From: Dan Neault
Sent: Thursday, December 13, 2001 7:24 PM
To: Jim Allchin; Bill Benack
Subject: Most recent slides
Attachments: PC Client 12.13.1913.ppt

We made a little progress today you will see reflected. Rogers Weed has other ideas to discuss tomorrow re: growth, mix, mining the IB; BillBen and I pulled in a few ideas reflected here.

Thanks.
–Dan

PC Client Strategy and Business Growth

SLT Discussion

12/18/2001

Take-Aways

- To be written after we complete deck

Major Challenges

(material possibly for take aways)

- PC business hyper-competitive starting with network computer threat
- Windows doesn't invite PC differentiation;
  - Drives commoditization
- IHV & MSFT lack alignment
  - IHV: Performance metrics & cost; no differentiation
  - MSFT. Features, reliability & user satisfaction
- OS not often a PC purchase criteria
  - OS value not understood
  - Selling scenarios don't break through distribution channels; demand generation sits only with MSFT
- PC's are overkill for web-based applications / scenarios
- Dot.com/Internet experience devalued software experience
- PC is no longer the only entrance to electronic information network
  - PPC / Cell phones are alternatives, move integration point closer to the user
- Linux on the desktop - driven by OEM/corporate cost focus, flexibility for savvy end users
- Complex PC environment stops purchases (drivers, incompatibilities, protocols, make the network work, downtime, the unexpected)
  - Some is inevitable due to nature of open platform
  - Pent up anger towards MSFT – we are the common denominator

Agenda

- Key Takeaways
- Situational Analysis
  - Business
  - Technical
  - Threats
- Strategy of Record
- Big Levers
  - PC growth
  - Ecosystem
  - Pro Mix
  - Mining Installed Base
  - Non-PC Devices
  - Anti-piracy
  - Customer Satisfaction
- Other Broad Issues
- Dreams in 5 years
- Appendix

RJ2

Business Situation Analysis

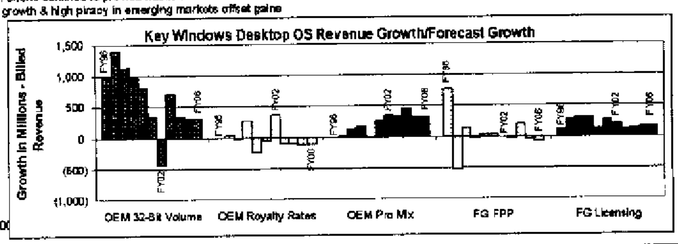
- Positive growth, but decelerating
  - FY95-01 CAGR = 29%
  - FY02-08 forecasted CAGR = 8%

New Machine Revenue

- PC Shipments reach an inflection point
  - FY95-01 Consistent annual growth of 12M units
  - FY02 Units down 3M or 3% Y/Y, $1 3B impact to MS (Win only)
  - FY03-08 Forecasted annual growth of 5M - 9M PC's
- Pro Mix is short term growth engine
  - OEM Pro mix increases from 22% to 30% in FY02
  - Targeting 55%+ by FY06, 70% corporate & 20% consumer
- Royalty rates are at risk
  - MNA royalties currently holding due to MDP
  - Declines expected due to competition & OEM consolidation
  - MNA share +5 points to 73% over past 2 years, lower avg RPL
- Piracy containment is critical
  - Activation cuts casual piracy – 22% WPA Failure/98% Illegal Unlock
  - Legal efforts continue to provide traction
  - High growth & high piracy in emerging markets offset gains

PC Installed Base Revenue

- Licensing is the key driver of $/PCIB
  - EA's creating LORG success - $x / PC / year & Attach
  - SORG's are reluctant to upgrade
    - Expense and perceived pain > perceived gain
    - Fighting the "Good enough" scenario
  - No broad consumer program
- Packaged product is only 5-6% of client revenue
  - Launch PR is the primary consumer touch point
  - Only reaching 1 2% of Consumer/SMB installed base / year
  - Lowest margin segment due to product support
  - Pro mix inching up from 17% in FY02, Longhorn/Blackcomb will drive a step change



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Slide 5

RJ2 Growth Rates/Forecasts still based on Billed Revenue. Working to model Adjusted Gross Revenue. Working on getting some specific industry #s
Rodney Jenkins, 12/11/2001

Business Situation - Industry

- OEM margins very weak
  - MS profit per license > OEM profit per system
  - 2nd day shipping a profit center @ Dell
  - <Need data>
- Dell is the only manufacturer winning
  - <stats>

rmt10

- OEM PC R&D spend is declining
  - <Fill in examples for key OEM's>

- Apple cost vs Win/PC cost
- VC funds flowing to non-Win32 projects
- Overall software sales declining??

Slide 6

rmt10

How about showing overall industry rev in a few lines.

top-line top 5 OEM rev y1-5
bottom-line top 5 OEM net y1-5
periph revenue w and w/o printers.

SW rev #s as good as we can get.
*NA retail biz/consumer
*EU retail biz/consumer
*any research on LOB & var channels
*focus, if we can, on theory of diminising thick client revenue
R. Michael Taylor, 12/12/2001

