



Inside intel on raising money for—and manufacturing—your next big idea.

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# Introduction:

# Crowdfunding Hardware

Danae Ringelmann, Eric Schell and Slava Rubin joined together in 2008 to form Indiegogo, to help people fund their dreams, and bring ideas to life. Indiegogo campaigns do more than just help bring product ideas to fruition, though. Raising money on Indiegogo can generate consumer interest, help with market testing, and of course, shepherd a company through the manufacturing process.

Inside you'll find a wealth of information for running a hardware campaign, including prototyping, finding a contract manufacturer, coordinating fulfillment, and third-party partners who can help bring your product to life.

# Manufacturing Made Easier

Manufacturing is not without its challenges, and running an Indiegogo campaign is the ideal first step toward fruition. Follow these steps to help you through the manufacturing process. For more on ensuring an impactful campaign including best practices, see: *Insider Tips for Creating a Hardware Campaign*, below. **Let's dig in!**

## 1. PREPARATION FOR MANUFACTURING (PRE-CAMPAIGN)

- Prototyping
- Setting your timeline
- Pricing your product
- Setting your campaign goal
- Finding a manufacturer

### Prototyping:

Before you bring your product to market, you'll go through several phases of prototypes. These will include situations when:

- ✓ Your product works like a prototype (pre-campaign).
- ✓ It looks like a prototype (pre-campaign).
- ✓ You work on design for manufacturing (DFM) the prototype (ideally pre-campaign).
- ✓ The unit rolls off the assembly line (most likely post-campaign).

Creating your first two levels of prototypes pre-campaign allows you to prove to yourself that you can build at least one of your products for your contributors. The process also allows you to show off the product in person—which is essential to building a buzz (many publications will be much more likely to write about your product if they can hold it and use it).

Going one step further, creating a DFM prototype before your campaign ensures you can make thousands of units for your contributors. This is rarely trivial. The techniques used for large-scale manufacturing are often very different from those used for your first several prototypes—so make sure you design with this in mind. If you can create a DFM prototype before you launch your campaign, it will cut months off your timeline, and help ensure much happier contributors.

### Setting your timeline:

Predicting a delivery date for your crowdfunded product is a good idea. That said, avoid pulling this date out of thin air. Talk to manufacturers about different aspects of your product, and determine how long it will take them to make it. They will often give you an “ideal” estimate, so make sure to multiply it by 2 or 3 times.

A great way to get organized is with a **Gantt chart**—which will allow you to see everything on one page, and how it links together. There are many templates you can download to use in Google Docs or Excel.

### Timeline recap:

- ✓ Talk to manufacturers about each element of your product.
- ✓ Figure out which parts rely on another part being complete.
- ✓ Multiply estimations by 2-3 times.
- ✓ Set up a Gantt chart showing every stage of your product.
- ✓ Make sure to include time for shipping (usually 5-6 weeks overseas).

### Pricing your product:

There are two common approaches to pricing your product: top-down and bottom-up.

**Bottom-up** means determining your cost of goods (COG's), and multiplying it by a factor (usually at least 3X—the higher the better). The COG includes:

- ✓ Components
- ✓ Assembly cost
- ✓ Packaging (can be pricey)
- ✓ Costs for shipping goods to your warehouse (per unit)
- ✓ Warehousing costs (per unit)
- ✓ Multiplying by a factor (3X or more)

**Top-down** means first figuring out the value of your product, or what people would be willing to pay for it. This can be done through:

- ✓ Comparison to similar products
- ✓ In-person market research
- ✓ Online A/B testing (testing market interest for your product at different prices)

In either case, you need to factor at least 3X your COG's. Use both approaches when determining your price, to cover all bases.

### Setting your crowdfunding campaign goal:

Know that your costs are going to be much higher than your COG's. There are many fixed costs that will be associated with your product. These might be:

- ✓ Tooling (injection molds or similar expensive tools)
- ✓ Flights/Travel (if you are going overseas, consider at least two flights, if not more)
- ✓ Prototyping costs
- ✓ Campaign costs (videography, product photography, marketing)

- ✓ Salary (what can you and your team afford to live on?)
- ✓ Shipping to your contributors
- ✓ Add your COG's multiplied by your minimum order quantity (MOQ)

### Pro Tip: Make a spreadsheet!

Add everything together, and make sure you'll have enough money to fulfill your campaign perks. Ensure there's a large buffer (at least 25%-50%). There's nothing worse than pouring money and time into a product, only to fall short and not be able to deliver.

