



# Transform your ideas into manufacturable products.

Specialists in product development for the real world, integrating the latest in sensor tech, power and wireless connectivity.

One of North America's Largest Award-Winning Product Design Firms.

[www.design1st.com](http://www.design1st.com)  
[info@design1st.com](mailto:info@design1st.com)  
1.877.235.1004



# Hi, we're Design 1st.

We specialize in **custom design and engineering** of useful and innovative physical products. Users are unforgiving and expect their devices to be convenient & reliable. We know how to do this.

## Core Competencies In-House:

- Technology Research
- Product Marketing Support
- Human Factors Design
- Industrial Design
- Interaction Design
- Mechanical Engineering
- Electronics Engineering
- Embedded Firmware
- Part and Product Prototyping
- Experimental Testing
- Regulatory & Certifications
- Manufacturing Set-Up
- Documentation Control
- Packaging & Graphics Design
- Quality Assurance Specifications
- Supply Strategy, Manage Builds

Connected medical product with custom touch display and IR temperature



Overnight recharge & asset management station – portable work tools for staff



Re-design:  
Global product line - brand refresh



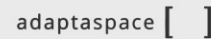
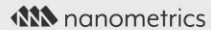
# You have an idea for a product.

We can make it a reality. We've done it hundreds of times, successfully.

We work with you to define and create a product to meet your business and marketing goals.

Since 1997, we've specialized in physical product design and development, delivering products with conspicuous customer value.

Our team has helped startups and established companies in many markets.



# Teams and Roles

There are **Five Critical Participants** for the design, development and delivery lifetime of a Physical Product (device).  
Our Design 1st team **leads Team #3** for the device development and will help **steer Team #4**, the device manufacturer.

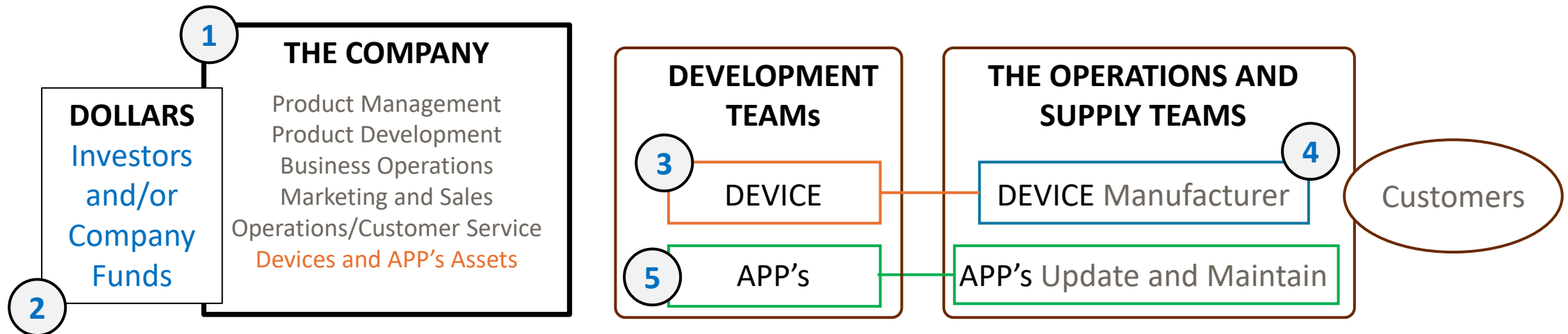
**1 The Product Idea Company** (Corporation, Startup, Inventor)  
Leads the 4 other participants, from R&D to operations and sales.

**2 The Investors**  
Funding development, inventory, launch and sales growth.

**3 The Physical Devices Development Team**  
Taking the product idea, finding a solution that meets requirements.

**4 The Device Manufacturer**  
Hired to order parts, build and supply a quality physical device.

**5 The Cloud/Mobile/PC Software APP's - Maker/Updater**  
Increasingly a custom APP is required to provide a user experience, and the physical product (device) is a part of this connected system.



