HIGHLY
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To: Billg, Bradsi, Jimall, Paulma
From: Jonro, Richt
Re: Life in Wartime '95

Over the last few months there has been a great deal of discussion between Bill, Steve, Paul, Brad, Jim, Bradc, etc on how to effectively respond to the competitive onslaught, effectively leverage our strengths, optimize Windows by creating a new revenue stream, and possibly change our product and marketing paridigms by taking advantage of our broad range of products and the emergence of CD ROM as a commercially popular technology. Outlined below is our iteration on this thinking.

Life in trench warfare

The suite wars are close to making the applications business a commodity business. Our API, UI, and Object standards are being threatened. Competitors are actively trying to split our standard. In addition, operating system and application revenue growth will drop to approximately 10%. Finally, we have a large number of products who are individually not making money. This is the equivalent of World War I trench warfare. The result, if we are not careful can be stalemate (e.g., cost-plus pricing, commoditization and stagnating markets).

Inventing the tank

But, there are some important technical, distribution changes coming that play to Microsoft strengths. Understanding the implications of these changes is really important to inventing our equivalent of the "land dreadnought," the tank.

- CD ROM technology, which allows us to distribute our wide range of solutions, making it easier for customers to purchase products. Rather than having to activate customer to go to a retail store, purchase a product, find the time to "flip floppies for 30 minutes" to install the product. Instead, with a CD, our customers can just unlock software from a CD and lower the install time dramatically. Also, updating software is much easier with a CD since mailing a $1.50 CD can be done very frequently since it is so light. With 600MB, we can put 98% of our revenue generating products on a single CD.
- OEM distribution. If the CD comes with their computer when they purchase it, it is entirely possible, they never have to go to the store. All their software can be fulfilled in the comfort of their homes.
- From our studies, it appears that 80% of users buy their software or change operating systems at the time of machine purchase. This means, we can make it much more convenient if we put "locked" software in a CD and place it in the CD drive itself *before* the customer buys the computer.
- Trial is expensive and getting more so. When we worked on the applications business, the cost of an additional trial was $20 and rising. As our base of customers expand, this will get more expensive, not less since we are moving beyond the easy to identify enthusiast base.
- Operating system modularity. It used to be that an operating system was just a kernel, drivers and a couple of utilities which usually fit on a single floppy and were monolithic. With our DLL architecture, multitasking, it is far easier for us to split up operating system functions like RAS or Mail, put them in separate modules and sell them separately. For customers, they buy what they need.
- Full range and modulatiry of Microsoft products. We have the broadest product line. We literally can provide software from cradle (MS Kids) to grave (Server products). Moreover, with OLE2 and other technology, it is going to get increasingly hard to tell the difference between the applications, operating systems, etc. (It looks more and more like the somewhat arbitrary divisions we have on \\products1\release where it is hard to know if the MS Fonts are in \sys or \apps).
- Microsoft Select licensing. We have separated the licensing of the product from the distribution of the bits. This also potentially gives us a revenue stream (combined with CD insights above) that is more like an annuity. For customers, this makes it very convenient since they just pay a small monthly fee,

rather than big lump sums every couple of years. Americans in particular are trained to accept this kind of purchase behaviour.

Life in Wartime '95

The challenge is to change our product and distribution model to leverage each of these strengths and maximize revenue. Let's see how this would work by mid calendar year 1995. We pick this timeframe because it is the first point where our operating systems are synchronized in their user interface. Rather than get confused about our current product quirks, let's see what our end point should be. This will help us understand where our product needs to evolve. Then, we will zoom back to mid 94 to see how we can roll this out.

Distribution Channels '95

Let's see how what each one of our channel will want to sell in this timeframe. This will tell us alot about the products that we will need to build.

Software Retail

At retail, the primary product that resellers will want is something that upgrades or adds new software to existing machines (by definition). With most machines being floppy only, this means, they will primarily want an floppy products of applications or of operating system *upgrades* (again, by definition, the customer already owns a computer that already has a operating system).

For a large percentage of these customers, they will want a Chicago-based product since they won't have the hardware to run Windows NT. Thus, the primary thing, we should sell are floppy upgrades.