Technical Situation Analysis

- PCs are arrested in the "good enough" state
  - Internet (browsing and email) was the last big boom for PC replacement
  - Windows XP will capitalize on reliability through the code-base integration and photo/music scenarios
  - Little hardware innovation due to shrinking margins and R&D investments in the commoditized OEM/IHV segments
  - Few breakthrough software applications and none targeting latest OS features (e g , Napster)
  - Limited synergy between software and hardware advances (e g , 3D graphics, wireless)
  - Upgrade, management and deployment complexity and cost limit adoption of new OS and applications
  - Innovation moved to the web and to the "mobile" devices
- Longhorn is focused on re-invigorating the platform in key areas
  - Rich storage, first pass at the Natural Language
  - Communication and community scenarios, better mobility scenarios
  - New rendering engine that takes advantage of the 3D graphics
  - Further improvements to automated feedback cycle (e g., Watson and Windows Update)
- Still need breakthrough new scenarios, applications, form-factors and hardware designs
  - PC excitement and relevance is centered around its ever-growing utility for every-day applications
  - New applications for communication, creativity, control, information processing, and entertainment activities
  - Communication and community enhance each application with network effects
  - Pervasive mobility and new form factors enable new scenarios and re-vitalize existing scenarios in new contexts
  - UI abstraction changes allow higher level tasks to be accomplished in the same amount of time (DOS->GUI->NL)
- Major technological shifts are under way looking forward
  - Pervasive connectivity, distributed applications and disaggregation change the definition of the PC and the OS
  - Explosion of information, interruptions and required user actions demand new UI paradigms and personal agents
  - Digital media becomes key part of digital data/content and places new demands on systems
  - Self-management capabilities required given complexity explosion

Competitive Situational Analysis

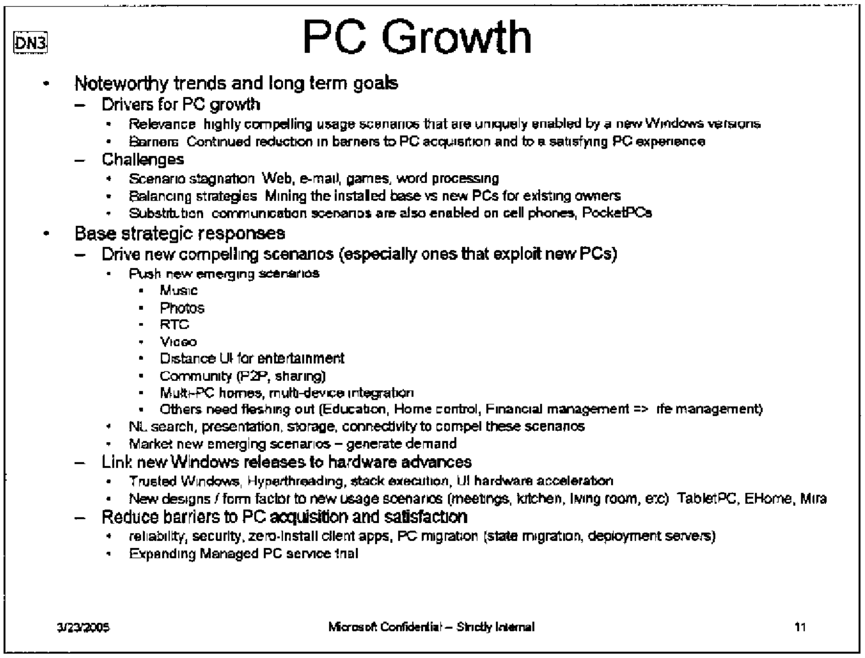
- AOL is focusing on establishing a subscription relationship with every consumer based around a complete experience for communication, entertainment and information access
- Apple focuses on end-to-end, cutting edge scenarios that combine hardware, software and services into an easy/elegant solution
  - Vertically-integrated hardware/software stack allows innovation to occur in lock-step, simplifies the testing matrix and the system complexity
  - OS X does an admirable job separating the slow-changing commodity part (off-loading its development and maintenance to the community) and the innovative layer (UI, applications, integration, connectivity)
- Linux offers a modular pool of commodity system and application IP that eases competitive entry into targeted segments
  - "Good enough" functionality, low cost and compatibility for key applications and hardware profiles threaten corporate/educational/international desktops
  - An evolutionary development eco-system that continues to improve the basics
- Distributed device platform
  - Sony is weaving a web of connected devices each focusing on specific application or experience and banking on Internet or IP-protected media for interoperation (memorystick)
  - Handhelds (Palm, PocketPC, phones) are offering commoditized software functionality in new mobile scenarios at fraction of the royalty (from none to small)
  - Java is being pushed as a distributed platform (cell phones, home automation, server applications, client applications, mobility, embedded)

Strategy of Record

- Business Axioms
  - New machine focus
    - Royalty is king
    - IB retail bump/excitement on new version
    - Less (basically no) free new value (vs QFEs) software to IB
  - Two price points
    - Most new value in Pro, but remain competitive in HE
    - More Pro value for SORG and Home users
  - Maintain HE OEM pricing by adding new value constantly
  - Move to annuity/ongoing relationships with customers
  - Get the eco-system more healthy (developers, OEMs, etc.)
  - Fight piracy
- Technical Axioms
  - Romance hardware improvements (e.g., TW, integrated webcams, wireless, etc.)
  - Simplification and value through integration
  - Encourage Microsoft Windows pure experience
  - Focused quality efforts (reliability, security, etc.)
  - Search for "irresistible" new experiences
  - Need technical synergy with Office that is only possible on new Windows releases
  - Holistic automated feedback loop
  - Move to componentization for flexibility
  - Synchronized release with server
  - Richer programming model (presentation, storage, networking)
  - Invest in formats/protocols (ensure we are not blocked; gather IP advantage if possible)

Big Challenges

- PC growth
- Ecosystem
- Pro Mix
- Mining Installed Base
- Non-PC Devices
- Anti-piracy
- Customer Satisfaction



Investigate operators subsidizing wireless data enabled PCs

The idea behind this comes from the observation that carriers are prepared to subsidize wireless PDAs to the tune of >$600 in return for a year's contract – so why not wireless PCs as well? They may in fact drive higher traffic & therefore be worthy of higher subsidy.

Slide 11

DN3 Is there a reasonable growth target to shoot for? How do we measure whether we're doing well? For example, would 10% YOY PC growth ad infinitum be a rational expectation?

