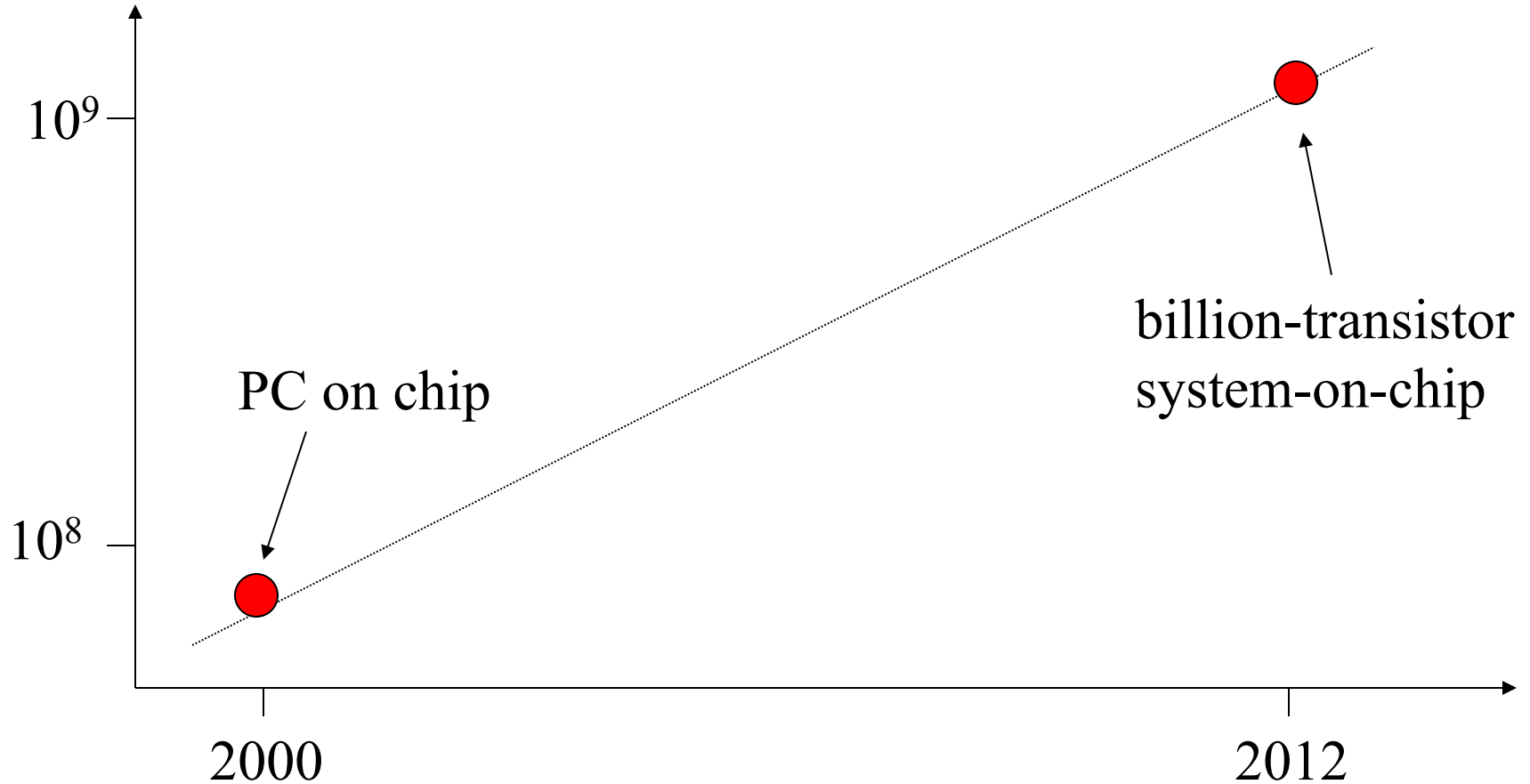


# Systems-on-silicon



- Can build significant embedded systems on single chip:
  - one or more high-performance CPUs;
  - I/O devices;
  - memory.
- Advantages:
  - higher performance and lower power;
  - lower cost.

# Moore's Law (Sematech)



# Design challenges



- Core-based design: can't take time to design gates, lines of code.
- Custom architectures:
  - heterogeneous multiprocessors;
  - custom memory systems.
- Verification:
  - long turnaround time;
  - can't probe interior directly.