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To: Bill Gates, Steve Ballmer, Mike Murray

Cc: Mike Hallman, Paul Allen, Nathan Myhrvold, Jeff Raikes, Darryl Rubin, Brad Silverberg, Mike Maples, Cameron Myhrvold, Paul Maritz, Bob Muglia, Russ Werner, Jon Larus, Steve Madigan, Richard MacAniff, Brian Valentine, Dave Cutler, Russ Siegelman, David Thatcher, Darren Remington

From: Jim Allchin

Date: 1/13/91

Subject: Thoughts on a Distributed Computing Strategy

The original purpose of this memo was simply to force me to privately think through some thoughts on our strategy. I am distributing it to you to record some of these thoughts and perhaps to act as a catalyst for future discussions. I have continued to refine my thinking since this was written, but I felt it would be good to begin getting feedback from everyone on my thoughts.

1. Today - Strategy and Market Position

Today, Microsoft networking products are perceived as 2nd or 3rd to Novell. Microsoft is directly compared to Novell. This isn't surprising since the strategy is "beat Novell". I call this the "out Novell Novell" strategy. It is a frontal attack. It is a features war, a comparison war, a mindshare war, SE war, etc. Clearly, Novell is doing well so it isn't wrong to go after them. However, how well such a strategy works depends on several factors:

- o correlation to long term vision (viz., will this get us to where we want to go?)
- o competitive product feature set
- o the "right" channel(s)
- o cash to sustain attack

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o Correlation to long term vision

I believe the vision is clear for Systems. We need to provide the platform for applications. That really is all an operating system is: a platform for applications. In the old days this meant abstracting the peripheral interfaces, efficiently managing the resources of the computer, and providing a secure environment for applications.

The goal is still the same today even though we live in a more rich and decentralized environment. All the basic functions that have heretofore existed in a "timesharing" system have appropriate counterparts in a decentralized system. For example, abstraction of physical resources, management of objects, security, accounting, etc. all must be provided. Clearly, the problems are much more difficult because of propagation times and a new range of potential failures; but, a globally transparent system is still the goal.

Nevertheless, there are many people asking what NBU should be when it grows up. They pose the question as "What business should we be in?" This is a clear sign of internal knowledge that the current path may not be the right one long term. I also have found many projects/ideas floating ... looking for the answer: Windows/N,

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Windows Server, buy this company or that company, application products to address LM weaknesses, etc. My conclusion is that the historic strategy built on "out Novelling Novell" cannot create long term, sustainable competitive advantage.

o Competitive product feature set

I believe the current LM 2.0 product is not terribly competitive with Novell (and certainly not Banyan). I say this for several reasons. First, Novell has a nice product; it's not great, but it's not bad either for their market segment. Second, LM 2.0 is not technically on par with Netware/386. (I don't want to start a religious war with that comment, but even though LM 2.0 has the checkoff items like fault tolerance, ease of use, etc., the implementation is very weak. Consider fault tolerance. What good is a mirrored disk system if you can't mirror the boot device (the disk that probably receives the heaviest activity)? That means that two disk systems aren't supported and LM can not guarantee that random disk failure in any system won't disable the system.) Most importantly though, Novell has a huge installed base. There is no compelling reason why anyone should switch from Novell. Yes, MS can fight with Novell over new installations as the market continues to grow and that will be a significant market. However, Novell has the leader's mindshare advantage even with these new sites.

Furthermore, I can't see why LM 3.0 as planned will make the situation that much better. The Netware feature set will continue to expand. Basically, it's back to trying to out Novell Novell. Functional areas such as Directory and Security are simply expected. These areas won't be reasons to consider Microsoft over Novell. In addition, I believe the connectivity capability of Novell far exceeds Microsoft and is growing rapidly. LM has very primitive connectivity options planned. Worse yet, there are few developers here who understand this technology area. Remember Novell bought Excerptan to gain their expertise.

What's most frightening is that DCB will totally change the face of the landscape during the next few years. LM 3.0 on its current path could be a niche product without backing from IBM or DEC. Many believe that DCB will lay the foundation for the services of the future. So, what will be the Microsoft advantage?

A fundamental problem is that Microsoft has fallen trap to the "networking is separate" model. That is, OS and networking are different pieces and can be developed and marketed separately. Novell is on their way to migrate to a more "general purpose" OS (with networking embedded). Microsoft, on the other hand, has OS and networking separate.