Are we focused sufficiently on customer segmentation? For example, if we took a look at the consumer segment only what would we see? Would we see higher/lower penetration than in the SORG/MORG area? Would we see untapped growth we're not reaching due to price/functionality/needs analysis? For example, the US HH penetration is at 60%. What could we do to target the remaining 40%?

Are we sufficiently customizing our product for international markets? Are there features that, say, may be more interesting for Asian business users that would boost demand overseas?

If we look at Microsoft's sales and marketing structure, are we set up in a way that maximizes creation of demand for our products? For example, would a consumer marketing org focused only on boosting demand for consumer PCs be beneficial?

Danial Neault, 12/13/2001

PC Growth - Ideas

- Ideas
  - Increasing PC relevance & appeal
    - Think harder to impact scenarios today (browsing, E-mail & PIM, games, word processing)
    - New class-breaking, captured apps from MS and partners
      - Office.Net should be demonstrably better (exclusive?) on Longhorn
      - NL that everyone wants (PIM) – include in OS or ONLY available on new OS
    - Drive scenarios requiring more continuous personal access to PC
      - Investigate carriers subsidizing wireless data enabled PCs
      - Drive cell radios into PCs, create simple apps
      - Take a leadership role in making 802.1x build-out expand
      - Link broadband migration to new PCs somehow?
      - Uniquely advantage Windows using these communication services
  - Reducing barriers
    - Expand customer financing pilots
      - A way for us to establish a customer billing relationship

rmt3
rmt4
rmt5

Ecosystem

- Noteworthy trends and long term goals
  - Slowing PC sales, retail SW sales, corporate deployments
  - OEM/IHV innovation and quality down
  - Continued move away from installing SW (corp and retail)
  - Partners not incentivized to drive Windows upgrades
  - PC not 1st class citizen in WW network (cable/STB, phone/PDA)
- Base Strategic responses
  - Zero friction client code (richness of Windows, cost of Web) (davidds)
  - Easier SW deployment (debbl)
  - Quality feedback loop with ISV/OEM/3rd party applications (somase)
  - Connectivity everywhere with PC as 1st class device (jawadk)
  - Community development a la Linux (mikenash)
  - Content protection/DRM (jmanfer)
  - Better together Windows/devices (toddw, amirm)
  - Promote/Market "pure" Windows (rogersw)
- Ideas
  - OEM differentiation – HW IP pooling, per OEM opportunities
  - Consumer channel – catalog reference selling
  - Marketing program for corporate IT to feel safe using client code
  - Apps as communities w/ service – ongoing relationship, revenue
  - Make upgrade, PC purchase a revenue event for IHVs/ISVs

Slide 13

rmt3

Have we fully considered the role of the channel in the ecosystem? I'm wondering, for example, if we are seeing a reduction in new SW catagories/sales because the channel is not set up to push new ideas. I expect that it's set up to push games and produtivity SW in the most efficient manner, but is not set up to push new client apps w/new ideas behind them.

One possible idea is to look at the MSFT channel management infrastructure as a means to help push new ideas onto store shelves w/sufficient marketing $$ to get them noticed. This would be an expanded role for MS publishing

One other problem is that the Web tought consumers the arguably bad habbit that SW is free to them.

One possible idea is to do general PR/branding around cool client apps for biz/consumer. Something like, "I bought such & such for $$ and it made my life better".

R. Michael Taylor, 12/13/2001

rmt4 An ecoystem point worth obvserving is that it's all about supply and demand and rate of change.

We want a high rate of growth driven by demand from our primary consumer and business segments. A relatively high rate of change in technology innovation, e.g. at a rate that can be efficiently adopted. We want a supply chain that supports the growth and creates the innovation.

The ecosystem ties this entire presentation together. If we set key growth targets in new PCs, mining the installed base, and on-going revenue derived from customer relationshiops serviced by new products & services, then our ecosystem problem tilts to doing everything we can to work with members of the ecosystem to achieve those set goals.

One big bet idea not on this slide would be to set scenario direction for 5 yr. point to required technologies, work with companies and VCs to see that necessary innovation is funded at required levels.
R. Michael Taylor, 12/13/2001

rmt5 Wow can we set a target for the ecosystem? What are the metrics?

Overall revenue growth @ XX%
Overall industry margins @ YY%
R. Michael Taylor, 12/13/2001

Pro Mix

rmt7

rmt8

- Noteworthy trends and long term goals
  - OEM revenue = 76% of Windows client revenue for FY01.
  - Pro Mix OEM run at 22% for FY01, 30% for Q1FY02.
    - Pro Mix FY04 plan = 40% OEM run rate, dream goal of 60% represents $1 2B incremental revenue/profit over FY04 plan
    - FY01 SORG 15%, Home: 2%, Enterprise: 47%
  - OS generally not a consideration in new PC purchase decision
- Base strategic responses
  - Move to more differentiated skus
    - Multiple Premium skus (super set of HE), (e g , tablet, MC)
    - By default, all value-add Longhorn features will be Premium editions only
    - Product naming/marketing/SKUs TBD
- Ideas
  - More "Premium only" classes of PCs
    - KW PC – legacy free, LCD with integrated video camera & mic, biometrics
    - SORG PC - raid HDs for backup, integrated phone (vmail, dialing, etc)
  - Do in-place upgrade (once we have TW)
  - OEM discounting based on mix
  - "Free" feature packs only with Pro
  - Security blanket around support (longer, more incidents, etc)
  - Synergy with Great Plains, bCentral (better together)

Slide 14

rmt7 Ss 60% the optimal mix? If we hit 60% would we see increased price pressure on Pro?
R. Michael Taylor, 12/13/2001

rmt8 Assumes only two SKUs. Why not targeted SKUs to specific customer segments?
R. Michael Taylor, 12/13/2001

