

Personal Systems Group Mission Memo

executive summary

Market Overview and Revenue Analysis

The analysis on the following page outlines historical and projected PSG revenues, and assumes one version of Windows. Note that FY97 revenues are projected at \$2.7B, or \$400M short of the Windows/Desktop OS mission goal for FY97. Plans for closing this revenue gap are outlined in the "Product Strategy" section of this document.

The analysis makes the following assumptions in projecting future revenues:

- *PC market growth*: As per Joachimk, estimated at 10%-20% annually
- *OEM royalties*: Also as per Joachimk, estimated to increase slightly over the period
- *OEM penetration*: Estimated to increase as we close off naked systems and as Chicago replaces PC-DOS on certain IBM PCs
- *Upgrade pricing*: The street price of a Windows Upgrade will increase from today's \$49 to \$99. Given an expected channel mark-up of 8%-18%, this price translates to \$82 revenue to Microsoft
- *Future of the Full Packaged Product*: The FPP exists only to create a price ceiling, and so sales will be modest
- *Upgrade penetration*: Windows Upgrade unit projections assume an annual upgrade cycle, with major releases in FY95 and FY97 (13% penetration) and a minor release in FY96 (7% penetration)

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Market Overview & Revenue Analysis							
	FY94	FY95	FY96	FY97	FY98	FY99	FY00
Penetration							
Total Intel PCs	22,000	25,300	32,200	38,300	44,000	52,000	55,000
Total MS OEM penetration	60%	62%	58%	67%	67%	68%	70%
Units							
OEM - MS-DOS	13,251	15,744	18,800	25,500	5,000	2,000	0
OEM - Windows	3,071	5,723	12,600	19,100	24,480	33,360	38,500
Retail - Windows FPP	1,994	3,410	3,937	2,500	500	100	0
Upgrade - MS-DOS	928	2,700	6,126	2,860	750	250	0
Upgrade - Windows	513	1,941	1,209	979	6,500	5,214	14,019
Revenues							
OEM - MS-DOS	\$268,538	\$330,166	\$330,000	\$455,000	\$85,000	\$30,000	\$0
OEM - Windows	\$50,660	\$102,255	\$220,000	\$370,000	\$930,240	\$1,334,400	\$1,578,500
Retail - Windows FPP	\$141,893	\$231,937	\$246,805	\$140,000	\$75,000	\$15,000	\$0
Upgrade - MS-DOS	\$50,677	\$143,293	\$263,136	\$110,000	\$30,000	\$10,000	\$0
Upgrade - Windows	\$28,398	\$91,653	\$60,908	\$40,000	\$533,000	\$427,515	\$1,149,574
Total Revenue	\$540,265	\$899,303	\$1,120,849	\$1,115,000	\$1,653,240	\$1,816,915	\$2,728,074
Per unit revenues							
OEM - MS-DOS	\$20.27	\$20.97	\$17.55	\$17.84	\$17.00	\$15.00	
OEM - Windows	\$16.49	\$17.87	\$17.46	\$19.25	\$38.00	\$40.00	\$41.00
Retail - Windows FPP	\$71.21	\$68.02	\$62.64	\$56.00	\$150.00	\$150.00	
Upgrade - MS-DOS	\$54.60	\$53.07	\$42.95	\$38.46	\$40.00	\$40.00	
Upgrade - Windows	\$55.33	\$47.22	\$50.39	\$40.84	\$82.00	\$82.00	\$82.00
Non-MS-DOS OEM units							
Naked		4,500	9,000	5,800			
PC-DOS		2,800	3,000	4,000			
OS/2		400	1,000	1,700			
DR DOS		1,500	700	500			
Unix		300	300	300			
Netware, Banyan, etc.		100	200	400			
Windows NT				100			
Assumptions							
Upgrade penetration					13.0%	7.0%	13.0%
Windows installed base					50,000	74,480	107,840

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Gross Profitability Analysis

The analysis below outlines historical and projected gross profit, which is measured simply as revenues minus cost of goods and cost of product support. There is no accounting for fixed costs such as marketing, R&D, allocations, etc.

