

mHUB

Product Development Curriculum Intro to Project Management January 25, 2019

Jim Shaw

Fellow mHUB Member

mHUB
965 WEST CHICAGO AVENUE
CHICAGO, IL 60642



Jim Shaw:

mHUB Mechanical Engineer & Business Owner

NORTHROP GRUMMAN

Kodak



Rolling Meadows, IL

Wheeling, IL

Lake Zurich, IL

mHUB

2002-2007

Missile
Defense

2007-2011

Commercial
Products

2011-2013

Automotive
Suspensions

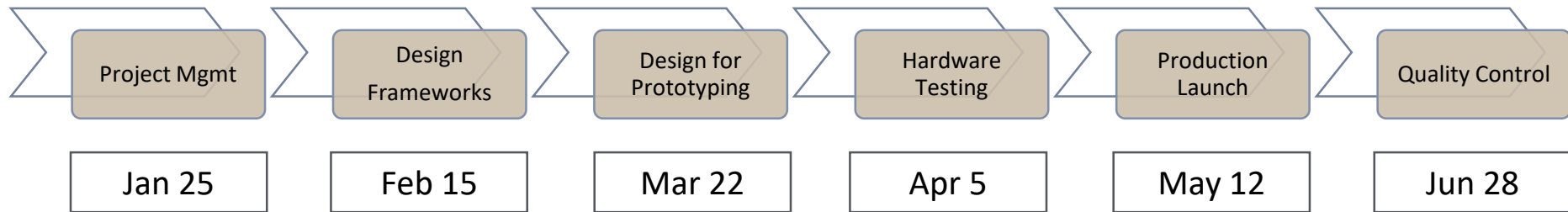
2013-now

CAD/CAE
Training





mHUB Programming: Product Development



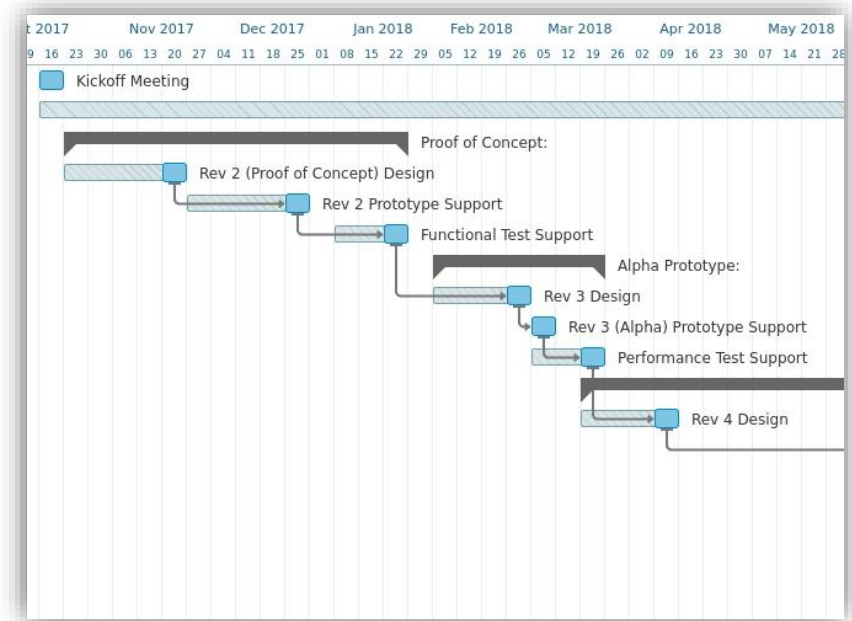
- ▶ Monthly Classes that cover the Product Development Process
- ▶ Introductory (January – June)
 - ▶ Align with the stages of your product
 - ▶ Correspond to funding milestones
- ▶ Advanced (July – December)
 - ▶ Deeper Dives into the core topics
 - ▶ Guest visits from Real Experts

Introduction to MHUB Project Management



► Discuss Frameworks for “New Product Development”

- Create a Process
- Develop a Timeline
- Estimate the Work Effort
- Build Team
- Estimate Costs
- Report Metrics
- Managing Change



