
Preparing and Delivering Oral Presentations

The Cain Project in Engineering and
Professional Communication

ENGINEERING SERIES



Analyze Your Audience

- What will motivate them to listen to you?
 - Who are the decision makers (your primary audience)?
- What do they need to do?
- What must they understand to take action?
 - How much do they already know?
 - What are their uncertainties?
- What will make your information useful?



Discover a Common Purpose

- What situation or context makes the topic important to you and the audience?
- What qualifications or experience makes you valuable to the audience?
- What benefits will they receive?
- Express your common purpose succinctly



Signal Accessibility

- Accessibility means
 - How the talk is organized
 - Where different issues and questions will be discussed
 - Where the speaker is at any given moment in the overall talk
 - Repeating key terms and patterns (parallelism)
- Accessibility convinces listeners of the speaker's responsiveness to their needs



Accessibility Signals

Set up audience expectations with your title, statement of purpose, transition statements, and visual aids.

Title: "A Cost-Effective Two-Stage Flood Control Program for Bexar County"

Common Purpose Statement: A two-stage program will minimize land acquisition costs and spread construction expenses.

Transition Statements:

Stage One: Establish infiltration zones and central drainage paths at pre-development costs to reduce future expense.

Stage Two: To delay costs, construct substations and storm sewers only as expansions require them.



Engineering Audiences Expect

A TWO-PART STRUCTURE

Summary

Briefly: Situation, problem/task, importance, your responsibilities, your actions, conclusions, recommendations

Discussion

Organized to answer questions in the order audience's field usually uses: Explains background, analyzes problem, proposes solutions, expresses conclusion in detail (perhaps with implementation details, etc.)



Organize Discussions for Accessibility

- Problem-solution organization
 - Describe the problem using engineering models and terms
 - Analyze evidence with engineering methods
 - Describe your proposed solution
 - Explain how your solution will fix the problem
- Topic or questions organization
 - group information into different topic or question categories
- Chronological organization
 - Follow a time sequence (mostly progress reports)



Ensure Understandability

- What **MUST** the audience understand to accept your main point?
- What would be **GOOD** for them to know?
- What is merely **NICE** to know?
- What theories, models, or reasons typically support this kind of engineering argument?
- What diagrams, charts, or other visuals would show important relationships?



Making sense for listeners

- Audience comprehends main claim through logic, emotion
 - Logic puts facts in a context of values
 - What the issue is or means
 - What should be done
- The degree of detail you need depends on whether the audience **already** accepts your definition of the issue
 - For example, that energy costs should be minimized



Help the Audience Understand

- State the claim
- Organize materials to answer questions in sequence important to audience
- Allocate evidence
- Decide where to place warrants - before or after evidence?
- Choose where to respond to others
- Place background, definitions, and concepts strategically.



Expand Listeners' Knowledge

- Present from general to specific
- Build on what they know
- Don't rehearse your own work process; instead, support your conclusions
- Use diagrams, graphs, and visuals
- Keep visuals appropriate and simple
- Label key elements
- Tell audience what they're seeing



What Details Make Your Argument Understandable?

Types of support material

- Your analysis of statistics
- Study findings of other researchers
- Examples
- Expert testimony

Criteria for evaluating sources

- Relevant to primary questions?
- Recent?
- Credible?
- Biased?

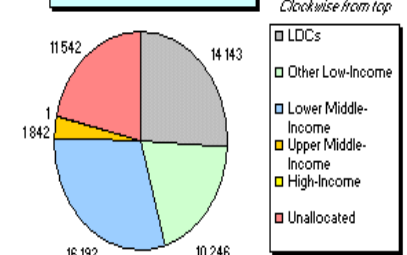
TOTAL DAC COUNTRIES

| Net ODA | 2002 | 2003 | Change 2002/03 |
|------------------------------|--------|--------|----------------|
| Current (USD m) | 58 292 | 69 029 | 18.4% |
| Constant (2002 USD m) | 58 292 | 61 062 | 4.8% |
| ODA/GNI | 0.23% | 0.25% | |
| Bilateral share | 70% | 72% | |
| Net Official Aid (OA) | | | |
| Current (USD m) | 6 317 | 7 106 | 12.5% |

