Tips on Giving Technical Presentations

Adapted from Bing Wang and John Chandy’s Senior Design Notes
Introduction

• Communication is key to
  – Conveying the importance of your ideas
    • Nobody cares if they can’t understand what you are talking about
  – Manage your project
  – Getting your project funded
  – Sell the merits of your project

• Communication skills required
  – Oral presentations
  – Written proposals
Outline

- Oral Presentations
  - Know your audience
  - Organization and Focus
  - Talk to the audience (and not to the slides)
  - Time Management
Oral Presentation: Know your audience

• Clearly identify the audience’s depth of knowledge
  – Do not derive semiconductor physics to investment bankers
  – Do show fundamental understanding of engineering to whoever is giving the grades!

• Clearly identify the audience’s interests
  – Investment Bankers want to make $$
  – Your professors want to make sure you understand engineering
  – Everyone likes to be entertained!
Know your audience

• Do research on your audience.
• What does the audience want to hear??
• Venture Capitalists?
  – How you’re going to make them money
• Naval Research Managers?
  – How you’re going to improve their ships’ capability to communicate
Presentation: know your audience

• Conference presentation
  – Most likely will be aware of the general area of your paper
  – Can skip most background material
  – Focus on the key contributions of your paper
    • How does it differ from existing approaches?
    • Quantify any improvements in your method
    • Is it a revolutionary or evolutionary idea?
  – Identify holes in your paper, because someone in the audience is going to ask you about it
    • The paper reviews will usually identify these deficiencies
Presentation: know your audience

• Funding Proposals
  – Government agencies
    • Need to convince agency your ideas advance science/engineering
  – Venture Capital firms are reviewed by firm’s partners
    • Judge on strength of team members, market appetite for the ideas, and quality of ideas
    • Interested in making money.
    • Need to convince VC that the idea will make money
  – Internal project proposals
    • Proposal needs to make a business case
    • Does new project/product align with current business?
    • Do the projected revenues justify the associated costs of project development?
Presentation: know your audience

• Teaching
  – Students need to know the details
  – Don’t skip over the mechanics of a problem solution
  – Lots of examples
  – Each lecture should have a central focus point
  – Make sure that you allow and encourage questions
  – Interact with students - ask the students questions
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FOCUS

• What is the point? Why am I here?
  – oral presentations

• For long talk, can lose audience easy
  – Avoid lengthy equations
  – Unavoidable in most ECE lectures
  – A picture is worth a thousand words
  – NOT, a picture with a thousand words
  – Too Many Details for most talks

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**Focus**

- Remind audience of important points.
- Detailed Technical figures may be unavoidable in engineering presentations.
- If detailed picture is absolutely necessary, emphasize important details **visually**.

### Conditions Important!

**T=25°C**

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<th>Typ</th>
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<td>1.6 mA</td>
<td>mA</td>
<td>0.4</td>
<td>1.5</td>
<td>mA</td>
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</table>
Organization: Provide outline of talk

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Organization

- Easy for audience to lose big picture
- Get lost in details
- Useful tip: redisplay the talk outline for each topic
- Highlight present topic
- Remind audience the organization of the talk
Organization: Basic Structure

• Start with Introduction
  – Motivations
  – Why is this interesting
• Provide outline of the talk
  – Can be redisplayed to show topic progression
• Background material as needed
• Your new ideas
  – New and better ways to do …….ship2ship communications, make $$$$, lose weight, etc
• Defend your ideas
  – Examples are helpful
• Conclusion
Organization

• Powerpoint Rules
  – Keep it simple
    • Cut clutter
    • At the most two font families
    • No more than one or two charts or figures per slide
  – 666 rule
    • 6 words per bullet
    • 6 bullets per page
    • 6 word slides in a row
  – Be consistent
Organization

- Powerpoint Sins (J. Sommerville)
  - Slide Transitions and Sound Effects
  - Standard clipart
  - Presentation templates
  - Text-Heavy slides
  - Text and images are too small
  - Reading the slides
  - Faith in technology
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Talk to the audience

• Obtain and maintain interest
  – Make eye contact with people in different parts of the room
  – Use examples
    • “We will build an optical communication network using dense wavelength division multiplexing with polarization division multiplexing to transmit Terabit bandwidth telecommunication signals” BORING!
    • “Doesn’t it drive you nuts when it takes you 20 minutes to download the DOOM3 trial version?”
    • “We will build a network that will download it in 10 seconds using optical fiber!”
Presentation Style

• If you don’t seem excited about the topic, nobody else will
• Don’t mumble - be clear and enunciate
• Be active
• Encourage questions
  – Keeps the audience involved
Humor

• Be appropriate!

• Invited talks, lectures, okay to use some jokes.

• People are more awake if they’re laughing

• Proposal talks, i.e. asking for money in a competitive bid, be more serious.

• Humor maybe misconstrued as not taking the task seriously
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Time Management

- First rule of presentations
  - KNOW HOW MUCH TIME YOU HAVE!!!
  - Nothing irritates an audience more than a presentation that runs long - especially if it's boring
- Keep a watch or clock easily visible
- Know ahead of time which slides you can skip if you are running long
  - Skip implementation details
  - Show results - that's what impresses people
- Good rule of thumb - 1 to 2 minutes per slide
Time Management

• Best way to judge time is to practice ahead of time
• Do a run through by yourself
• Practice as if you were doing the actual presentation
  – You can catch places where you may not be expressing the material clearly enough
  – Use the notes feature to help you
• Practice enough times so that it is natural
  – You should be able to know what the next slide is so you can transition naturally
Conclusion

- Oral presentations;
  - know your audience,
  - organize and focus, and
  - talk to your audience, and
  - make sure you don’t run long.