Mining Installed Base

- Noteworthy trends and long term goals
  - PC lifecycle 3-4 years (except for EAs, little revenue during interval)
  - Upgrades (1-2% per year of capable installed base) – trending information – rivals
  - Minimal business from add-ons (Plus!) – Richlap
  - 1% increase in touching IB is $400M
- Base strategic responses
  - Sustaining marketing to drive Windows XP further into installed base
  - Make it even easier to upgrade to the next version of the OS (technology, including data migration)
  - Continue to improve deployment and management story for Windows XP
  - Continue efforts for ISVs and IHVs to improve quality and compatibility
  - Discount for second home PC
- Ideas
  - Add value (code distribution, licensing reporting) for Software Assurance (keeps customers on EA)
  - Home/SORG TS TSCAL on downlevel PC to access new PC/OS functionality
  - Subscription
    - goal: get credit card in Longhorn
    - basics: tuning, sentry for problems, automatic improvements,
  - Take SP+sizzle and market as new upgrade

Harnessing Non-PC Devices

- Noteworthy trends and long term goals
  - Number of data-capable phones will soon surpass PC installed base
    - Key data application is simple messaging (SMS) moving to multimedia messaging (MMS)
    - Growth substantial in Europe and to some extent Asia
    - Devices could become the primary messaging platform for the rest of the world (80% of traffic generated by 12 to 24 age group)
  - MHP/Java platform gaining STB mindshare & potentially legislative backing in Europe
- Base strategic responses
  - Messaging is one of the top PC applications (instant and email)
    - Investigate integration between IM, Exchange and with MMS using Windows Media / DRM momentum
    - Bridge the wireless device world and PCs
    - Integration will benefit carriers and keep PCs relevant in the wireless world
  - Drive Windows Media/DRM/Browser adoption with DVD player OEMs
- Ideas
  - Standards clash: GSM 3GPP formats not same as PC; need gateway to bridge
  - Programs for wireless PC networks, exploring carriers business models & subsidies
  - Invest in innovation in synching protocols & auto-switching in wireless networks
  - Need to make the PC a better PDA
  - Need to make PC more of a gravitational well for data from PDAs
  - Explore business models for the Pocket PC to bring in money after the sale
  - Investigate integration of MS STB assets eHome, MSTV, UltimateTV

DN1

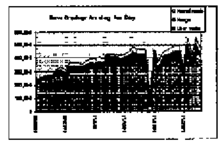
Anti-Piracy

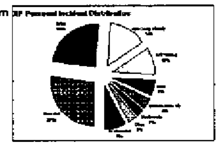
- Noteworthy trends and long term goals
  - [Piracy rates table FY02 by region]
  - [WPA rejection by reason (and by geo?)]
  - PRC OEMs Four top Chinese PC makers pledge to ship Windows XP with all new home PCs
  - Two Win XP VL keys leaked (XP Pro selling for ~$2)
    - Intel (large implementation in Kuala Lumpur)
    - Mexico City (Early Adopter—being investigated)
- Base strategic responses
  - Numerous raids & settlements monthly WW by BSA and LCA
  - Blocking upgrade for known pirated keys, studying for SP1
  - Situation Analysis to build Windows A-P strategy; don't currently have one specific to Windows
  - System Builder business model issues; Analysis if discount reduces piracy
  - Secure RIS install, currently shows key on screen Not committed even for SP1
- Ideas
  - Work on preinstallation in local markets as we did in PRC
  - Expansion of WPA into VL space, At least lower end <50 seats
  - Anti-piracy technology update, is there a breakthrough in view?

Slide 17

DN1 marcsand to send additional ideas and table to billben & dneault
Danial Neault, 12/13/2001

Customer Satisfaction





- Noteworthy trends and long term goals
  - Quality
    - Approx. 500K WER/OCA crash reports daily on WinXP, expect to double by EOY
    - Still too early to know what is going on with XP
  - Support
    - Web-based support 35%-40% of all incidents, costs 50% of phone support
    - PSS Call Volume ~74% greater than expected
    - OEM support poor, but high cost for Msft to take this on
    - With assurance of better support, more willing to try new experiences (e.g. Digital Camera)
  - Sentiment
    - Licensing, Support, Documentation all big dissatisfiers
    - Msft is held accountable for everything (bad) the customer experiences from the ecosystem
- Base Strategic responses
  - Quality
    - Targeting top 33% of crashes for WinXP SP1
    - Leverage MCAP for qualitative non-crash feedback on Windows
  - Support
    - Improve PSS Feedback call coding, outsourcing, and data sampling/mining issues
    - Get information from OEMs on their support issues
  - Sentiment
    - Licensing, Support, Documentation all big dissatisfiers
- Ideas
  - Shift focus from customer dissat to customer satisfaction single executive score for all factors that lead to PC customer satisfaction, including ecosystem (ChrisJo, SomaSe, BillV EricR each have key elements)
  - "Managed PC" initiative for quality feedback on Windows & to reduce support costs
    - Staff product team in order to invest in reducing PSS costs through support automation
    - Initiative for much better support by OEMs more we can do to share/get information federate ideas above
  - Unify existing feedback & customer input platforms to create a consistent feedback strategy and service model, including reflecting back to customers our receipt of and response to their input
    - Design taxonomy/methods to communicate to engineering the needs of customers (v current raid), on scorecard
    - Build into Windows an infrastructure/taxonomy for customer feedback and input (but not instrument entire OS)
  - Next step in driver coverage and quality for upgrades
    - Be less gunshy about getting in the face of IHV & ISVs regarding quality of their products (wall of shame)
    - Incentivize IHV to write better quality driver rebate program require OEMs to pass rebate on to IHVs?
    - Shift our support costs to net revenue to IHVs (could be in programs to reduce costs)
  - Design schedules and staffing to build key post launch customer feedback into the next update

Broader Issues

• Missing Talent – presentation architect	• New Incubations – "new" OS – Broader Managed PC test • Current Incubations – Indigo – .NET My Services – eHome – Mira – Presentation reform/Avalon
• Acquisitions – Anti-virus – Support tracking	*(notional) Windows 2005* – *Constellation of devices* – *Every display can be seized by local devices on events* – *Modular, scalable complexity (in basic configuration c.f. Linux)*

Summary of Initiatives

- JimAll owns.