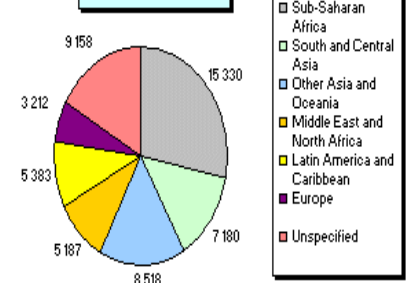
| Top Ten Recipients of gross ODA/OA (USD million) | |
|--|-------|
| 1 Congo, Dem. Rep. | 2 760 |
| 2 China | 2 028 |
| 3 India | 1 680 |
| 4 Indonesia | 1 596 |
| 5 Pakistan | 1 420 |
| 6 Serbia & Montenegro | 1 387 |
| 7 Egypt | 1 268 |
| 8 Mozambique | 1 232 |
| 9 Afghanistan | 1 110 |
| 10 Russia (OA) | 1 108 |

Gross Bilateral ODA, 2002-03 average, unless otherwise shown

By Income Group (USD m)



By Region (USD m)



By Sector



Offer Familiar Images First

- Offer figure or image familiar to audience first
- Technical image next
- Water treatment example for government officials

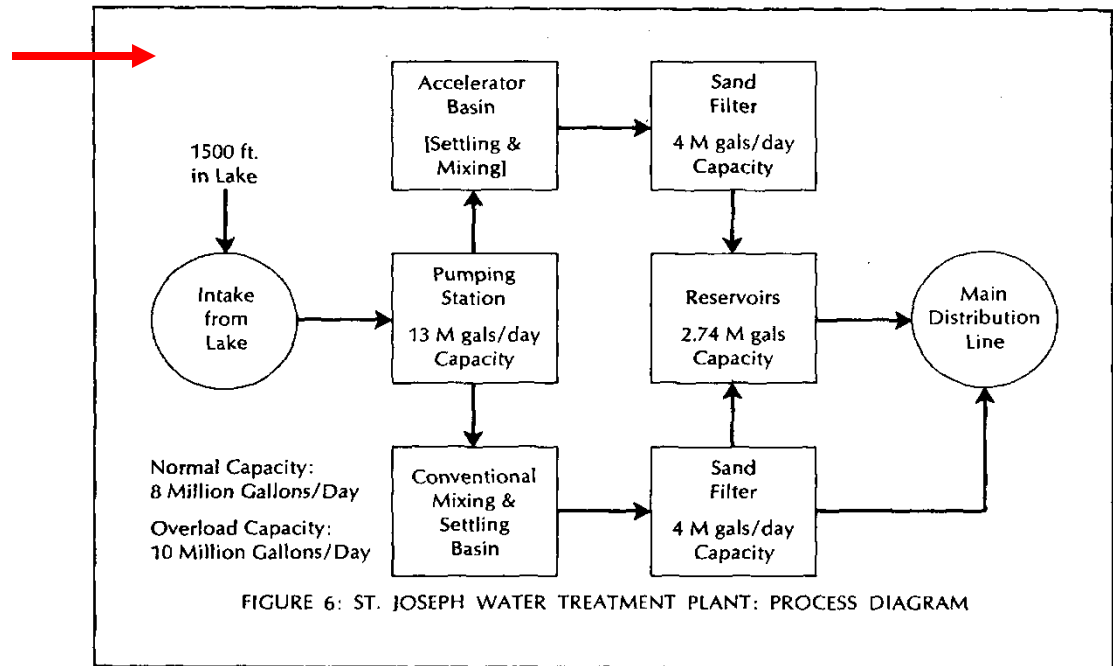


Figure 9–10. A simplified flow diagram appropriate for nontechnical audiences (as it appears in the discussion).

Show Technical Images Next

- Build toward technical understanding
- Sequence: Photo / diagram/ schematic/ cross-sections/other technical drawings
- Water treatment example →

