Curiosity is as much a parent of attention as attention is of memory

Richard Whately (logician, 1787-1863)

2.009 Product Engineering Processes
2.009 Product engineering processes
today in class

ideas presentation
estimation from Friday
more estimation
Mini-quiz from last Wednesday

question i)

list a mental attitude that *blocks* creativity?

**attitude: a settled way of thinking**

using the left side of the brain in not an attitude!
Mini-quiz from Wednesday

question ii)

list two factors that correlate with *unsuccessful* product development teams

correlate: **have a mutual relationship or connection**

vs. opinions (laziness, disorganization, sexual tension)
truisms (bad teamwork, weak group)
Mini-quiz from Wednesday

question ii)

list two factors that correlate with unsuccessful product development teams
Class (next) Monday
3-ideas presentation
a product opportunity

idea + customer + market + feasibility
3-ideas presentation

Monday

Section A
- 3 ideas
- 1 lab instructor
- 10-12 students

Section B
- 3 ideas
- 4-6 mentors

one team

1 area

three ideas presentation

technical review
final selection
mockup review

1 lab instructor
10-12 students

1 team
alpha prototype
assembly drawing
3-ideas presentation
tips and overview

Review structure

each section presents
2 minutes to present 3 product ideas
equal amounts of time on each idea

scenario?
strictly held to two minutes
3-ideas presentation

tips and overview

use descriptive sketches
3-ideas presentation

tips and overview

visuals

- sketch
- not solid model
- hand done
- digital
- not clip art
- original

package dropoff

WHAT convenient home deliveries
HOW local, secure package drop-off
WHO online shoppers in apartments consulting with UPS / FedEx
3-ideas presentation

tips and overview

poster format

each idea should be prepared on a piece of foam core, laid out in vertical orientation
maximum 1” thick
foam core is in your team’s area in lab (24x36)
the poster should convey
  your section name and the idea name
  the idea’s embodiment/purpose
  the targeted customer
  the anticipated market
  its feasibility/doability

readable from 50-80 feet = clean and flows
supporting citations, estimations on back
3-ideas presentation

tips and overview

setup

make sure your posters and presenters arrive no later than 12:55 PM

posters will be placed at the front of the classroom

presentations will commence at 1:05 PM
3-ideas presentation
tips and overview

presentation tips

do not read the poster! Augment the visual information and look at the audience (but acknowledge poster)
a story is more memorable than a list

do not read cue cards... practice in advance

do not emulate a 'used-car salesperson’ or TV infomercial

be honest and informative

humor is great!

... but be careful

more tips from communication instructors online
3-ideas presentation
plotting and practice

scheduling tools will be on website Wednesday afternoon

reserve a time for plotting/mounting help on Friday or Sunday
reserve a time to practice with communication instructors

use your MIT username to log in
choose reset password for first use
used throughout term (scheduling, notebooks)

we will collect pdf at time of plotting
please do not plot Monday morning!

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3-ideas presentation

tips and overview

feedback logistics

idea/opportunity area for your team posted 5 PM Monday

instructors (from other teams) will provide poster feedback overnight (before Tuesday lab)

feedback from your own team instructors during lab
2.009 Product engineering processes today in class

idea presentation

estimation from Friday more estimation
Friday
usable energy in a D cell
47 Joules of hype

offered no answer, or did not have units of energy
avoid non-standard units: hours of flashlight

barrel of oil?
42 US gallons
159 l

47 Joules of hype
Battery powered, hand foam cutter

estimation exercise

power?

2 W/cm²

how am I supposed to know that?

do you have an experience to draw upon?

look for the next right answer!
Battery powered, hand foam cutter estimation exercise

- Power:
  - ~2 W/cm²
  - ~1.5-2 W/cm²
  - ~2-3 W/cm²
  - ~3 W/cm²

Do you have experience to draw upon?
Battery powered, hand foam cutter results

“anything is possible”
“safety. Not even close. Don’t mess with safety”
about 60% not sure if feasible

numbers (1W to 1MW)
model (20 %)
power? (50 %)

~2-4 W/cm²
Design challenge!

name *and section*, no computers or mobile
Design challenge!

A Land Far Far Away
Design challenge!

name and section, no computers or mobile

you were a toad!
name *and section*, no computers or mobile

Design challenge!

no, a frog actually
Design challenge!

you were turned into a frog by an clumsy wizard
name *and section*, no computers or mobile

Design challenge!

with a potion

but the spell can be undone
Design challenge!

name *and section*, no computers or mobile

an 11 key puzzle will unlock the potion
name *and section*, no computers or mobile

**Design challenge!**

inconveniently

the potion is at the centre of a pond
name *and section*, no computers or mobile

**Design challenge!**

and the water is evil

if you touch it you will stay a frog **FOREVER**
Design challenge!

name and section, no computers or mobile

you and your frog friends CAN cross on lily pads
Design challenge!

name and section, no computers or mobile

but the pads are too far apart for you to hop at least 10 feet
name and section, no computers or mobile

Design challenge!

and the keys are big!
Your challenge!

name *and section*, no computers or mobile

design a fun and unique human-powered

2+ person device to traverse from pad to pad

without touching the water

to the centre of the pond

carrying the keys, one per trip

10 minutes
Estimation challenge!

name *and section*, no computers or mobile devices

estimate the maximum distance between pads that you can traverse using your device

5 minutes
and finally...

reminders/coming up

be prepared for your lab

will send email with plotter signup/schedule

foam core in lab but you need to obtain other materials

financial officer training this Thursday, 4 PM

design magic tips: Thursday 7:15-8 PM

Friday is career fair, no class. Illustrator tutorial 5 PM.