Dream in 5 years

- BillBen owns.

Appendix

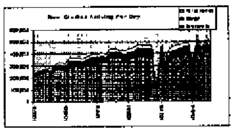
Quality and Customer Satisfaction

Customer Satisfaction Levers

- Product Quality
- Licensing (not covered)
- Support
- Documentation (not covered)

WinXP Product Quality

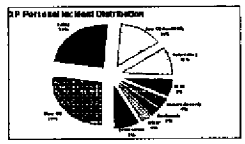
- We're swimming in WER/OCA crash reports on WinXP
- Approx 600K crashes reported per day
- Watson site on track to hit 1 000,000 hits per day by Christmas (includes all platforms)



- <u>**Top Issues**</u>
- Targeting top 33% or crashes for WinXP SP1
- Don't have any qualitative non-crash feedback on Windows (need to leverage MCAP)
- Need tools for developer engagement
- No single strategy/platform for collecting feedback (Watson, SQM, WER/OCA, and others)
- Product cycle needs to allocate time to fix to crash and feedback issues from previous release

WinXP Support

- PSS Call Volume ~74% greater than expected
- Increased volume cost $3 1M
- Costs for top 20 support issues are ~$587,600 over first 15 days
- Web-based support accounts for 35%-40% of all incidents, and costs 50% of phone support



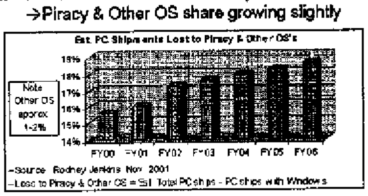
- <u>**Top Issues**</u>
- Quality of PSS Feedback suffers due to call coding, outsourcing, and data sampling/mining issues
- Longer-term PSS commitment to feedback questioned
- Need to get quality data from OEMs

<u>**Recommendations**</u>

- MCAP "Managed PC" initiative for quality feedback on Windows & to reduce support costs (not currently funded)
- Staff product team in order to develop support tools to address PSS feedback issues
- Unify existing feedback platforms in order to have a consistent feedback strategy and service model

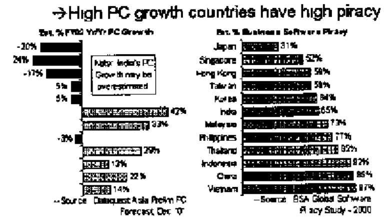
AntiPiracy

1. Noteworthy trends
   a. FY02-FY06 Worldwide PC shipment forecast
      →Piracy & Other OS share growing slightly

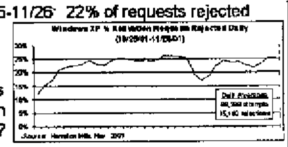


   b. Two Win XP VL keys leaked (~$2/copy for Pro)
      → Intel (large implementation in Kuala Lumpur)
      → Mexico City (Early Adopter—being investigated)

   c. Asia FY02 PC Forecasts
      →High PC growth countries have high piracy



   d. Windows Product Activation
      → 10/25-11/26: 22% of requests rejected



2. Base strategic responses
   a. Updating situation analysis→ Building Windows A-P strategy
   b. Blocking upgrade for known pirated keys→ Studying for SP1
   c. Expansion of WPA into VL space→ At least lower end <50 seats
   d. System Builder business model issues→ Analysis and resolution
   e. Anti-piracy technology update→ Is there a breakthrough in view?
   f. Secure RIS install → Currently shows key on screen
3. Ideas
   a. Numerous raids and settlements each month → Supported worldwide by BSA and Microsoft LCA
   b. PRC OEMs→ Four top Chinese PC makers pledge to ship Windows XP with all new home PCs

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Ecosystem Backup

Developers

How do we create new opportunity?

Themes

- Richness of client with cost of web
- Secure, simple deployment
- Software service
- Ease of development
- Catalog and promotion
- Apps as viral communities w/ annuity stream
- Bottoms up engagement
- Rights management
- What will we not do?

In progress

- NET/CLR integration (mwallent, robs)
- Fusion (davidds)
- Community engagement (mikenash)
- DRM (jmanfer)

Needs thought

- Hailstorm/.NET My Services
- Community apps & platform
- Software service
- Platform as "subscription"
- Catalog integration & biz model
- Channel development – corporate and retail and online
  - Unblocking rich client in corp IT
  - Retail vs. online sales?

PC Platform

How do we drive quality and innovation?

Themes

- Early definition of the 3-5 big bets up front (24 months) for the OEM's
- Platform definitions earlier in the ecosystem (Taiwan designs and chipset vendors)
- Build reliability and self management infrastructure into the chipset that is leveraged by Windows
- Enable ongoing OEM revenue beyond device purchase (services, solutions)
- Consider ways to reward innovation for OEM's that invest
- Make quality a criteria – use the feedback loop
- Customer demand for new PC's – move away from speeds and feeds

In Progress

- HW reference design (stevekan)
- Feedback and quality loop (bradca)
- Roadmap definition (tomph, davewill)

Needs Thought

- How to manage upgrade
- Creation of "Service.Net" to link device to associated OEM and IHV's – formal feedback loop
- IP telephony and voice scenarios – business model?
- Ongoing revenue for innovators – IP pool?
- Role of the MDP?
- Channel influence – How to change review and purchase criteria?