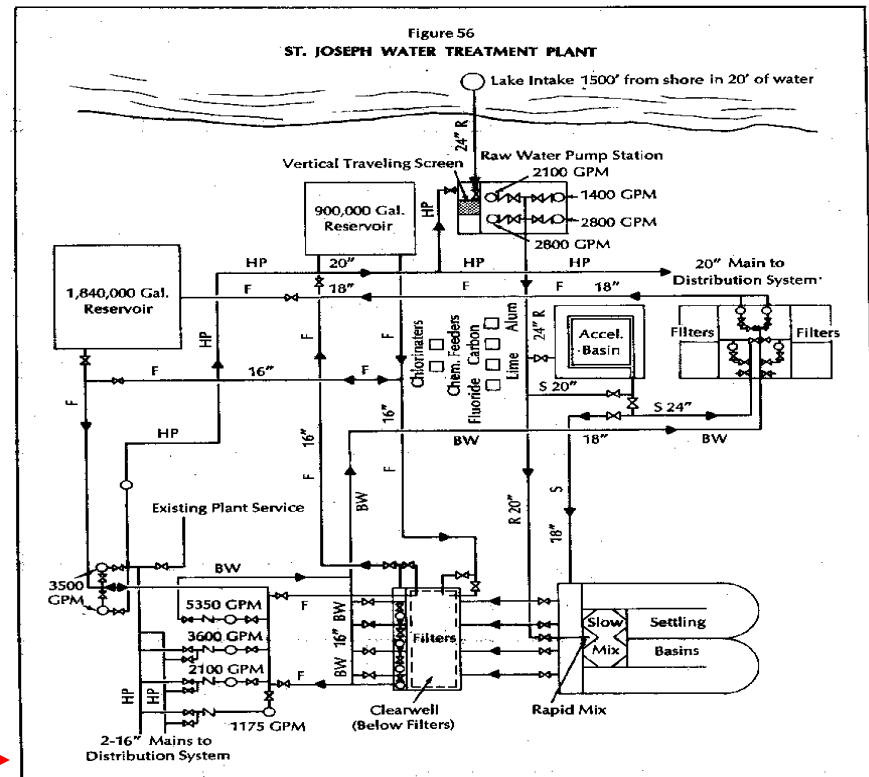


Figure 9-11. A flow diagram appropriate for technical audiences (as it appears in the appendix).



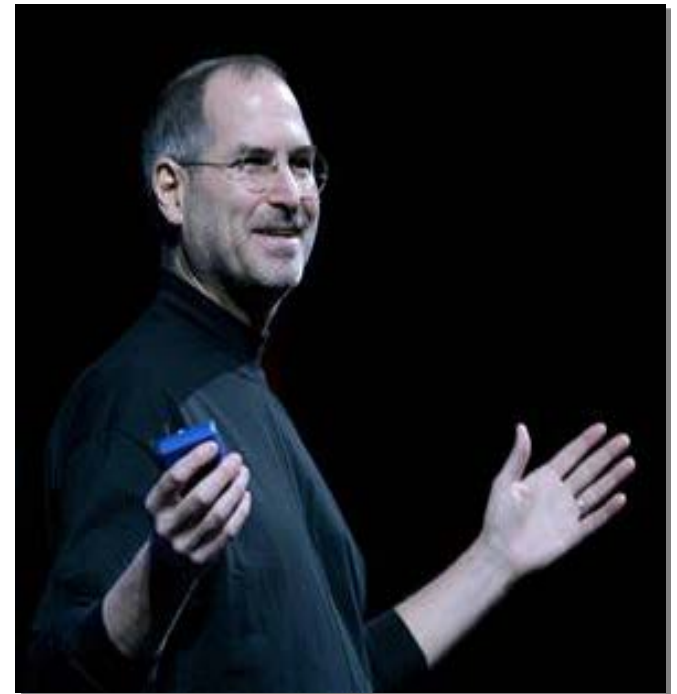
“In Conclusion”: Pull It All Together

- Signal the end
- Summarize points
- Remind audience of compelling support
- Tie professional and motivating reasons to points.
- Deliver your memorized final sentence looking at the audience (no lame “I guess that’s all.”)



Delivery: Making All Aspects Work Together

- Keep eye contact
 - Don't read from notes or screen
 - Begin sentences looking at audience
- Reinforce ideas with gestures
- Reduce visual interference
 - Don't put hands in pockets
 - Don't play with pen, clothes, laser pointer, etc.
- Maintain an open stance



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Set Relationships, Guide Understanding with Your Intro

- Establish good will
- Tell why they should be interested
- Explain the situation
- Define the problem and your claim
- Preview points for accessibility



