



(<https://winblogs.azureedge.net/devices/2012/09/Lumia-920-S4-1.png>).

You've probably heard of Moore's Law, the prediction made by Gordon E. Moore, the co-founder of Intel. In 1965, he said that the number of transistors on integrated circuits would double every two years. He expected this to be the case for just ten years, but it's still happening. This astounding progression of computing power is no better demonstrated than by your smartphone's processor. To see how much things have changed, let's take a trip down memory lane.

1996 – In the beginning

It's 1996. Ebay launches the world's first online auction site. The Spice Girls get their first number one with *Wannabe* and the movie *Independence Day* hits the big screen. Meanwhile, in Finland, Nokia launch the world's first smartphone, the Nokia 9000

Communicator. Weighing in at a sturdy 397 g, the first ever Communicator was driven by an Intel 24 MHz i386 CPU.



[.https://winblogs.azureedge.net/devices/2012/09/nokia-9000i.jpeg](https://winblogs.azureedge.net/devices/2012/09/nokia-9000i.jpeg)

Running on the GEOS 3.0 operating system, it had a mere 8 MB of memory: Half of which was used for apps, 2 MB for program memory and 2 MB for user data. While these specs might not sound very impressive, in its day the Nokia 9000 Communicator was the best a man (or woman) could get. This is probably why it was used by Val Kilmer when he played Simon Templar (<http://www.youtube.com/watch?v=F4JOxijD1ts>) in the 1997 remake of The Saint.

2007 – Touchtastic

While smartphone processing power continued to scale at unprecedented speeds, it wasn't until 2007 that touch screen smartphones and the emergence of a big screen really pushed developers and component makers to keep pace with this ramp up. Typically these power

hungry machines needed a 620 MHz CPU and used 128 MB of memory.

2008 – SoC it to them

With smartphones becoming increasingly sophisticated, the need for more computing power in a smaller space became paramount. Fortunately, human ingenuity delivered in 2008 when Qualcomm (<http://www.qualcomm.com/>) delivered the first System on a Chip (SoC) processors for mobile devices.



[. \(https://winblogs.azureedge.net/devices/2012/09/SoC1.jpg\)](https://winblogs.azureedge.net/devices/2012/09/SoC1.jpg)

In a traditional desktop PC, the CPU, RAM, graphics card and storage are scattered pieces on a motherboard. Inside a smartphone, most of the space is taken up by the battery, and the notion of spreading functionality between different chips would cause severe space constraints and bring battery life to its knees. To overcome these challenges, engineers, like those from Qualcomm, put all the necessary components—CPU, GPU, memory, and wireless radio technologies—on a single chip.

2012 – Snappier than ever

Which bring us to today. You probably expect the world's most innovative smartphone to have the world's most innovative processor. Well, you'd be right. The Nokia Lumia 920 (http://www.youtube.com/watch?v=V8_Z7_kJ3_g) and its sibling the Lumia 820 (<http://www.youtube.com/watch?v=aYm07ACkjU>) both contain Qualcomm's latest Snapdragon S4 processors. At 28nm, the Snapdragon S4 takes die-shrinking to a new level, balancing performance and power efficiency like no other chip. Dual Core and clocked at 1.5GHz, the Snapdragon S4 processor makes smartphones faster and more versatile, too.



(<https://winblogs.azureedge.net/devices/2012/09/Snapdragon-S4-Processor1.jpg>).

What's more, within the Snapdragon S4 processor, you'll find an Adreno 225 GPU. This graphics component enables the Nokia Lumia 920 and 820 to play the latest DirectX 3D games, drive HD content and support 720 p high resolution displays. Combined, this means the Nokia Lumia 920 is hundreds of times faster and has one hundred and twenty five times more memory than the original Nokia 9000 Communicator.



(https://winblogs.azureedge.net/devices/2012/09/lumia920_02.jpg).

This incredible evolution of processors like Qualcomm's Snapdragon shows this trend is set to continue. But how amazing can smartphones get? Let us know your predictions below.

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