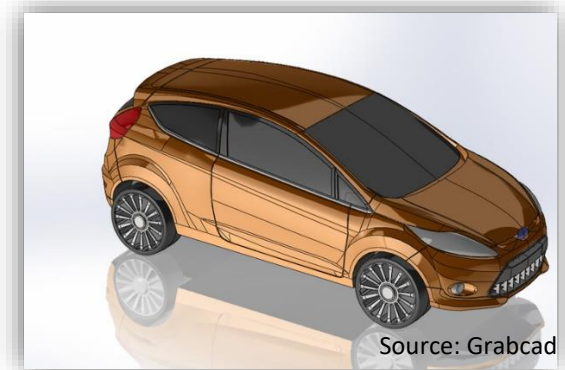


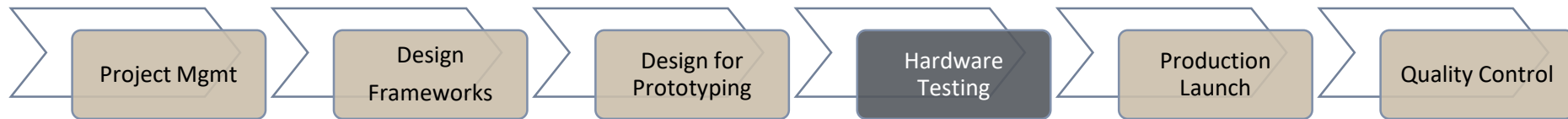
- ▶ Developing your Product Concept
 - ▶ Who is your customer?
 - ▶ What is their problem?
 - ▶ How is your product going to solve it?
- ▶ Converting Solutions to Features
 - ▶ Creating a Feature List!
- ▶ Researching Technology
- ▶ Define: Minimum Viable Product
- ▶ Communicating your Ideas





- ▶ Bringing your Concepts to Life
 - ▶ Utilizing CAD
- ▶ Iterative Design-to-Prototype Process
- ▶ List of processes/limitations
- ▶ Accuracy vs. Speed
- ▶ Resources
 - ▶ Here at mHUB
 - ▶ In the community
 - ▶ General Public





▶ Preparing for Test

- ▶ Creating a Test Plan
- ▶ Logistics
- ▶ Budgeting

▶ Execution/Oversight

▶ Risk Management

▶ Data Acquisition/Analysis

▶ Virtual Test/Simulation





Production Launch

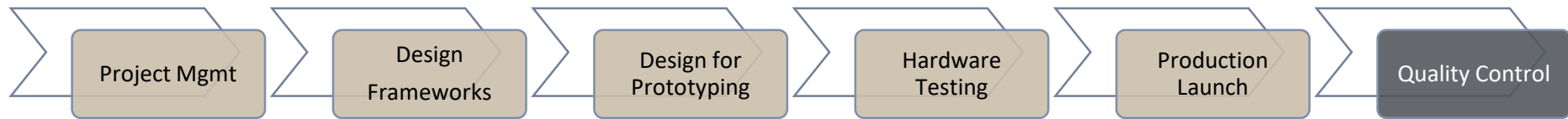


- ▶ Preparing for Launch
 - ▶ Creating a BOM
 - ▶ Releasing Eng. Drawings
 - ▶ Estimating Costs
- ▶ Overview of Technologies
- ▶ Supply Chain Development
- ▶ Inventory Management





Production Launch

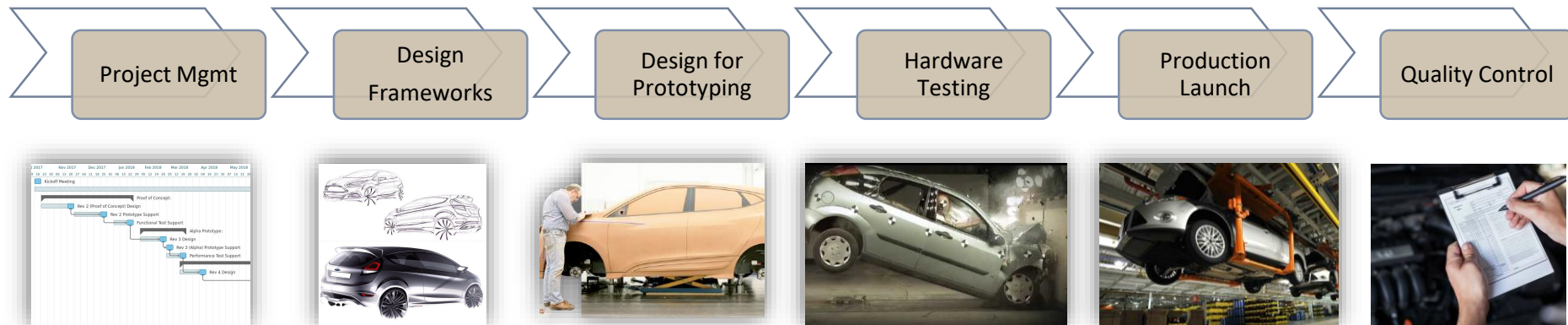


- ▶ Quality Control
- ▶ Definition
 - ▶ Tolerances
 - ▶ Variability
- ▶ Frameworks/Strategies
 - ▶ ISO
 - ▶ Lean
 - ▶ Six Sigma





