

Lessons Learned from Successful (and Failed) Robotics Projects Dorota Shortell, CEO, <u>Simplexity Product Development</u>

Process

Conducted primary source interviews with established companies, current start-ups, past start-ups, and investors, including:

- Matt Frost, Sr. Robotics Hardware Manager at Amazon Robotics
- Christopher Carlson, EVP Research, Corporate Development, and Intuitive Ventures at Intuitive
- Jonathan Hurst, Co-Founder and Chief Robot Officer at Agility Robotics
- Philipp Herget, Founder / CTO at Dusty Robotics
- Kimberley Losey, former CEO at Rapid Robotics
- Aadeel Akhtar, CEO / Founder at PSYONIC
- Duncan Orrell-Jones, Co-founder and CEO at Camino Robotics
- Clayton Wood, former CEO & Board Director at Picnic Works
- Ray Browning, Co-Founder and CEO of Biomotum
- George Linscott, former CEO / President of Visicon Technologies
- David Chessler, Managing Director at Chessler Holdings
- Liav Muler, Co-Founder & COO at Civ Robotics
- And others who wished to remain anonymous

5 Categories Emerged with Key Lessons in Success & Failure

- 1. Product Market Fit
- 2. Funding
- 3. Development Process
- 4. Team
- 5. Scaling

Product Market Fit

"Understand the most important customer problems first and build new technology second. Building a new robot should only come after you have conviction that it will solve a problem worth solving. Otherwise, you risk building something interesting, but ultimately useless."

Christopher Carlson, Intuitive

Product Market Fit

- Build your company around what people will buy
- Use a fast feedback cycle: ideate, validate with customer feedback, iterate on the design
- Secure a beachhead client & co-develop with them
- Don't underestimate the challenges of technology adoption
- Simplify to <u>only critical</u> product features



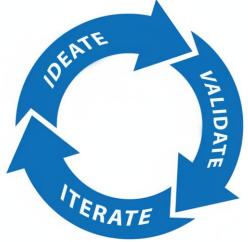


Photo credit: Dusty Robotics

Funding

"It's tough to work with the entrepreneur that knows everything. Easy to invest if they have an open mindset and know where they could use help"

David Chessler, Chessler Holdings

Funding

- It always costs more and takes longer than you think
- Develop a sustainable business model
- Choose investors wisely
- Try creative marketing to conserve cash
- Paint the future rather than explaining your product

What Investors Look for:

- 1. Is it disruptive?
- 2. What is the market size of the opportunity?
- 3. Can we (the investors) add value?
- 4. Is the team there to execute?
- 5. How long will it take to get to implementation?

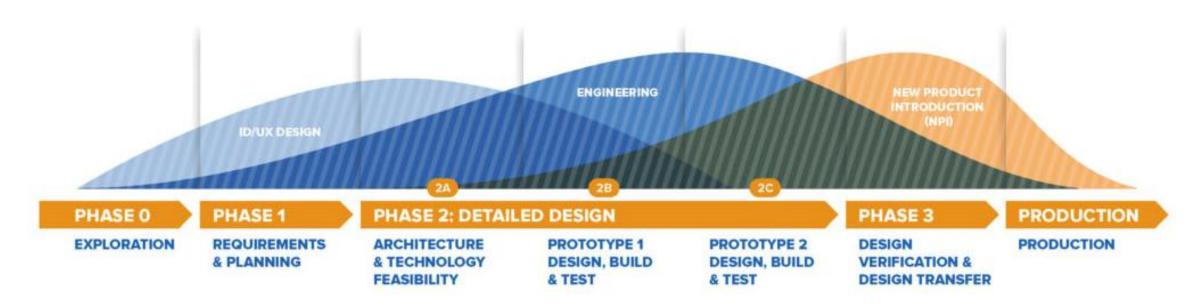
Development Process

"Early on it's hard to get meaningful customer feedback about your idea without building it. Make something quick & dirty to learn from the customer as early as possible. However, if you build something too prototype-y at a later stage, the customer may reject it."

Philipp Herget, Dusty Robotics

Development Process

- Use off-the-shelf hardware and open-source software for your MVP
- Embrace requirements, Gantt charts, and product process rigor at the right stage
- Create testbeds to test key functionality in parallel
- Use digital twins and simulations
- Don't start the FDA process too soon for regulated products



Source: https://www.simplexitypd.com/resources/product-development-process/

Team

"Teamwork and leadership are complex character traits that are often referenced by many people but are widely ill defined despite the mountain of books and available classes."

- George Linscott, formerly of Visicon Technologies

Team

- Founders, stay humble
- Seek a strong technical co-founder with hardware development experience
- Hire the right people
- Develop your leadership & management skills
- Seek multiple mentors

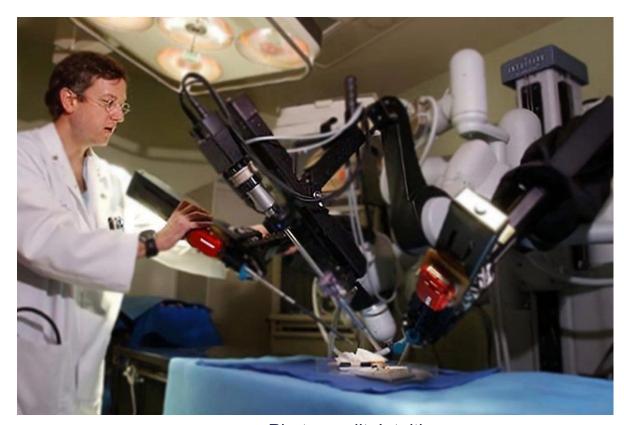


Photo credit: Intuitive

Scaling

"Scaling is the hardest part, not engineering."

Matt Frost, Amazon Robotics

Scaling

- It's easier to go from zero to prototype than from prototype to production
- Plan for & test your product
- Semi-automate for production
- Tariffs & multi-sourcing
- Seek the flywheel effect

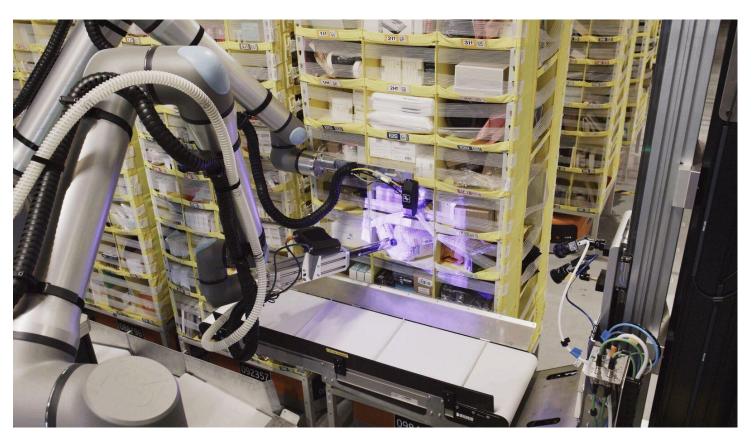


Photo credit: Amazon Robotics

"We do it not because it is easy, but because we thought it would be easy"

shared by Jonathan Hurst from Agility Robotics



Photo credit: Agility Robotics

Additional Resources

Visit the **RoboBusiness Resource Page** to learn more simplexitypd.com/robobusiness25/

You'll discover links to the following resources & more:

- Sustainable Product Framework by Christopher Carlson
- Developing a Product Requirements Document
- Slicing Pie: The Book
- Think Like an Investor: How to Secure Robotics Venture Funding