### Finding a manufacturer:

At this point, there's no silver bullet. You're going to have to do some research. Find people who have made a product, and ask them for recommendations. Your options include:

- ✓ Working directly with a supplier (lower cost, higher risk)
- ✓ Working with a contract manufacturer (CM) or sourcing group (higher cost, lower risk)

In either case, make lots of phone calls. Get to know these folks! There are plenty of CM's based in the U.S., and this is probably your best bet for your first product. They will minimize risk, and often save you money in the long run.

You should ideally pick your manufacturer before you launch your campaign. Make sure you go with someone you trust. Remember, you will be entrusting them with the future of your business. Make sure you vet them well.

## 2. MANUFACTURING AND FULFILLMENT (POST-CAMPAIGN)

- U.S. vs. Abroad
- Determining order size
- Sticking to timeline
- Sticking to budget
- Fulfillment
- Certification

### Where to manufacture:

#### Potentially the U.S. if:

- ✓ Your first order is small (under 2,000 units)
- ✓ Your product uses mostly off-the-shelf parts
- ✓ The price of your product is on the higher side
- ✓ Your product is made of one or two materials (especially wood)

#### Potentially China if:

- ✓ Your first order is large (over 5,000 units)
- ✓ You need many custom parts
- ✓ Your product requires a lot of assembly
- ✓ Your product can be easily shipped overseas

Consider both options and do a cost analysis before launching your campaign.

#### General Manufacturing Resources:

- [Berkeley Sourcing Group](#): Based in California, this company has a factory network in China, and provides services to prepare your prototype and design materials for interfacing with manufacturers. You are then assigned a project manager based in China who deals with factory selection, management, and quality control.
- [Dragon Innovation](#): They provide a variety of services to prepare you for getting your product manufactured, in two broad categories: 1) Pre-crowdfunding: Under the Dragon Certified label, you'll receive design reviews of your product and analysis of your costs of goods sold, and 2) Manufacturing: includes factory selection and project management on site at the factory. Dragon Innovation is based in Massachusetts, with domestic factory networks along with some in China.
- [HW Trek](#): This China-based company offers two main services: Premium Sourcing Program (HPSP) and Premium Management Program (HPMP). The HPSP sourcing program assists with quote requests from supply chain vendors and manufacturers, and includes a design review, manufacturer audit, quotation negotiation, and cost-saving recommendations. The HPMP management program includes project management in Asia, and monitoring the day-to-day operations (time, budget, and quality). HW Trek also recently launched a software tool that pairs manufacturing and hardware experts with project creators.
- [MakeSimply](#): This New York-based company provides a range of services including market analysis of your idea, prototyping your product, and manufacturing services. They have an extensive network in Taiwan where they can make 1000+ units of a product. They will also manufacture with partners in the U.S. if you are making 10,000+ units.
- [MorphoMFG](#): This contract manufacturer based in Guangzhou, China features an international team (including American management). They provide sourcing, prototyping, and manufacturing services, with bundled packages relevant for startups and crowdfunded projects.
- [Hatchmfg](#): This China-based electronics development and manufacturing company has American management. Their focus is on tablet-type devices and smartphones, and they offer engineering development and manufacturing.
- [Product Realization Group](#): This team provides a range of services from product roadmap development, prototyping, design for manufacturing reviews, to contract manufacturer selection and manufacturing. Most of their manufacturing partners are based in the U.S.
- [Protolabs](#): This company provides both CNC machining (first cut), high-resolution 3D printing (fine line) and injection molding tools (proto-mold) that are well suited for small to medium-sized production runs. They have online quote generators that check (in real-time) the manufacturability of your parts.