mHUB Programming: Fundamental Curriculum

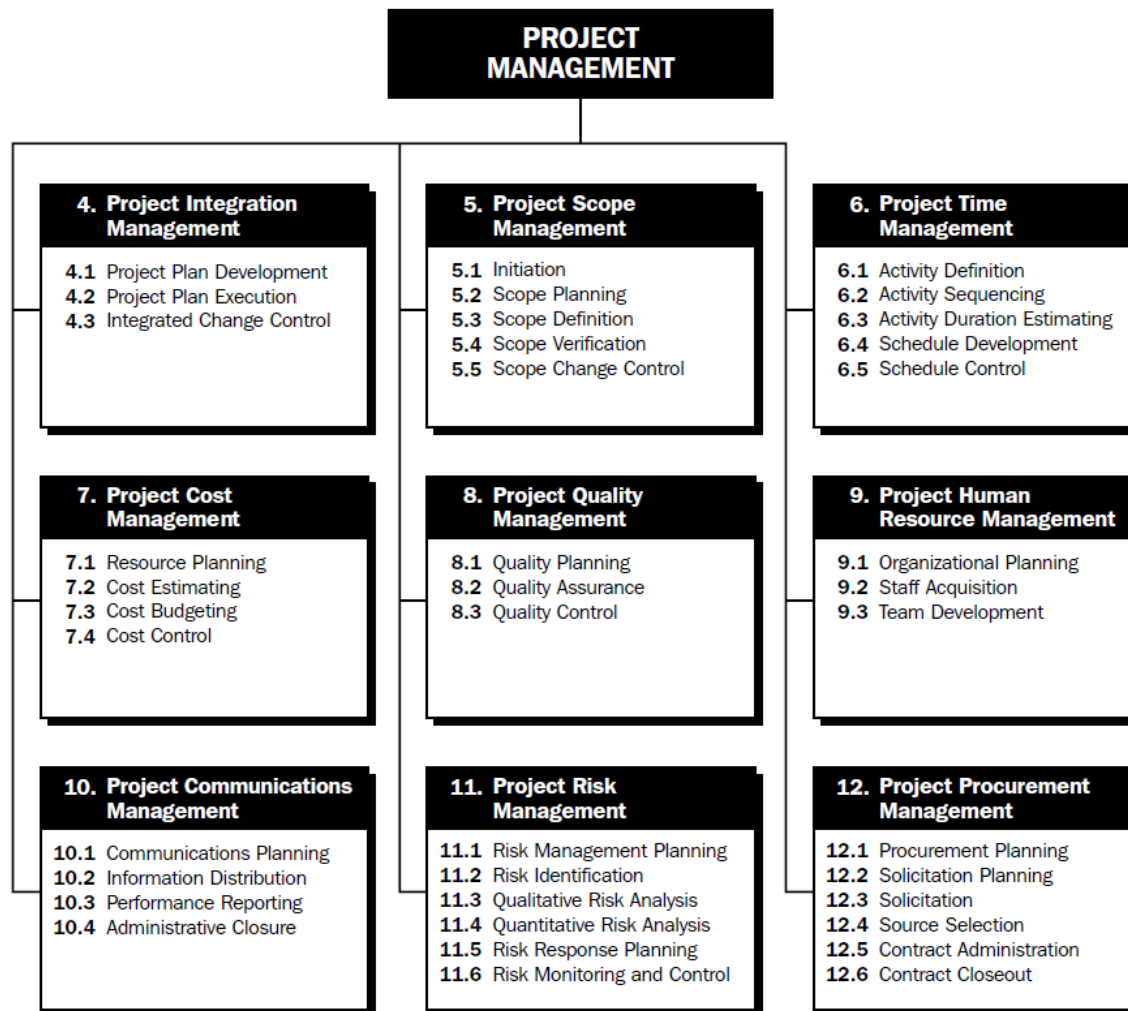


- ▶ **Curriculum Program Goals:**
 - ▶ Education on the Big Picture
 - ▶ Highlighting Pitfalls to Avoid
 - ▶ Reinforcing the Available Tools
 - ▶ Sharing Additional Resources
 - ▶ Facilitating Success
- ▶ Catered to active mHUB members, but everybody is welcome.



