50 Year Longhorn (CodeName) Timeline for Microsoft to fold the Office Applications Suite, Back Office Suite (including SQL Server), CE, and the Internet, into Windows, by 2006

Mainframe etc.		DOS Code Base		Windows (NT) Common Code Base								CE Code Base	
(Including CDs, DVDs, IP, Modems, & Microprocessors)		DOS (Including Windows 1,2,3,95,98,ME)		Windows Desktop (& PARC, Metadata, & Hypertext)		Windows, Advanced, & Enterprise Server		Windows Data Center Server		Embedded (Microprocessor based controllers)		CE (& Office Applications) (formerly Consumer Electronics)	
1951	Univac I			1954	Fortran	**1950**							
1956	IBM 650	1956	RAMAC Hard Drive	1960	Hypertext (Ted N.)								
1960	IBM 1401			1963	First Mouse					**Pre-History**		See also: www.WinSuperSite.com for current events.	
1964	Dartmouth Basic	1963	ASCII	1969	GML								
1964	Multics			1969	ARPANet								
1964	IBM 360			1969	Laser Printer (Xrx)								
1967	Unix	1967	Floppy Disk	1970	Xerox PARC					1834	Charles Babbage		
1968	IBM OS 360			1973	ethernet (PARC)					1843	Lady Lovelace		
1971	4-bit Intel 4004			1974	SGML					1911	IBM Incorporated		
1972	C Language	1974	MITS Altair 8080	1976	E&S Design System					1936	Turing Machine		
1972	8-bit Intel 8008	1974	CPM	1976	Xerox Alto					1944	Harvard Mark 1		
1974	16-bit Intel 8080	1975	Microsoft Basic	1978	JAM (John & Mark)					1945	John von Neumann		
				1978	DEC VAX VMS 1.0								
1981	IPv4	1981	SCP QDOS	1980	Interpress (PARC)	**1980**							
1981	Hays 300 baud	**1981**	**DOS 1.0**	1981	Xanadu (Ted N.)								
1982	CDs Available	1982	Novell (1979)	1981	PostScript					**Microsoft Applications**		1983	Word 1.0 for DOS
		1982	**DOS 1.25**	1981	Xerox Star							1985	Word 1.0 for Mac
		1983	**DOS 2.0**	1982	Adobe Systems							1985	Word 2.0 for DOS
		1983	Announced Win 1.0	1984	Apple Mac							1985	Mac Excel 1.0
		1984	**DOS 3.0**									1986	Word 3.0 for DOS
1985	32-bit Intel 386	**1985**	**Windows 1.0**	1985	OS/2 Started					A selection of Microsoft applications Is included because in 2004, with Longhorn, Microsoft intends to merge Office, SQL Server, Widows, and the Internet ===>		1987	Win Excel 2.0
1987	MS CD Bookshelf	**1987**	**DOS 3.3**	1987	OS/2 1.0 PS/2							1987	Word 3.0 for Mac
1987	US Robotics 9600	**1987**	**Windows 2.0**									1987	Word 4.0 for DOS
												1987	Purchased PowerPt
		1988	**DOS 4.0 & 4.1**	1988	NT Started							1988	SQL Server 1.0
				1989	HTML							1989	Word 4.0 for Mac
												1989	Word 5.0 for DOS
												1989	Word 1.1 for Win
												1989	Mac Office (W,E,PPT)
1990	IBM OS 390	**1990**	**Windows 3.0**			**1990**						1990	Sybase SQL Svr 4.0
												1990	Office 1.0 (W,E,PPT)