Peripherals & Devices

What do we do to enable the PC as a hub?

Themes

- Better together "themes" by device class
- Enhanced desktop "connector" for simplification and manageability
- Simplification of underlying driver development
- Definition of the OS and application requirements up front for IHV's and ODM's

Needs Thought

- Unique Windows ⇔ devices scenarios
- Peripheral upgrade Supported on class by class basis
- Reduce the backward level of support for IHV's

Service Providers

What is our relationship with service providers?

Themes

- Commoditization – more than one provider at any location
- Proliferation of wireless
- Zero configuration
- Firewall traversal
- IP dialtone everywhere

In Progress

- Firewall traversal (jawadk)

Needs Thought

- Wireless/cell modem on every PC
- At least 2 providers to every location
- Zero configuration

PC Growth and Upgrade

How do we get the ecosystem to drive these with us?

Themes

- Industry monetization of upgrade
- Per upgrade versions for apps
- Per terminal/screen licensing?

Needs thought

- Kick back on upgrade for drivers, apps?
- OEM as "reseller" for upgrade?
- Model for "model year" apps aligned with OS release
- Migration and app settings, plug and replace?
- Terminal licensing model

Quality of Service

How do we make the PC self-managing
and self-maintaining?

Themes

- Managed PC – WinTone service
- Red/yellow/green feedback loop for Windows and the industry
- Increasing relevance – PC Catalog
- Uniform platform – API subscription?

In Progress

- Software and OS service for distribution (debbl, bshah)
- Red/Yellow/Green and OCA (bradg)

Needs Thought

- Role of the OEM/ISP in WinTone
- Subscription for API's?

PC Growth Backup

Business PC/OS Summary

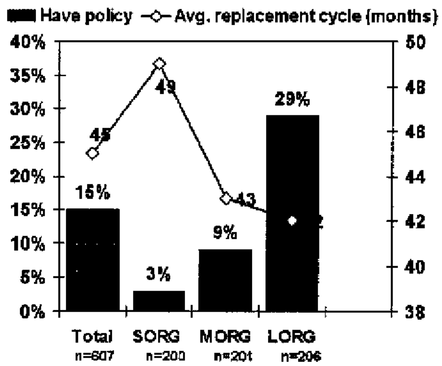
- **Most IT Pros expect flat 2002 budget overall and for PCs and PC SW**
  - Despite economic conditions and worldwide events, few IT Pros are expecting budget cuts – yet - meaning that opportunities remain as most businesses plan to spend some money on hardware or software in 2002
- **Win2K Pro shows large gains just as WinXP enters the market**
  - Nearly half of MORGs/LORGs are now running Win2K Pro in some capacity, and primary OS share has increased dramatically as these businesses complete their long deployment cycle
  - Most (70%) are not planning to change to a new operating system in the next six to twelve months. Of those who are, most are expecting to move to Win2K Pro with only one in four making plans for WinXP
  - If WinXP follows the same adoption cycle as Win2K Pro, significant penetration will be visible in late 2002 and the first half of 2003
- **Most say they acquire a new OS through purchase of a new PC**
  - The average PC lifecycle is 3-4 years, and the average PC age is ~ 3 years.
  - Aging machines may not be able to run WinXP and <20% of SORGs and MORGs plan replacements in the next 12 months.
  - Although economic conditions may not yet be reflected here, and may actually slow the intended replacement cycle, most companies stated that their PC replacement cycle remains about the same as one year ago

Business PC/OS Summary – *continued*

- **Linux penetration as a desktop OS remains low across business sizes, with the highest penetration in MORGs with 2%**
  - However, 10% are using Linux, primarily as a server.
- **Almost 1 in 4 PCs are shared and/or used as kiosks or terminals**
  - Shared PCs offer opportunities for improved terminal services in both Win2K Pro and Win XP, as well as fast user switching in Win XP.
- **Most MORGs, LORGs are networked, majority use WinNT Server**
  - As 8 in 10 medium and large companies allow employees to remotely access their network, the enhanced remote access functionality of Win XP may become a purchase driver if value proposition is communicated.
- **Small businesses use PCs for Accounting/Bookkeeping and Productivity applications**
  - One-fourth would like to restrict PC use, most by limiting time on the Internet or access to specific files or Internet sites, offering possibilities for Longhorn PC management scenarios

PC lifecycle is 3 to 4 years

Use of Formal Policy and Average PC Replacement Cycle



Q30 On average, how long do you keep a computer in use before replacing it?
Q31 Does your company have a policy on how long computers are kept in use before being replaced?

- On average, PCs are in use for 3.5 years in MORGs and LORGs, 4.1 years in SORGs
  - 14% say they are keeping PCs longer now than a year ago; 9% a shorter time (NQ36)
- Two-thirds (66%) upgrade HW rather than replacing
  - Avg % upgraded is 48%
  - SORG - 67%, MORG - 35%; LORG - 33% (NQ37/38)
- One in five machines will be replaced in the next 12 months
  - Desktops SORG – 20%; MORG - 16%; LORG - 26%
  - Portables: SORG – 15%, MORG - 13%; LORG - 21%

There is relatively little variation in the length of PC use reported, hardware replacement policy or not
Avg age of a desktop is 32 months; portables 23 months

