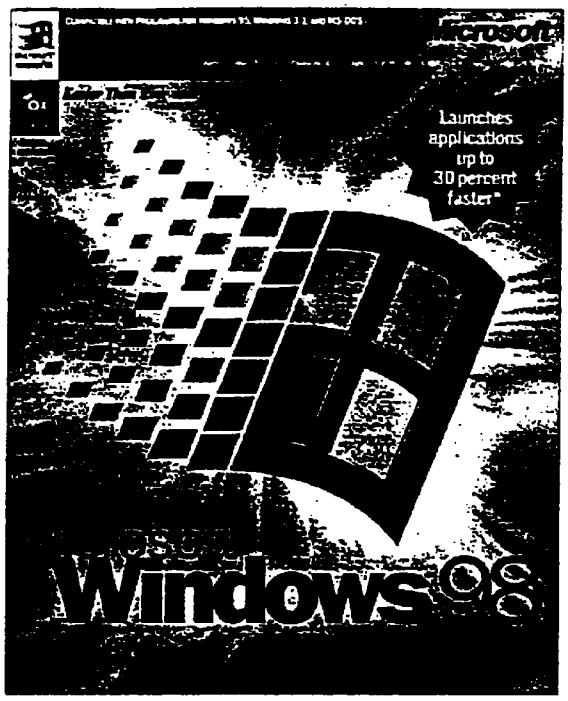
Copies To: Ed St, Raja, Wasset H, Harish, Kay Fe
George M, John Gray, Tom Ad

Fm: Bill V

Marketing Windows 98 and Beyond to the US Home PC Market



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Jake Lansche and Bob Foulon
PBSG Marketing Intelligence
//pbsinfo/MarketResearch

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Executive Summary

Installed Base and Shipments

- The total installed base of US Household PCs is 37 to 43 million, including Macintosh. For this report, we are using a conservative 37.9 million PCs, of which 30.5 million are primary machines
- PC Penetration into US telephone households is rather flat at 34%. This translates to approximately 30.5 million US households having a PC in regular use.
- FY98 IBM compatible shipments to the US home installed base are projected to be 12.5 million units, up 13% over the previous year. The FY97-FY00 CAGR for IBM compatibles is 12%.
- There has been a strong shift toward lower cost PC's. Currently the performance and features available at the $1,300 end-user price point is sufficient for the average user.
- Of FY98 new shipments, approximately 70% will be Pentium based with >= 32 MB RAM. Virtually all will have 32-bit operating systems.

Windows

- Though US household PC penetration is flat, the composition of the household primary machine installed base (30.5 million) is dynamic due to the high volume of new shipments.
- Win 32 penetration on household primary machines is currently 70% and projected to reach 90% by December 1998. At that time two-thirds of household primary machines are projected to be running Pentium based machines with >=32 MB RAM.
- NT Workstation's share of the home installed base has never been greater than 1%. The projected installed base of NTW machines in the home is about 300K units, most of which are used for bringing work home.
- Satisfaction with the current operating system is the main reason users have not have not upgraded to Windows 95 (23%). Price, speed, and not being impressed with Windows 95 were all equally important reasons for not upgrading (14% each).

Online:

- For the first time ever, most home PC's are being used to access the Internet. 70% of these are using Windows 95.
- America Online is the largest Internet Access Provider at 45% share of the home market. MSN is in second place at 11% share.
- Netscape Navigator continues to be the dominant browser in the home at 39%. America Online browser was in second place at 29% share, followed by Microsoft Internet Explorer at 26% share.

Taxonomy:

- Microsoft has a home user taxonomy comprised of: Super Users, Generalists, and Reluctants. Most of our Windows 98 marketing efforts will need to be targeted to Super Users. This group has the highest propensity to upgrade and is the most influential.
- Super Users can be targeted through their retail online service provider, 45% use America Online and 23% use MSN, and through their browser.
- 29% of all users have added memory to a PC since it was purchased.

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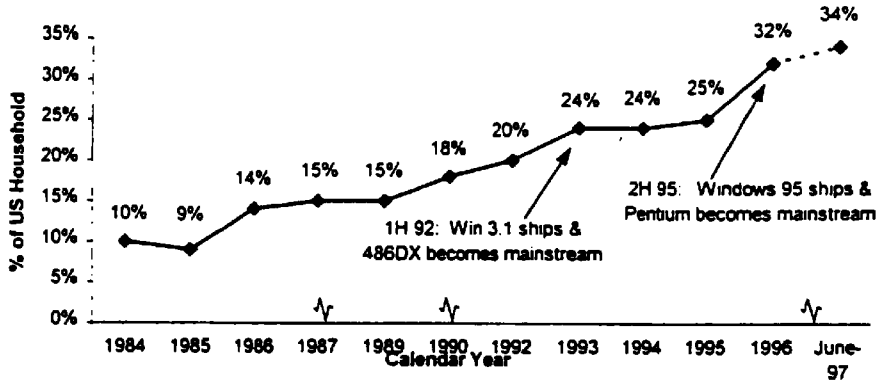
PC Penetration in US Households

PC penetration into US households was 34% as of August 1997[1]. Based to 91.0 million telephone households in the US as of June 1997[2], this translates to 30.5 million US households having a PC in the home. PC Penetration has grown at an average rate of about 2% per year over the past 10 years (1987-1997), with significant increases corresponding with major releases of Windows operating systems. From 1992 to 1993, household PC penetration increased 4% points during a period corresponding with the April 1992 release of Windows 3.1. From 1995 to 1996, household penetration and enjoyed a substantial 7% point increase following the August 1995 release of Windows 95. Both of these spikes represent a confluence of technology and public interest in personal computing, the latter culminating with the launch of Windows 95 and mainstream acceptance of the Intel Pentium processor. Previous PBSG market research has tracked PC penetration by key demographic variables, an analysis that shows home PC penetration increases with income and education.