1991	Torvalds' Linux	**1991**	**DOS 5.0**									1991	Word 5.0 for Mac
1991	CD-R	**1992**	**Windows 3.1**									1992	Office 2.0 & 3.0
		1992	**WindowsWG 3.1**									1992	Word 2.0 for Win
		1993	**DOS 6.0**									1993	Word 6.0 for Win
		1993	**WindowsWG 3.11**	**1993**	**NT 3.1**	**1993**	**NT 3.1**					1993	NT SQL Server 4.2
1994	IPv6 proposed			1994	Netscape							1993	Office 4.0
1994	W3C Founded	**1994**	**DOS 6.22**	**1994**	**NT 3.5**	**1994**	**NT 3.5**					1994	Word 6.0 for Mac
1995	Transmeta.com											1995	SQL Server 6.0
1995	MSN & MSNBC	**1995**	**Windows 95**	**1995**	**NT 3.51**	**1995**	**NT 3.51**					1995	IE 1.0 & 2.0
1995	US Robotics 56Kb											1995	Office 95 Windows
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1996	MSN Game Zone			**1996**	**NT 4.0**	**1996**	**NT 4.0**					**1996**	**CE 1.0**
1997	DVDs on sale					**1997**	**NT 4.0 Entrprse**					**1997**	**CE 2.0**
												1997	Office 97 Windows
												1998	SQL Server 7.0
		1998	**Windows 98**	1998	XML							1998	IE 4.0
												1999	Office 98 Mac
												1999	IE 5.0
												1999	Office 2000 Windows
		1999	**Win 98 2nd ed**									**1999**	**CE 3.0**
						2000						2000	IE 5.5
												2000	SQL Server 2000
		2000	**Windows ME**	**2000**	**Windows 2000**	**2000**	**W2000 Server**	**2000**	**Windows 2000**	**2000**	**NT Embedded**	**2000**	**CE 2.0 Car**
												2001	Office 2001 Mac
2001	$400 DVD-R		DOS replaced by XP	2001	X-Box							**2001**	**CE 3.0 Car**
2001	64-bit Intel Itanium			**2001**	**Windows XP**							**2001**	**CE 3.5 Car**
												2001	IE 6.0
												2001	Office XP Windows
				2002	**Win XP SP1**							2002	Office v.X Mac
2002	1 billionth PC			**2002**	**XP-MediaCtrEd**	**2002**	**.net Server 2003**	**2002**	**.netDataCtr2003**	**2002**	**XP Embedded**	**2002**	**CE .net 4.1**
				2003	**Win .net 2004**					**2003**	**.net Embedded**	2003	CodeName: Word 11
				2004	**Longhorn**	**2004**	**Longhorn**	**2004**	**Longhorn**	**2004**	**Longhorn**	2003	Office .net 2004
				2005	**Blackcomb**	**2005**	**Blackcomb**	**2005**	**Blackcomb**	**2005**	**Blackcomb**	2003	Yukon (SQL S 2004)
				2006	Microsoft Office and Back Office (including SQL Server) folded into Windows with Longhorn, reversing the separation of Operating Systems and Applications begun by OS 360 in 1965. The smallest microprocessors, (controlling all physical devices) will participate using a common code base. All information will be organized as XML described objects. All objects and services will be in a flat IPv6 Internet memory space.							**2004**	**Office Folded-in**
2005	Teledesic.com											**2006**	**CE Folded-in**
2010	Omni-guide.com												