Over the period FY91 - FY94, PSG's overall gross margin is estimated at 89%. Over the period FY95 - FY97, we project that gross margin will increase five points to 94%. This projection is based on two assumptions about our retail business:

- *Increased per unit revenue:* The revenue to Microsoft for an OS Upgrade will go from \$40 today to over \$80 for Chicago
- *Advent of CDs:* CD SKUs will comprise over half of all upgrades over the period as compared to 0% today. CD upgrades cost \$6 less to produce than floppy upgrades, which translates to over seven margin points (\$6/\$82)

Profitability Analysis							
	FY91	FY92	FY93	FY94E	FY95	FY96	FY97
Revenues							
OEM - MS-DOS	\$268,538	\$330,166	\$330,000	\$455,000	\$85,000	\$30,000	\$0
OEM - Windows	\$50,660	\$102,255	\$220,000	\$370,000	\$979,200	\$1,334,400	\$1,540,000
Retail - Windows FPP	\$141,993	\$231,937	\$246,605	\$140,000	\$75,000	\$15,000	\$0
Upgrade - MS-DOS	\$50,677	\$143,293	\$263,136	\$110,000	\$30,000	\$10,000	\$0
Upgrade - Windows	\$28,396	\$91,653	\$60,908	\$40,000	\$520,000	\$417,088	\$1,121,536
Total Revenue	\$540,265	\$899,303	\$1,120,649	\$1,115,000	\$1,689,200	\$1,806,488	\$2,661,536
Per unit revenues							
OEM - MS-DOS	\$20.27	\$20.97	\$17.55	\$17.84	\$17.00	\$15.00	\$15.00
OEM - Windows	\$16.49	\$17.87	\$17.46	\$19.25	\$40.00	\$40.00	\$40.00
Retail - Windows FPP	\$71.21	\$68.02	\$62.64	\$56.00	\$150.00	\$150.00	\$150.00
Upgrade - MS-DOS	\$54.60	\$53.07	\$42.95	\$38.46	\$40.00	\$40.00	\$40.00
Upgrade - Windows	\$55.33	\$47.22	\$50.39	\$40.84	\$80.00	\$80.00	\$80.00
Gross margins							
OEM - MS-DOS	100%	100%	100%	100%	100%	100%	100%
OEM - Windows	100%	100%	100%	100%	100%	100%	100%
Retail - Windows FPP	75%	74%	72%	69%	89%	89%	89%
Upgrade - MS-DOS	80%	79%	79%	77%	77%	77%	77%
Upgrade - Windows	68%	63%	65%	57%	82%	83%	84%
Gross profit							
OEM - MS-DOS	\$268,538	\$330,166	\$330,000	\$455,000	\$85,000	\$30,000	\$0
OEM - Windows	\$50,660	\$102,255	\$220,000	\$370,000	\$979,200	\$1,334,400	\$1,540,000
Retail - Windows FPP	\$107,098	\$172,267	\$177,713	\$96,250	\$66,500	\$13,300	\$0
Upgrade - MS-DOS	\$40,468	\$113,592	\$208,001	\$84,259	\$23,100	\$7,700	\$0
Upgrade - Windows	\$19,415	\$57,682	\$39,755	\$22,860	\$425,100	\$347,226	\$942,090
Total Gross	\$486,180	\$775,962	\$975,469	\$1,028,369	\$1,578,900	\$1,732,626	\$2,482,090
Overall Gross margin	90%	86%	87%	92%	93%	96%	93%

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Business Investments

Headcount estimates for the next three years. Explain projected changes

Alliances, acquisitions and purchased technology

For MS-DOS 6 we spent \$2,290,000 to acquire external technology. Six major features were acquired in part or in toto from four vendors in a series of flat-fee or no-fee transactions. In addition, as part of one of the deals, we enlisted Central Point Software to provide ongoing anti-virus updates worldwide.

Unlike MS-DOS, we expect that future technology acquisitions for Windows will be for non-core, low-risk features. Also, since the inclusion of one's technology in the operating system is a marketing coup, PSG has historically paid more modest licensing fees than, for example, an application, and has never paid royalties. We expect this trend to continue.

The technologies acquired for Chicago are:

- *File viewers*: Licensed from SCC for \$462K plus marketing benefits
- *Tape backup support*: Licensed from Arcada for \$250K plus marketing benefits
- *Client backup agent*: Licensed from Cheyenne for \$75K plus marketing benefits only
- *Terminal replacement*: Licensed from Hilgraeve for \$20K plus marketing benefits
- *Paintbrush*: \$88K, work for hire
- *MS-DOS Editor*: \$15K, work for hire

Total: \$910K

We expect that Cleveland, which is not envisioned as a core technology release, will rely more on licensed technology than Chicago in order to free up development resources for Memphis. We also expect that MS-DOS 7 will consist almost entirely of licensed technology.