I know some may not like the following statement, but ... It is my belief that LM is making headway today because of only one reason: the Microsoft name and the IBM connection. MIS people says "hey, we better watch them, they are aligned with IBM". It's FUD. Consider what would happen if IBM sold Netware (as a strategic product - not just their education group) or partnered with Novell on networking. With the current product and strategy, the game for Microsoft would be over with Novell the clear undefeated winner. Lucky for us, this is unlikely.

There is a separate low end to the market. LM today is also unsuited for this. LM is heavy duty - not simple, inexpensive and easy to use. (All products should be easy to use, but small peer networks have unique requirements along this line.)

o The "right" channel(s)

Microsoft has a complex channel strategy. Even though Microsoft knocks Novell for their "7-11" outlet approach, Microsoft has another problem which could be severe. OEM distribution works great when a product is bundled with another orthogonal product (e.g., Windows with new PCs) or there is not a "packaged" product available. Unfortunately, what has happened in LM is that OEMs have added value that is user visible (e.g., LS logical

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server or admin UI). On top of this we've introduced retail sales. This, of course, leads to two problems: "Will the real LM stand up?" and OEMs competing with us.

Simply put, if an OEM is going to port the product AS IS (e.g., only adding new drivers, etc.), it works great. If an OEM adds value, but there is no "standard" packaged product, then that also works great. Today, neither of those situations is true for LM.

Finally, the market that LM is targeting is high end. Only the most sophisticated resellers are capable of addressing the LM market. I'm sure the strategy is to sell to the top corporate customers and that will win with the smaller customers over time, etc. (Of course, this is the area of the market that requires WAN, Directory, network management, advanced security, etc. -- all the things that we don't have right now.)

I understand why we took the paths that we did and see how we are working our way out of the confusion. Nevertheless, it will take quite a while to change the perceptions in the marketplace. Networking may be leading the way for a continued movement away from OEM and toward packaged products. LM and Windows are both examples.

o Cash to sustain attack

Let's look at the current annual run rates extrapolated from November actuals. Expenses and overhead appear to be around \$73M. Assuming no more headcount (we all believe that, huh?) breakeven won't be until around $73 \times 1.18 = 86.11$ (This is assuming that current COGS ratio.) In November, the revenue run rate was around \$29M. Thus, the business must get 3x bigger to even break even. (It is also important to remember that the OEM revenue in most cases comes from honoring the contract minimums. If they back away (go with DCE, Novell or IBM), then we are at risk in this area.)

While I'm sure that the plan shows great improvement in units, I also expect that it has extra headcount as well. Given my comments in the prior sections, it is clear to me that all in all this will be a very expensive and prolonged attack.

2. Thoughts on a New Strategy

2.1 General Systems Strategy

How do the products of Systems fit into the overall mission of owning system software? After being here for several weeks, I'm still confused. I'm confused because we mix the marketing of a strategy with its implementation. The momentum of Windows has created "Windows" mania. I feel the following should be answered. Please note that we can change the marketing message and product names to ride the Windows wave later. Given the current names (applied to functionality), we need to answer the fundamental issues.

- o What is Windows? Is it a GUI on DOS and NT? Or is it an operating system?

I contend that this decision will dramatically change the strategy. Today we basically have a 3 operating system strategy (DOS, Windows, NT/OS2 -- 4 if you separate OS2 and NT). I strongly doubt whether such a tier environment can be built without functionality leakage eliminating needed differentiation and whether the marketplace could possibly understand a 3 OS strategy.

- o What is the OS family? In defensible terms, what market or functionality is different between each member of this family? Clearly, if you have a family there must be a clear reason for each member.

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- o What is the market and distribution plan for NT? That should drive the functionality and time to market issues.
- o Why are we packaging and selling the basic building networking software separate from the operating system? We have legitimized the "NOS" concept instead of obsoleting it by putting this capability into the OS.

It is important when thinking about these issues to not get confused over the names...we could migrate to a total Windows named product line (or anything else) if we wanted; it's the functionality that counts.

2.2. Why is distributed computing important?

I believe there are three reasons why distributed computing is critical to Microsoft.