## Electronics Manufacturing Resources

- **AdvancedCircuits:** This company is one of the largest, printed circuit-board (PCB) manufacturers in the U.S. that can do quick turnarounds for prototypes and large production runs. Free file-design check is available (to see if it can be manufactured, not if the circuit will work), and they can do manufacture and assembly.
- **NexPCB:** This company provides electronic manufacturing services for PCB's, which include PCB layout design, fabrication, assembly, and supply chain management (that is, choosing components that are low cost and available for your order quantities within a short lead time). They are based in the U.S., with production in China.
- **Refactory:** They focus on producing short PCB runs from 10 to 5000 units, with a dedicated, on-site manufacturing line in Brooklyn, NY. Refactory provides circuit design and assembly services, with a focus on wireless battery-powered devices and audio electronics, and have in-house testing capabilities and relationships with test houses.
- **Sierra Circuits:** This California-based PCB manufacturer offers fabrication and assembly services. They can do quick turn-around prototypes as well as medium-sized production runs.
- **Golden Phoenix:** This China-based PCB fabrication and assembly company works on both rigid and flexible PCB's, with rapid turnaround times.

## Determining your order size:

You will probably want to produce more than just enough units to fulfill to your campaign contributors. Ideally you will build up an inventory to sell directly to consumers, or through wholesale. This is one of the most important reasons to price your product with a high margin. It will allow you to invest some of that margin into an inventory, and help you build a sustainable business.

## Next steps:

- ✓ Subtract fixed costs from your campaign earnings (including shipping to your contributors).
- ✓ Next, subtract a buffer (in case anything goes wrong).
- ✓ Divide the number by your COG's, to figure out the # of units you can produce.
- ✓ Do this exercise ahead of time with different levels of successful campaigns (e.g. your exact goal, 2X your goal, 5X your goal).

## Sticking to your timeline:

The best way to do this is to prepare early. Your timeline may change dramatically depending on the volume of your order, so get as much done as you can before the campaign.

## Be sure to:

- ✓ Build a Gantt chart with your manufacturer.
- ✓ Make sure you both understand all the deadlines.
- ✓ If anything slips, address it, and try to understand why it happened, so you can avoid future missteps.
- ✓ Remember that nothing will go perfectly, so leave plenty of breathing room.
- ✓ Try to promise a later delivery date to your contributors, and then aim to fulfill early.

## Sticking to your budget:

Again, preparation is your best friend. Some steps to help you stick to your budget:

- ✓ Make sure you get quotes for everything ahead of time.
- ✓ Add a safety buffer to your COG's (they may increase 25%-50% as issues arise).
- ✓ Leave a budget for extra travel and other fixed costs.
- ✓ Always use a spreadsheet to track progress, and update it as soon as changes happen.
- ✓ Make sure you get a sample of every part before you order a full batch. You'll want to make any necessary adjustments before starting production.

## Fulfillment:

There are two main options for fulfillment: doing it yourself, or using a fulfillment service. In either case, you will have to pay for postage, so factor this cost into your campaign! Fulfillment services often charge \$2-\$4 per unit to package your goods and ship them out, and you are generally paying for three concepts: warehouse storage of your goods, picking and packaging your product once it gets ordered, and shipping with the most cost-efficient carrier (which might include taking care of customs, export issues etc.). You can ship all your products to a fulfillment service and they will handle your orders, and they often provide API's to the leading e-commerce platforms if you keep selling after your campaign. You can save money by doing it yourself, but it can be a big headache. In either case, do research ahead of time:

- ✓ Check prices on USPS, FedEx, and UPS, based on the weight and size of your product.
- ✓ Get quotes from fulfillment services (search for a few and talk to them).
- ✓ Ask for a reference from someone who's completed a successful campaign.

## Outsourced Fulfillment Resources:

- **Amplifier:** This full-service production and fulfillment company and Indiegogo partner enables campaign owners to easily produce, package, and ship perks such as shirts, hats, mugs, stickers, and more. Based in Austin, TX, Amplifier serves as a one-stop shop for merchandise production and fulfillment. Any campaign that uses Amplifier receives a 10% discount on Amplifier fees, as well as personalized support from Amplifier's customer service team, which includes coaching, a best practices toolkit, and shipment tracking tools.
- **Shipwire:** This large fulfillment company has warehouses in many countries, offering storage, worldwide shipping, and returns handling, with API's to over 80 e-commerce platforms. Shipwire doesn't require minimum order quantities, and they charge per order fulfilled.