PC Penetration in US Households



Source: Roper Starch Worldwide, Inc.

We are seeing continued strong acquisitions of PC's by US households. During FY97, a total of 13.5 million units were acquired. Of these, first time PC owners acquired 5.0 million machines, an increase of 14% over the previous year. It is surprising that household penetration has remained flat despite this high volume of acquisitions by first time purchasers. New household formation is increasing at .08% per year overall in the US, with more rapid growth approaching 2.5% in higher income levels, but this only accounts for 1.0 million first time PC acquisitions. Increasing penetration accounts for another 1.0 million units. The combination of the recent slow growth in PC penetration and increasing shipments leave about 3.0 million machines that are somehow being churned in US households, a phenomenon we do not fully understand.

[1] There are conflicting estimates of the PC penetration into US Homes. The Consumer Technology Index, a suty by by Computer Intelligence, and The National Survey of Hardware Ownership, a study prepared by The NPD Group, estimate home PC penetration at about 40%. We believe they are mistaken. There is a body of evidence that the mode of interview for measurement of usage on the Internet, home computers, and probably other consumer technologies has an important impact on estimates of market size. We have reviewed the weights used by NPD and believe they are incorrectly specified.

We believe Roper Starch Worldwide, Inc. provides the most reliable historical PC penetration in homes through their in-house interviews process. For more a comparison of different interview methodologies, hyperlink to "How Many Are Really on the Electronic Superhighway: A comparison of Two Survey Methodologies", by Bradford Fay, May 17, 1996.

[2] US Department of Labor

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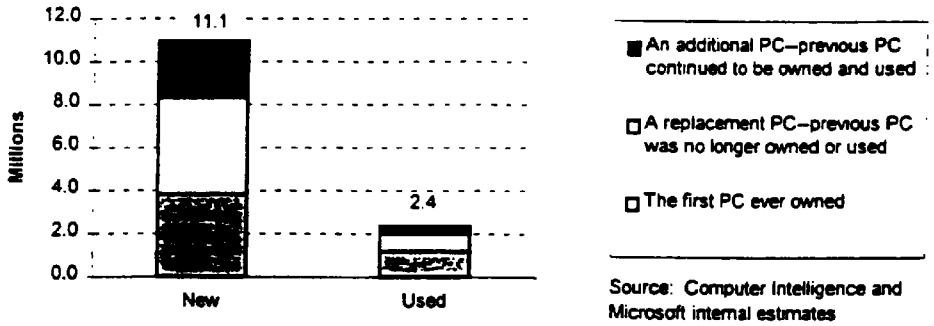
Of the 13.5 million machines acquired by US households, 11 1 million or 82% were new machines and the remaining 2.4 million were used machines. Focusing on new machines, first-time PC owners acquired 35% of total new machines purchased in FY97 or 3.8 million units. Replacement PC's, i e , the previous PC was no longer owned or used, comprised 40% of new machines acquisitions or 4.5 million units. The remaining new machine acquisitions, 2.6 million units, were additional machines going into homes where the previous PC continued to be owned and used. Used computers comprised over 25% of the machines acquired by first time buyers or 1.2 million units. Replacement PC's (i.e., the previous PC was longer owned or used), represented 40% of the total units acquired in FY97 or 5.3 million units The remaining 3.0 million units acquired during FY97 were additional machines where the previous PC continued to be owned and used.

US Home Shipment Forecast

We expect 12.5 million new computers to be shipped into US Households in FY98, representing a 12%

PC Acquisitions in FY97



Source: Computer Intelligence and Microsoft internal estimates

growth rate over the previous year. IBM compatible shipments are projected to grow 13% in FY98 and comprise 91% of total PC shipments. Over the FY97-FY00 period, the projected compound annual growth rate (CAGR) for IBM compatibles is 12%. The CAGR for Macintosh computers over the same period is projected to be 8%.

PC Shipments into US Households

Fiscal Year (Millions)	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	
Units										
IBM Compatible	3.6	4.6	6.0	7.4	8.8	10.1	11.4	12.9	14.1	
Macintosh	0.6	0.8	0.9	1.1	1.1	1.0	1.1	1.2	1.3	
Total	4.2	5.4	7.0	8.5	9.9	11.1	12.5	14.0	15.4	
Y/Y Growth:										FY97-00 CAGR
IBM Compatible		31%	30%	23%	19%	14%	13%	12%	10%	12%
Macintosh		27%	21%	14%	2%	-4%	2%	12%	9%	8%
Total		30%	28%	22%	17%	13%	12%	12%	10%	11%

Source: Microsoft internal estimates, not for public use. For questions, contact Curtis Freet

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Consumer PC Price Points ≤

There has been a dramatic shift in the distribution of PC sales to lower-end price points. The performance and features available now at the $1,300 end-user price point is sufficient for the average users' needs. Systems costing as little as $1,750 shipped are being shipped predominantly with MMX-enabled processors. And, due to the rapid price erosion of non-MMX, Pentium-class processors, low-end mainstream consumer systems shipped with 200-MHz, non-MMX Pentium-class chips.

Another rapid shift is occurring in the telephony area. OEMs are moving their bundles rapidly to 56-kbps fax/modems from 33.6-kbps units and including voice feature for as little as $1,500.