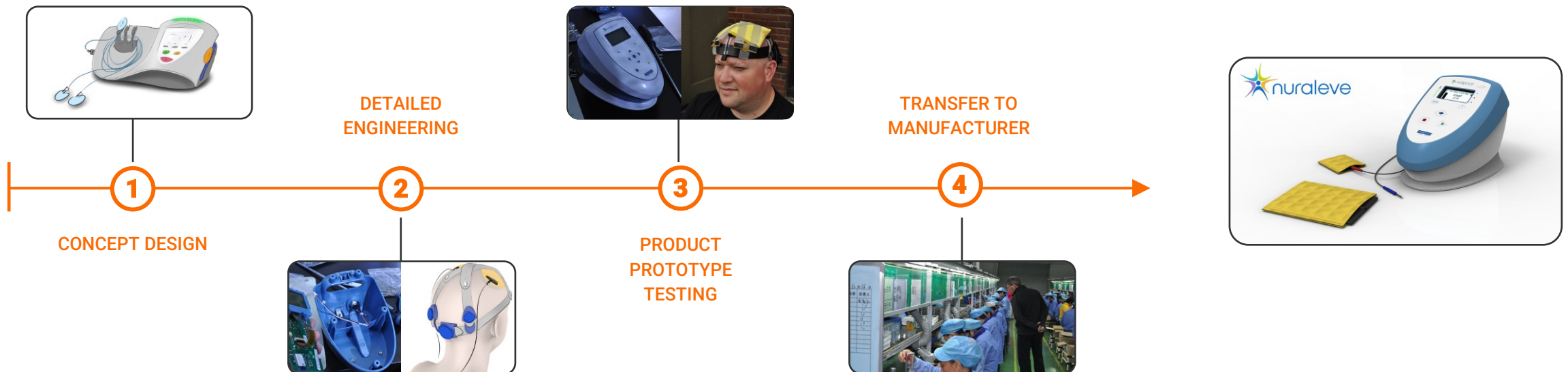
The Company, investors and the development teams may be all in one company or some may be third parties.



# You may be new to the process of developing physical devices.

Let us share our experience with you.

We've spent over 25 years refining our 4-stage process that reduces product-to-market time and lowers development costs by up to 50%\*, whether your product is simple or highly complex.



\* When designing devices, a poor decision building and testing product prototypes, will create immediate landfill and the error can cost as much as the entire development program.



# How we do it.

## Proven System

We have a proven, predictable process that has been refined over a thousand-plus real-world products developed. Our unique system is based on user value thinking and rapid design iterations that produce working physical prototypes. We verify performance and quality, so they are ready for your first customers.

## Collaborative Development

We are a team of cross-functional, hands-on experts in all the critical areas of development [ product-market fit, user behavior, industrial design, mechanical engineering, custom electronics, firmware, supply and manufacturing ], guiding the entire product development process.

## Risk Assessment & Opportunity Experts

We identify user, market, supply and product risks early on. We derisk what we can, considering the overall product lifecycle, and focus on the high value new product features. We overcome the technical challenges and configure solutions that perfectly fit the user needs and business strategy.