Localization plans

Assumptions: Technology/Platforms

The gating hardware for a desktop operating system release is the installed base, although not all of it; data from the MS-DOS 5 and 6 Upgrades indicates that almost 90% of purchases were made by customers who had purchased PCs within the last three years. Using this data as a guide, the target hardware for each of the next three desktop Windows releases is as follows:

Release	Release Date	Target date (three years before release date)	"Sweetspot" PC on target date
Chicago	H2, 1994	January 1, 1992	386, 4MB, VGA
Cleveland	H2, 1995	January 1, 1993	486, 4MB, VGA
Memphis	H2, 1996	January 1, 1994	486, 8MB (4MB?), SVGA

In addition, although the operating system should not require new technologies, it should exploit them as they become mainstream on new PCs or in the aftermarket:

Release	Release Date	"Sweetspot" PC on release date	Other new hardware and enabling technologies
Chicago	H2, 1994	486/66, 4MB, 800 x 600 x 256, 2X CD-ROM, 16-bit sound, fax modem	Pen, tape drive, Internet
Cleveland	H2, 1995	Pentium/66, 8MB, 1024 x 768 x 256, 3X CD-ROM	DSP?

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Memphis	H2, 1996	Pentium/100, 16MB, 4X CD-ROM	High-speed data lines into the home?
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Product Strategy

The product release plans for PSG over the next three years are as follows:

Product	CY 1994	CY 1995	CY 1996
NT version	<u>Daytona - Q2</u> <ul style="list-style-type: none"> Performance WOW 	<u>Cairo - Mid-year</u> <ul style="list-style-type: none"> Server emphasis Distributed security DFS OFS-based directory service 	<u>Memphis NT - H1</u> <ul style="list-style-type: none"> OFS OLE/VB customizable UI
Intel version	<u>Chicago - H2</u> <ul style="list-style-type: none"> Win32 PnP New UI Improved connectivity 	<u>Cleveland - Mid-year</u> <ul style="list-style-type: none"> Cairo client-side support Low-risk features cut from Chicago (wastebasket, animations, beginner shell) Improved MM support 	<u>Memphis - H1</u> <ul style="list-style-type: none"> Same as Memphis NT

Product packaging strategies

As noted in the Market Analysis section earlier, PSG is forecasted to fall \$400M short of its revenue goals in FY97. In considering packaging and pricing options to close this gap, we followed these guidelines:

- Maintain or grow OEM market share without lowering price
- Seed the Win32 API as broadly as possible
- Have a simple and compelling Upgrade message
- Rationalize today's multiple client OS offerings

Aside from doing nothing, there are two basic packaging alternatives:

1. Two OEM products (Base and Premium Chicago), One retail product (Premium Chicago)

This plan creates two versions of Windows with different positionings. Buyers of new PCs would most often receive Base Chicago. Premium would be a superset of Base, and include all bits. All retail buyers would purchase the same upgrade product - Premium - whether upgrading from Windows 3.1, WfW or Base Chicago. Below is a simple price list:

Base Chicago	\$40 (Price to OEM)
Premium Chicago	\$25 (Price to OEM)
Premium Chicago Upgrade	\$80 (Price to channel)

This alternative generates two additional sources of revenue:

- *OEM:* OEMs pay an additional \$25 to license Premium. We estimate that 10%-20% of PCs would ship with Premium
- *Retail:* New PC buyers upgrade to Premium at retail (assuming their PC came with Base). We estimate we would attach a Premium Chicago Upgrade to 15% of all PC purchases

This plan is estimated to generate an additional \$500M in FY97 revenue. The risks are:

In creating two product identities, there is the potential for mass confusion

The plan relies heavily on attaching at retail to a new PC sale, which we have attempted in the past without much success

Premium Chicago will fail unless it has a simple positioning and compelling feature set vis-a-vis Base

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Finally, as this plan allows for only one retail product, it does not allow us to rationalize our client OS offerings even by 1996; by "rationalize" we mean making the Intel version the Base, and NT the Premium. Since it would be Premium, NT would be the Upgrade as well. However, the target PC for the 1996 Memphis release - an 8MB 486 - won't run NT Memphis acceptably.

