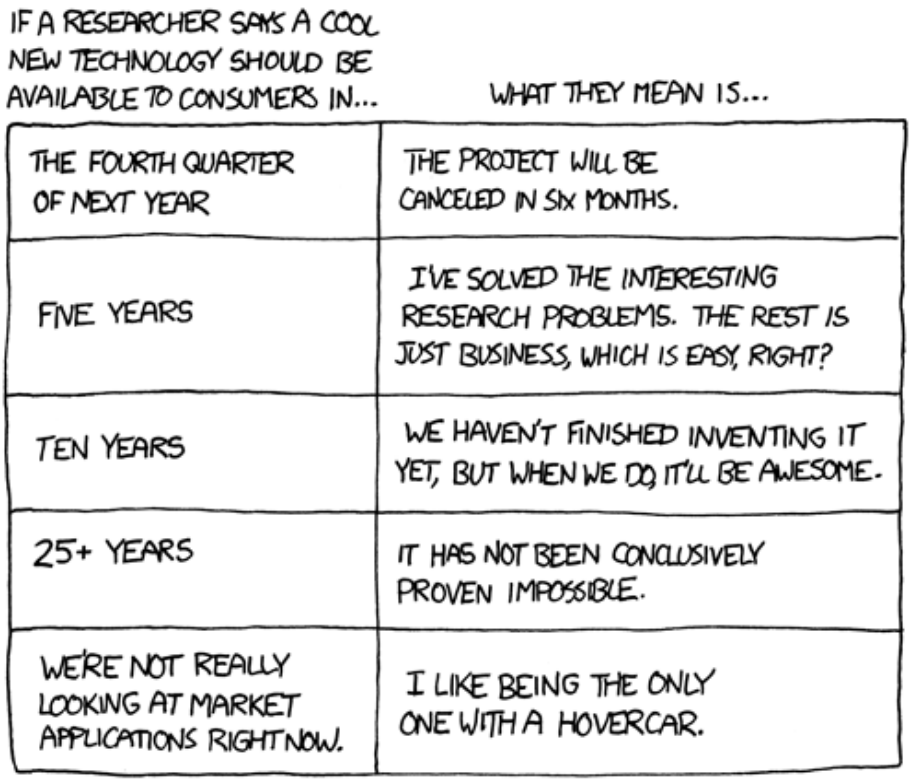
Lecture 3: More technology

Wednesday, January 9, 2019 6:40 PM

Outline

- Energy and power of CMOS devices
- Trends in technology
- Start on ISA/instructions, if time



Energy and Power of CMOS devices

How do energy and power relate?

Energy =

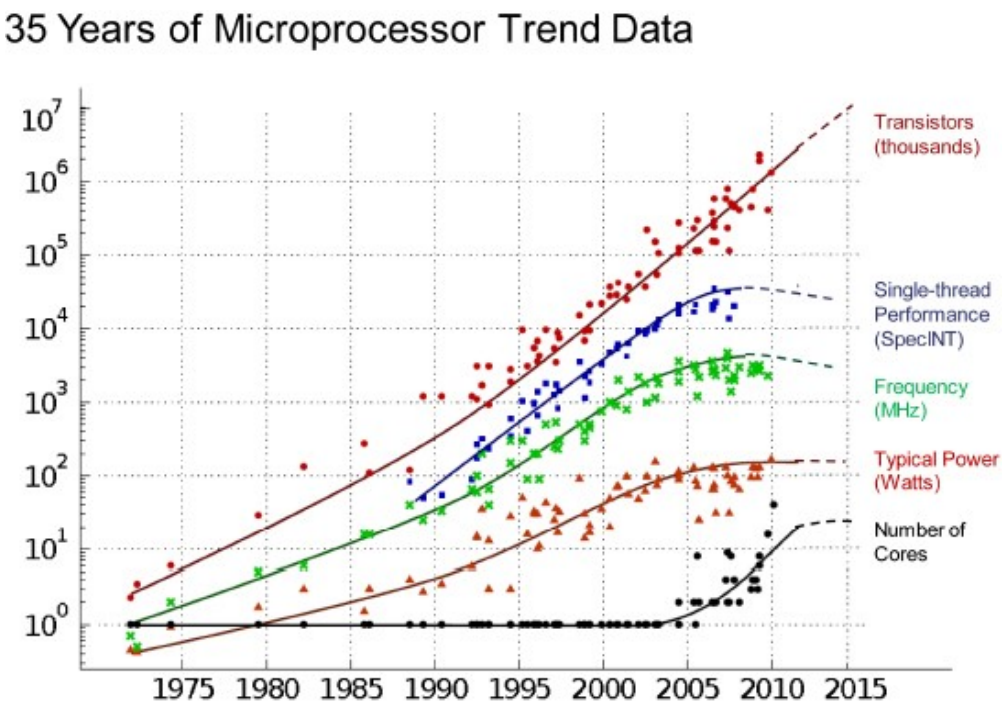
Static energy:

