

2.009 Product engineering processes

**“nothing is particularly hard
if you divide it into small jobs”**

Henry Ford



2.009 Product engineering processes

today

logistics and pointers mockup review

Mockup review

7:15-9:30 PM, Thursday October 20

key criteria

- degree of resolution on critical issues/risks

- appropriateness of mockups/models/simulations

- quality of the design concept

two components

- presentation to the entire class (3 min/section in 35-225, no models or Qs)

- testing and questions in the Pappalardo lab (four 7 minute rotations)

- 2 minute video demonstration

detailed schedule online, linked to home page

Mockup review

issues to cover

what is the concept?

clear overall definition/vision

scoping of major subsystems/technical elements

clear use life-cycle, human interface

Mockup review

issues to cover

key needs and preliminary contract

clear core product proposition

logical mapping between needs, product attributes, and specs

basis for estimated purchase price

Needs and attributes

mockup review: preliminary product contract

Product Description: Portable electric device for lifting automobiles.

Intended Customers: Backyard mechanics.

Market: Automotive accessories.

Customer Need	Product Attribute(s)	Engineering Specification(s)
Can be easily transported in and out of a house.	Weight	Total weight less than 30 lbs.
Is easily stored in the home and office.	Size	Less than 14" x 14" x 14" in smallest configuration.
Can handle most repair situations.	Lifting capability	more than 15 cycles at 1" per second per charge for a 3000 lb. automobile.
Can be used on many uneven surfaces.	Stability	3000 lb vehicle raised 16 inches will not tip under 400 lb side loading. Base self-levels up to 1 inch discontinuities and 2% slopes in pavement.

Mockup review

issues to cover

key risks

major issues identified

feasibility demonstrated or disproven

lessons learned and identification of unresolved challenges

Mockup review presentation

pointers

don't try to sell — communicate

design the presentation to be engaging

use 3 minutes to summarize the concept, contract, risks, findings

in the lab, let the content speak — few words

plan the content for your short mockup demonstration video

remember the longer-term goal — design a good new product

Mockup review

preparation

special locations

Orange A (Phil: sink in back of lab)

Purple B (Chair force one: ramp, north Pappalardo foyer)

Green A (Scuiter, south Pappalardo foyer)

process in the lab (somebody to take notes)

Mockup review

preparation

before the review

Product names: today 5 PM

2:30-5:30 PM Thursday (schedule online)

load images onto presentation computer (Pappalardo)

4:45-6:45 PM: prepare team area

5:30-6:30 PM: AV test in 35-225

7:15 PM: presentations starts in 35-225