60% of desktop PCs are re-purposed

- Six in ten desktops, four in ten portables are re-purposed, most often as clients
- MORGs re-use more machines

n=607, 206 SORG, 201 MORG and 200 LORG

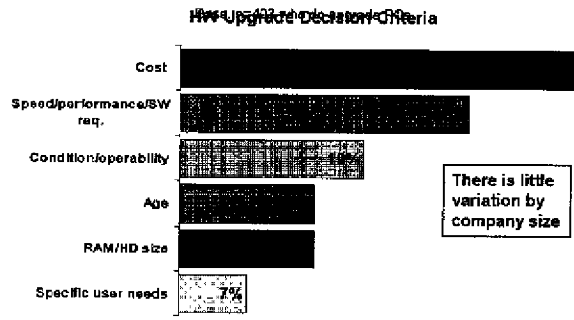
Repurposing of Replaced Machines

	TOTA	SORG	MORG	LORG
Repurpose desktops	**59%**	38%	71%	59%
...as clients	**74%**	25%	75%	79%
...as terminals	**37%**	62%	42%	33%
...as servers	**16%**	25%	18%	15%
Repurpose portables	**43%**	--	64%	43%
...as clients	**82%**	--	74%	84%
...as terminals	**22%**	--	19%	23%
...as servers	**7%**	--	--	9%

NQ4C/8C. Do you re-purpose the desktop/portables PCs you replace? NQ4D/8D. As servers, as clients, or as terminals?

Cost drives upgrade vs. replacement

- One in three (30%) cite speed/performance or software requirements as the reason to upgrade rather than replace PCs



NQ39 *What are your criteria for deciding whether or not to upgrade a machine's HW rather than replacing it?*

Apps drive PC replacement for most

- Most (56%) replace PCs to run new or more powerful apps, many of which are proprietary or custom
  - 24% Proprietary/custom apps
  - 20% MS Office
  - 16% CAD
  - No others over 9%
- Only 1 in 5 (19%) replace PCs to run a new OS, up from 15% in Q2 '01

Reasons for PC Replacement n=companies that replace PCs	Total n=584	SORG n=178	MORG n=194	LORG n=198
Run new/more powerful apps	56%	49%	56%	63%
Old one not repairable	23%	28%	25%	18%
Run new OS	19%	16%	19%	21%
Better performance	16%	20%	21%	11%
Keep up-to-date	8%	8%	7%	8%
Cheaper to replace	4%	6%	3%	4%

Q32 When you do replace desktop or portable computers, what are the main reasons for doing so?

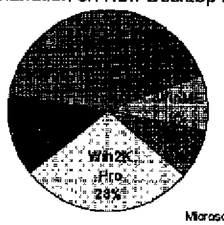
One-fourth of portables are <6mos old

- One in 10 (11%) desktops are new
- Win98 is the leading OS on new desktops, Win2K Pro is on the most new portables

% of Machines Less Than 6 Months Old

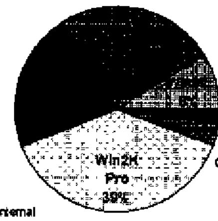
Desktops				Portables			
All n=607	S n=206	M n=201	L n=200	All n=473	S n=83	M n=196	L n=194
11%	11%	13%	9%	25%	17%	23%	34%

OS Penetration on New Desktop PCs



Q3/Q7 How many of those desktop/portable machines running (OS), if any, were acquired in the past 6 months?

OS Penetration on New Portable PCs



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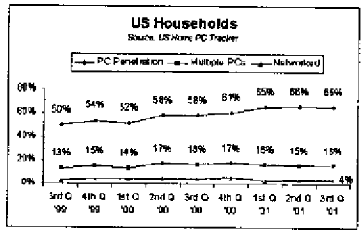
PC Penetration, OS/Browser Share, Trends

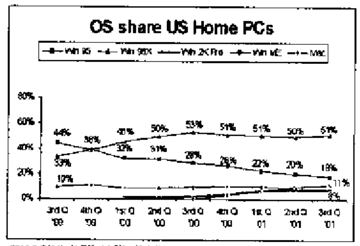
3 months ending			
US Households [106 million]	Oct-00	Oct-01	Y-Y change
PC Penetration	59%	65%	+ 6%

US PC Households [~ 69 million]	Oct-00	Oct-01	Y-Y change
Multiple PCs	27%	25%	-2%
Networked	8%	6%	-2%
Avg # of PCs	1 37	1 33	–
Avg # of PC users	2 5	2 5	–
Avg age of most recent home PC	26.0	25.3	–
Avg price PC purchased within 90 days	$1,305	$1,084	-$221
Access Internet from home	86%	88%	2%
Use PC at work	54%	53%	-
Operating System Share (all Home PCs)			
Windows 95	28%	17%	-11%
Windows 98X	50%	47%	-3%
Windows ME	1%	12%	+11%
Windows XP		1%	+1%
Windows 2000	2%	7%	+5%
Other Windows	4%	3%	-1%
Mac	11%	8%	-3%
Browser share (Overall)			
Internet Explorer (net)	52%	53%	+ 1%
Navigator (net)	33%	28%	-5%
AOL	11%	16%	+5%

Additional Data

- ~ 80 million PCs in US HHs, ~ 90 million PCs + Mac in US HHs
- Mac share has been basically flat over the past two years
- Linux share of US Home PCs is less than 1%
- 7% of US HHs say they use broadband for internet access





does not include DKs (< 5% of total)

Awareness, Purchase Intent, PC Activities

Future PC Purchase Plans

PC Purchase Plans	
next 12 months	18%
1 - 2 years	20%
2 years +	29%
Don't plan to purchase	33%

Don't plan to purchase a new PC ...	n = [illegible]
Current PC does what I need	61%
Too expensive	7%
I can upgrade my current machine	4%

OS Awareness, Purchase Intent (October data only)

Aware, plan to use (aware includes currently using)	Aware	Prob/Def Will Buy
Windows 2000	70%	7%
Windows ME	68%	7%
Windows XP	47%	8%
Linux	41%	2%