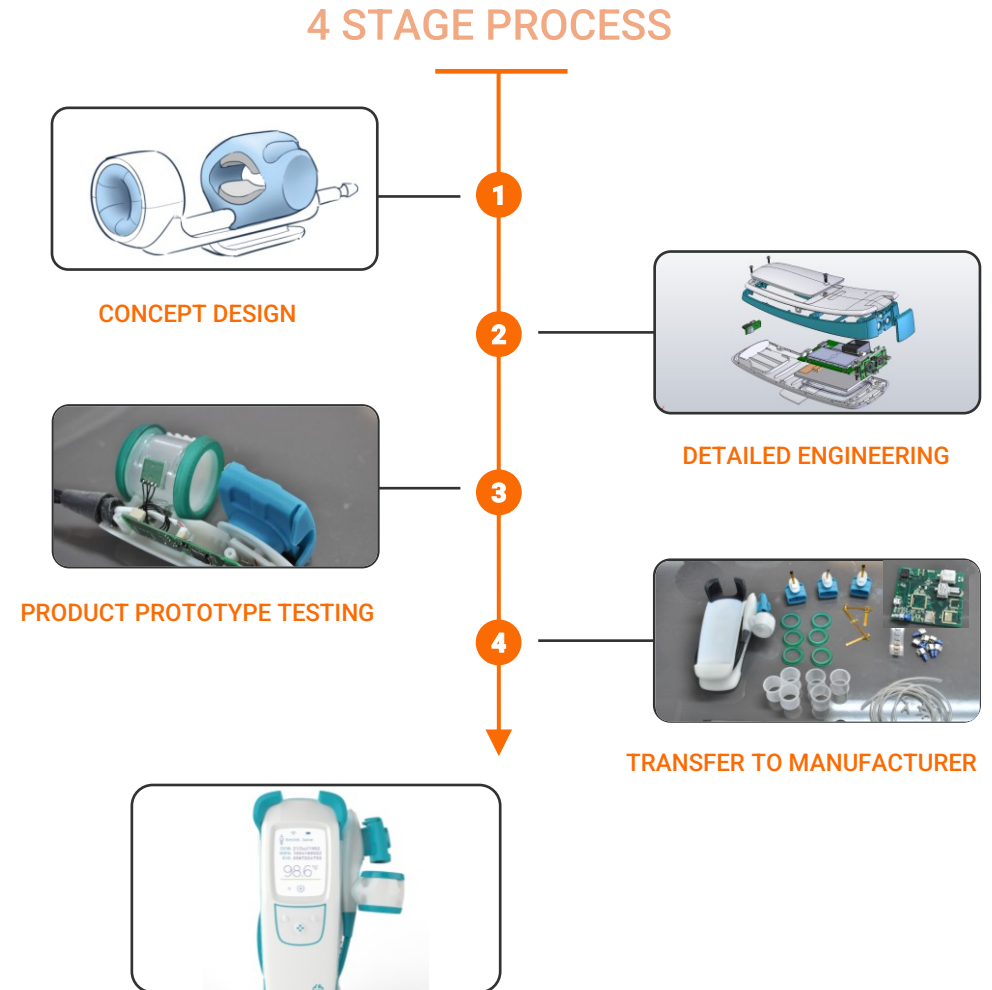


# Physical product design and development is a potentially high-reward endeavor.

## It's also high risk.

How the Design 1st process helps clients to maximize the opportunity and mitigate the risk.

- 1 There are thousands of decisions to be made in every development project. We implement rapid design iterations that produce working models which are tested at each stage until the product is ready for market.
- 2 Our highly experienced team of designers and manufacturing specialists collaborate to combine world-class design and user experience with physics, materials and cost-of-goods to create successful, market-ready solutions.
- 3 Risk, identification and assessment is integrated into our development process to help ensure you have good data to make decisions at every step, so you get to market faster with the best possible product for your target customer and business.



# Whatever your physical product design + development needs...

Design 1st has end-to-end product design, engineering and supply experts - we plug-in to your team and get the job done seamlessly.

Design Capabilities	Mechanical Engineering	Hardware Electronics	Firmware Engineering	Manufacturing Production Setup	FDA Regulatory	Aesthetics	Business Services
Industrial Design	Structural Design	Hardware Architecture	Software Design	Supplier & Manufacturing Investigation & selection	Regulatory Submissions Support	Product Color	Business Guidance & Plan Development
User Interface Design	Finite Element Analysis	Analog & Digital Design	Real time Embedded Systems, Firmware Development	Documentation Release & Cost Analysis	Prototype Verification	Materials & Finishes Selection	Product Concept Investigation (Patent & IP research, Competitive Landscape analysis)
Ergonomics	Thermal & Stress Analysis	Embedded Processors	Communication & User Interfaces, Networking & Protocols	Production Supply Chain Strategy & Sourcing	Test Report Validation	Realistic Images & Graphics Design	Market Research (Primary & Secondary)
Prototypes & Models	Mechanisms & Robotics Design	Power Strategy	Device Drivers, Application Development	Quality Control & Quality Assurance	Risk Management Reports	Videos & Labels	Funding Campaigns & Pitch Presentations
User Preference Research	Portable Display & Keys Interface	FPGA Development	Sensors Controllers Displays	Documentation & Change Control Management	Design History File	Packaging	Social Media platforms & SEO strategy
Material Selection	Human Sensory Design (Audio, Tactile, Optical)	Printed Circuit Board Layout	IoT Platforms	Product Delivery & Logistics Strategy	Integrated Design Team	User Guides and Illustrations	Marketing content & E-Commerce store setup
Key Component Technical Selection	Air & Water Flow Design	Electronics Prototyping	Optimization & Tuning	Product Certification & Testing to support country requirements	Design Revision Management	Tradeshaw Materials	Pricing & Distribution Strategy

Concept

Our flexible team can also fill in your development team gaps.

