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

Richard Whately (logician, 1787-1863)
a quick, random mini quiz
now!

how many fasteners are used to attach your chair’s arm onto its frame?
Curiosity is as much a parent of attention as attention is of memory

Richard Whately (logician, 1787-1863)

2.009 Product Engineering Processes
Mini-quiz from last Wednesday

question i)

list a mental attitude that \textit{blocks} creativity?

\textbf{attitude: a settled way of thinking}

using the left side of the brain in not an attitude!

- not an attitude
- only one answer
- it's not logical
- follow the rules
- be practical
- play is frivolous
- that's not my area
- don't be foolish
- avoid ambiguity
- to err is wrong
- I'm not creative
Mini-quiz from Wednesday
question ii)

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

have a mutual relationship or connection

vs. opinions (laziness, disorganization)

truisms (bad teamwork, weak group)
Mini-quiz from Wednesday
question ii)

list two factors that correlate with *unsuccessful* product development teams
2.009 Product engineering processes today in class

ideas presentation estimation from Friday more ideation and estimation
3-ideas presentation
next Monday

Three ideas presentation
September 24, during class
3 ideas per section

A
B

3 more ideas per section
Class next Monday
3-ideas presentation
a product opportunity

idea + customer need + market + feasibility
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* consistent home deliveries
*HOW* local, secure package drop-off
*WHO* online shoppers in apartments consulting with UPS / FedEx
3-ideas presentation

tips and overview

It's a bit CHEESY!
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 pappalardo lab (24x36)
the poster should convey
  - your section name and the idea name
  - a vision for the need/idea’s embodiment
  - 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

poster format

are captions needed? what’s a meaningful market? what’s feasible?

readable from 50-80 feet = clean and flows
3-ideas presentation
plotting and practice

scheduling tools linked on home page

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

use your MIT username to log in
sent email with password
used throughout term (scheduling, notebooks)

we will collect pdf (and poster)
at the time of plotting

no google slides please
please do not plot Monday morning!
3-ideas presentation

tips and overview

setup

make sure your presenters arrive at 1 PM sharp

posters will be 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
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

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

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Watch the Recyclo-Sink elevator speech (.mov, 6.4 MB)

Poster design and communication comments

Concept comments (idea, customer, market, feasibility, cost)
2.009 Product engineering processes
today in class

idea presentation
estimation from Friday
more estimation
Friday

usable energy in a D cell

“enough"

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

about right

Joules
Battery powered, hand foam cutter
estimation exercise
Battery powered, hand foam cutter
is it feasible? Key question
Battery powered, hand foam cutter
is it feasible? Analogous model

how am I supposed to know that?

do you have an experience to draw upon?

look for the next right answer!

power?

2 W/cm²
Battery powered, hand foam cutter is it feasible? Analogous model

do you have experience to draw upon?

- 2 W/cm²
- 1.5-2 W/cm²
- 2-3 W/cm²
- 3 W/cm²
Battery powered, hand foam cutter

is it feasible?

“anything is possible :)
~50% not sure if feasible
Estimation power benchmarks
name *and section*, no computers or mobile

Design challenge!
idea generation and estimation practice
Design challenge!
idea generation and estimation practice

name and section, no computers or mobile

silly sir safety’s sudden departure...
Design challenge!
idea generation and estimation practice

name and section, no computers or mobile

...developed david danger’s disastrous domination!!
name *and section*, no computers or mobile

**Design challenge!**

idea generation and estimation practice

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*Caution

critters
currently in
captivity!!!*
name *and section*, no computers or mobile

Design challenge!
idea generation and estimation practice

You must free them!
name and section, no computers or mobile

Design challenge!
idea generation and estimation practice
Design challenge!
idea generation and estimation practice

name *and section*, no computers or mobile

...maneuver through mayhem missiles...
name *and section*, no computers or mobile

**Design challenge!**

idea generation and estimation practice

...while successfully shipping safety circle shooters...
name *and section*, no computers or mobile

**Design challenge!**
idea generation and estimation practice

...to crack the caution critter’s containment center!
name *and section*, no computers or mobile

**Your challenge!**

- design a fun, danger-evading human-powered vehicle that can house at least 2 occupants
- to drive down the danger dump deflect mayhem missiles
- and successfully ship safety sircle shooters
- retrieve the dangles!

10 minutes 7 + 3
name *and section*, no computers or mobile

Estimation challenge!

estimate your device’s power at 5 mph

4 minutes
and finally…

reminders/coming up

be prepared for your lab, please read notes in advance

plotter signup/schedule is on the home page

foam core in lab but you need to obtain other materials

financial officer training this Thursday, noon

yoda 101: moving to next week!

illustrator tutorial: Friday 4-5 PM, workshop 5-6 PM