50 Year Timeline: Merging Microsoft Windows, Office, SQL Server, CE, and the Internet in 2006

Microsoft Software Timeline

This text is a description of the accompanying timeline table for Microsoft Software.

This whitepaper is also related to the whitepaper: Microsoft Evolution.

This is not just about merging Microsoft Office and Microsoft Windows; it is about merging all of the information and services on the Internet (and in everyone's computer) with Microsoft Office, Microsoft Windows, and consumer electronics.

What is this whitepaper for?

To answer the questions: Where are we? How did we get here? Where are we going?

Computers now have a long history. In the first half of the 19th century people (Charles Babbage, 1834, and Lady Lovelace, 1843) were describing how to build and program computers. Alan Turing defined the turning machine, the minimum stored program instruction set (1936). Computers were at work in World War II: the Harvard Mark I (1944) had a 1 hertz (and 1 hp, horsepower) clock. John von Neumann described the stored program computer (1945). The first commercial computer, the Univac I, was delivered in 1951, providing us with the start of a half-century of commercial computing.

Microsoft appeared halfway through our half-century of commercial computing, in 1975. Microsoft has always had the goal of doing useful things in a commercially successful way. Microsoft has not yet made elegance a corporate goal. The closest has been the Microsoft Palladium initiative to provide better security.

Column Headings

Code Base

Code forks. If you write a program to do something in DOS (Disk Operating System) and then copy the code into Windows, you then have twice as much code to maintain, and very quickly, the two copies of code are modified differently, so each copy produces a different result. In Word 2000, the screen display code produced correct pagination; the printing code did not (sometimes).

Software configuration management has a goal of having only one copy of each routine that is available to all applications. All of the common routines used in a software product are called the code-base. If two products share all common routines, then the two products are said to have a common code-base. For example, Windows-32 for 32-bit Intel Pentium processors might share most of its modules with Windows-64 for 64-bit Itanium processors.

Windows NT was a new code base, ignoring DOS. Windows CE (originally Consumer Electronics by now sans meaning) ignored the Windows NT code base, to save on memory (make the memory footprint smaller). DOS was killed (expensively and at great length) (1995-Windows 95 to 2002-Windows XP). Everyone with a CE based Pocket PC wishes that they could edit their PowerPoint presentation on the spot when they see they have the wrong client name or a suddenly unavailable product line in their presentation. CE is not enough like Windows to support PowerPoint and its editing functions.

Where we are going?

Longhorn Timeline

Microsoft is done with Windows XP and will soon be done releasing the Windows .net servers. Microsoft had planned to solve all remaining problems with a software release codenamed Blackcomb in 2006. Actually, Blackcomb was planned to come out sooner, but it slipped and Microsoft decided to do a release codenamed Longhorn to take up some of the slack. Microsoft has recently decided to go for the gold and put everything in Longhorn (which may cause it to slip). There will not be much left-over for Blackcomb to do, unless some things are removed from Longhorn to rush its journey to market (a historically plausible occurrence).

The Kitchen Sink

Everyone has surfed the hyperlinks on the Internet, from page-to-page-to-page. Bill Gates thinks it would be neat (and profitable) to make every object (piece of information) in every computer (or repository) uniquely accessible over the Internet. He will describe them with XML (eXtensible Mark-up Language) (1998) and address (locate) them with IPv6 (Internet Protocol version 6: address) (1994), which has 128 bits of address space versus the 32 bits of address space in IPv4 (1981). (Approximately 256 trillion trillion trillion (256 undecillion) objects vs. approximately 4 billion objects in the maximally extended theoretical address space). In the same way that you can buy or interrogate databases using webpages, Bill plans to make all information objects and computer routines or processes addressable on the Internet. With this design, information and services can be anywhere on the Internet, they can even be in two (or more) places at the same time, for backup and disaster preparedness. Some of the subroutines for your Pocket PC may reside in Ulaan Bantaar, Mongolia. All objects and services will be in a very flat IPv6 Internet object (memory) space. All devices in the world will be controlled by microprocessors, which will share the Windows common-code base.

And More

Because all information and processing routines will be very thoroughly mixed together and spread (distributed) across all known computing devices, the separation between application, service, and operating system will become a moot point (to use a legal term). The yin and yang of an approximately infinite number of information objects and services yields a single homogenous computing and information object bound together by the Internet (perhaps by 2006).

Timeline Columns
(Where we have been.)

Mainframes

Univac I was the first mainframe (1951). IBM (incorporated 1911) brought us the vacuum tube 650 (1956); almost 2 thousand were sold at one-half million USD 1950's dollars each. The 1401 (1960) was the first widely used transistorized computer (when you could still see the transistors.) The 360 (1965) was the first universal computer that had a unifying architecture that could be built in many sizes. The 360 Operating System (OS 360) (1968, a little late) was the first commercial operating system. OS 360 has lived for almost 40 years to date and is now called OS 390 (1990). In addition, OS360 separated applications and the OS (1968), which Microsoft wants to put back together with Longhorn (2004).

Multics (1964) was a joint mainframe OS effort between MIT (Massachusetts Institute of Technology) and Honeywell. The singular of Multics was Unix (1967) which begat Linux (1991). Basic (1964) ran on a GE (General Electric, US, United States) at Dartmouth. The language C (1972) was written for Unix.