- o Distributed computing is a fundamental building block for the future of computing. Concepts from distributed processing will permeate most every software system in the future. Microsoft must acquire and embed this knowledge for these future applications. There will be no Information at Your Fingertips without this knowledge.
- o Microsoft set the application framework for the desktop. We must expand this framework for distributed applications -- or risk losing control of that business. Today, Microsoft has an advantage because the applications are written to a platform base (e.g., DOS, Windows, OS/2) that is controlled by Microsoft. The platform for distributed applications is just as important.
- o There are new business opportunities created by networks. There is a significant profit opportunity through providing distributed services for networks. In essence, these distributed services are a special type of distributed application which extends the standard OS features into the distributed arena.

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2.3 The Network Marketplace

The network systems marketplace today is divided into three market segments:

Segment	Examples	Volume	Price(server)	Key Features	Selling Method
Workgroup (<10 nodes-no interconns)	ELSI/II, Lantastic, 10Net	High	Low (Street 3k)	Simple, Simple, Simple Inexpensive	Naive user (the ultimate bottom up sale) (Everyone sells)
Department (small groups within larger orgs)	Netware 286, LM, LS, Vines	Medium	Medium (Street 1.5k)	Application compatibility Growth	Bottom up (Resellers+ Seminars, etc.)
Organizational (typically geographically dispersed departments)	Vines, Netware 386, LS, LM	Low	High (Street 5K++ - not price sensitive)	distributed mini capability Ease of Admin	Top down (IS - together with departments) (best with direct sales or high end resellers)

Today Novell owns the workgroup and the department. Banyan owns the organization.

It is interesting to note, that it is possible to have a product in the workgroup space without being in the Department or Organizational space. They are completely different areas. This isn't true in the other two areas. Simply by the nature of network growth, IS involvement, and competition, a company must offer products in both the Department and Organization space.

The Department and especially the Organization, arena would have been owned by IBM historically. I'm sure that IBM sees retailing LM as a very significant threat. Once they lose the network, they are on their way to losing control of the account. Thus, it is clear to me that on the current path, IBM is a competitor - not an ally. I do not think this is a good idea (...yet...). Networks require significant handholding. IS is beginning to understand this fact. IBM and handholding are synonymous. In order to really match IBM/DEC/etc. it will be necessary to get the channel as capable as direct SEs to support the networks. This is a very large undertaking. The larger, more complex the network, the more difficult the job. The resellers make little margin so they can't invest and their internal support staffs turn over rapidly so there isn't a constant support system in place. The point: LM is attacking the most complicated area and on a path of doing it alone.

The following is obvious, but reminding ourselves of the perceptions (in the NOS world) is important:

Novell the leader, fast, a winner, "why shouldn't I buy them?"

Banyan the dark horse, best technology, poor - but improving marketing, directory, best WAN solution

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Microsoft IBM connection, significant investments, weak product, generally a winner -- but not in networking

2.4 An applications driven world

I completely agree with Bill's memo. Applications drive the world. Applications are the reason that the VAX was so successful. Applications make people switch computer systems and vendors. Assuming that LM stays in its current market segments, applications are the only thing that will allow Microsoft to win against Novell.

Therefore, we should strive at building the best distributed computing platform in the world. We should then promote this to every applications' writer to ensure that if it's distributed, then the server side *must* run in this environment.

Today, the general APIs used in the marketplace from LM deal with named pipes/mail slots (and even mail slots aren't used externally). There are two reasons. First, no other API is required to build a user oriented "client/server" application (e.g., all DDBs have their own security model built in and the vendors know the LM security is poor and going to change). Second, few ISVs focusing on administrator oriented applications (e.g., network backup) would write to the other APIs from LM because of marketshare. I contend that solving the user oriented application lock-in is much more powerful than the simple network utilities that could be written using the other APIs. Most all the currently available network utilities will eventually be built into systems so it is a transient lock-in. More importantly, end user productivity gains by applications on the network are a much more compelling reason for choosing a particular network.

No one is going to switch from their current system for a better file or print server. No one is going to switch for a "better" directory, etc. There has to be a significant reason which will increase their productivity (e.g., an application, a new data model) to change or add a new product. The same logic holds for new sales. Why choose one system over another? LM needs a competitive advantage -- applications are the key. The applications could be Microsoft provided distributed services such as a licensing system or software distribution manager or something like a client/server version of the ASK system ported to OS/2. This represents the best Trojan horse strategy against Novell and the best long term lock on accounts in the future.