Project Management

The Big Picture





Project Management

MHUB Two Major Frameworks

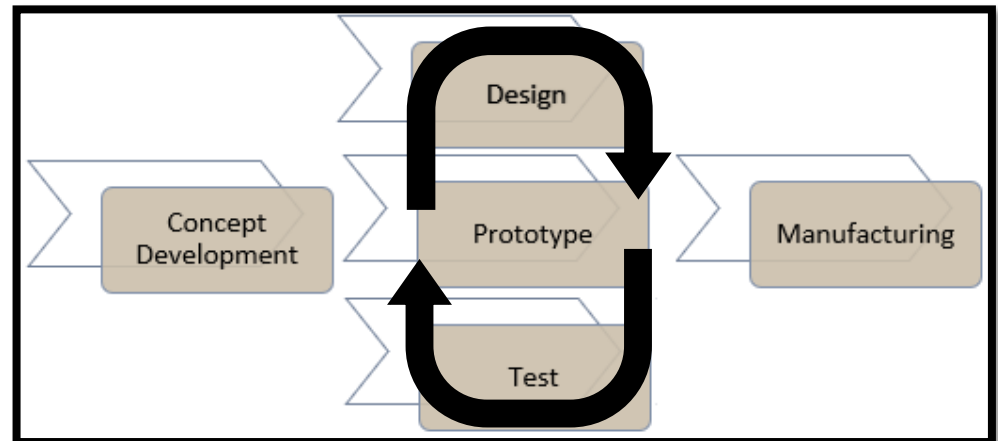
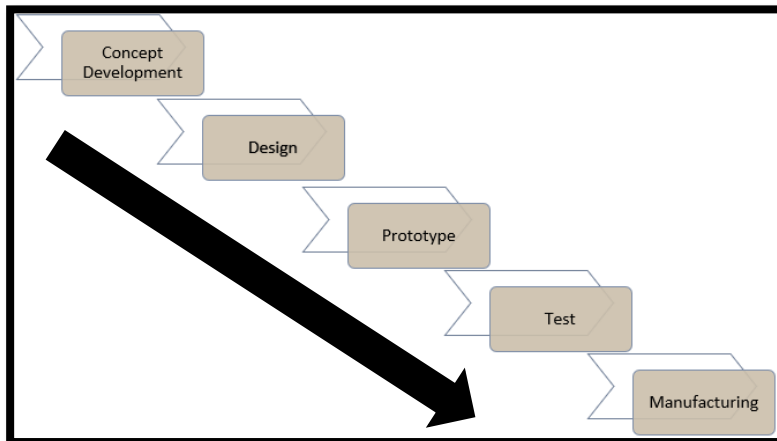


► Phase-Gate (Waterfall)

- Serial Process
- Clearly defined, linear steps
- Designed for Hardware Manufacturing