Intel microprocessors grew their address space from 4-bits (1971) to 8-bits (1972) to 16-bits (1974) to 32-bits (1985) to 64-bits (2001). The 1 billionth PC was sold (2002).

Modems went from 300 bits per second (1981) (at about the time it became legal to own a modem and to acoustically couple it to a phone line, but not to plug it in, which remained illegal for a while) to 9600 (1987) to 56,000 (56K) (1995). CDs appeared (1982), from Microsoft (1987), DVDs appeared (1997) as DVD-R (recordable) (2001). Microsoft has learned networking, but Novell was first with effective DOS networking (1982).

Microsoft got its own ISP (Internet Service Provider) in MSN (MicroSoft Network) which almost immediately begat MSNBC (MSN+NBC) (National Broadcasting Company, part of GE) and later the MSN Game Zone (1996) as Microsoft branched out. (Microsoft has now branched out a lot more, but this whitepaper is written to give a sense of history, not a blow-by-blow account.)

DOS

DOS (1981) and Windows (1985) grew up together, intertwined, inseparable, to the end. Killed by Windows XP (2002).

DOS needed a floppy drive (1967) and a hard drive (1956) and ASCII (American Standard Code for Information Interchange) (1963).

Windows (NT) Desktop

Not wanting to lose a valuable trademark (Windows), Microsoft simply transferred it to the new Windows (NT) code-set. Now that DOS (1981) is gone, Windows NT (1988) is just Windows.

Windows now embodies the goodies from PARC (Formerly Xerox Palo Alto Research Center, now operating independently, or available for sale.): laser printer (1969), ethernet (1973), JAM (1978) begat Interpress (1980) begat Postscript (1981), the bit mapped display with windows: Alto (1976) begat Star (1981) begat the Mac (1984) begat (at least according to Apple, which sued) Windows (1985). The mouse was already around (1963).

The idea of higher-level languages got its start with ForTran (Formula Translator) (1954). A subset of Ted Nelson's Hypertext (1960) and Project Xanadu (1981) is the basis for the Internet. The Internet had GML (Generalized Mark-up Language) (IBM 1969) begat SGML (Structured Generalized Mark Up Language) (1974) begat HTML (HyperText Mark-up Language) (1989) begat XML (eXtensible Mark-up Language) (1998).

Windows, Advanced, and Enterprise Servers

Microsoft made its OS more robust for servers with NT Server (1993), and so that it could charge more for them (market segmentation 101).

Data Center Server

Like other servers, but more, and harder to get. It (2000) only comes bundled with hardware. (In the 1960's, IBM would not write software for other computers, would not sell its computers, and would not service its computers if customers ran non-IBM software on the IBM computers the customers leased.)

Embedded

Those microprocessors that run all devices have an operating system, and Microsoft plans for it to be Windows. If the designer can afford 12 MegaBytes of memory, Window embedded (2000) is the key (common code base and all that). Otherwise, use CE.

CE (originally Consumer Electronics)

Someday, CE (1996) will be subsumed into the Windows common code base. Until then, if you want commonality in a hand-held package, see Transmeta.com (1995).

Microsoft TV (TeleVision), aka (also know as) Windows XP Media Center Edition was released on September 3, 2002. Microsoft TV is intended to replace the home TV, stereo, VCR (Video Cassette Recorder), DVD (Digital Versatile Disc), TV Guide magazine, telephone answering machine, TV remote, intercom, and doorbell.