Market



# New product designs and re-designs, over the past 16 months.

## MEDICAL & DIAGNOSTIC

Solar Panel Rotation Device  
Eye Pressure Drainage  
LED Tissue Healing  
Sleep Apnea Monitoring  
AI Medical Diagnostic Kiosk  
Connected Digital Stethoscope  
Diagnostic Nose Implant  
Inflatable Medical Mattress

## MINING & INDUSTRIAL

Underground Mining Camera  
Nondestructive Material Testing  
Ultrasonic Wear Sensor  
Industrial Pump Equipment  
Pressure Switch Equipment  
Air Pressure Instrumentation  
Water Control Valve  
Hydraulic Pressure Sensor

## HEALTH & WELLNESS

Ultrasonic Skin Therapy  
Aromatherapy Inhalation Device  
Beauty Sleep Aid  
Handheld Muscle Massager  
Connected Musical Massager  
Luxury Hair Misting Device  
Water Bottle Filtration Device  
All-in-one gym system

## SMART HOME & IOT

Toddler Monitoring Device  
Intelligent Mattress Device  
Wristworn Security Device  
IoT Educational System  
Touch Switch Outlets  
Air Purification Fan Filter Heated  
Cooling Pillowcase Package  
Delivery Box

## CONSTRUCTION & TOOLS

Electric Wood Router  
Auto-cut Table Saw  
Powered Caulking Gun  
Portable Cement Mixer  
Residential Infloor Heating  
Magnet Tool Holder  
Innovative Window Latch  
Air Gap Building Insulation

## CONSUMER & HOME

Magnetic USB-C Cable  
One-Time Puck Passer  
UV Disinfecting Plunger  
Modular Furniture System  
Compact Backpack Stroller  
Reverse Angle Mirror  
Electric Boot Warming Device  
In-home Fans - Air Cleaner  
Countertop Cereal Maker

## CLEANTECH & SUSTAINABILITY

Solar Panel for EV Bikes  
Hydrokinetic Water Turbine  
Solar Desalination System  
Solar Based Dehumidifier  
Hydroponic Grow Station  
Hydroponic Growing Trays  
Innovation Compost Bin

## TRANSPORT & LOGISTICS

GPS Fleet Tracking  
Loading Dock Sensor  
Electric Scooters Battery  
EV Motorcycle Bikes  
Wireless Transport Truck Light  
Innovative Motorcycle Shield  
Enterprise Asset Re-Charging

## AI DEVICES

Wearable Fitness Monitoring  
Sleep Apnea Monitoring  
AI Hearing Assistant  
Intelligent Concussion Recovery  
Wristworn Security Device

## ROBOTICS & AUTOMATION

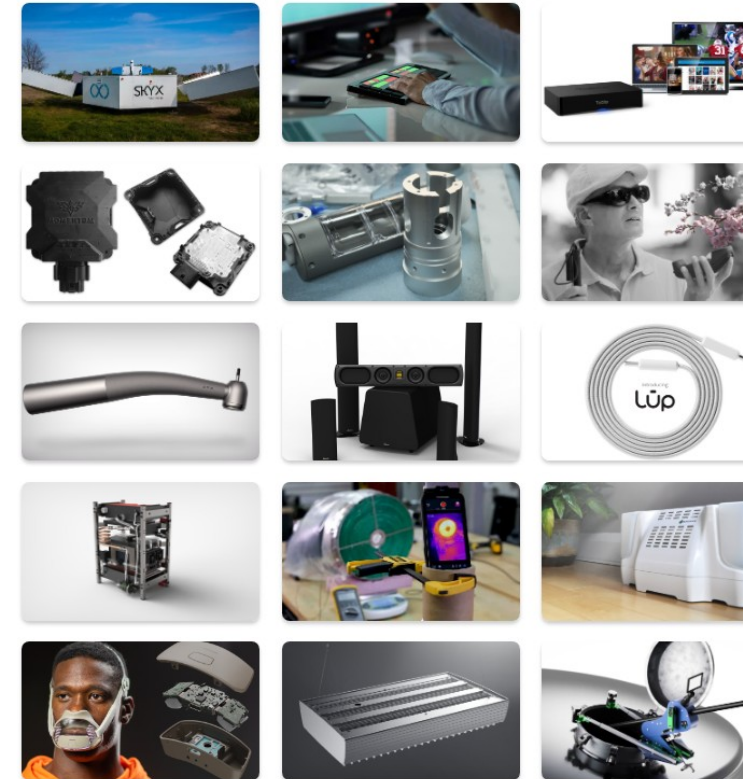
Full Motion Robotic Chair  
Tank Cleaning Robot  
911 Control Room Consoles  
Vacuum Collection System

## ACCESSIBILITY & SAFETY

Electric Brake Walker  
Walker Foot Stability  
Innovative Walking Aid  
Self Defense Spray

## TELECOM & NETWORKING

Stock Trading VOIP System  
Cell Tower Antenna Intelligence  
Antenna Energy Harvesting System  
Emergency Communication System  
Computer Interconnect Adapter



MORE EXAMPLES OF OUR WORK



# Things our customers say about us on Clutch.

Clutch is a global Business to Business research, ratings and independent reviews site.

