Computing & communications exponential growth!

◆ Performance/Price doubles every 18 months

◆ 100x per decade

◆ Progress in next 18 months
  = ALL previous progress
  – New storage = sum of all old storage (ever)
  – New processing = sum of all old processing.

◆ Aggregate bandwidth doubles in 8 months

–15 years ago

Computer performance over time

	1981	1997	2014	Factor (2014/1981)
Uniprocessor speed (MIPS)	1	200	2500	2.5K
CPUs per computer	1	1	10+	10+
Processor MIPS/$	$100K	$25	$0.20	500K
DRAM Capacity (MiB)/$	0.002	2	1K	500K
Disk Capacity (GiB)/$	0.003	7	25K	10M
Home Internet	300 bps	256 Kbps	20 Mbps	100K
Machine room network	10 Mbps (shared)	100 Mbps (switched)	10 Gbps (switched)	1000
Ratio of users to computers	100:1	1:1	1:several	100+