- **Amazon multi-channel fulfillment:** They provide all the typical services of a major fulfillment company, along with returns management and customer service.
- **Fulfillrite:** This smaller fulfillment company based in New Jersey can store, package, and ship orders, as well as handle returns. It is well suited for domestic shipping (although they can ship worldwide), with a small number of SKU's (this refers to the number of different products you are selling).

## Self-fulfillment Resources:

- **Endicia:** This software solution allows you to print your own pre-paid and customized shipping labels with the USPS, so you can send items directly. Endicia also provides a postage management tool, so you can track delivery statistics and fill out electronic customs forms.
- **Stamps.com:** Print pre-paid stamps and customized shipping labels with the USPS, and navigate the different shipping options. The service also offers a postage management tool, with delivery statistics and electronic customs forms.
- **TrueShip:** This software solution allows you to print pre-paid shipping labels in the same ways as Endicia and Stamps.com, but works with more carriers than the USPS, such as FedEx and UPS.

## Post-campaign Pledge Management Resource:

- **BackerKit:** After you've completed your campaign, this software allows you to manage your contributors using product survey tools, address updates and postage solutions. You can also increase order quantities, perks, etc.



## Certification:

Many products coming onto the market today will require certification. The three most common are FCC, UL, and CE. You will need:

- ✓ FCC if your product emits an unintentional signal (anything with a microchip).
- ✓ FCC if your product emits an intentional signal (wifi, Bluetooth, cell).
- ✓ UL if your product plugs into the wall, or has any injury potential.
- ✓ CE if you want to sell your product in Europe.

The simplest level of FCC certification is about \$2,000 (this is for unintentional signal). You can go to [FCC.gov](http://FCC.gov) to find locations near you. They will also be able to do CE certification. Note: UL certification, and more advanced certification are much more expensive. Use pre-certified parts whenever possible to avoid a lengthy and costly process. For best results, determine your costs ahead of time, as certification in general can be very expensive!

### Certification Resources:

- [Underwriters Laboratory \(UL\)](#): This company offers a range of certifications including Safety, FCC/EMC, Energy Efficiency, Transaction Security, ADA, and others. UL has a specific start-up program where you are assigned a compliance engineer and business development manager who will guide you on the mandatory regulatory and certification marks needed to sell your product in specific countries. This program includes a free engineering consultation to look at the regulatory compliance of your design and free EMC pre-scans for R&D purposes.
- [Intertek](#): This company performs a range of certifications including UL and FCC, and has its own safety ETL-listed mark.

## 3. BUILDING A SUSTAINABLE BUSINESS

- Automated fulfillment
- Wholesale
- Marketing
- Product line

### How to Build a Sustainable Business

**Automate Fulfillment:** As your business grows, you will want to make sure you're not spending precious minutes sticking shipping labels on boxes. Transfer to an automated solution, whether that means hiring a team, or working with a fulfillment service. In the long run, you'll want orders to go out automatically, and wholesale items to ship with the push of a button.

**E-commerce to Wholesale:** You'll eventually want to make larger sales to wholesalers. They will purchase in bulk, but require up to a 50% price cut. Make sure your margins can afford this! Start talking to potential wholesalers early, and learn their requirements.

**Marketing:** A sustainable business is as much about building a brand as it is about selling your products. Consider marketing approaches such as buying ad space. Online advertising makes it possible to do on a fairly tight budget. Viral campaigns are also fantastic for gaining exposure, so be creative!

**Build a product line:** No matter how cool your product, it probably won't sell forever. The lifecycle of most consumer products is one to two years. Start thinking about your next product early! Once you've set up a supply chain and a brand, the next product will likely be much easier to bring to market.

**Keep production momentum:** Indiegogo now offers [InDemand](#), which allows you to continue to raise funds after your campaign ends, and offer your product as a perk. Using the Indiegogo platform can help you gain continued global exposure, to help build your business and your brand. Your [InDemand](#) page will permanently display your past funding success, too—which will help instill consumer trust and continue momentum.

# Insider Tips for Creating a Hardware Campaign

## KNOW YOUR GOALS

Are you trying to produce a one-off product or start a business? Hoping to attract the attention of distributors? Determining market interest and soliciting user feedback? Know what you're looking for beyond funding, so you can focus your campaign strategy on achieving these goals—for a more pointed approach. You may want to raise more or less funds, and manufacture more or less goods, accordingly.