CY97-3 Profile system configurations by end-user price point for consumer

	$ 1,300	$ 1,500	$ 1,750	$ 2,000	$ 2,500	$ 3,000
Microprocessor	Pentium-200	Pentium-200	P5-166 w/ MMX	P5-200 w/ MMX	P5-233 w/ MMX	P5-233 w/ MMX
System RAM	16MB EDO	16MB EDO	32MB EDO	32MB SDRAM	32MB SDRAM	64MB SDRAM
Hard-Disk Drive	1.6 GB	2.5 GB	2.5 GB	3.6 GB	6 GB	6 GB
CD-ROM	16x	16x	16x	16x	24x	24x
Monitor	14-inch	15-inch	15-inch	15-inch	15-inch	17-inch
Telephony	33.6 fax/ modem	33.6 fax/ modem/voice	56 fax/ modem/voice	56 fax/ modem/voice	56 fax/ modem/voice	56 fax/ modem/voice
Sound card & Speakers	yes	yes	yes	yes	yes	yes
O/S	Win 95	Win 95	Win 95	Win 95	Win 95	Win 95
Bundled Software	Abbr Consumer Suite	Mid Consumer Suite	Mid Consumer Suite	Full Consumer Suite	Full Consumer Suite	Full Consumer Suite

Source: Desktop PC Build Costs Updated Edition 3Q97 (Mercury Research)

Mercury Research reports 59% of the new shipments into the home market during CY97-2 were Pentium machines with >=32 MB RAM. Mercury expects this figure to increase at a rate roughly equal to an incremental 7% per quarter and reach 81% of new shipments into the home by CY98-2.

	CY97-2	CY97-3	CY97-4	CY98-1	CY98-2
Percentage Pentium w/ >= 32 MB RAM	54%	59%	65%	74%	81%

For Internal Use Only. Source: Mercury Research

Disposition of an Existing PC ≤

The average life-span of a PC in the home is 5.4 years as reported by the Computer Intelligence. When a computer was purchased as a replacement for an existing machine, 40% of the existing machines were kept in the household, while 32% were given machine away or donated to charity. Only 17% of machines were sold to either a private party or a store that sells used equipment. This does not address people leaving the market. We estimate 3 million US households acquired, but later disposed of, their only home PC.

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What was Done with Previous PC	%
Gave to friend/relative/co-worker	25%
Kept and still used	23%
Kept but is no longer used	17%
Sold to a private party	16%
Donated to a school or charity	8%
Other	5%
Thrown out/junked	4%[3]
Sold to a store that sells used equipment	1%
Total	100%

Source: Computer Intelligence, Consumer Technology Index 1997

Used PC's

Used PC's are a significant part of the US PC market. During FY97, nearly 2.4 million used PC's were acquired by home users, representing about 25% of first time buyers. This proportion is down from 29% in FY96 and is likely to decline further in FY98 due to lower PC prices (see Consumer PC Price Points). The primary advantage of used PCs has been their price – their price points were typically in the several-hundreds to one thousand dollars, while new PCs were in the high-teens and up. But in FY96, new systems from Monorail, Compaq, Packard Bell and others lowered the entry point for new PC systems to below $1,000. This will likely affect the sales of used PCs, as first time buyers opt for low priced new systems over low priced, lower powered used systems.

As you would expect, used PCs have much lower configurations than PCs acquired new. The biggest differences between the new and used PCs acquired in FY97 are in their microprocessor and RAM configurations. While almost all new acquired PCs have a Pentium or PentiumPro chip, only 13% of used PCs do. New PCs have 16MB of RAM or more, while only one-third of used PCs have that much memory.

Other characteristics of used PCs show the same pattern. Used PCs are less likely to have a CD-ROM drive (41%), likely to have external speakers (36%) and less likely to have a modem (30%). Even among those with modems, the new PCs have more powerful units: only 41% of used PCs were acquired with modems 28.8 or higher.

Hardware Profile of US Households

Of the 30.5 million US households having a PC, approximately one in five households have more than one machine and the average household has approximately 1.24 machines in regular use. This translates to an estimated installed base of 37.9 million computers in US households[4], a conservative estimate of the US household installed base. Focusing on the first, or primary PC, IBM compatible machines comprise 89% of the installed base (27.2 million) in US households while Macintosh machines comprise the remaining 11% (3.3 million). Of the IBM compatible primary machines, 99% or 26.9 million are running Windows.

Media Metrix, a New York based research firm, administers a panel of 10,000 households using Windows based PC's as their primary home computer. Each panel participant is given a diskette to record hardware configuration and usage characteristics. We have taken data from their latest report,

[3] Recent survey research suggests that 3% of all US households have had a home PC at one point in time, but either gave it away or sold it without replacement.
[4] Roper Starch, September 1997.

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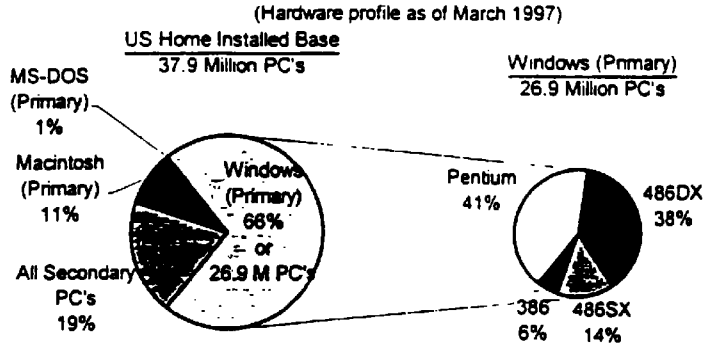
March 1997, and projected it to the base of primary Windows PC's in US households to provide estimates of the US home installed base by RAM by chip type[5]. Of those primary Windows machines:

- 41% or 11.2 million are running on Pentium chips.
- 52% are running on 486DX and 486SX chips, or 10.3 million and 3.8 million units, respectively

PC Hardware Profile of US Home Installed Base
(Hardware profile as of March 1997)



