2.009 Product Engineering Processes

One hour of preparation for each minute of presentation

Wayne Burgraff, 18th century American philosopher
2.009 Product Engineering Processes

Presentation structure the story

Graphic layout design make it clear

But First…

Reminders

Practice sessions this Friday afternoon. Schedule online.

Props for final presentation:
  Yellow: bathroom
  Red: stone wall
  Blue: sidewalk
But First…

Mini quiz!

How does the cost of building your alpha prototype relate to the product’s manufacturing cost?

What does net present value mean?

What does return on investment mean?

Estimate your personal, real, financial discount rate for one year. (include your rationale for the estimate)

List three key take-away points for a business case.
But First...
How does the cost of building your alpha prototype relate to the product’s manufacturing cost?
Presentation Design
A product design problem

Determine needs and set key specifications
Generate presentation concepts (story)
Detailed layout design (graphic design)
Presentation Structure

Telling a story using visual aids

Overview
Introduction
Body (in chapters!)
Conclusion
No one can remember more than three points

Philip Crosby, Pioneer of quality management

Early on …What is your product’s core benefit?

What is your presentation’s take home message?
Presentation Structure

Typical story telling tools...

Prototype
Physical props
Music/sounds
Lighting
Computer animations
Video (recorded or live)
Drawings/boards
Team members and audience
Presentation Structure

Develop the story: Idea phase

Thumbnail sketches of key ‘highlight frames’ (sketch model phase)
Presentation Structure

Thumbnails: movies, animation, user experience
Presentation Structure

Concept development phase

After establishing ‘key frames’...
Develop storyboards (mockup phase)
Presentation Structure

Storyboards: movies, animation, user experience
Presentation Structure

Storyboards: movies, animation, user experience
Presentation Structure

Use storyboards to...

Craft your story (not a mystery)
Make sure the ‘key frames’ will work as a whole
Make sure that main points dominate (product)
Balance between importance, complexity, understandability
Resolve presentation pace, flow and shifts
Keep audience focused
Test presentation design (out loud and with others)

Save time
2.009 Product Engineering Processes

Presentation design

Developing a presentation structure

Graphic layout design

Use of color

Common mistakes
less
is more
Graphical Noise

Example

Click to add title

Click to add sub-title
Graphical Noise

Example
Graphical Noise

Example

Click to add title

Click to add sub-title
Graphical Noise
Example
Graphic Layout Design

Detail design phase (prototype)

Systematic partitioning (or blocking out)

Not just for your slides! … your presentation presence … your booth
Graphic Layout Design

Use grid structure consistently

- Power Lunch Protocol
- Taboo Topics
  - Politics
  - Weather
  - Rain forests
- Agreeing To Agree
  - Shared experiences
  - Mutual friends
  - Common concerns
  - Appetite
- Success, Yes
  - Chart showing Chinese, Italian, French trends over Jan., Feb., March, April
Graphic Layout Design

Devices

Rules

Table Manners

- Unfolding the napkin
- Use of fingers
- Toothpick tips
- Elbow etiquette
Graphic Layout Design

Devices

Borders

Delivering the Punch

- Energy
- Intelligence
- Style
- Tact

Enthusiasm definitely out.
Graphic Layout Design

Devices

Boxes

Delivering the Punch

- Energy
- Intelligence
- Style
- Tact

Leave enthusiasm out.
Graphic Layout Design

Devices

Open spaces

**With the Mints**

A silver platter
Clear the palate
Sign the contract

**With the Mints**

A silver platter
Clear the palate
Sign the contract

Gestalt grouping laws, product form lecture
Graphic Layout Design

Devices

Less is more!

The Payoff

Picking up the tab

- Slip out your plastic
- Don’t whistle under your breath

Confusing? Why?
Graphic Layout Design
Alignment

Fast Track Appetizers
- Escargot $7.50
- Shrimp Cocktail $8.00
- Tempura $6.00

Fast Track Entrees
- Salmon Steak $19.95
- Stuffed Trout $18.00
- Filet Mignon $21.95

Fast Track Desserts
- French Silk Pie $3.95
- Amaretto Cheese Cake $4.00
- Chocolate Raspberry Torte $4.50
Dynamic Dressing
*Fit to be tied...*

Mini bar stripe is a dressier, more refined-looking tie. A perfect accessory for that important luncheon or for impressing new clients.
Graphic Layout Design

Type (serif and sans serif)

Guidelines are very useful and convenient design aids. However, in the DFX paradigm interactions between different life-cycle objectives become critically important (Gatenby and Foo 1990). Thus, in our opinion, selection of appropriate design guidelines can become extremely context sensitive and complex. Blindly following guidelines may lead to inferior designs because more appropriate general solutions are overlooked.

Guidelines are very useful and convenient design aids. However, in the DFX paradigm interactions between different life-cycle objectives become critically important (Gatenby and Foo 1990). Thus, in our opinion, selection of appropriate design guidelines can become extremely context sensitive and complex. Blindly following guidelines may lead to inferior designs because more appropriate general solutions are overlooked.
I cdnuolt blveiee taht I cluod aulaclty uesdnatnrd waht I was rdanieg
The phaonmneal pweor of the hmuan mnid! Aoccdrnig to a rscheearch at
Cmabrigde Uinervtisy, it deosn't mttarer inwaht oredr the ltteers in a wrod are,
the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae.
The rset can be a taotl mses and you can sitll raed it wouthit a porbelm. Tihs
is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod
as a wlohe.

I CDNUOLT BLVEIEE TAHT I CLUOD AULACLTY UESDNATNRD WAHT I
WAS RDANIEG THE PHAONMNEAL PWEOR OF THE HMUAN MNID!
AOCCDRNIG TO A RSCHEEARCH AT CMABRIGDE UINERVTISY, IT
DEOSN'T MTTAER INWAHT OREDR THE LTTEERS IN A WROD ARE, THE
OLNY IPRMOATNT TIHNG IS TAHT THE FRIST AND LSAT LTTEER BE IN
THE RGHIT PCLAE. THE RSET CAN BE A TAOTL MSES AND YOU CAN
SITLLL RAED IT WOUTHIT A PORBELM. TIHS IS BCUSEAE THE HUAMN
MNID DEOS NOT RAED ERVEY LTETER BY ISTLEF, BUT THE WROD AS A
WLOHE.
Graphic Layout Design

Text line length

a long line is difficult to read, so try to keep it short
Title 1.5X bullet text

Bullet text size based on number of rows

Title counts for 2 rows

Use the most crowded page as standard

This layout based on 10 line maximum

Typical maximum size 20% (60pt)

Typical minimum size 3% (18 pt)

Bottom border is larger than top

bla, bla ...
Use of Color

Coding a presentation

Consistent function associated with a specific color

Differentiate or relate items
Use of Color
Differentiate, prioritize

Stripes
awning stripes
bar stripes
pinstripes
Common Mistakes
Type distortion
Common Mistakes

Too many elements
Common Mistakes

Competition with background

This is very important!
Common Mistakes

Unjust justification

The Ancient Mariner

It is an ancient mariner and he stoppeth one of three. ‘By thy long grey beard and glittering eye, Now wherefore stopp’st thou me?

The Ancient Mariner

It is an ancient mariner
And he stoppeth one of three
‘By thy long grey beard
and glittering eye,
Now wherefore stopp’st thou me?
Common Mistakes
Capital punishment
Common Mistakes
Clip art cliche