you on product development without needing to meet in person. No matter where you are located, we can help bring your product to market.

How can I get started?

Contact us with any of your inquiries and we will provide you with all necessary information on how to get started.

Have more questions? Let's chat!
letsgo@brashinc.com

Let's connect.

www.brashinc.com

Email us: letsgo@brashinc.com

Call Richard at 1 (613) 816 - 6211

Who is Richard? One of our Managing Partners.

 [@be_brash](https://twitter.com/be_brash)

 [brash-inc](https://www.linkedin.com/company/brash-inc)



It's not just a product,
it's our passion.