Source: Roper Starch Worldwide, Inc. and Media Metrix Hard Scan

32-bit operating systems require sophisticated hardware architecture and sufficient RAM to operate effectively. We have defined separate standards for Windows 9x operating systems as follows:

Definition	Hardware Requirement	US Home Installed Base (000's)
Windows 95 Capable	486 or better processor >= 8 MB RAM	23.0 million primary PC's
Windows 98 Capable	486DX or better processor >= 16 MB RAM	13.5 million primary PC's
Window 98 Optimal	Pentium or better and >= 32 MB RAM	2.3 million primary PC's

Following is a more detailed segmentation of the installed base of Windows primary machines in US households:

Hardware Profile of Primary Windows PC's in US Households

(Units in Millions)	PENTIUM	486DX	486SX	80386	Grand Total
< 8 MB	0.0	0.8	1.6	0.9	3.3
>= 8 MB - < 16 MB	[redacted]	[redacted]	[redacted]	0.5	9.5
>= 16 MB - < 24 MB	5.4	3.6	[redacted]	0.1	9.6
>= 24 MB - < 32 MB	1.0	0.5	[redacted]	0.0	1.5
>= 32 MB - < 64 MB	2.1	0.7	[redacted]	0.0	2.8
> = 64 MB	0.2	0.0	[redacted]	0.0	0.2
Grand Total	11.2	10.3	3.8	1.6	26.9

Source: Roper Starch and Media Metrix

Win 98 Optimal 2.3 Million | Win 98 Capable 13.5 Million | Win 95 Capable 23.0 Million

[5] Even though only 6 months old, the Media Metrix data is outdated due to the high volume of richly configured OEM shipments into US Households. In terms of Windows 98 opportunity analysis, we view this as a conservative estimate of the hardware installed base. (For more information on consumer hardware configurations, hyperlink to Consumer Price Points). The next Media Metrix report providing August 1997 data will not be available until November.

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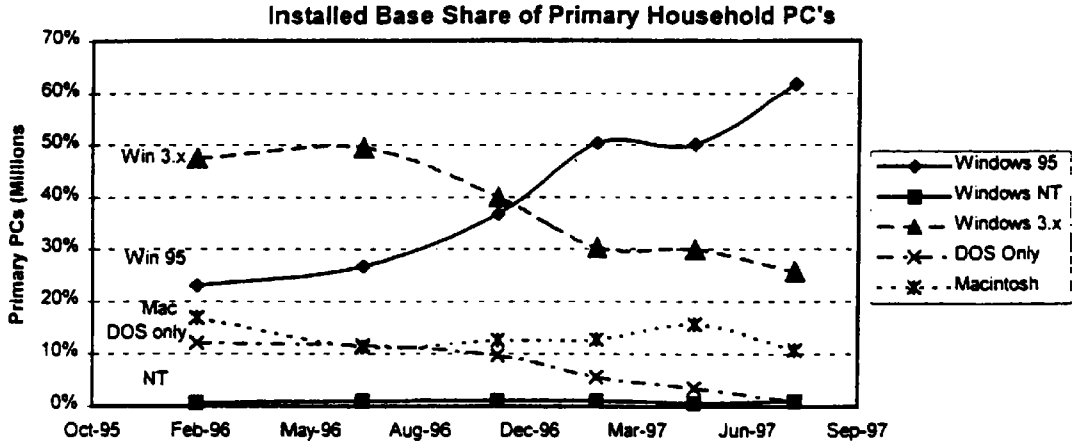
Operating System Penetration

The US home installed base of primary PC's has remained almost flat since February 1996, growing only 5% over the subsequent 18 month period to reach 30.5 million PCs by August 1997 While the size of the installed base has remained relatively stable, the composition of operating systems within that installed base has changed dramatically. Windows 3.x was the dominant operating system during February 1996 with a 47% share of primary PC's. Windows 95 held the second largest share only five months post-launch at 23% of primary machines. Macintosh and DOS-only operating systems held the third and fourth positions at 17% and 12%, respectively. NTW was barely on the map with 1% share of household primary PC's.

Windows 95 became the dominant operating system on household primary PC's during December 1996. By August 1997, Windows 95 share had grown to 62%. Over the 18 month period from February 1996 to August 1997, Windows 95 share of primary home PC's grew at an average of 2.2% per month. This increase came at the expense of Win 3.x, which declined to 26% share of primary PC's or at an average rate of 330K licenses per month from the primary installed base. DOS-only operating systems have declined to 1% share. Macintosh share has also declined, albeit at a slower rate than the other 16-bit operating systems. As of August 1997, Macintosh share was 11% of primary machines. Probably this biggest surprise is that NT Workstation may have lost share despite the launch of the shell update release version 4.0 during the fall of 1996. Based on the August 1997 wave of survey data, NTW has less than 1% share of primary home machines.



Sources: Market Decisions, Feb 96 - May 1997; Roper Starch Worldwide, Aug 1997

As of August 1997, Windows 95 was running on 19.0 primary machines in US households. Including secondary machines, the total installed base of Windows 95 machines in US households was 22.9 million machines or 60% of the US household installed base. Windows 3.x was on 7.9 million primary machines another 1.7 million machines used as secondary machines.

We define Win 32 penetration as the proportion of the IBM compatible PC installed base using Windows 32-bit operating systems (Win 95 and NT Workstation). Sometimes we hear varying penetration estimates from internal and external sources. These differences are usually definitional (e.g., may include Macintosh or other non-IBM compatible hardware architecture) or out of date. As of August 1997, Win 32 operating systems were on three-of-five primary machines in US households and Win 32 penetration was 70%.