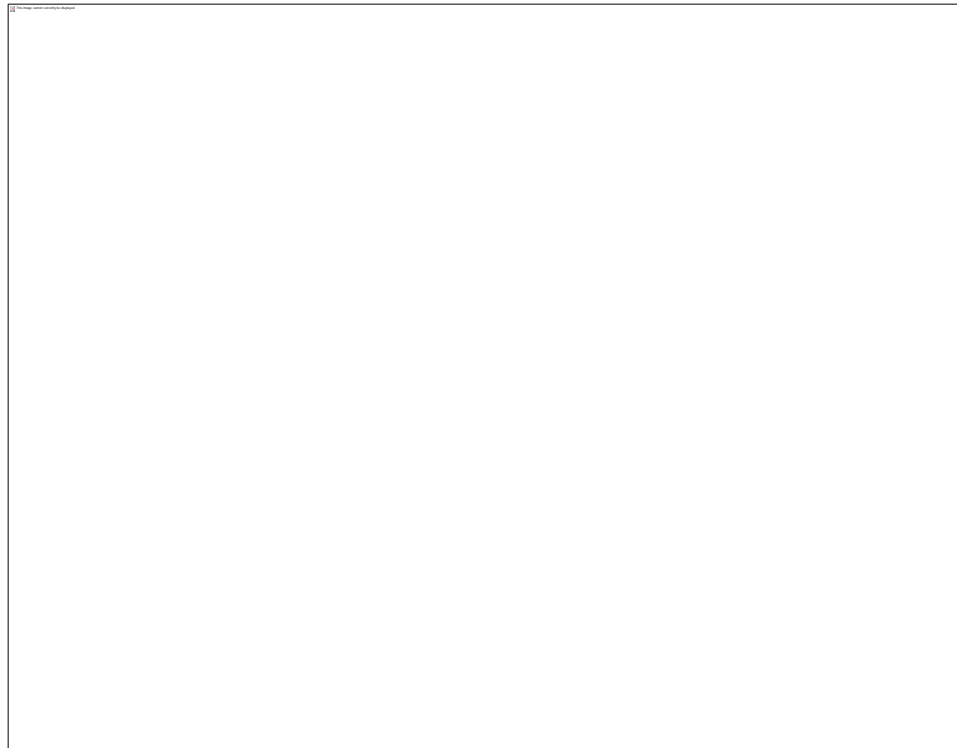
*Tell your audience what
you will talk about.*



What do you think of this speaker's enthusiasm? Why?



What kind of point is signaled by this speaker's gesture?



What is this speaker missing?



Your Body “Talks,” Too

- Use effective body language
- Communicate high energy with your posture
- Stand firm; don’t sway
- Move purposefully; don’t pace up and down



Bad posture



Good posture



Try “Reading” Nonverbal Cues



ASCE Student Chapter
photo, Rose Hulman
Institute of Technology

<http://www.rose-hulman.edu/news/articles/2005ASCEbest.htm>

Look at each face, then consider the arms and hands.
Are the faces and the hands giving you the same message?



Sound Confident

Use your voice to your advantage

- Vary your voice pitch and rate
- Adjust your volume so everyone can hear you
- Project your voice through the end of the sentence
- Avoid fillers (“uhms” “ah”)
- Avoid speaking too fast



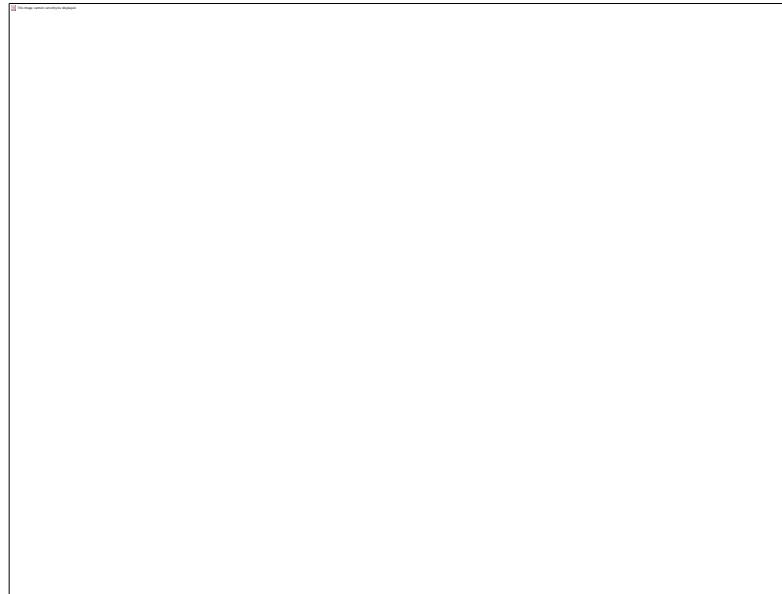
Handle Q&A Sessions

- Leave up a summary slide
(not a “?” slide)
 - Helps audience recall questions they want to ask
- Repeat the question
- Project confidence nonverbally



Handling Q&A Sessions:

How strongly does this speaker believe in the answer he's giving?



Practice for Success

- Visualize success as you practice
- Work especially hard on the introduction and close
- Breathe slowly and deeply for 3 to 5 minutes before you are set to talk
- Focus on the audience as you speak. Are they getting your message?



Allow Enough Time

- Memorize the opening and the close
- Good visual aids take longer than expected (give the audience a chance to make sense of them)
- Practice builds confidence
- Remember standards are high



Lead through Excellence in Engineering Communication

More resources are available for you

- under “Engineering Communication” at Connexions at <http://cnx.org>
- at the Cain Project site at <http://www.owl.net.rice.edu/~cainproj>
- in your course Communication Folder in OWLSPACE.