Aware of, but won't buy Win XP ...	n = [illegible]
Current OS does everything I need	71%
Too expensive	8%
Wait until bugs fixed/out for awhile	5%
Heard Bad Things	2%

Other technology

	3 months ending	
US HHs regularly use	Oct-00	Oct-01
Cable/satellite dish	**	74%
Electronic game console	**	31%
DVD player	15%	23%
Digital camera	18%	21%
Personal electronic organizer/PDA	11%	3%
Digital camcorder	**	13%
Most important HH technology devices		
Television	79%	75%
Home Computer	63%	69%
Cable/satellite dish	19%	62%
Web-enabled cell phone	**	13%
Electronic games	8%	9%

*** new/combined response categories*

Recent PC Purchase

New PC was:	Oct-01
First Computer	32%
Additional Computer	24%
Replacement Computer	44%
PC Purchase Channel	
Retail Store	47%
Online from OEM	10%
Online from Retailer	9%
Acquired from work	3%
Telephone order	5%
PC Purchase Motivators	
Internet/Web/Email access, features	11%
Business use	10%
School work	8%
Price	8%
Speed	7%
Previous machine outdated	7%

PC Activities

PC activities in past month	Oct-01
Send or receive e-mail	78%
Play Games	64%
Do office work at home	51%
Get up to the minute news	51%
Access chat rooms/IM	34%
Monitor Stock, investments	29%
Primary uses of home PC	
Office work at home	18%
Send or receive e-mail	17%
Access/browse web	16%
Learning device for kids	13%
Play Games	8%

Mining the Base Backup

Upgrades

Windows Installed Base & OS Use

Segment	# (M's)	Upgrade Capable # (M's)	95	98	ME	NTW
LORGs	82	38	27%	48%	2%	9%
MORGs	75	36	24%	48%	3%	15%
SORGs	122	50	15%	69%	9%	3%
Consumer	182	68	22%	61%	13%	1%
Total	**461M**	**192**				

- Increasing OS upgrades % by ##% = $## per year
- Increasing capable installed base ##% (keeping % upgrading the same) = $##
- <need revenue model for typical Windows customer across multiple OS releases and PC purchases>
- Issues
  - How much does selling more upgrades delay new PC purchase?

Increasing OS Upgrade Sales

Barriers to selling more upgrades:

Overall

- System requirements exceed significant portion of installed base
- Compatibility with existing hardware & software
- Significant time
- MS product support costs

Home	**Small Business**	**Enterprise**
Machine does everything	Cost of support/purchase	Compatibility w/LOB
Complexity	Machine does everything	Deployability
Awareness	PC lifespan	Cost
Compatibility	Compatibility w/LOB	Hardware reqmts.
Piracy	Hardware Compatibility	Training/interop between old/new
Cost for multiple PCs	Fear of Change	Not a big deal/priority
Downtime	Frequency	
Retraining		

Business Model Changes

(delete unless reworked)

1. Noteworthy trends and long term goals
   - a User value moving beyond new features to include ongoing quality experience
     - a Need innovation/service feedback loop & frequent updates, << 2 years
     - b Want to get a credit card # and get paid on a monthly basis (5+ years)
   - b System and APIs/applications increasingly distributed, protocols become "APIs"
   - c Exponential growth in system complexity requires breakthroughs in system management
2. Strategic responses for discussion not requiring big bets
   - a Invest in projects to get the CC #, Demand for Security & 1 touch Support
     - i Shift perception from software infrastructure as durable good to evolving service
     - ii What we distribute for security/quality and strategic reasons no matter what, not want to rob v+1
     - iii. Finding profitable area for subscription that is not 'protection' or feel that is should be free
     - iv Create business/organizational focus (revenue customer satisfaction) for "product" design
   - b Windows Catalog to next level – NET service from Windows, w/partners
     - i Steer the ecosystem through information/connections, promote certain choices
     - ii Could be distribution/$ platform small ISVs, + Channel conflict, referral service would work
   - c Business models of monetizing protocols usage
     - i Value $ at nodes, or in community/network effects Monetize connection to gravitational wells
     - ii Formalize protocol & IP strategy, technical and business aspects for fully distributed devices
     - iii DOJ settlements takes us in this direction C f RDP & SMB v CIFS
3. Major actions indicated
   - a Distributed, evolvable and more manageable computing platform
   - b Targeted efforts to build & protect IP assets around distributed protocols as we build the technology (NB W3C & RF)
   - c Organizational structural focus on monetizing customer connections that evolves to P&L
   - d Build managed offering, acquisition of customer support/service companies Need A/V as part of this? Must we provide the technology ourselves?
     - i Recognize difference between Msft's role and federated partners
     - ii Buy A/V, then need IDS, etc Where is the natural boundary?

PC Growth Backup

a. Situation
   - a New PC opportunities & requirements
     - a Current owners new usage scenarios requiring new PCs, or multi-PC ownership
     - b Non-owners in developed markets usage scenarios relevant to needs; PC cost reduction
     - c Non-owners in developing markets PC cost reduction, piracy reduction, greater localization
   - b Wireless data network rollouts gathering pace – enabler for communication scenarios
   - c Difficult to gain app support for new OS & PC features before OS gains broad deployment

b Enterprise
   - a Average PC replacement interval = 42 months (LORG)
   - b Most (56%) businesses replace PCs to run new apps, not new OS (19%)

c. Small business
   - a Average PC replacement interval = 49 months (SORG)
   - b Much of PC value in vertical/domain-specific roles is in the vertical app These apps are among the last to leverage new OS/PC features = no incentive to move to new PC

d. Home
   - a Of current PC owners not planning to buy a new PC – 81% say their current PC does everything they need
   - b Trend toward schools requiring 1 1 student to computer ratio – every student will have a laptop