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US Home Installed Base Profile - August 1997

	Primary Computers		All Computers	
	Units (millions)	%	Units (millions)	%
Total	30.5	100%	37.9	100%
Win 95	19.0	62%	22.9	60%
Win 3.x	7.9	26%	9.6	25%
MS-DOS	0.3	1%	0.8	2%
Mac	3.3	11%	4.5	12%
Win 32 Penetration (Excludes Mac)		70%		69%

Source: Roper Starch Worldwide

Overlaying the Media Metrix data onto the August 1997 operating systems share data provides the following profile of primary Windows PCs. Note the percentages in the table are not additive, but should be interpreted as the % of total PCs that are equal to or better than the hardware configuration. For example, 72% of the Win 3.x machines are running on 486 architecture or better and have at least 8 MB RAM. This includes the 2% of Win 3.x machines running on Pentiums and have at least 32 MB RAM.

	Operating System	
Hardware Configuration	Windows 95	Windows 3.x
Total Household Primary PC's	19.0 Million	7.9 Million
<486 and 8 MB RAM	0%	27%
>=486 and >=8 MB RAM	100%	72%
>=486DX and >=16 MB RAM	75%	26%
Pentium and >= 32 MB RAM	15%	2%

Note: %'s are not additive

Attached is a pivot table providing additional Windows installed base detail by: operating system, hardware architecture, RAM, income and education level from the Media Metrix database and projected to 26.9 million primary Windows PC's in US households. Additional demographic detail from the Media Metrix database is available in the Appendix.

Microsoft Excel Worksheet

Home PC Usage Scenarios

There are 30.5 million US telephone households with computers. Breadth statistics are important to determine the universe of households using their machines for specific activities. We know that of all computers households:

- 73% use a CD-ROM for entertainment.
- 69% bringing work home from the office, and 21% are running a home based business.
- 55% access online services, the Internet, or the Worldwide Web.

The primary use of a computer can be more important for targeting marketing activities. When compared to breadth statistics, primary use provides an indication of the strength of preference for specific activities. For instance, while a high proportion of households use computers for bringing work home or running a home based business, few list these activities as a primary activity. Conversely, households using CD-ROMs for entertainment had the highest score both as a primary use (18%) and any use. The following table provides both breadth and main uses for US Telephone households.

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Operating Systems by Primary and Any Usage ≤

	Primary Usage					Any Usage							
	Total	Home Business	Bring Work Home	CD-ROM Entertain-ment/ Homework	Other	Total	Home Based Business	Bring Work Home	CD-ROM Entertain-ment	Home-work	Online, WWW	Faxing	Personal Finance
Base: Households (Millions)	30.5	3.1	5.2	5.5	16.5	30.5	6.4	21.0	22.3	15.9	16.8	8.5	11.6
Horizontal Percentage	100%	10%	17%	18%	54%	100%	21%	69%	73%	52%	55%	28%	38%
Households (in Millions):													
Total	30.5	3.1	5.2	5.5	16.5	30.5	6.4	21	22.3	15.9	16.8	8.5	11.6
Win 95	61%	50%	48%	67%	64%	61%	68%	63%	68%	63%	70%	71%	63%
Win 3.x	26%	20%	38%	23%	24%	26%	13%	23%	21%	25%	17%	18%	24%
Mac	12%	8%	2%	0%	3%	12%	14%	13%	10%	11%	11%	9%	10%
MS-DOS	2%	23%	13%	9%	11%	2%	5%	2%	2%	1%	2%	3%	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source Roper Starch Worldwide

*Based to 33% PC penetration into 91.3 million US telephone households.

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Following are additional factoids about home PC usage:

- Windows 95 owns the internet. 70% of computers accessing the web used Windows 95 on their computer.
- One-eighth of households (13%) dial-in to a network or computer at work.
- 1.0 million households have multiple home computers linked together using a network
- 38% of those whose primary activity is to bring work home list Windows 3.x as their operating system and 23% of those listing running a home based business list DOS-only as their operating system

Interestingly, while CD-ROM entertainment is the highest percentage of both the Any Use and Primary Use categories, according to Media Metrix most of the time spent for using the home PC is not for playing games, however. In fact, the "Other" category is primarily comprised of OS related activities. The following table breaks out home application usage based on screen time, excluding screen savers and idle time, for US adults and children under the age of 18.

Application Usage Share of Active Minutes

Screen time, excluding screen savers and idle time

	Total	Adults	Kids Under 18
Home Business/Work at Home	19%	19%	14%
Education/Entertainment	1%	0%	4%
Games	14%	14%	15%
Online/Internet Access	15%	16%	13%
Personal/Home Finance	2%	2%	0%
All Other	50%	49%	54%
TOTAL	100%	100%	100%

Source: Media Metrix, March 1997

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Household Online Usage

For the first time ever, more than one-half of PC households (16.8 million) are going online or accessing the WWW. Of these households:

- 45% of households are using America Online as their primary access provider.
- 11% of households are using the Microsoft Network, almost twice the share of its next nearest competitor.
- Independent access providers comprise a significant share of the market, with one-in-five households using services from companies like Netcom or UU Net as their primary access provider.
- Netscape remains the dominant browser with 39% share of US households accessing the Internet or WWW (we believe this percentage is actually somewhat higher).
- Microsoft Internet Explorer and America Online have similar market shares of primary household browsers at 26% and 29%, respectively. We believe about 40% of AOL household browsers are using Internet Explorer code.