2. One OEM product (Chicago), Two retail products (Chicago and Frosting)

This plan creates one version of Windows. OEM and retail Chicago are essentially the same bits. Frosting is simply an add-on to Chicago and positioned as such. A simple pricing matrix is as follows:

Chicago	\$40 (Price to OEM)
Chicago Upgrade	\$80 (Price to channel)
Chicago Frosting	\$40 (Price to channel)

This alternative also generates two additional sources of revenue:

- *OEM:* OEMs pay an additional \$10 to license Frosting. We estimate that 10% of PCs would ship with Frosting
- *Retail:* We estimate about one-third of retail Upgraders would purchase Frosting

This plan is estimated to generate an additional \$200M in FY97 revenue. We view this plan as riskless, although it is not forecasted to close the revenue gap of \$400M.

Under this plan we could rationalize our client OS offerings by 1996, but not easily; by "rationalize," we mean making NT the Frosting. One problem is that NT will presumably offer the same performance as the Intel version only on 16MB systems, which will have become mainstream only 6-12 months earlier. So the typical upgrader, who will not have 16MB, will be unable to run Frosting. Second, we could not sell NT as Frosting at all unless its compatibility and range of supported devices approached that of Intel version, which is not the case today.

Competitive advantages vs. OS/2

- *Installed base / brand name:* Most Windows users would never consider OS/2 an upgrade path
- *Compatibility:* Advantage today, becomes even bigger if Win32 applications become prevalent
- *Performance and lower resource requirements:* Unlikely that OS/2 will ever run properly on 4MB or outperform Chicago on 8MB
- *Ease of setup and configuration:* OS/2 is difficult to configure; this advantage could diminish over time. OS/2 is likely to have some form of PnP, removing this as an advantage for Chicago
- *Ease of use:* Workplace Shell is unusable by novices
- *Better client side networking and manageability:* OS/2 has no built-in networking today
- *Broader device coverage:* Sustainable because of Chicago's better real-mode device driver compatibility

Competitive disadvantages vs. OS/2

- *Robustness:* OS/2 runs Win16 apps in separate VMs, giving it a perceptual robustness advantage. We can address reality of robustness in Chicago, but not the perception until Cleveland.
- *Pre-emption:* Similar to above; we can address by doing some form of Win16 pre-emption in Cleveland
- *Multimedia:* Preemption and threads give OS/2 the advantage. Should be addressed in Cleveland

Competitive advantages vs. Mac

- *Price/performance:* This advantage could be lost if Power PC and PPC-specific apps deliver as promised
- *Range of available software and hardware:* ISV and IHV momentum are with Windows
- *Development tools:* Neither of the two major tools vendors develops for the Mac

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- Multitasking
- Modern look: The Mac UI has become dated; expect Apple to remedy this problem

Competitive disadvantages vs. Mac

- Ease of hardware configuration: Chicago should diminish this advantage substantially
- Ease of software configuration: App uninstall would help here
- OS multimedia services: Quicktime is considered more fully-featured than VFW; not expected to change until Cleveland at the earliest
- 2D/3D graphics and multimedia tools: Selection of tools for Mac is much wider than for Windows

Marketing Strategy

Customers

The principal customer segments are:

- Opinion leaders: Press and highly influential users, such as beta or early experience testers, and those active in electronic discussions
- First Wave: Defined as users who typically upgrade their operating system; about 20% of all users
- Next Wave: Defined as users who buy software or have purchase influence but typically do not upgrade their operating system; about 40% of all users
- Small and medium organizations: Any organization that has a "one-to-many" buying pattern exists but does not have direct contact with the MS field sales force
- Large organizations: Those companies, governments and universities in direct contact with the MS field sales force
- OEMs: Any manufacturer whose business model necessitates bundling Windows
- ISVs: Commercial vendors and in-house authors of Windows applications

Communication Methods

- Positioning: Past experience tells us that the First Wave gathers information voraciously and so is largely unaffected by positioning. Therefore, as with MS-DOS 6, we expect to position primarily to the Second Wave as they are most in need of a simple message and represent the largest incremental opportunity
- PR: As always, PR will be by far the most important communications tactic for all customer segments, and we plan to communicate through both trade and extended-reach PR vehicles. However, while PR alone is sufficient for First Wave communications, it is not sufficient for any other segment (aside from OEM).
- Advertising: Unnecessary for the First Wave, although expected to be tested in a larger and more expensive role in Second Wave communications
- Other communication methods (Direct mail, collateral, point of sale, etc.): Not expected to play a major role except in specific targeted marketing efforts

Marketing Spending

PSG marketing efforts have always relied heavily on PR. Consequently, the percentage of retail revenue spent on PSG marketing has traditionally been low, and as low as 3% in the case of the MS-DOS 6 Upgrade.