2.5 What technology is needed for Distributed Computing

Distributed applications need a framework to execute in. What are the missing pieces from a standalone operating system? I often think about OSI layer 7 being divided into sublayers for simplicity.

Distributed Applications	e.g., Calendaring
Network Services	foreign file, foreign print, DDB, distribution, messaging, transaction processing monitor, etc.
System Services	Directory, Security, System Services Mgt, Time
Underlying Host OS/Transport System	OS + Transports + remote file and peripheral support

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The MAC is network ready. Unix is network ready. Both environments come with a standard interface into the network. (Macs use AFP/PAP through AT, and Unix uses NFS through TCP/IP.) Why is Microsoft shipping a desktop OS that is not network ready? (The number of PCs which are being connected is growing rapidly and we're letting others (Novell) put fundamental technology (a redirector) into the operating system.) The way to neutralize Novell is to embed this level of functionality (and more) into the operating system. It's the right thing to do even ignoring Novell for providing a consistent platform for decentralized applications.

In addition to redirection, the operating system should provide homogeneous transparent remote file and peripheral access. An add-on service (as is done today) could be used, but as the semantics of the file systems become richer (e.g., transactions), it will become very difficult to layer these pieces. High performance is impossible to achieve without this tight coupling. Foreign clients accessing the node's resources can be built above the transparent structure already in place. This only works well if the semantics of the underlying system can accommodate the foreign system's semantics naturally.

The gaping hole today are the system service pieces. Again, the desire is to build a system which matches a typical minicomputer system -- only decentralized. Therefore, a directory, security, and service management model which spans nodes is fundamental. This should not be an add-on.

The upper layer services are "applications". You could think of them as utilities in the old OS terminology. These distributed services can add significantly to ease of use, etc. They can add the intelligence to make such an environment manageable. *A fundamental problem with all systems today is that they are too hard to use. The system must figure more out using heuristic rules concerning the user, administrator and the current state of the system. Customers will pay for ease of use. This follows the principle of making the user more productive.*

2.6 The IBM Connection

Here is my observations of the IBM situation and its effect on our position:

- o IBM feels screwed by Windows vs. OS/2. They feel that they got left holding the bag on "old" development and, in addition, that Windows stands against the lock they were trying to establish for new applications. I believe there is a significant amount of old baggage hanging around dealing with past shared development projects, etc. (Building an operating system between two companies is certainly a difficult feat (impossible?); however, I believe there are many opportunities for a close development relationship with IBM.)
- o We want IBM to be a distribution outlet. On the other hand, IBM wants to control the direction and, in particular, they want customers to perceive IBM as the "owner" of the future (MS is simply the implementor). I don't believe Microsoft is anywhere near as strong without IBM (marketing-wise). We are on a collision course with IBM today. I expect that someday we will eventually collide, but do we have to collide now? (I mean geez, I just got here and we're going to war?)
- o IBM is committed to DCE. Their plan is not to adopt LM 3.0 long term. They want us to converge LS and LM so that they don't have to continue to invest resources in this deadend since they are moving to DCE. They also want to eliminate LM's temporary feature advantage over LS.
- o If LS and LM don't converge, then IBM will undoubtedly intensify their efforts of competition with us. They will show their migration strategy to DCE customers and how Microsoft is not with the program unless we have a great story. Nevertheless, IBM will win in large accounts. Actually, Novell will win the most because of the fragmented networking strategy between IBM and MS.

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- o IBM doesn't understand DCE. This is clear in my past conversations with them. We have an opportunity to take a lead with them. (Block diagrams look so good. However, they are usually quite difficult to put together when they are done by different groups (using difficult fundamental models)).

2.7 Some straw ideas

Consider the following breakdown of products:

- o Distributed Computing Tools. Tools are the needed catalyst for making distributed applications grow. RPC is the first on the list, but there are many more. For example, as soon as there is a standard for RPC, then remote debugging tools will be an opportunity. This is a new area but I believe there are many important tools such as remote transaction libraries, etc. that would really help the application writer. Furthermore, it is my belief that new extensions to languages (e.g., "Distributed C++") are needed to address these new distributed environments. He who has them first will have the advantage.
- o Windows/N. In my view, this product should be simpler than what is planned today, but based on the same concept. Create a common interface into the basic network functions. Make Windows truly "network ready". We want customers to want Windows if they run a network. That is, extend the concept of Winnet today. Customers will absolutely love the idea. In addition, it plays on our strength (Windows and the client); it insulates the networking companies from the user (so the user only sees Microsoft); it can be sold into all existing sites, etc.