OEM

The primary product that they will want will be CDs. By this timeframe, most machines should have CDs. This is much cheaper for them (since the backup floppies that customers want will cost $20 even for Chicago in that timeframe or about $20 vs. $1.50 for a single CD). And, of course, CD cost per megabyte is much lower than preinstalling on a hard disk.

Most of the machines in this timeframe will be NT-capable. That means, they would probably want a product that could install either Chicago or Windows NT.

There is still lots of space left on the CD. In the current Windows NT CD, only 60MB is actually used. With all this extra space, we can put lots of additional Microsoft software on it. This gives them a revenue upside (either their resellers take margin, or the direct sellers, take it for themselves).

Ideally, an OEM would have two CDs. One would always have the Microsoft CD in it, the other would be for multimedia products. That would mean that a customer would always have access to the CD with Microsoft software[1]

Solution Provider/VARs

What will these people want? There are two cases. There are those who administer and implement prepackaged software. They will want the same CD as the OEMs for machines that don't come with the CD from the OEM.

The second case are people who do their own development. In this case, they will want to blow a custom CD that merges their software with ours. Custom blowing of CDs is inexpensive. Setup costs breakeven today is as 1,000 CDs which results in an average cost of goods of $10 or so. There are some licensing implications here. since customers have two ways to get the same Microsoft objects. In this timeframe, we will have the licensing APIs which will let the reseller

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[1] Technically, by this timeframe, we could implement a hard disk cache that would let you keep 95% of the software on the CD. Then, we would keep the most recently used files cached on the hard disk. We haven't done the technical analysis, but I bet that we would get access times that would be 98% of that of the hard disk.

track what is actually used. This continues the trend of focusing the channel on value-added services, not on software distribution.

The Matrix

So, we actually have a pretty simple matrix for products sold in the 80% case. Naturally, Retailers will want to sell CDs, etc., but it's helpful to look at the mainline SKUs.

	Retail	VAR	OEM
Floppy	Floppy Chicage upgrades	X	X
CD	X	CD with Chicago and Windows NT on it.	CD with Chicago and Windows NT on it.

What to do with empty space on CDs? The Silver and Gold Editions

Even in this timeframe, it is hard to imagine both Chicago and Cairo taking more than 20% of the CD (e.g., 125MB). With licensing separate from distribution, we should just fill the rest of the CD with our locked products. This could include all accessories (Fonts, etc.), all MS Office products (Mail, Word, Excel, etc.). In fact, when we did a simple disk usage on \\products1\release, we found we can get 98% of our current revenue generators on a single CD.

In 1995, Cairo synchronizes the UI and PnP support, so we can combine Chicago and Cairo on one CD. We could create one Desktop version of Windows. The enhanced security and scalability of Windows NT simply become modes in this new version. This is the orginal steveb thinking about NT mode in Windows. It is implementable now because we can put it on one CD rather than on 40 floppies. Customers would simply have to consider the functional difference between the products. This is analogous to what we did with Windows 3.0 when we combined Windows 286 and Windows 386 modes into one product.

This would leave us with two major product editions:

- Silver Edition. [2] This would be our base set of bits that we provide as the standard OEM product on CD. It would include the upgrade to the Gold Edition (see below) as locked bits. A customer could upgrade to any portion of the Gold Edition by paying some money and unlocking bits. Or, we could just have them buy the whole Gold Edition. This Silver Edition would be the complete API set. If some Office components become part of that base OLE API set, they would go on this CD. (e.g., if we decide the standard text processing object in Winword becomes a standard API for developers, it would go into this Silver Edition).

- Gold Edition. This would include everything that we could stuff onto a single CD. For instance, putting the "premium Chicago/Cairo bits" (such as preemptive multitasking, server components, etc.). Also, we could then place the MS Office, the major MS Home components (MS Money for instance).

This leaves us with the matrix below:

	Retail	VAR	OEM

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[2] We think that Silver and Gold are better, then our current strategy of "No-name" Edition vs. "Pro Edition". This solve four problems, the generic name of the two products is simple (right now there is an ambitguity, if I say the "Office", so I mean the standard Office or the standard and Pro Office generically). Second advantage, you don't need a clumsy identifier in your packages. For instance, you can just change the color of the product rather than having to always stick a long suffix at the end. Third, localization--around the world, silver is cheaper than gold and the big consumer marketing companies spend billions driving home the difference. Finally, it is extensible across the range of Microsoft offering. Home Pro is somewhat strange for instance.