► Agile

- Parallel/Circular Process
- Easily Adapted
- Designed for Software Development

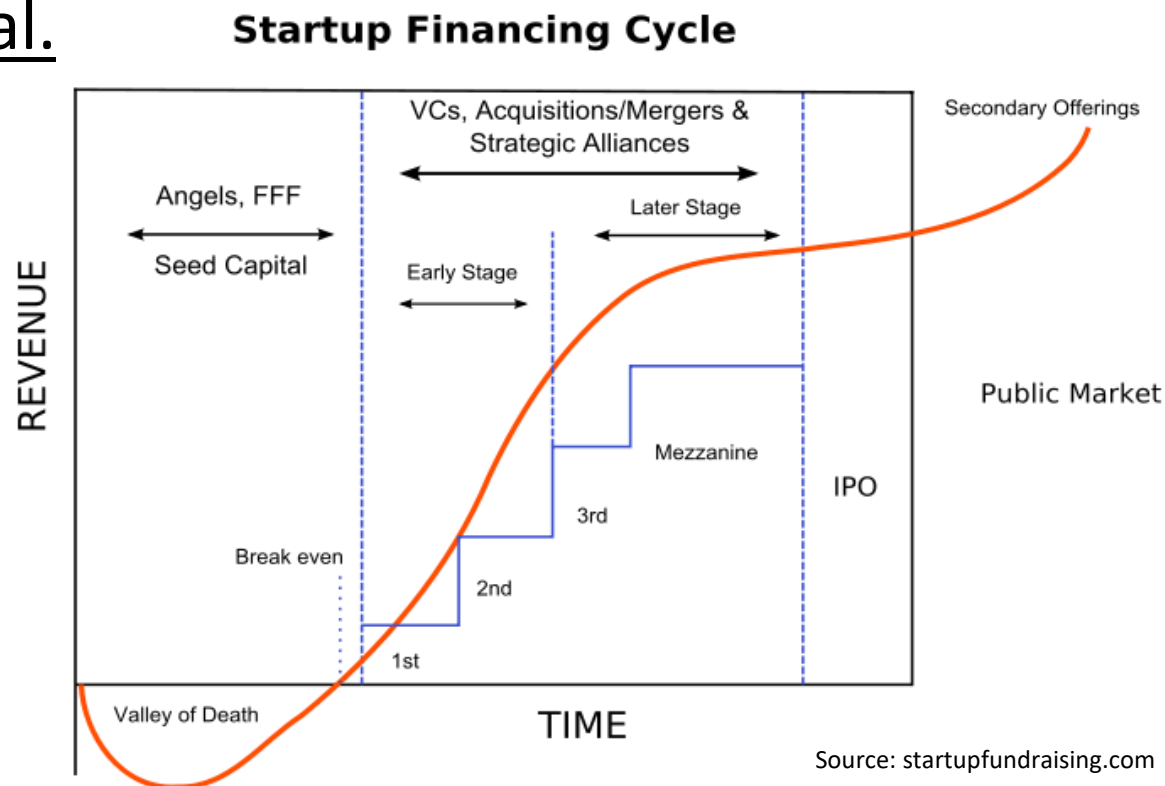




Project Management Alignment with Fundraising



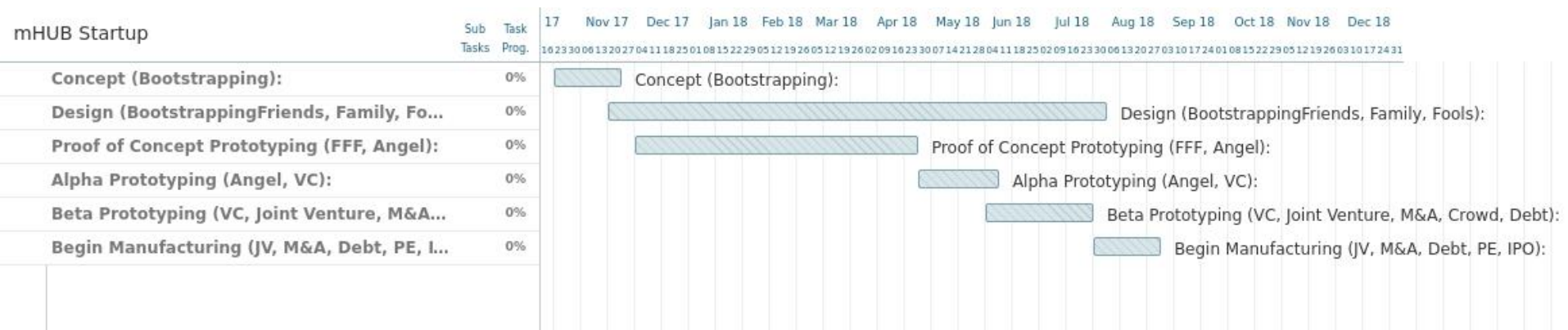
- ▶ There is a typical process for fundraising
- ▶ It is atypical to raise \$\$ out of order
- ▶ This process is serial.