	Any Usage							
	Total	Home Based Business	Bring Work Home	CD-ROM Entertain-ment	Home-work	Online, WWW	Faxing	Personal Finance
Base: Households (millions)	30.5	6.4	21	22.3	15.9	16.8	8.5	11.6
Horizontal %	100%	21%	69%	73%	52%	55%	28%	38%
Internet and WWW Access Provider								
Base: Access Internet or WWW from Home	16.8	4.4	10.5	13.6	8.7	16.8	8.2	8.4
AOL	45%	48%	44%	48%	51%	45%	42%	47%
MSN	11%	7%	13%	10%	12%	11%	8%	11%
Compuserve	4%	2%	5%	5%	4%	4%	3%	3%
Prodigy	6%	12%	7%	7%	7%	6%	9%	6%
Independent (e.g., Netcom, UU Net)	21%	18%	24%	20%	20%	21%	21%	24%
Corporate Gateway	4%	7%	5%	3%	1%	4%	8%	1%
Other	9%	6%	2%	7%	5%	5%	9%	8%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Primary Browser								
Base: Access Internet or WWW from Home	16.8	4.4	10.5	13.6	8.7	16.8	8.2	8.4
Navigator	39%	31%	41%	34%	38%	39%	46%	33%
Microsoft (Net)	26%	55%	33%	28%	30%	26%	32%	37%
AOL	29%	14%	22%	34%	23%	29%	22%	30%
Other	6%	0%	4%	4%	9%	6%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Roper Starch Worldwide

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Household E-mail Usage

- One-half of households (15.2 million) send or receive e-mail. Most use an online service such as America Online or the Microsoft Network as their primary e-mail access provider. Independents comprise 21% of access providers, a figure similar to those accessing the Internet or WWW.
- 12% of households send or receive e-mail through a company or school network. Not surprisingly, households bringing work home from the office are the highest percentage using a company or school gateway.
- The household e-mail client market is dominated by America Online. Almost one-half of US telephone households sending or receiving e-mail usage the AOL client. Aside from AOL, the home e-mail client market is fragmented with none of the other competitors having double-digit share of households.
- Microsoft and Netscape are the next closest e-mail client competitors to AOL at 7% and 9%, respectively.
- One-third of the household e-mail client market is comprised of e-mail clients with very small percentages of the market (i.e., each e-mail client in the Other category has less than 3% share of the household e-mail client market).

	Any Usage - Users							
	Total	Home Based Business	Bnng Work Home	CD-ROM Entertain ment	Home-work	Online, WWW	Faxing	Personal Finance
Base: PC Households (Millions)	30.5	6.4	21	22.3	15.9	16.8	8.5	11.6
Horizontal %	100%	21%	69%	73%	52%	55%	28%	38%
E-mail provider								
Base: Home E-mail households	15.2	4.4	10.2	12.3	7.9	15.2	7.9	7.7
Online service (e.g., AOL, MSN)	57%	64%	60%	61%	60%	58%	50%	67%
Internet Access Provider (e.g. UU Net)	21%	17%	19%	18%	19%	23%	25%	21%
Through company or school network	12%	2%	13%	10%	8%	9%	12%	8%
Other	10%	17%	8%	11%	13%	10%	13%	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%
E-mail client								
Base: Home E-mail households	15.2	4.4	10.2	12.3	7.9	15.2	7.9	7.7
AOL Mail	47%	49%	43%	52%	46%	47%	35%	49%
Netscape (Net)	9%	14%	6%	7%	8%	9%	11%	10%
Microsoft (Net)	7%	5%	6%	8%	8%	8%	6%	6%
Lotus (Net)	4%		6%	4%		4%	4%	1%
Other	33%	32%	39%	29%	38%	32%	44%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Roper Starch Worldwide

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Home User Taxonomy ≤

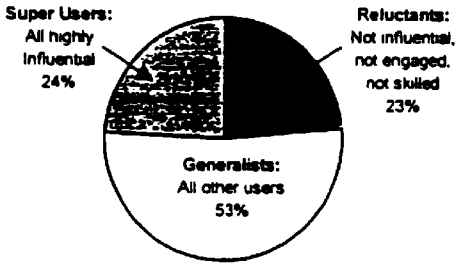
Our study is based to 188.4 million adults in US telephone households. Of those adults, Roper Starch estimates that between 50 million and 55 million are using computers in the household. Understanding and defining the first wave of upgraders, who the opinion leaders are, and propensities to purchase software are important. The power of the Microsoft Home Customer taxonomy is having everyone in the company speaking the same language. For Marketing Managers:

- Align your marketing strategies with learning about these specific audience types, their sizes and profiles, to assist in refining products, services, marketing program and/or developing communications and contact strategies.
- Brief agencies and those who develop contact strategies
- Use it any reference customer types or targets.

The home taxonomy is based on three dimensions related to the purchase behavior, each measured on a 9 point agreement scale. For more information on the taxonomy, hyperlink to a PowerPoint presentation prepared by Corporate Marketing or contact Angela Hall.

Dimension	Questions/Criteria
Influence	"My friends thing of me as a knowledgeable source of information for computer software"
Highly Influential:	8 or 9 response on scale
Not Highly Influential:	1 to 7 response on scale
Engagement	"I am excited about computers"
Highly Engaged:	8 or 9 response on scale
Not Highly Engaged:	1 to 7 response on scale
Skill	"How would you rate your knowledge of personal computer software"
Skilled:	8 or 9 response on scale
Not Skilled:	1 to 7 response on scale

From these questions, customers where classified as Super Users, Reluctants, or General Users. The following chart summarizes the taxonomy and provides approximate population sizes based on an October 1996 AAU study.



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We universally agree that Super Users are our key target audience for marketing communications because of their ability to influence the other taxonomy groups. It should be noted the first wave of telephone surveys from Roper Starch indicates Super Users comprise 15% of adult home PC users. We believe this understates the population of Super Users.