This foreshadowed linking of Windows, Windows CE, and Windows for embedded processors, in combination with the Microsoft X-Box game console, has caused Sony to begin thinking about linking all microprocessors, in all the appliances, in the home to form a processor grid (needed to achieve the requisite 1 thousand times increase in processor power required to justify buying a new game console, this time to the teraflop range, trillion floating-point operations per second), creating a virtual supercomputer, like the one SETI [http://www,SETI.org] (Search for Extra-Terrestrial Intelligence) has created out of the Interlinked PCs contributing to SETI. IBM announced this circling of the wagons, along with its new partners, Sony.com and Toshiba.com, on March 12, 2001 [http://www-916.ibm.com/press/prnews.nsf/jan/FFBB4B222F4DBFE585256A0D0056C7AC]

Microsoft Applications: Microsoft has followed (the industry) in applications (Word 1983) and in application suites (Office 1990) and System Services (SQL Server, 1988-2002, Structured Query Language, part of the Back Office system services suite). Microsoft has issued different versions of applications and suites for the Mac and the PC (Personal Computer). The Mac products have traditionally given Microsoft a window on advanced technology.

Microsoft's IE (Internet Explorer, 1995) was well behind Netscape (1994) but Microsoft IE now (2002) has a 96 percent market share.

Caveats

These entries are intended to be representative. There are already too many columns, so some columns (topics) were merged. The dates are more or less right, but there are questions about the difference between an announcement, an announcement of availability, actual availability, and then of course, if the product works at all. Did 1.0 really work, or was 1.01 rushed out immediately. Or, if the .0 ('dot oh') suffix was sacrosanct, was there a quick SP1 (Service Pack 1). (Windows NT was first released (1993) as 3.1 to make it look like the DOS version of windows (and to fortuitously avoid the stigma of a 1.0 release, which it truly was.) The Itanium I (2001) from Intel is now a famous example of this. Even Intel has been careful to downplay the entry of the first of the Itanium line.

50 Year Longhorn (CodeName) Timeline for Microsoft to fold the Office Applications Suite, Back Office Suite (including SQL Server), CE, and the Internet, into Windows, by 2006

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Timeline Columns (Where we have been.)

Mainframes

Univac I was the first mainframe (1951). IBM (incorporated 1911) brought us the vacuum tube 650 (1956); almost 2 thousand were sold at one-half million USD 1950's dollars each. The 1401 (1960) was the first widely used transistorized computer (when you could still see the transistors.) The 360 (1965) was the first universal computer that had a unifying architecture that could be built in many sizes. The 360 Operating System (OS 360) (1968, a little late) was the first commercial operating system. OS 360 has lived for almost 40 years to date and is now called OS 390 (1990). In addition, OS360 separated applications and the OS (1968), which Microsoft wants to put back together with Longhorn (2004).

Multics (1964) was a joint mainframe OS effort between MIT (Massachusetts Institute of Technology) and Honeywell. The singular of Multics was Unix (1967) which begat Linux (1991). Basic (1964) ran on a GE (General Electric, US, United States) at Dartmouth. The language C (1972) was written for Unix.

Intel microprocessors grew their address space from 4-bits (1971) to 8-bits (1972) to 16-bits (1974) to 32-bits (1985) to 64-bits (2001). The 1 billionth PC was sold (2002).

Modems went from 300 bits per second (1981) (at about the time it became legal to own a modem and to acoustically couple it to a phone line, but not to plug it in, which remained illegal for a while) to 9600 (1987) to 56,000 (56K) (1995). CDs appeared (1982), from Microsoft (1987), DVDs appeared (1997) as DVD-R (recordable) (2001). Microsoft has learned networking, but Novell was first with effective DOS networking (1982).

Microsoft got its own ISP (Internet Service Provider) in MSN (MicroSoft Network) which almost immediately begat MSNBC (MSN+NBC) (National Broadcasting Company, part of GE) and later the MSN Game Zone (1996) as Microsoft branched out. (Microsoft has now branched out a lot more, but this whitepaper is written to give a sense of history, not a blow-by-blow account.)

DOS

DOS (1981) and Windows (1985) grew up together, intertwined, inseparable, to the end. Killed by Windows XP (2002).

DOS needed a floppy drive (1967) and a hard drive (1956) and ASCII (American Standard Code for Information Interchange) (1963).

Windows (NT) Desktop

Not wanting to lose a valuable trademark (Windows), Microsoft simply transferred it to the new Windows (NT) code-set. Now that DOS (1981) is gone, Windows NT (1988) is just Windows.