► Chronological List of Tasks

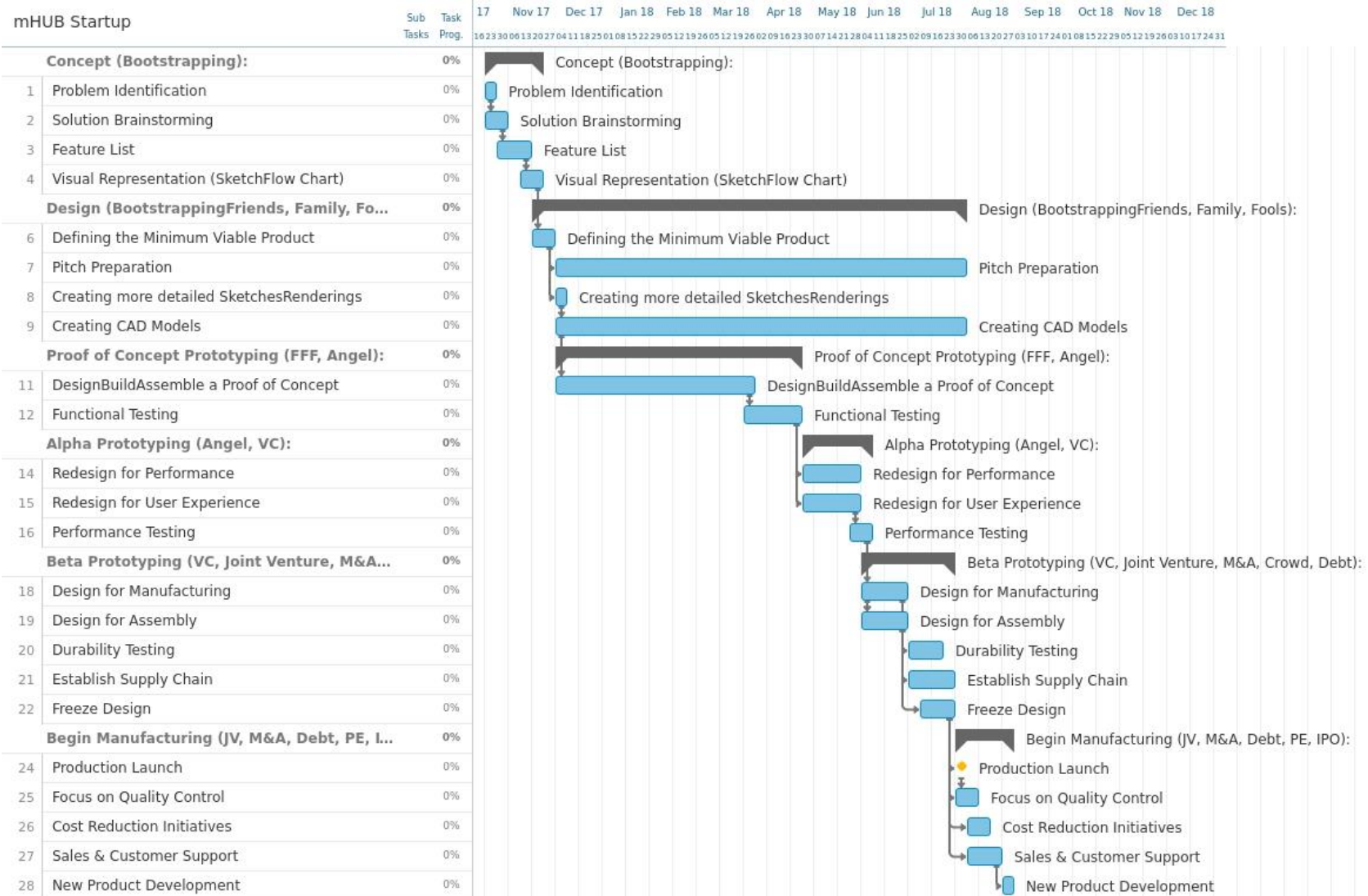
- ▶ Big Picture
- ▶ Anticipate the Next Step
- ▶ Reduces Risk