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Operating System Users by Taxonomy ≡

- Windows 95 is used by 62% of adult PCs users in the home. Windows 95 usage among Super Users and Generalists is similar at 64% and 66%, respectively.
- Windows 3.x is used by 26% of adults PC users in the home Win 3.x share is highest among Reluctants ad 33%.
- Macintosh operating systems are used by 11% of adult users in the home and its share is similar across taxonomies.

	Customer Taxonomy			
	Total	Super	General	Reluctant
Base: Primary Home Computers (Millions)	52.4	7.9	24.6	19.9
Horizontal %	100%	15%	47%	38%
Primary Home Computers				
Total (Millions)	52.4	7.9	24.6	19.9
Win 95	62%	64%	66%	56%
Win 3.x	26%	24%	21%	33%
MS-DOS	1%	2%		2%
Mac	11%	10%	12%	9%
	100%	100%	99%	100%

Source: Roper Starch Worldwide
* Based to 188.4 million adults in US telephone households.

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Internet Users by Taxonomy ≤

- America Online is used by 45% of adult users to access the Internet or WWW from home.
- Microsoft Network share is 11% overall but highest among Super Users at 23.
- The data appears to indicate that a high proportion of Reluctants are using independent access providers as their primary access provider. It should be noted that only a small proportion of Reluctants access the Internet and as a result the sample size from this first wave of data is small and may not be representative.
- Netscape dominates browser share among US adult users accessing the Internet from home. Its share is similar among Super Users and Generalists, at 42% and 40% respectively, but drops among Reluctants.
- Microsoft Internet Explorer share is 26% across all customer segments.

	Customer Taxonomy			
	Total	Super	General	Reluctant
Base: Home PC Users (millions)	52.4	7.9	24.6	19.9
Horizontal %	100%	15%	47%	38%
Internet and WWW Access Provider				
Base: Access Internet or WWW from Home	19.6	5.3	10.4	3.9
AOL	45%	45%	42%	52%
MSN	11%	23%	7%	2%
Compuserve	4%	4%	6%	*
Prodigy	6%	2%	9%	3%
Independent (e.g., Netcom, UU Net)	21%	16%	21%	29%
Corporate Gateway	4%	3%	4%	9%
Other	9%	7%	11%	5%
Total	100%	100%	100%	100%
Primary Browser				
Base: Access Internet or WWW from Home	19.6	5.3	10.4	3.9
Navigator	39%	42%	40%	33%
Microsoft (Net)	26%	26%	26%	26%
AOL	29%	30%	25%	38%
Other	6%	2%	9%	3%
Total	100%	100%	100%	100%

Source: Roper Starch Worldwide

Small sample

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E-Mail Users by Taxonomy

- Generalists and Reluctants are more likely than Super Users to use an online service provider when sending or receiving e-mail from.
- Super Users are more likely to use and independent service provider or company or school network when sending and receiving e-mail from home.

	Customer Taxonomy - Users			
	Total	Super	General	Reluctant
Base: Home PC Users (Millions)	52.4	7.9	24.6	19.9
Horizontal %	100%	15%	47%	38%
E-mail provider				
Base: Home E-mail households	17.7	4.8	9.0	3.9
Online service (e.g., AOL, MSN)	57%	44%	61%	64%
Internet Access Provider (e.g. UU Net)	21%	31%	21%	14%
Through company or school network	12%	14%	12%	4%
Other	10%	11%	6%	18%
Total	100%	100%	100%	100%
E-mail client				
Base: Home E-mail households	17.7	4.8	9.0	3.9
Microsoft (Net)	7%	8%	7%	8%
AOL Mail	47%	41%	42%	59%
Netscape (Net)	9%	10%	10%	4%
Lotus (Net)	4%	5%	5%	0%
Other	33%	36%	36%	29%
Total	100%	100%	100%	100%

Source: Roper Starch Worldwide

Office 97 Users by Taxonomy

	Customer Taxonomy - Users			
	Total	Super	General	Reluctant
Base: All Users (Millions)	52.4	7.9	24.6	19.9
Horizontal %	100%	15%	47%	38%
Office 97 Awareness (based to home PC users)	52.4	7.9	24.6	19.9
Not Aware	42%	20%	34%	62%
Heard of, but do not have	48%	68%	53%	34%
Have on home computer	8%	6%	12%	3%
Have, but not on home computer	2%	6%	1%	1%
Total	100%	100%	100%	100%

Source: Roper Starch Worldwide

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Targeting the Taxonomy Segments

- Super Users are the key target audience for the home PC market. Besides being the most influential, they are more likely to stay current with the latest software and upgrade more frequently
- 29% of home users have added memory to their primary computer since purchasing it. While significantly higher among Super Users, this group represents a small portion of the home user base and is already more likely to be running 32-bit operating systems. Generalists and Reluctants make up over 75% of the home user population, but only about one-quarter have cracked the box and added memory.
- Almost three-quarters of adult home users have not heard enough about Windows 98 to know if they want it. Awareness of the next 32-bit operating system is much lower than it was for Windows 95 six months prior to its launch.
- Targeting both the Super User and Generalist will require advertisements more than both the Microsoft Network and America Online.