The biggest potential change in the PSG marketing model is a shift to a more intensive appeal to the Next Wave. Market research indicates that awareness is a huge problem in the Next Wave, and we have failed to date to devise an inexpensive yet effective way to speak to them. Should we decide to use tactics such as advertising and event marketing, the cost of marketing would increase.

Support

Major support issues are:

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- Launch staffing levels: The lesson from MS-DOS 6 is that packed PSS lines fuel the perception of product problems and create frustrated, vocal customers. The old PSS model of staffing to 80% of peak demand is too risky with high-volume, high-visibility products. In the future we will staff to at least 100% of peak demand.
- Launch resources: Initial forecasts indicate that Chicago may require as many as 800 additional technicians; flexible outsourcing of product support is an inevitability.
- Third party support: Solution providers and other third party support providers will be trained to support future releases

Sales Strategy

- Opinion leaders: Use traditional PR tactics and new information highway-based tactics to create a buzz and build pre-launch momentum
- First Wave: Create a sense of "coolness" through pre-launch coverage in the trade press
- Next Wave: Use non-traditional vehicles, channels and bundles to reach
- Small and medium organizations: Attack through SP's and jumpstart evaluation through massive early experience programs
- Large organizations: Remove barriers for mass adoption
- OEMs: Get early commitments
- ISVs: Smother with information, create a sense of inevitability of success, and provide clear direction on how best to exploit new services in Windows

Distribution Strategy

- Breadth: Target Chicago breadth is 20K outlets in the U.S. as compared to the MS-DOS 6 Upgrade, which hit a Microsoft-record 13K outlets at launch. Potential channels include supermarkets (unlikely, however, at \$99), video and record stores
- International: Spend more time helping the subs increase distribution
- Leverage: Use partners to create inexpensive, incremental breadth. Example: DOS for Dummies got us a new channel (bookstores) and resulted in 1,000 incremental outlets at almost no cost
- CD: Chicago is first test of distributing encrypted bits on CD
- On-line: Could be used to deliver patches and small step-up products

Packaging/Licensing Model

See the "Product Strategy" section for a discussion of packaging and licensing. In addition, the Windows Resource Kit maybe used to offload corporate features to save on cost-of-goods.

Programs and Initiatives

Aside from marketing and PR, the major programs under consideration include:

- Early evaluators: Seed 250,000 beta units to build momentum and squelch the perception of a .0 release
- Information highway marketing: Use the information highway to create a building buzz on Chicago

Competitive Marketing Strategies

OS/2

- Position as a Windows utility and a dead-end
- Focus, focus, focus on driving ISVs to Win32
- Conduct thorough technical analysis of all product releases
- Aggressively publicize product incompatibilities, present and future, and other shortcomings via PR and the information highway

Novell

- Position Personal Netware as not adding any value over the Netware 4.0 client
- Position DR DOS as "as incompatible as ever"

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- Conduct thorough technical analysis of all product releases
- Aggressively publicize product incompatibilities, present and future, and other shortcomings via PR and the information highway

Apple

- Position Mac System as an OS past its prime and losing ISV momentum
- Neutralize Apple's remaining ease-of-use advantage - "They still do some things easier, but unlike the past, now we do some things easier." Highlight the button as an ease-of-use innovation.
- However, avoid getting into an ease-of-use battle with Apple

Dependencies and shared objectives

- Mail: Delivering information client technology for Chicago. Goal is that positioning of EMS will be one positioning leg or sub-leg of Chicago
- MOS: Delivering information highway connectivity, including Internet connectivity, for Chicago. Dependent on Chicago to seed the MOS client
- Cairo: Building key technology for Cleveland and Memphis releases
- At-work: Delivering fax and TAPI. Dependent on Chicago to building an installed base of At-work-compatible fax clients
- Winpad: Delivering PIM for Chicago. Dependent on Chicago to seed Winpad-compatible PIM
- External: Dependent on great Win32 apps, PnP hardware and PnP PCs for future success
- External: Dependent on Intel to keep us price/performance competitive vs. System 7 and the Workplace OS on the Power PC

Key success factors

- A Chicago that delivers performance, stability, compatibility, and features that work as promised
- Chicago-exploitive software and hardware
- Positive PR and reviews

Risks

- IBM successfully clones Win32
- ISVs stall on Win16
- OS/2 2.2 runs well on 4MB or outperforms Chicago on 8MB
- The combination of Power PC and PPC-specific Mac apps creates an overwhelming price/performance advantage vs. the combination of the Pentium, Chicago and Win32 apps

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