

# **IEEE**

# **A Global Community**

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# IST 2005

- **Congratulations**
  - To organizers
  - To authors
  - To attendees
- **Conference seems interesting, very well organized and of high quality**

# IEEE Vision:

- To Advance Global Prosperity By
  - Fostering Technological Innovation
  - Enabling Members' Careers
  - Promoting Community
- Worldwide

# Emerging Technologies

- **Biotechnology**
  - Biotechnology, biomedical, microfluidics (lab on a chip), pharmaceuticals, protein engineering, systems biology, biology
- **Design engineering**
  - Computer aided design, design automation, microtechnology, semiconductor technology, semiconductors, chip design
- **Internet**
  - Internet, Web, global sharing and processing of information
- **Mobile**
  - Communications (WiFi), mobile technology, radio frequency communications, wireless, wireless and mobile devices
- **Nanotechnology**
- **Tools**
  - Computer (PDA, handheld), organic display technology, Interconnectivity of products
- **Power**
  - low power technologies, photovoltaics (power), power electronics, energy products
- **Systems**
  - Computer systems reliability, embedded systems, question answering systems (search technology)
- **Data storage technology**
- **Security**
  - Cryptography, privacy wrt information gathering, surveillance technology
- **Bandwidth**
- **Sensors**

Sources: *IEEE Spectrum*, Nov 2004, “Most important technology for the next decade” and “10 tech companies for next decade”; *Trend Consortium*, Sep 2004, “24-month future scan: technologies that will impact business over the next two years”; and *Business 2.0*, Sep 2004, “Seven new technologies”



# What Technology Offers

- **Possibilities**
  - Doing things differently, better
- **Improving standards of living**
  - Power, water, food, health, community
- **HOPE**
  - For a better world, better future
- **However, technology CANNOT deliver on any of these**
  - Technology together with business, government, society, MAY be able to deliver
- **The promise of technology, unlike the promise of science, lives, breathes, succeeds and fails within the fabric of our socio-economic systems**
  - If this is ignored nothing is achieved

# Challenges

- We all believe that technology can generate potential solutions to major global problems
- **HOWEVER**, for the technical solutions to actually impact the lives of people we need the interaction and synergy of
  - Global companies
  - Economic systems - globally interrelated
  - Standards - global
  - Technical creations - global
  - Social systems
  - National governments

# Multidisciplinary

- In technology we often talk about the multi-/trans-disciplinary nature of modern day engineering
- In fact, it is MUCH more complicated
- Engineering lives and succeeds within a socio-economic system that is becoming completely global
- Engineers need to partner in a much more complicated and synergistic way with the other key players in order to make sure that the promise of engineering becomes a reality

# Engineers

- **You cannot be a cog in a machine**
  - You are part of the solution
- **Partner with government, business, academics**
- **This is the power of technical entrepreneurship and the way to create a technical revolution**
- **It is the key to HOPE for the serious problems facing the world today**

# IEEE

## Advancing Global Prosperity By

- Fostering Technological Innovation
  - Enabling Members' Careers
  - Promoting Community
- 
- Worldwide

# Thank you!

- **We need to work together to achieve success for the good of the world**
- **This conference is one example of working together**
- **I look forward to learning more at this conference and working with all of you to advance global prosperity**