

HY428 – Lecture 1

Embedded Systems - Intro

Lab assignments and Lego NXT

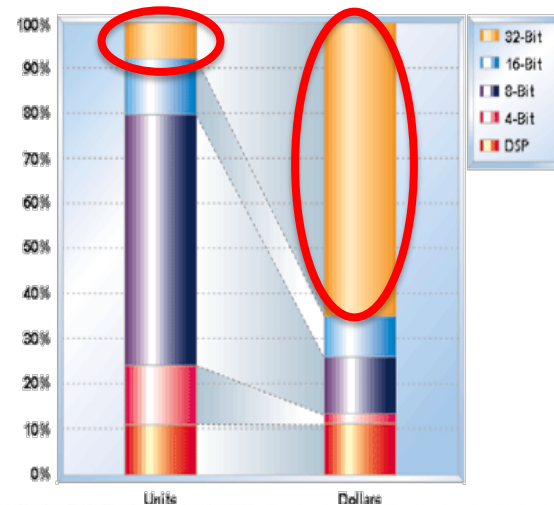
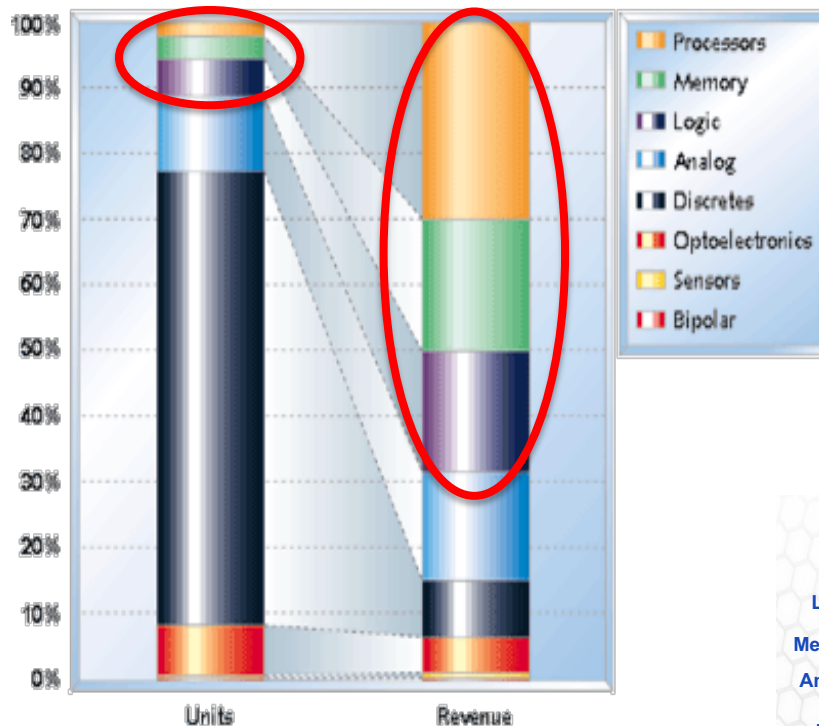
- Assignments and lego NXT
- A basic runtime/OS, from scratch

Embedded systems: How many?

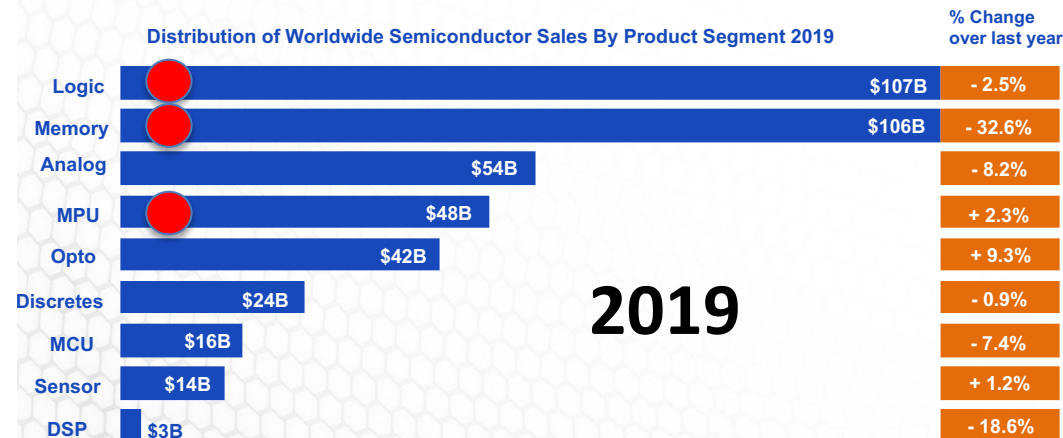
- The Two Percent Solution. Jim Turley. Dec. 18, 2002
 - <https://www.embedded.com/the-two-percent-solution/>
- Semiconductor Industry Association (SIA) FactBook 2020
 - https://www.semiconductors.org/wp-content/uploads/2020/04/2020-SIA-Factbook-FINAL_reduced-size.pdf