Floppy	• Floppy upgrade to Chicago Gold bits • Floppy versions of Office, Home, etc.	X	X
CD	X	• Gold CD for machines without the Silver CD. • Unlocks for the locked bits on the Silver CD.	• Silver CD as the base product • Strong incentives to buy the Gold CD.

What about if can't fit it all on the same CD?

It is pretty unlikely we can get all server products, all home products, all office products into 600MB. Moreover, the market for PCs is differentiating along market boundaries. We already have a strong division between server and personal machines. And, an emerging division between office and home personal machines. Compaq has introduced a special home PC for instance and they market a high-end desktop line (Deskpro) and low-end desktop line (Prolinea).

So, we should separate our CD products to match the market divisions that the big players are spending zillions of dollars to create. This would leave us with four major product lines and a Silver Gold Edition of each. Two would be for end-users. One would be for developers. Finally, we would have a server product line that would let you install Office Desktop and our line of server applications. It also lets us decide somewhat late in the game what we put on Silver goes on Gold.

This would be our implementation of "Master Branding" Rather than just marketing the products as a single set, we actually package them as a single set at the OEM and VAR level. This gets addresses the marketing challenges of distribution of the bits for our low-volume products. It also makes trial of these products *much* cheaper. Finally, it allows us to provide a consistent naming and positioning model accross each product grouping.

	Silver	Gold (all Silver plus)
Home Desktop	Base Chicago/Cairo, Works, Money, base Encarta	Premium Chicago/Cairo, Office, premium Encarta
Office Desktop	Base Chicago/Cairo, Base Office	Premium Chicago/Cairo, Office Shell, MS Mail, Ms Project
Developer Desktop	Base Chicago/Cairo, VB, Visual C	Premium Chicago/Cairo, VB Professional, VC++ Professional, MS Fortran
Server	Base Chicago/Cairo tuned for file and print service. Would also include a over-the-net installer for the Office and Developer desktops.	Premium Chicago/Cairo, SNA Server, SQL Server, EMS, Hermes, the gold editions of Office and Developer with over-net installer.

The subscription business '95, '96, '97,...

The next step is to add a six month or yearly subscription component to the Gold edition of each of these offerings. This moves us to a model that is very similar to the auto industry where we would have a 1995, 1996, 1997, edition of each component. Users would simply sign a select agreement and never have to worry about software purchase again. The agreements could be administered by Microsoft directly or by the channel.

Basically, customers would get used to putting this special CD into the MS CD bay.

Competitive Implications
The biggest thing that we can do for customers is reduce the cost of trial and simplify the long arduous process for getting our software. This does have some competitive implications that are quite nice for us.

Silver Server Edition includes full NetWare 3.11 server
Novell is currently cloning our base MS-DOS and Windows products. They also want to prevent the trial of our server operating systems. They want to do this by denying us client software and also keeping their server technology closed and available only through special resellers.

The above model changes the way we do business dramatically. In Silver CD, we would include all of our upcoming NCP server software and utilities. This is the basic cost of entry into the networking business currently dominated by the installed base of NetWare servers. For Netware 3.11 functionality customers will be able to buy our Silver Server. For advance functionality we will upgrade customers to the Gold Server (NT AS).

This does have very dramatic implications for our product strategy and what we need to do to increase the ease-of-installation of our products assuming that servers will basically get placed into a sea of NetWare 3.11 servers.

Silver Desktops include Cairo
Today, we have many companies in the business of cloning our base MS-DOS and Win16 APIs. This includes IBM, Sun and Novell. They want to split the operating standard before we move onto our object-oriented interfaces. Although most customers won't be able to use Cairo on installed machines, this won't be the case of *new* machines.

They should be able to get the full Cairo when they want to use it. We should include enough of Cairo to get the full API implementation on the base product. This will help ISVs since they can be *guanranteed* that these DLLs will be on the run rate of machines. We should also make it easy for a Cairo application call to install flip from Chicago mode to Cairo mode and load the appropriate APIs and go.

