



## 8<sup>th</sup> June 2011

### Internet protocol

### Version 6 day

The 8<sup>th</sup> June 2011 marked internet '*big bang*' day when the internet expanded from four billion unique internet addresses to a colossal 340 trillion, trillion, trillion. That is a big number! IPv6 reflects the massive expansion of online social and business activity and may be the 1066 or 1766 of future generations.

The internet was developed by the British scientist Tim Berners-Lee in 1989 to solve the problem of large data transfers between scientists working on the Cern project (particle physics research) in Geneva, Switzerland. The internet with its http (hyper text transfer protocol) prefix went live on 6<sup>th</sup> August 1991. The internet was launched with 4 billion unique addresses and at the time this seemed like an impossibility large number but by 2010 only 14% of those addresses remained unallocated. No one had predicted devices beyond computers needing to be connected to the internet but with the advent of internet linked smartphones, Sat-navs, play consoles, e-readers and now TVs the internet was facing a physical limit to growth. Will we eventually need an IPv7?



# Internet evolution

Over the last twenty years the internet has revolutionised all aspects of life and work across the western world. The rapid development of the internet is marked in terms of 1.0, 2.0 and 3.0 evolutionary stages. The examples listed are not all internet developments but include examples of applications and key websites to provide context.

<b>Web 1.0</b> <b>1995-2004</b> <b>Information Web</b>	<b>Web 2.0</b> <b>2005-9</b> <b>Interactive web</b>	<b>Web 3.0</b> <b>2010+</b> <b>Semantic Web</b>
<ul style="list-style-type: none"> <li>• Dial-up</li> <li>• Read-only</li> <li>• Tower computer</li> <li>• Floppy discs</li> <li>• Powerpoint</li> <li>• Instant messaging</li> <li>• Word</li> <li>• Excel</li> <li>• Powerpoint</li> <li>• clipart</li> <li>• Email</li> <li>• email attachments</li> <li>• BBC</li> <li>• AOL</li> <li>• Yahoo</li> <li>• Company websites</li> <li>• Museum collections</li> <li>• Art galleries</li> <li>• Charity websites</li> <li>• Government</li> <li>• Cash machines</li> </ul>	<ul style="list-style-type: none"> <li>• Broadband</li> <li>• Interactive</li> <li>• laptop</li> <li>• MP3 players / ipod</li> <li>• PS2 / Xbox</li> <li>• Ebay</li> <li>• Amazon</li> <li>• Online shopping</li> <li>• Online travel</li> <li>• Google</li> <li>• Digital camera</li> <li>• Podcasts</li> <li>• iplayer</li> <li>• Wikipedia</li> <li>• Twitter</li> <li>• Facebook</li> <li>• You Tube</li> <li>• Flickr</li> <li>• Sat Nav</li> <li>• Online banking</li> <li>• RSS</li> </ul>	<ul style="list-style-type: none"> <li>• wireless Wi-Fi</li> <li>• Create / add</li> <li>• Tablet e.g. ipad</li> <li>• smart phone</li> <li>• netbooks</li> <li>• prezi</li> <li>• Blogs</li> <li>• E-book readers</li> <li>• Cloud computing</li> <li>• Robots</li> <li>• Smart homes</li> <li>• Smart cars</li> <li>• GPS position</li> <li>• Avatars</li> <li>• 3D</li> <li>• TV-i convergence</li> <li>• Motion sensors</li> <li>• 4G high speed</li> <li>• Near field payments</li> <li>• The grid</li> <li>• Apps</li> </ul>

The 1.0 stage was the early internet and personal computer age circa 1995 when our relationship was largely one of access and passively receiving information in the same way we accessed traditional television, radio, newspapers, books etc. Websites added to this list in a largely 'read only' relationship. The access was slow. Perhaps you can still remember that distinctive sound of the internet connecting over your telephone line and once connected patiently waiting and watching as the text and graphics slowly unfurled. The 2.0 technology arrived circa 2005 with broadband – the permanently switched on internet that ended dial-up. Broadband connected a fat digital highway to our computers rather than the narrow country lane of Web 1.0 and permitted a much richer content to be downloaded. Web 2.0 opened-up all manner of interactive applications across shopping, banking, travel, music, social contact etc and created a vast array of websites. In 2011 the Web was estimated to hold 295 exabytes of data and the sheer scale is now the problem. The Apple Apps store alone holds 350,000 apps for the iphone or ipad. If you spent only a single minute looking at each one it would take 35 weeks of continuous 24/7 viewing to view all of them but thousands more will have been added as you viewed. Web 3.0 the 'semantic' or thinking web offers intelligent search tools and personalised home pages to sift, control and cut through the vast Web 2.0 explosion to present the precise information we are seeking. What's next? The fibre optic linked 'Grid' emerging from the Cern project will deliver super-fast broadband. The European Union has set a target for all homes to have access to 100mb broadband download speeds by 2020. At that sort of speed the hourglass or circular loading symbols on our computers will be history and whole films will download in three seconds.

# Why wait for a lesson?



***"Today we are failing too many of our children. We're sending them out into a 21st century economy by sending them through the doors of 20th century schools".***

**Barack Obama 2006**



The dominant pedagogy of a teacher standing at the front of a classroom imparting basic factual information for students to write down can no longer be sustained. The Smartphone in a student's pocket has as much computing power as a laptop and more so for the new range of tablet computers. We can Google any topic and find fast reliable information. Why wait for your Business Studies teacher to give you notes on Sole Traders when the internet will provide all you need to know in seconds? Most teachers worry about how much they have to cover and how few lessons they have but by harnessing the internet they can access an array of, rich, attractive resources on any topic. The internet will not only save preparation time but it is wholly engaging and can be accessed anytime and anyplace. Our current concept of learning within timetabled lessons makes little sense within the 24/7 world of the internet and we need to shift our focus to smart learning targets, core knowledge resources and lessons that focus on higher order understanding and skills rather than covering basic factual information that can be absorbed outside of the classroom. Collegenet has developed an electronic Scheme of Work the 'Learning Portal' to sit on your VLE for all teachers and students to develop. Our Learning Portal offers a well-researched 21<sup>st</sup> Century pedagogy in a highly accessible form rather than simply a repository for files. Visit our website in July, install on your VLE before September and over the course of 2011-12 build a simple but powerful digital learning environment. The Learning Portal will be followed by a similar electronic lesson plan, based on our popular diamond lesson plan, to smooth the process of lesson design, stir creativity and prompt outstanding teaching and learning. Review your pedagogy to ensure a smooth integration of knowledge, employability skills and creativity ready for 21<sup>st</sup> Century living and working.

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3644,554 articles  
In English



600 million subscribers



234 million  
websites



247 billion per day  
81% spam



2 million videos viewed  
per day



126 million blogs



200 million subscribers  
27 million tweets a day



650,000 books to buy  
1 million free books



5 billion photos



1 billion searches  
everyday