Designing and Delivering Technical Presentations

Eric W. Anderson
CHEG 237W
September 11, 2006

Overview

• Motivation
• The Design Idea
• Organization & Content
• Support Materials
• Delivery
• CHEG 237W talks
Presentations Matter

• Engineering is not a solo activity
• You want to influence people to
  – Fund your project
  – Hire you
  – Allow your plant expansion
• A presentation is a special opportunity
  where you have someone’s time and
  attention, and can get feedback or inspire
  action.

Designing Technical Presentations

• A talk is an engineered object, something
  designed and built to achieve a goal

• Identify goals

• Design within constraints
Communication Acts

- Communication Acts have 3 parts
  1. Sender
  2. Message
  3. Audience

- Tendency is to focus only on message, rather than on what you want to achieve or what your audience wants to learn

Goals of a Talk

- Start with your audience:
  - Who are they? (not all the same!)
  - What do they know already?
  - What are their expectations?
  - What are their goals/interests?
Identify Your Message

• “If you don’t know where you want to go, you probably aren’t going to get there.”
• Before starting, clearly identify what you intend to communicate.

Goals of a Talk

• For a teaching presentation, know:
  – What specific facts you want to impart.
  – What you want the audience to be able to do at the end.
• For a meeting, identify:
  – What facts you want to teach or learn.
  – What decisions you want made.
• What action do you want the audience to take?
Constraints

• Designing a chemical plant
  – Money
  – Space
  – Feedstock availability
  – Utilities
  – Technology/IP
  – Environmental protection

Constraints

• What might they be?
  – Time
  – Space/Facilities
  – Environment (noise, distractions, side events)
  – Media (Technology)
  – Money
Organization & Content

• Content first:
  – What story do you want to tell?
    • Why should the audience care?
    • How does this fit in with what they already know?
    • What did you do?
    • What does it all mean?
    • What do you want them to do now?
  – What specific things support that story?

Structure of a Talk

• Introduction (Motivation, BG, Roadmap)
• Body
  – Topic 1 (Why, How, What)
  – Topic 2, 3, …n
• End Matter
  – Recap/conclusions
  – What next? (action recommendations)
  – Acknowledgements
Choose Structure that Fits Goals

• Sometimes you go
  – Conclusions (= Motivation)
  – Support data
  – How data were acquired

• May give two separate talks in series

• Leave opportunity for feedback

Pick the Components of your Talk

• When building a refinery, you don’t stick in a compressor just because you happen to have one lying around.

• Each part of your presentation has to have a purpose:
  – it has to relate to your overall message
  – it has to be relevant for your audience

• For each goal or sub-goal, think about what is the best tool for that job
Support Materials

• Images on a Screen (text, equations, or figures)
  – PowerPoint
  – Other CG images/video
  – Transparencies
  – 35mm slides
• Handouts
• 3-D objects

Slide Design

• Large Clear Fonts
• Use Backgrounds and FX sparingly
• Use Graphics and Figures
Fonts and Sizes (Arial 44)

• Arial 32
  – Arial 28
    • 24 point
      – Down to 20
      – Sixteen Point – Much too Small!
  • More 28-point fonts
    – CASTELLAR (ALL CAPS)
    – Blackadder
    – Times New Roman

Figures that Work
Legible Labels!

Mix Graphics and Text

- Many Layouts are available
- Beware Making Either Words or Pictures too small
- Hacksaw here a cartoon, not a technical figure
Color grabs attention

- This talk has so far been almost B&W
- A Color photo or graphic really draws the eyes.

Good use of call-outs and color

Excel

Aspen Plus toolbar in Excel

Connect Current Cell to a Defined Variable

Import Variables

Export Variable

=FLOW/DENS

=(-10^-9)*B6^2
Delivering a Presentation

- Voice
- Body
- Attitude
Voice

- Volume not too soft or TOO LOUD
- Enunciation
- Pace
- Emphasis

Body

- Position
- Movement
- Eyes
- Hands
- Fidgeting
- Dress
Attitude

• Project Energy and Enthusiasm.
• If you don’t care about the topic, the audience won’t either.
• Project a positive attitude.
• The audience needs you to get them jazzed up enough to pay attention.

Tools of the Trade

• Notes
• Microphones
• Pointing Devices
  – On-screen mouse
  – Pointer
  – Laser pointer
  – Hand!
• Timers
Tips & Tricks

• For Nervousness
  – Practice
  – Get familiar with location
  – Breathe
• Sleep, Eat, Relax
  – It is more important to be thinking clearly than it is to have every possible slide prepared

Tips & Tricks

• Prepare well – there is no substitute for knowing your stuff

• Arrive early
  – Check out room & equipment
  – Meet people
  – Good things happen!
CHEG237W Talks

- Very tight time constraints, esp. short talk
- Must motivate, guide (1 slide)
- Must include description of equipment
- Tell what your group did
- Tell what it means

Talk Evaluations

- Everyone evaluates every talk
- Faculty, TA, & Self Evals collected and used for grades
- Peer evaluations given directly to each student w/o faculty review
  - Helpful comments more imp than numbers
  - Read each evaluation – that is one point of view
Grading Basis

- Organization of talk
- Quality of materials
- Delivery