50 Year Timeline: Merging Microsoft Windows, Office, SQL Server, CE, and the Internet in 2006

Windows now embodies the goodies from PARC (Formerly Xerox Palo Alto Research Center, now operating independently, or available for sale.): laser printer (1969), ethernet (1973), JAM (1978) begat Interpress (1980) begat Postscript (1981), the bit mapped display with windows: Alto (1976) begat Star (1981) begat the Mac (1984) begat (at least according to Apple, which sued) Windows (1985). The mouse was already around (1963).

The idea of higher-level languages got its start with ForTran (Formula Translator) (1954). A subset of Ted Nelson's Hypertext (1960) and Project Xanadu (1981) is the basis for the Internet. The Internet had GML (Generalized Mark-up Language) (IBM 1969) begat SGML (Structured Generalized Mark Up Language) (1974) begat HTML (HyperText Mark-up Language) (1989) begat XML (eXtensible Mark-up Language) (1998).

Windows, Advanced, and Enterprise Servers

Microsoft made its OS more robust for servers with NT Server (1993), and so that it could charge more for them (market segmentation 101).

Data Center Server

Like other servers, but more, and harder to get. It (2000) only comes bundled with hardware. (In the 1960's, IBM would not write software for other computers, would not sell its computers, and would not service its computers if customers ran non-IBM software on the IBM computers the customers leased.)

Embedded

Those microprocessors that run all devices have an operating system, and Microsoft plans for it to be Windows. If the designer can afford 12 MegaBytes of memory, Window embedded (2000) is the key (common code base and all that). Otherwise, use CE.

CE (originally Consumer Electronics)

Someday, CE (1996) will be subsumed into the Windows common code base. Until then, if you want commonality in a hand-held package, see Transmeta.com (1995).

Microsoft TV (TeleVision), aka (also know as) Windows XP Media Center Edition was released on September 3, 2002. Microsoft TV is intended to replace the home TV, stereo, VCR (Video Cassette Recorder), DVD (Digital Versatile Disc), TV Guide magazine, telephone answering machine, TV remote, intercom, and doorbell.

This foreshadowed linking of Windows, Windows CE, and Windows for embedded processors, in combination with the Microsoft X-Box game console, has caused Sony to begin thinking about linking all microprocessors, in all the appliances, in the home to form a processor grid (needed to achieve the requisite 1 thousand times increase in processor power required to justify buying a new game console, this time to the teraflop range, trillion floating-point operations per second), creating a virtual supercomputer, like the one SETI [http://www,SETI.org] (Search for Extra-Terrestrial Intelligence) has created out of the Interlinked PCs contributing to SETI. IBM announced this circling of the wagons, along with its new partners, Sony.com and Toshiba.com, on March 12, 2001.
[http://www-916.ibm.com/press/prnews.nsf/jan/FFBB4B222F4DBFE585256A0D0056C7AC]

Microsoft Applications: Microsoft has followed (the industry) in applications (Word 1983) and in application suites (Office 1990) and System Services (SQL Server, 1988-2002, Structured Query Language, part of the Back Office system services suite). Microsoft has issued different versions of applications and suites for the Mac and the PC (Personal Computer). The Mac products have traditionally given Microsoft a window on advanced technology.

Microsoft's IE (Internet Explorer, 1995) was well behind Netscape (1994) but Microsoft IE now (2002) has a 96 percent market share.

Caveats

These entries are intended to be representative. There are already too many columns, so some columns (topics) were merged. The dates are more or less right, but there are questions about the difference between an announcement, an announcement of availability, actual availability, and then of course, if the product works at all. Did 1.0 really work, or was 1.01 rushed out immediately. Or, if the .0 ('dot oh') suffix was sacrosanct, was there a quick SP1 (Service Pack 1). (Windows NT was first released (1993) as 3.1 to make it look like the DOS version of windows (and to fortuitously avoid the stigma of a 1.0 release, which it truly was.) The Itanium I (2001) from Intel is now a famous example of this. Even Intel has been careful to downplay the entry of the first of the Itanium line.

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Note to Editors

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