The Top 10 Reasons Why Startups Fail

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Adam J. Shayevitz M.B.A.

Supply Chain and Strategic Sourcing Consultant, A Force Multiplier For Engineering Teams. Optimizing Manufacturing Sources, Accelerating Time to…

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I attended a spirited debate by a panel of Robotics Industry Executives discussing the drivers and impediments to robotic startup success. The one thing they managed to agree on was the failure rate being 99%. They also mentioned the typical failure rate for hardware startups is 95%. Staggering failure rates. Hardware is hard, and if there were a difficulty spectrum, robotics would be in the diamond-hard range. Robotics development requires expertise and synergy across software, mechanical, electromechanical, electronics, and complex assembly. Fight the hardware startup apocalypse by avoiding the following top 10 devastating operational missteps.

1. Build It and They Will Come

This cliché business strategy often discredited yet still in use, is even more destructive to hardware startups. A plan based solely on generalities like cost, safety, and user-friendliness is doomed. For a startup to be successful, their product must be designed around a specific market need, to perform specific tasks reliably & consistently, and have a Total Cost of Ownership making it economically viable. The value proposition, ROI, and payback time should be so strong and well documented that a customer's decision to adopt the technology becomes a no-brainer. A chicken with its head cut off runs around but certainly doesn't know where it's going.

2. DFI instead of DFM

Designing for investors instead of designing for manufacturability is a surefire and common startup killer. When the pressure is on to develop a working model, engineering teams focus on prototype production processes, frantically search the web for parts, and utilize samples from unqualified suppliers. Selecting the optimal manufacturing partners takes a back seat to DFI, as if the two are mutually exclusive. The result is a functioning demonstration model that is un-manufacturable at projected volumes or targeted cost. In this scenario, stop the presses manufacturability issues are often not discovered until the production ramp deadlines loom. What a way to decelerate product time to market!

3. Design for Perfection

Design for Perfection is the deadliest rung in the ladder towards product launch delays and failures. Three commonly found ingredients in the DFP toxic stews are: engineering teams hyper-focusing exclusively on the exact specifications needed +- 0 tolerance,

designs pushing the limits of manufacturability, engineering solely based on prototyping process capability, ignorance of the need to collaborate early with volume suppliers, and no design of experiments to understand acceptable tolerance ranges. This mirror image and evil twin of Design for Investors will drive a stake through the heart of product realization.

3. Contract Manufacturer Selection

Conventional wisdom whispers to startups that top tier contract manufacturers provide unmatched purchasing power, engineering capability, and a halo of credibility. Substituting conventional wisdom for actual wisdom when selecting a contract manufacturer is a recipe for disaster. It's also not about being a big fish in a small pond. Think Goldilocks' not too hot, not too cold. A successful supplier selection process prioritizes alignment with the startups' markets, technology, timelines, and production volumes. A contract manufacturer's executive-level commitment to the startup's long-term potential, their belief in the business plan, and specific core competencies to support product realization must be the decision drivers. Mismatched contract manufacturers will eventually fire customers not meeting revenue targets in the expected time frame. What keeps you up at night? Scrambling to find a new CM while vital early adopter customers are expecting deliveries should be on the list. There's no checkbox on the unemployment insurance application for "fired by my contract manufacturer".

4. Engineering Attention Surplus Disorder

All hardware startups developing leading-edge technologies push the boundaries of process capabilities. The Slow-Mo Methodology for resolving manufacturability issues is to focus on one possible solution at a time. Seems to make sense on the surface. Don't spread the engineering team too thin, do one thing at a time, multi-tasking causes multi-inefficiencies, etc. In the meantime, competitors are catching up and obsolescing your new technology. The opportunity for first-mover advantage withers on the vine. To speedily solve the unsolvable requires following parallel path solution development until the unsolvable is solved. Try saying that ten times quickly! In this race, the hare not the tortoise wins.

5. The China Syndrome

There is a pervasive assumption among hardware startups that China is the lowest cost sourcing market. Add this to the fact that startups' engineering teams are often choosing suppliers without a total cost of ownership analysis and proper supplier qualification. Un-strategic sourcing leads to disastrous outcomes every time. Add up the freight, duty, insurance, shipping lead-time, quality problems, travel, language, and time zone challenges. Then consider unenforceable IP protection putting at risk a startups' most valuable asset. The FOB China cost typically needs to be at least 30% less just to break even. Under the parental blocking controls can you add Asia sourcing based websites?

6. Building Teams From the Top Down

The theory goes that experienced Vice Presidents are experts, will know how to build their organizations and choose the right job candidates. By each functional VP (Marketing, Engineering, Supply Chain, etc.) building their departments, the startup will accelerate organizational development. Problems occur when the VP's are expecting to manage teams and not perform day-to-day tasks. This can lead to politicking, pushing for resources to add unnecessary headcount, and stacking the deck with former associates who may not be the best match for the startup. If the startup needs some big, experienced guns, hire consultants. Prematurely adding an executive buffering layer also disconnects founders from their organizations. Top-heavy designs capsize ships.

8. Burn-Rate Baby Burn

When more attention is paid to the capital burn rate than how money is spent and for what results, the startup is going to quickly become immolated. Startups that are starved for engineering resources, but seem to have the funds to hire abundant administrative assistants and rent fancy offices, are headed for a fall. At the other extreme, raising gobs of money and throwing it at a problem, by reactively hiring a boatload of additional employees and rushing tooling for production without a design freeze, is just as damaging. If the startup doesn't have a high Engineer to Administrative Assistant ratio it's going to be a bonfire of the vanities once the investor gravy train stops.

9. Uberizing Supplier Development

Contract Manufacturers, broad line sales reps, design engineering firms, importers with offshore buying offices, and the proverbial friend of a friend's Uncle will all offer the budding startup their one-stop shopping, all-inclusive, we do it all global sourcing services. Identifying, qualifying and selecting optimal suppliers is highly complex and a critical success or failure factor. Abdicate Strategic Sourcing and the startup loses independence, control, transparency, cost savings, an opportunity to build relationships, sourcing markets knowledge, and valuable learning's from DFM supplier partnering. Like it or not supplier selection and relationship management are core to every hardware startups' success. If you are lacking an internal resource higher an expert consultant to set up direct relationships, not a middleman. Outsourcing sourcing is just one more leak in the dam holding back the flood of failure.

10. Board Member Fire Drills

Board members who view their role as judges at an inquisition cause resource-eating distractions. "Why aren't you talking to Big Cheese Contract Manufacturer?" Fire alarm pulled. "Why haven't you implemented an ERP system yet?" Fire Alarm pulled. "Your production costs are too high." Fire alarm pulled. "Why aren't you sourcing from China and Mexico?" Fire alarm pulled. "Why did you only send RFQ's to 5 sources instead of 10?" Fire alarm pulled. On and on and on, round and round goes the wheel and where it stops nobody knows. Each line of questioning requires pulling resources from developing a successful product. Too bad the laws about false alarms don't apply to the startups' board members.

Conclusion

The high failure rate of hardware startups is not inevitable and the challenges not insurmountable. The definition of insanity applies here. Leave Groundhogs Day to the groundhogs and stop the insanity by avoiding the top ten failure drivers. Startup founders knowing what they don't know, and selectively turning a deaf ear to conventional wisdom, are the most effective countermeasures.