Total Reviews	Average Referral Rating
13	4.9 /5



### Design 1st Reviews

Sort By Relevance Service Provided Project Cost Clear All [Submit A Review >](#)

#### Product Prototype Design for R&D Company Featured Review [Share](#)

<b>THE PROJECT</b> <ul style="list-style-type: none"><li>Other Design</li><li>\$200,000 to \$999,999</li><li>Oct. 2017 - Ongoing</li></ul> <b>PROJECT SUMMARY</b> <p>Design 1st is collaborating with the internal team to design prototypes for atmospheric water generators. The team is structuring them to ensure a seamless transition to high-volume production.</p>	<b>5.0</b> ★★★★★ <table border="1"><tr><td>Quality</td><td>5.0</td></tr><tr><td>Schedule</td><td>5.0</td></tr><tr><td>Cost</td><td>5.0</td></tr><tr><td>Willing to Refer</td><td>5.0</td></tr></table>	Quality	5.0	Schedule	5.0	Cost	5.0	Willing to Refer	5.0	<b>THE REVIEW</b> <p>"The team is able to make good forward progress independent of micromanagement."</p> <p>Aug 17, 2020</p> <b>FEEDBACK SUMMARY</b> <p>Design 1st's respect, professionalism, and patience have made for a strong and enjoyable working relationship. The team's breadth of talent allows them to meet business needs, and they are able to work independently to produce results. They are an adaptable partner who delivers as promised.</p>	<b>THE REVIEWER</b> <p>CTO, Molecule</p> <p> Kurt Francis</p> <ul style="list-style-type: none"><li>Consulting</li><li>Ireland</li><li>1-10 Employees</li><li>Phone Interview</li></ul> <p>Verified</p>
Quality	5.0										
Schedule	5.0										
Cost	5.0										
Willing to Refer	5.0										

[Read Full Review](#)

#### LED Housing Design & Manufacturing for Environmental Org

<b>THE PROJECT</b> <ul style="list-style-type: none"><li>Manufacturing Consulting, Product Design</li><li>Confidential</li><li>Apr. - Dec. 2024</li></ul> <b>PROJECT SUMMARY</b> <p>Design 1st designed and manufactured a waterproof LED housing for an environmental services organization. The team created the housing with a glass lens and ensured it was completely waterproof.</p>	<b>5.0</b> ★★★★★ <table border="1"><tr><td>Quality</td><td>5.0</td></tr><tr><td>Schedule</td><td>4.5</td></tr><tr><td>Cost</td><td>4.5</td></tr><tr><td>Willing to Refer</td><td>5.0</td></tr></table>	Quality	5.0	Schedule	4.5	Cost	4.5	Willing to Refer	5.0	<b>THE REVIEW</b> <p>"They are a professional team and highly responsible."</p> <p>Jan 31, 2025</p> <b>FEEDBACK SUMMARY</b> <p>With Design 1st's help, the client conducted initial thermal and pressure tests, and the results were highly successful. Design 1st was highly responsive and detail-oriented. The team was professional, trustworthy, and reliable.</p>	<b>THE REVIEWER</b> <p>Postdoctoral Research Associate, Environmental Services Org</p> <p> Anonymous</p> <ul style="list-style-type: none"><li>Environmental Services</li><li>Amherst, Massachusetts</li><li>10,001+ Employees</li><li>Online Review</li></ul> <p>Verified</p>
Quality	5.0										
Schedule	4.5										
Cost	4.5										
Willing to Refer	5.0										

[Read Full Review](#)

92% customer satisfaction, even on the most challenging projects with loads of technical uncertainty.





