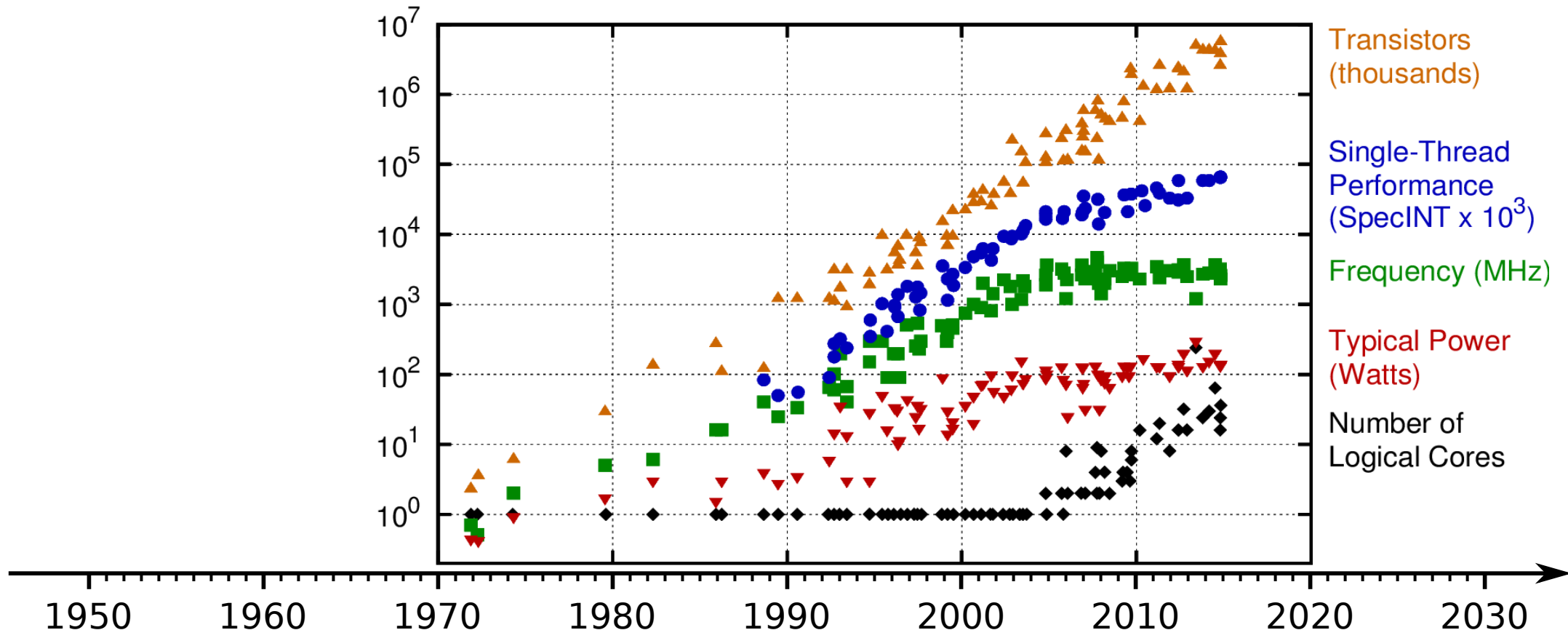Original data up to the year 2010 collected and plotted by M. Horowitz, F. Labonte, O. Shacham, K. Olukotun, L. Hammond, and C. Batten
New plot and data collected for 2010-2015 by K. Rupp

40 Years of Microprocessor Trend Data

Transistors (thousands)

Single-Thread Performance (SpecINT x 10^3)

Frequency (MHz)

Typical Power (Watts)

Number of Logical Cores

"just get it working"

"generalize it"

"make it fast"

- Early exploration: what can computers do for us?
- Specialized applications for business and science.
- Mostly assembly language.

- Distributing software for personalized computers and the web, need portability.
- High-level languages, particularly object-oriented.

- Data analytics of web-sized datasets.
- Deep learning becoming effective in business and science.