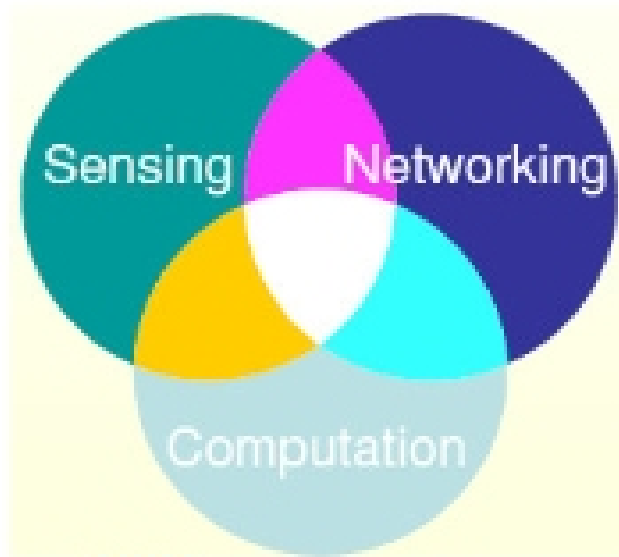


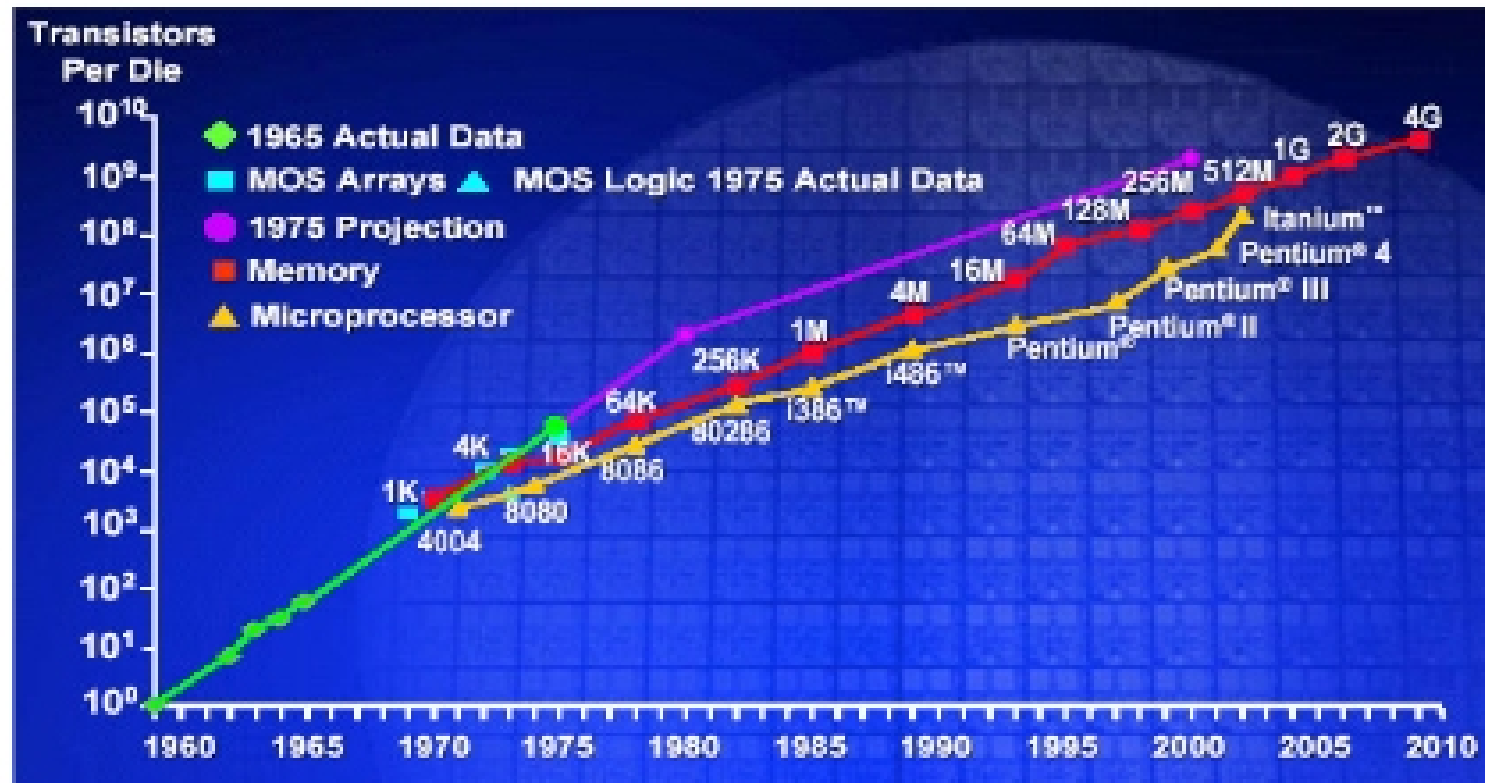
Wireless Sensor Networks: Revolutionary Applications and New Challenges

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IT growth is rooted in “Moore’s Law”



- Transistors per chip doubles every 12-18 months
 - Microprocessors
 - DRAM

The New Power Point

- Microcontrollers:
 - 1-10 mW active, 1 uW passive => 10-100 uW average
- Micro-sensors (MEMS, Materials, Circuits)
 - acceleration, vibration, gyroscope, tilt, magnetic, heat, motion, pressure, temp, light, moisture, humidity, barometric
 - chemical (CO, CO₂, radon), biological, microradar, ...
 - actuators too (mirrors, motors, smart surfaces, micro-robots)
- Micro-Radios
 - CMOS, short range (10 m), low bit-rate (200 kbps), 1-10 mW
- Micro-Power
 - Batteries: 1,000 mW*s/mm³, fuel cells
 - solar (10 mW/cm², 0.1 mW indoors), vibration (~uW/gm), flow
- 1 cm³ battery => 1 year at 1 msgs/sec