## CHOOSE A FUNDING MODEL

Indiegogo offers multiple funding models designed to best serve your campaign. If you're unable to move forward or fulfill your perks without the full amount raised, you should choose Fixed Funding. This way, if you don't receive your goal, you're free of obligations. However, if you're able to fulfill perks regardless of how much you raise, or if you have access to fund sources outside of Indiegogo, you might consider Flexible Funding, which allows you to receive funds whether or not you meet your goal. Indiegogo also now offers InDemand, which allows you to continue to raise funds after your campaign ends. Your page shows your campaign's past funding success, making it easy to continue raising funds and grow your community with little effort. You can add, remove, or modify perks—anytime—and continue raising funds for as long as you choose.

## START WITH A SOFT LAUNCH

Reach out to your close contacts first, and secure 30% of your funding goal before you start spreading word of your campaign. When you contact your wider audience—and the media—they'll see your campaign already has momentum and traction, making it more compelling. This is especially important when it comes to hardware campaigns, as consumers may not trust your product until they see that others already trust you.

## CREATE A PERK STRATEGY

You can be creative with how you offer your perks, to stimulate consumer engagement and interest. 'Early-bird perks' can make contributors feel special, for example. Select a number of items you'd like to offer by a specific date, and slightly reduce the price. (This tactic helps generate buzz, too—along with momentum/an early fund base.) Other ideas include: Exclusive discounts or 'secret' perks, which can be offered to a select group of prior contributors, via email.

## SHOW USE CASES

Remember your users—always. The complex technology behind your product might be amazing, but most people are more interested in how they'll relate to it. Be sure to highlight use cases for your product in descriptive text, and provide concrete examples of how it will make users' lives better. State the problem your product solves; then clearly show how it solves the problem.

## PREPARE IN ADVANCE

Think ahead to avoid snags. Determine if you have any production limits, for example, and be sure not to offer more when setting up your campaign. Familiarize yourself with PayPal, too, before launching, to streamline the process. If you plan to receive over 200 contributions or \$20,000, you'll need to provide PayPal with your Tax Identification Number, as they will require this information.

## ESTABLISH INTERNATIONAL SHIPPING

Remember: Indiegogo is an international platform, and people from around the globe will want your product. Determine international shipping costs in advance and familiarize yourself with potential customs issues. When you create a perk on Indiegogo, you can set the shipping costs and indicate whether a perk ships to one country, a handful of countries, one region, or anywhere in the world.

## CREATE A COMMUNICATION FRAMEWORK FOR CONTRIBUTORS

How you handle contributors' concerns will influence how your organization is perceived. Include a contact email address on your campaign page, and designate a team member to answer questions, manage contributor problems, and ensure that contributors are happy with your product. You'll also want to regularly update your followers. We've found that keeping contributors in the know once/week can increase funds raised by more than 200%. That said, don't overdo it; only post if there's news. And if there's a delay in perk production or fulfillment, let contributors know immediately to avoid confusion or resentment.

## PLAN YOUR OUTREACH

Monitor and maximize your social outreach by consistently tending your social pages. You'll also want to build a PR strategy, and create a list of media you'll want to contact and share prototypes. That said, don't forget email! We've found that emails have a 34% conversion rate for contributions. You can also build a targeted list.

# Additional Resources

## ONLINE EDUCATION

For more on raising funds with Indiegogo, check out our [educational videos](#) for strategic tips, best practices, and more.

## INDIEGOGO'S FIELD GUIDE

Whether you're running a campaign or simply interested in learning more about crowdfunding, [this field guide](#) is packed with tips, tricks, and resources to help make your ideas come to life.

## INDIEGOGO OFFICE HOURS

We're happy to answer your questions. Contact [technology@indiegogo.com](mailto:technology@indiegogo.com) and someone will respond with an available time to connect.

Additionally, if you're interested in contributing to future Handbooks, please contact us at [technology@indiegogo.com](mailto:technology@indiegogo.com). We'd love to hear from you!

\*\*The tips and information provided are meant as general lessons we've learned along the way. Before making any important decisions, you should independently conduct thorough research using additional resources. Indiegogo and its affiliates are not liable for any decisions you make in reliance on the information we have presented.



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