Marketing this product will be very easy. Even the "Windows" name can be leveraged as in "Microsoft provided me a (transparent) window into my computing environment."

I believe that Windows/N offers advantages for non networked PCs. There will be lots of interesting stuff that can be done from home machines using integrated Fax, etc. For this reason, I suggest that we add the basic features to Windows. Then we have three basic packages (with one UI): basic Windows with "providers" disabled; "providers" enabled together with some sexy providers for fax, mci mail or the like; and finally an upgrade package for the installed base.

I believe that this product should be shipped ASAP. The way to do that is not get carried away with remote management and all other wonderful things that are missing from networks today.

- o Windows/N Server. I would propose that a business plan be written for a direct ELS I/II and Lantastic competitor with the most important advantage being ease of use. This is slightly different from what Nathan proposed recently. That is discussed below. This product would offer file, print, and admin capability for workgroup networks in a very simple package. The server side would be built, of course, under Windows. Client support should be for DOS and Windows. (No Macs, no fancy directory, etc.) The reason why this could be competitive is that ELS is hard to use -- Lantastic has won recently because it is easier to use. We should be able to make a very easy to install and use network in a Windows framework.

Today, many PC manufacturers sell Windows loaded onto the PCs. We should be able to do the same thing with the board manufacturers. That is, if this is cheap enough, then we could perhaps take a royalty on every board (or every 5 pack or the like). Longer term, all the important PCs will be network ready with Ethernet or TRN available on the motherboard. Now would be the time to make a deal with them before they do it with Novell.

Alternatively, we could bundle this functionality (one free provider) with Windows/N. I happen to like this idea. That would kill the workgroup systems of today.

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- o OS N. We need to pick an OS to weave the networking code into the system. We can solve the ISV problems by creating Win32. We haven't solved it for the IHVs and the networking world. Clearly, the more operating system driver formats, conventions, etc. the harder it is to get momentum in the marketplace.

Should the base OS be NT extended to support a rich set of protocols with a common interface to the application world: an inherently rich distributed file/peripheral system, directory, security, and basic admin to manage users and services? Or should we use Windows 3.2? That may sound silly, but it is worth considering. There will be Windows everywhere soon. It is much easier to convince someone to buy some distributed services (see below) to run on an operating system they understand than tell them they must add yet another operating system (e.g., NT) to their organization. Would the OS/2 history repeat itself? (Even if we called it Windows+ or something, I don't think it would be hidden for long.)

I propose packaging services on top of this environment. We need to market this as THE distributed computing platform. *Viz.*, write your application here. It cannot be perceived as a direct threat to a customer's installed base of network (e.g., Netware). It is however a Trojan horse.

Microsoft services and 3rd party services would simply fit under the basic service architecture provided in the system. This is not LM as we know it today. From this platform, LM could be built by adding the file, print, Mac, etc. support. Basically, I'm saying that distributed computing must have a good base. This must be integrated with the system from the ground up.

- o Distributed Services. Outside of the operating system sale itself, this is where the money is. Services range from the mundane such as file/print to powerful services such as a global messaging engine for mail, inter-application communication, etc. There are two fundamental types of services:
 - user oriented. messaging, database, calendaring, computation, etc.
 - system administration and network management based. I personally see Nathan's Window Server as just a basic network service - one for managing Windows clients. Other examples include remote PC debugging, network management, software licensing, software distribution, archiving, etc.

3. Some Other Thoughts

3.1 P&L and Church and State

There is an important separation between the Applications and Systems Divisions for marketing reasons. Even though not explicitly communicated, it is clear to me there are similar separations between the groups within Systems. I have run many P&Ls and know the benefit of pushing a manager to run their business to maximize their profits. However, the split today in Systems (at least for networking) may not encourage the right decisions to be made for the corporation in the long run. Much of this comes from my view that networking needs to be integrated into the operating system.

Some of the questions to ponder include:

- o How should Netware be viewed by the operating system group vs. LM? I've heard many discussions over the DOS 5.0 upgrade shipping with the Netware redirector included on the disks. Being open is goodness; however, helping them put stuff into the OS? Our client? I understand the ease of installation issues. Nevertheless, I question this strategy.