Rules of warfare for '95 and beyond
The nice thing about the model above, is that it should be generally extensible through the next century. For the next update of products, we would have the following rules:

1. Decide what new operating system features go into the new base product. That is, all the APIs and UI elements we want to make de facto standards. This should go into the Silver Edition of all products.

2. As new market segments for computers systems emerge, add a specific set of editions for them. For instance, if Winpad style machine stake off, we would offer a Silver Winpad and a Gold Winpad. The most likely case here is the widespread acceptance of the MiniCD (3.5" format with 180MB data). Any products that can include 100MB storage at a cost per <$0.01/MB will work.

3. As we continue to fight a brutal competitive key things that used to be in this year's Gold will go into next year's Silver. (Somewhat like the game that the car manufacturers have played with Antilock brakes, Airbags, Sunroofs, automatic transmissions).

4. Update the CDs on a regular basis. This is an easy way to get minor upgrades out. And, to ensure an annuity since customer really like the idea that it is easy to get the latest bits.

What to Do in '94 Warfare...

Unfortunately, we won't be able to implement alot of the above for product and organizational reasons right away. The key is to start at the time of Chicago launch in mid 94 with our operating system products only. We can divide Chicago up into a couple of different product offerings. We can essentially create a base and premium Chicago which would result in the following offerings:

1) Silver Chicago CD. In the Silver Edition, we would put the following Chicago features: New GUI, Windows and MS-DOS app support, task-switching kernel, Plug and Play support, small font set, OLE 2 support.

1a) Silver Chicago Floppies. This will hopefully be a low volume OEM-only SKU, but there will still be some OEM machines without a CD-ROM driver. Sold primarily through MED and SVED.

2) Gold Chicago Floppy Upgrade for Windows 3.x users. This would be the product that we would sell through software resellers. This would upgrade the existing Windows 3.1/WFWG 3.11 machines to the Gold Edition of Chicago. In addition, It would be all Silver Chicago bits plus extended GUI, multitasking kernel, MAPI/TAPI, mail client, fax transport, network client, peer server—might want to put this in separate package—additional fonts, accessories, Winpad PIM, Doublespace, on-line service client.

3) Upgrading Silver Chicago users to Gold Chicago users. For those OEM products with the Silver CD, this is just an unlock. For those with floppy Silver, we sell them #2.

The implication of this is that we do not try to create an Add-on business. Instead we include the additional networking and mobile functionality into the premium editions of the products. This keeps us focused with simple offerings.

Introducing the Server Edition '94

Unfortunately, we can't yet introduce a merged desktop edition of Windows NT 1.0a and Chicago because the UIs are so different. However, this should be much less of an issue on the server side. So, we would introduce the merged server edition in mid '94. We would have these products:

1. Silver Server CD. This would have a integrated setup that would install Chicago or Windows NT 1.0a depending on the size of the machine, etc. It would also install Chicago and Windows NT 1.0a optimized for file and application service (for instance, big net caches, etc.). It would include locked addiitonal Gold features.

2. Gold Server CD. This would have the Silver Edition above and include our server applications like SNA Server, Hermes, EMS, and SQL Server. We would also include the Chicago and Windows NT desktop installer could load Chicago and NT from the Server.

Product Implications for Chicago and NT '94

UI: The Chicago and NT UI need to be as similar as possible. Specifically, the shell and common controls (sliders, buttons, etc) DLLs need to be made available on NT. It also means that the Chicago era UI needs to be very similar to the Cairo era UI, and that the Cairo era UI be implemented on both Chicago and NT at the same time.

API: Elegant response when a functional call is made to a non supported API.

Drivers: principle issue here is how to resolve plug and play issues. The registry between NT and Chicago should be merged, otherwise the dual boot scenerio is very problematic.

Revenue Model for '94-96

This still needs to be done. However, a back of the envelope analysis is that we should set the pricing for our base Chicago/Cairo components between current NT OEM pricing ($200) and MS-DOS+Window spricing ($40). So as to achieve a small gain in average royalties on Silver. Gold pricing should get tuned to increase our revenue per desktop to meet our 20% per year gains.