MHUB

Project Management Gantt Charts

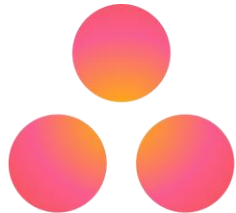




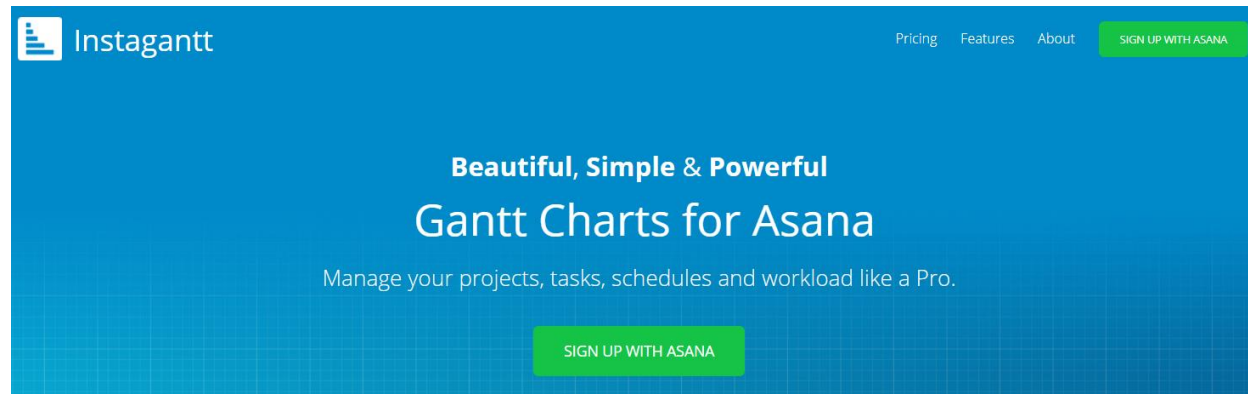
Project Management Online Tools



- ▶ Project Management in Asana
- ▶ Link it to Instagantt
- ▶ Create a Gantt chart for your project
 - ▶ Start with your next major milestone
 - ▶ Work Backwards
 - ▶ Add a Buffer



asana














Project Management Available Tools @ mHUB



- ▶ Find a Subject Matter Expert
 - ▶ Put them on your BoD!
- ▶ mHUB Mentorship Program
- ▶ Look for Experts:
 - ▶ Design For Manufacturing
 - ▶ Product Design/Engineering

▶ https://member.mhubchicago.com/directory/listing?category_no=1331

 <p>Darcy Bonner MHUB MENTORSHIP PROGRAM Manager, Strategy, Innovation, and M&A, Schneider Electric North America Book a Time VIEW</p>	 <p>Deborah Brown MHUB MENTORSHIP PROGRAM Book a Time VIEW</p>	 <p>Eli Share MHUB MENTORSHIP PROGRAM Mobile and IoT Lead, Robert Bosch Tool Corporation NA Book a Time VIEW</p>
 <p>Emil Koulov MHUB MENTORSHIP PROGRAM Director, GoAnalytix (Go-to-Market, Business Product Design) WEB www.linkedin.com/in/emilkoulov Book a Time VIEW</p>	 <p>Frank Scopacasa MHUB MENTORSHIP PROGRAM Wireless Business Development Lead, Keysight Technologies Book a Time VIEW</p>	 <p>Jeff Meunier MHUB MENTORSHIP PROGRAM Global Director, Software and Electrical Engineerin, SRAM, LLC Book a Time VIEW</p>
 <p>Karen Kerr MHUB MENTORSHIP</p>	 <p>Leslie McKinney MHUB MENTORSHIP</p>	 <p>Robert Keller MHUB MENTORSHIP</p>

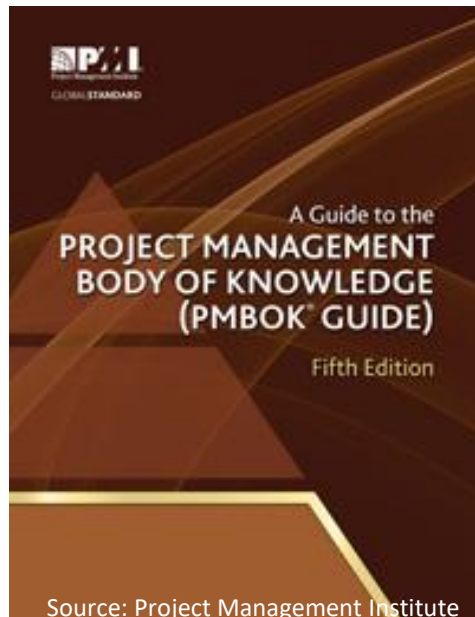


Project Management Additional Resources



▶ Hardware PM:

- ▶ Project Management Institute (PMI)
- ▶ Offers PMP® Certification



Source: Project Management Institute

▶ Software PM:

- ▶ Scrum Alliance
- ▶ Certified ScrumMaster® (CSM)





Project Management Thank You!



▶ Next Class

- ▶ Design Frameworks (Systems Engineering & Design Thinking)
- ▶ February 15th

▶ Stay in Touch

- ▶ Stop by my desk
- ▶ Connect online

