Device proposals beyond silicon CMOS

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As the end of the silicon evolutionary path nears, alternative devices are being proposed on an urgent basis. Such devices involve different materials such as carbon, III-V semiconductors, *etc*., different geometries such as nanotubes, nanowires and graphenoid sheets, different operating principles involving collective phenomena such as coherent tunneling and ferroelectricity and density of states engineering for band-to-band tunneling FETs. All add to a weird device menagerie that needs some sorting out. These device proposals are mostly not new, but they are enabled by the march of technology and the apparent need for a device that breaks the inflexible switching-energy *vs*. performance limit of silicon CMOS environment of today. Meanwhile, the goalposts have shifted. In this presentation I will attempt to describe and evaluate the most promising to the most outlandish of these devices in terms of future needs for large scale computation.