	Customer Taxonomy - Users			
	Total	Super	General	Reluctant
Base: All Users (Millions)	52.4	7.9	24.6	19.9
Horizontal %	100%	15%	47%	38%
Stay Current:				
Pre-disposed to stay current with latest software version	32%	51%	39%	14%
Acquired software or upgraded in past 6 months	45%	69%	48%	30%
Added memory to any computer since purchase	29%	42%	28%	26%
Awareness of Windows 98				
Have not heard of it	50%	36%	49%	58%
Heard of it, but not enough to know if I want it	23%	30%	22%	20%
Heard of it, but do not want it for my computer	11%	6%	10%	14%
Somewhat interested	11%	11%	13%	9%
Very interested	5%	18%	4%	*
Use Microsoft Office 97	10%	12%	13%	4%
Have children under the age of 18	46%	48%	41%	53%
Base: Access the Internet/WWW from home:	19.6	5.5	10.2	4.0
America Online is primary access provider	45%	45%	42%	52%
MSN is primary access provider	11%	23%	7%	2%
Internet Explorer is primary browser	26%	26%	26%	26%
Base: Sent or received e-mail in past 2 weeks	16.2	4.4	8.3	3.5

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Why Customers aren't Using Win 95

Windows 95 has been available in both OEM and retail versions for over 24 months, yet 31% of IBM compatible PC's are still running 16-bit operating systems.

- The primary unaided reason users say they have not upgraded is they are satisfied with their current systems (23%). Other reasons, all of equal importance (14%), are that it is too expensive, it slows the computer down, and users were not impressed with it.
- Among 486 users, satisfaction with the current operating system (29%), high price (17%), and taking up too much memory (17%) were the primary reasons hindering an upgrade to Windows 95.
- Among Generalists, price was the major inhibiting factor (50%).
- Reluctants indicated satisfaction with current operating system was the main reason for not upgrading (25%), followed by slowing the computer down (20%). They appear to have an "if it ain't broke, don't fix it" attitude.

Question:
Why are you not using Win 95 on this computer?

	Total
% of Win 3.x customers w/ 486+ and >=8MB RAM	72%
First Computer is IBM Compatible and does not use Windows 95	100%
Satisfied with what I have/No Need	23%
Too Expensive	14%
Takes up too much memory	11%
Computer came with another system	6%
It slows the computer down	14%
It is incompatible	6%
Not impressed with it	14%
Not familiar with it/Lack of knowledge	9%
Haven't gotten around to it	6%
Other	3%

Source: Roper Starch Worldwide

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Projections of the Home Installed Base ≤

To help product managers understand the dynamics of the home installed base and the potential upgrade opportunity, a model was created to project operating system share through December 1998. We have chosen to include only household primary machines in this analysis because we believe customers are less likely to purchase a new operating system for secondary PCs.

Upgrade Opportunity

The US household primary installed base is project to grow to 33.3 million machines by December 1998 with Win 32 penetration reaching 90%. Of the Windows 95 machines, 95% will be 486DX or better with >=16 MB RAM, and 65% will be Pentium based with >=32 MB RAM.

Windows 3.x machines will decline to 2.6 million units by December 1998. Of these machines, 26% will be 486DX or better with >=16 MB RAM and 2% will be Pentium based with >=32 MB RAM.

Refer to the table below for installed base projections of household primary PCs through December 1998.

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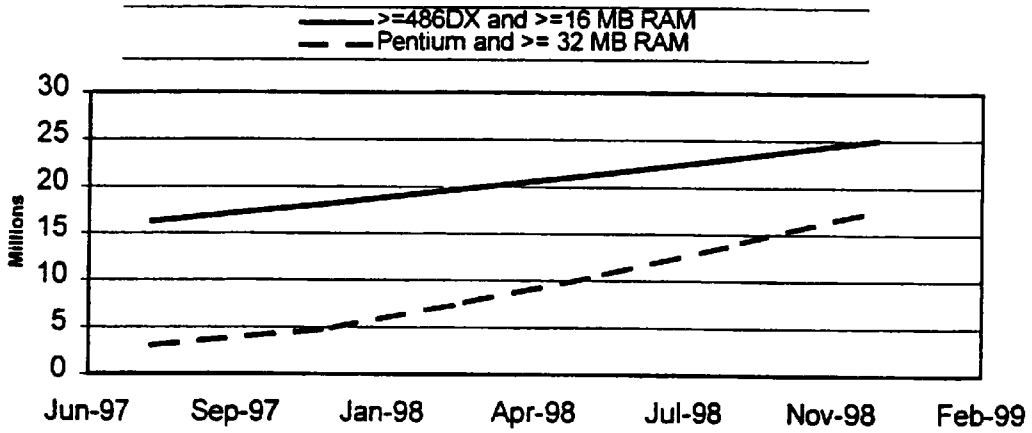
US Household Primary Installed Base
Units in Millions

		Projection				
	Aug-97	Dec-97	Mar-98	Jun-98	Sep-98	Dec-98
Telephone Households	91.3	91.5	91.7	91.9	92.1	92.3
Household Penetration	33%	34%	35%	35%	36%	36%
Primary Machines	30.5	31.2	31.7	32.2	32.8	33.3
Windows 95	19.0	21.0	22.5	24.0	25.6	27.1
>=486DX and >=16 MB RAM	75%	78%	81%	84%	87%	90%
Pentium and >= 32 MB RAM	15%	22%	33%	44%	55%	65%
Windows 3.x	7.9	6.6	5.6	4.6	3.6	2.6
<486 and 8 MB RAM	27%	27%	27%	27%	27%	27%
>=486 and >=8 MB RAM	72%	72%	72%	72%	72%	72%
>=486DX and >=16 MB RAM	26%	26%	26%	26%	26%	26%
Pentium and >= 32 MB RAM	2%	2%	2%	2%	2%	2%
DOS-Only	0.3	0.3	0.3	0.3	0.3	0.3
Mac	3.3	3.3	3.3	3.3	3.3	3.3
Selected Statistics:						
Win 32 Penetration	70%	75%	79%	83%	87%	90%
Tota Installed Base (Millions):						
>=486DX and >=16 MB RAM	16.2	18.2	19.8	21.4	23.2	25.0
Pentium and >= 32 MB RAM	3.0	4.8	7.6	10.7	14.1	17.6

Projected US Household Primary PC Hardware Installed Base



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