Moore's Law is the idea that transistor density will double ever 2 years. Previously, this used to explain the development of the technology quite well, but as of recent, computer engineers are running into issues. Namely, they can't get transistors any smaller. At the nanometer size they are currently working at, quantum issues are surfacing. For example, electron tunneling is causing unexpected outcomes. Due to issues such as this, Moore's Law is no longer valid.

Additional Concepts:

1. As transistors get denser, more power is needed.
2. As power increases, temperature increases. This causes issues with cooling hardware without it being too loud for consumers, too complex/expensive to manufacture, etc.
3. Voltage scaling does reduce power consumption.
4. Voltage scaling does not prevent power leakage.
5. Since transistors require a certain voltage to switch and a switch needs to be distinguishable from noise, voltage can only be reduced so much.