Semiconductor units and revenue (2002)

~2001



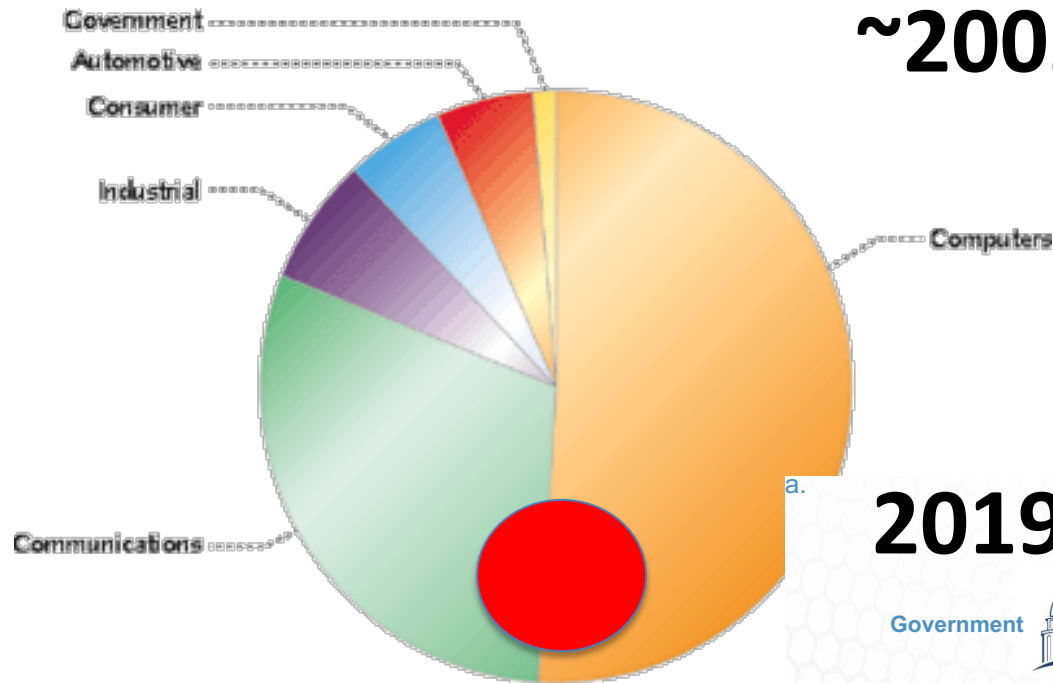
- The “digital world” dominates in semiconductor revenue (but not in volume) [**programmable vs. not**]
- The general-purpose “high performance” (aka 32 bit) world dominates in revenue (but not in volume) [**performance matters**]



2019

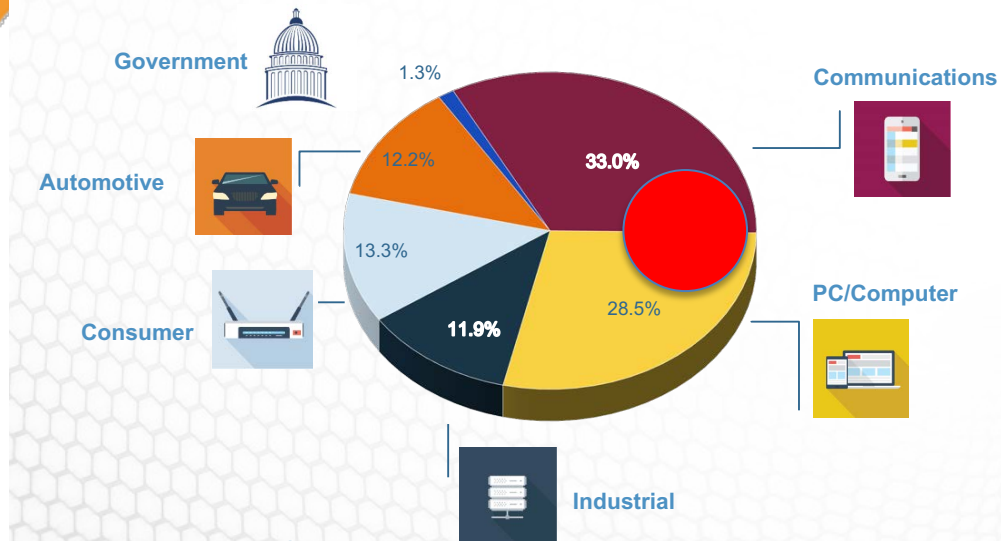
Source: World Semiconductor Trade Statistics (WSTS) and SIA Estimates.

Semiconductor Revenue Breakdown ~2002



2019

2019 Total Global Semiconductor Market: \$412.3 Billion
Percent of Semiconductor Demand, by End Use



Military end-use is included in Government.
Source: World Semiconductor Trade Statistics (WSTS).

What is an embedded system?

- Discussion

Next

- Timers and Advanced Interrupt Controller (AIC)