

Contemporary Issues: Engineering Implications

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Introduction

- How do breaking developments affect the practice of engineering?
- How can you stay on top of developments?
- How can you plan for the future when you don't know what the future will be?
- What tools and techniques will help you?
- What engineering practices apply?

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Agenda

- Example issues & their implications
- Places & Sources
- Search & report exercises
- Over three (50-minute) class days

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Overview

- Obvious: The world is changing quickly!
- How will you respond?

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Example: California's Power

- California has had "rolling blackouts" recently.
- What are the likely results?
 - Will standards for power suppliers change?
 - Will environmental standards for power plants change?
 - What will be the long-term effect on the market for uninterruptible power supplies for computers?
 - What other implications can you think of?

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Blackout Implications:

- If you are in the electric power business, what changes should you plan for?
 - What extra course could you take to prepare?
- If you are an environmental engineer, what changes should you expect to see?
- If the computers in your company are dependent on "clean" power (no voltage spikes, no drops) , how should you prepare for future power problems?

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The Basis of the Problem

- The world's total knowledge doubled from:
 - 1AD to 1500 AD
 - 1500 to 1750 AD
 - 1750 to 1900
 - 1900 to 1950
 - 1950 to 1975
 - ...
- The world's knowledge is doubling every few months now.
 - By 2020, it will double every 73 days.
- If it takes you 4 years to learn engineering, how will you keep up when engineering knowledge doubles every 2 months?
 - You're already [2 years?] behind!

Example: Counting Florida Votes

- Many counties used "punch out" ballots.
- Poor design decisions & poor maintenance made it easy to produce ballots that weren't completely punched out. ("dimpled chad" or "pregnant chad")
- Propose a solution to the problem of counting votes. (group of 2-3 students)
- Present your solution to the class.

Check Point

- What have you learned so far today?
- How do you need to adjust your training and plans because of what you've learned?
- How can you find out about these types of things when I'm not there to help?
 - There are several sources of information.
 - How can you find new sources?

Information Sources

- What are the information sources you can use to find out about new developments?
- List several...
- How do you **find** more?

Today We Have Seen:

- It isn't what you **know today** that counts.
- What counts is what you **continue to learn** each day.
- It is what you learn, the issues you stay abreast of, that will make you a good engineer.
- If you don't keep up with breaking issues, you'll fall behind so far you can **never** catch up!

Assignment for Next Class:

- Scan the sources we listed, news headlines, CNN, or professional society journals.
- Bring in two paragraphs describing two recent developments that could affect engineering.
 - 3-5 sentences describe each development.
 - 1-2 sentences describe possible impact of each on engineering.
 - "Bibliography" of your sources.
- Bring in 2 additional news sources that would probably have information on these or similar developments.