What will the future be like?

• Why not make smaller less power intensive chips?
  – Ubiquitous?
  – Different Application space?

• Software perspective
  – Timely output to market
  – Correctness
  – Conventions
  – Workflow
  – Usability / Features
  – Little work as possible
What will the future be like

• More parallel computers
• Better packaging
  – Flip chip
  – 3D stacking of xtrs
• Non-silicon?
Clocking scheme limitation (400mm^2)

Speed of light in a vacuum (400mm^2)

RC Delay + Clocking scheme (400mm^2)
quantum effects at room temperature

quark computing?
Productivity: Million-Transistors/Staff-month 21%/year

Million Transistors/Chip 58%/year
Why are wires slow?
Is there a *hard* limit?

• But does \( h \) make a limit?