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I've heard a proposal that we host Portable Netware on NT. If a third party does this development, then fine. If we take any active role, then we ultimately will be drawn into a Netware on Unix vs. Netware on NT debate. This is wasted effort. We need applications — not file/print systems. Furthermore, such a path would lead to a performance war game — one which I can assure you that if someone using Unix wants to beat us, they will be able to. What would be the advantage?

The real issue is the potential confusing message that it sends to the marketplace. Consider what would happen if NBU used Unix as a base operating system? Unix is far better than anything MS has today. However, this is clearly not in sync with our global mission. I believe the same holds for any *active* involvement with porting Portable Netware onto NT.

3.2 What's in a name?

We should consider whether changing the name of the NBU could help reposition us into another space. For example, would the Distributed Computing Business Unit (or Group) be better? The reasons are as follows:

- (a) DCE is attracting great attention. We could ride the wave by associating with this name.
- (b) Distributed Computing sounds more encompassing and not associated with a physical network.
- (c) Distributed Computing can be positioned to be the next logical step from client/server technology.
- (d) It will be another marketing differentiation from Novell's story. (Recall they claim to be the "network computing" leader.) With IBM, DEC, etc. adopting DCE, our association with Distributed Computing would isolate Novell.

If asked to describe the difference I would say that DC encompasses all the technology/products to provide a distributed computing platform for applications whereas NC is a basic networking view stemming from a basic file server model. (This isn't what Novell means, of course, but it would probably work marketing wise.)

3.3 Strategic Product Planning Group

One of my biggest revelations is how many areas within Microsoft overlap. I've concluded a global coordination function would be beneficial to keep architectural consistency (and reduce redundant work) among the dispersed groups. Because of the far reaching effects of certain decisions and the complexity of the problems, I think we need a formal review group to monitor the implementation of the company's strategy. As an example, consider management of objects. What is the right split between the operating system, "database", network support, and an application? My guess is that between the OS group, database group, office group, and networking there are a lot of different opinions. This confusion will ultimately result in a inconsistent model or simply wasted effort.

I suggest a small team of the all around best thinkers be created to help plan and monitor the global issues of our future products.

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4. Summary**4.1 Questions to answer:**

This memo discussed several fundamental issues which must be answered to finalize a coherent strategy. (Please think through your positions on the following questions. I will discuss some of my personal conclusions at the meeting on 1/19/91.)

- o What is Windows? ... GUI or OS?
- o What is the OS family?
- o What is the market and distribution plan for NT?
- o What is the plan for OS/2? (public position and internal)
- o How badly should we try to create a combined IBM/MS networking story given the apparent problem in OS strategies? Are we prepared for the consequences of a divorce?
- o Do we need to win in the organizational network marketplace (as I defined earlier) given the costs?
- o Should we implement a workgroup (and small department) network strategy also?
- o Should Windows be shipped network ready? DOS?
- o Which OS base is the "right" one to embed richer networking concepts to create the distributed computing platform discussed earlier?
- o How important is interoperability with DCE? How important is "convergence"?
- o Strategically, is Novell an enemy to Microsoft or only NBU? ...to Systems or only NBU? How can we ensure being open while at the same time integrating our own products better?

4.2 Conclusion

The "out Novell Novell" plan attacks Novell at their strength: selling file server software. Remember, the LAN Shootout between 3COM and Novell. Novell ate 3COM for lunch. Why? 3COM attacked Novell at their strongest point: speed. Microsoft is having another kind of shootout with Novell.

The way you win in such a battle is to change the game. If Novell is playing baseball, then we should convince the world that football is the game to play. Of course, we better be really good at football. (Segmentation and differentiation are of course the marketing terms.) The best argument provided by Microsoft to date has been that we created client/server architectures. This put Novell on the defensive. This worked because there was SQL Server to back up the claim. It also attacked Novell at a weak spot: their weak application engine (VAP/NLM) strategy.

Our future direction should crystallize the distributed applications platform by integrating networking into the operating system. That way, we change the game totally -- from the NOS world to an OS that is already network

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ready. Therefore, why use Novell? Moreover, we must find a way to leverage our natural strength: the millions of desktops running DOS and Windows. We must deal from strength — not weakness.

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