**Kevin Bailey**  
CEO and Founder



**James Henderson**  
VP Design



**Matthew Bailey**  
VP Engineering



**Yih-Shyang Tsai**  
VP Embedded Software



**Donovan Wallace**  
VP Electronics



**Jenna Bailey**  
VP Administration



**Allan Kerr**  
VP Design Research



**David Ingram**  
VP Supply Strategy



**Ian Kayser**  
VP Sales



**Joan Hight**  
VP Product Strategy



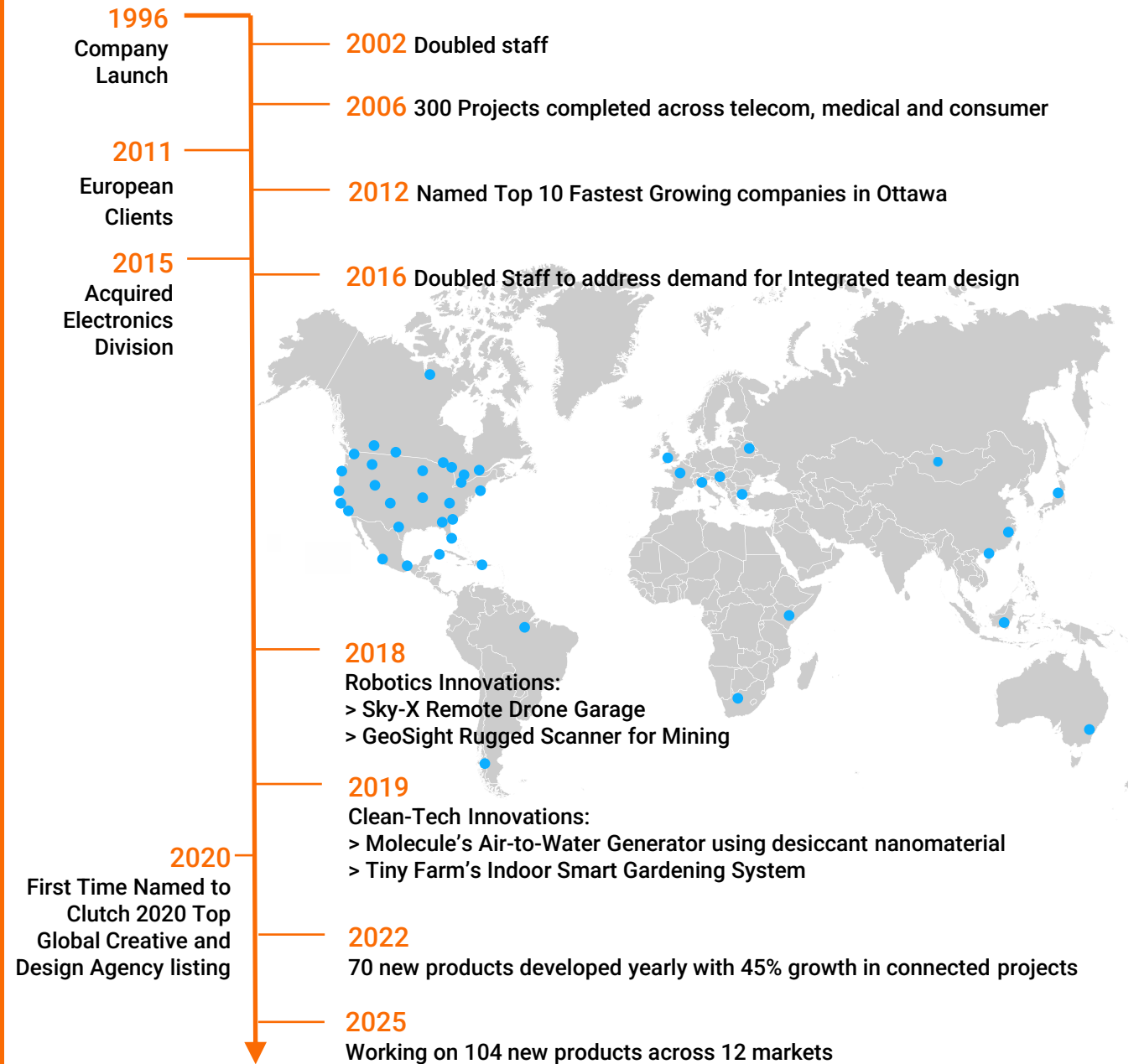
Meet the team.

# A bit about our history and values.

25+ years creating real-world devices, leveraging suppliers globally, and serving clients in Canada, the USA and around the world.

Our cross-industry experience is critical to delivering physical products that connect emotionally with users and drive revenue.

We truly believe that with the right design partner; any entrepreneur, startup or corporation has the ability to successfully bring a new physical product innovation to market.





# Ready to get started?

# Let's talk and make your product idea or re-design a reality.

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Award-Winning Product Design Firms.

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