Dynamic energy:

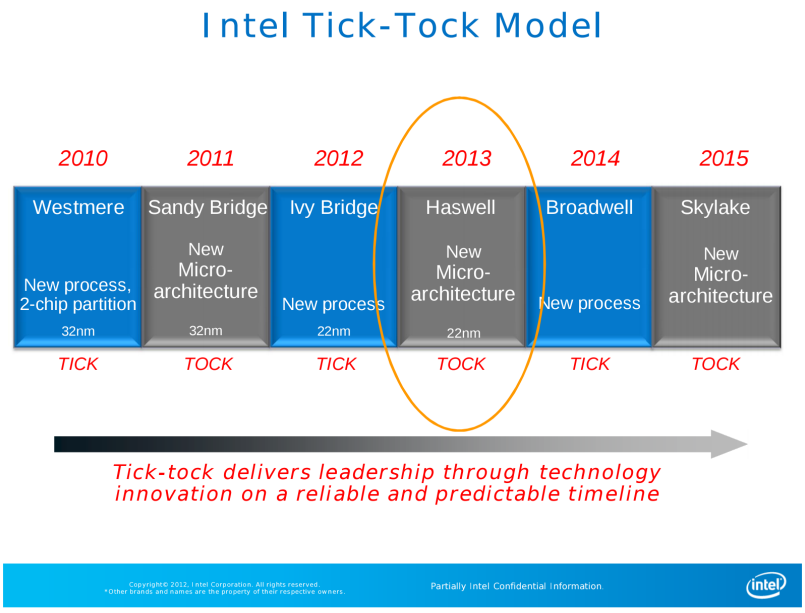
Power:

If we are power/energy constrained: How do we reduce power/energy?

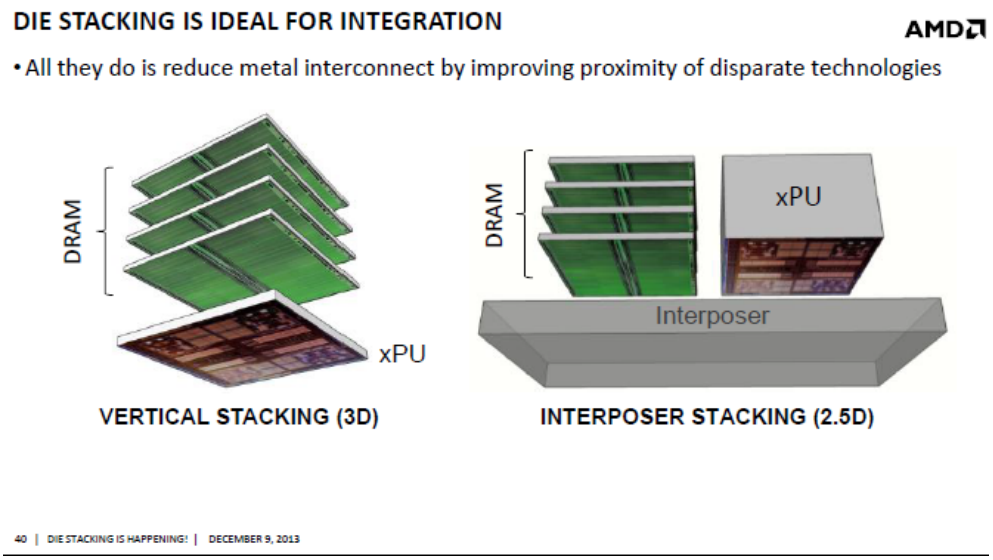
Trends

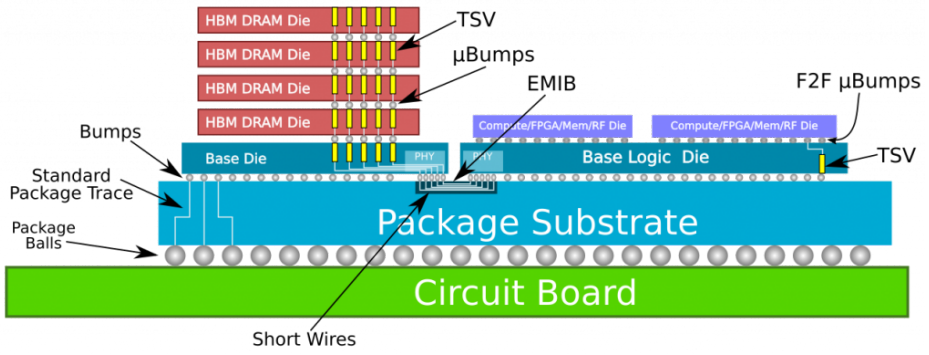


Slides from Intel



Other trends





[John Hennessy and David Patterson 2017 ACM A.M. Turing Award Lecture]