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To:	Bernard Vergnes; Brian Fleming; Chris Peters; Hank Vigil; Jeff Raikes; Joachim Kempin; John Neilson; Lewis Levin; Mike Brown; Mike Maples; Pete Higgins; Pete Pathe; Richard Fade; Steve Ballmer
Cc:	Bill Gates; Executive Staff and Direct Reports
Subject:	"Sea Change" brings opportunity
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This memo looks at the opportunities created for DAD and other groups over the next decade as the framework of computing changes.

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To: Steve Ballmer, Mike Maples, Pete Higgins, Jeff Raikes, Bernard Vergnes, Richard Fade, Joachim Kempin, Mike Brown, Hank Vigil, Lewis Levin, Chris Peters, Peter Pathe, John Neilson, Brian Fleming
From: Bill Gates
Cc: Executive staff, Executive staff direct reports
Date: October 6, 1994

"Sea change" brings Opportunity

Among our future challenges is the high percentage of office workers and homes who will already have an "Office" solution and are no longer candidates to be new users. Already in a number of our large accounts we have seen major sales years when Office is widely deployed and then a drop in sales to a much lower level at least for the DAD products. The solution to this is to get more revenue from our installed based. If we can get high percentages of our users to buy upgrades our business will thrive. The challenge there is "adequacy". Some people feel we have already gotten to the point where most users will not benefit from updated Office applications. Although we can do a better job on this in the short run "adequacy" will limit our penetration. However, over the next decade I believe we will see several "Sea changes" which will drive major waves of upgrades. This is an optimistic point of view that struck me during this Think Week. Its new thinking - at least for me and I think it leads to exciting opportunities.

An imperfect analogy is the consumer electronics industry which has seen major waves not only of hardware sales but software sales including old titles as new formats like CD come along.

Starting sometime after 1990 the move to graphical computing has been a "Sea change". Although the vast majority of Wordperfect user would have said their product was quite adequate at the start of the "Sea change" every year a higher percentage of those have moved across to either Windows Wordperfect or Windows Word. Because it took several tries to fully exploit graphical word processing and match up with the latest operating system users who switched by 1992 will have bought on average at two major upgrades. The graphical computing sea change has played out over a period of 6 years creating immense share and leadership opportunity for the software company that saw it coming and helped make it happen (Microsoft). By 1996 Office users will spend an insignificant amount of money on DOS applications and even the diminishing installed base will know they are "dated".

Arguably the shift to an integrated Office approach is another "Sea Change" which we help caused and benefited from. However it is not as clear cut or total as the move to graphical interface. No matter what you consider the start date of this shift, 6 years after its start there will still be significant numbers of users buying and using standalone word-processing and spreadsheets. Anything we can do to drive the Office percentage up is very helpful to our strategy.

I believe we are in the midst of another major sea change which is the move to electronic communication with office documents. In the past PC software users created most of their own input and did their output to a printer. During this decade a very high percentage of input will come across private networks (another terms for corporate LAN/WAN) and public networks (including Internet and online services). The information coming across the private network will include business information created to review sales, budgets, personnel, customer service and every other aspect of the business. Word must become a great authoring and reading tool for electronic documents. Excel must blow away the competition in being a viewer for corporate data by tighter integration to databases and extensions of features like pivot tables. We need to make sure public networks include lots of documents best viewed with Office. The product approach for this is complex and multifaceted including things like supersetting Internet features and providing free subset readers. The basic point however is that users expectation of what Office applications will do is changing and 3-4 years from now anyone forced to use the software we have today would find it completely inadequate for dealing with the electronic world.

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This sea change like others provides opportunities for new challengers as well as our familiar rivals. Extended Web viewers from startups will grow to provide Word with new competition. These competitors will ridicule the number of commands and features Word brings from its past and suggest it is not the right tool for the new usage model. Embarrassingly we find ourselves somewhat behind on of our old rivals in providing both the system (replication, security) and application (views with categories, @ expressions, multivalued fields, flowing forms) elements for basic workgroup sharing and so Lotus is recognized as a leader in moving corporations into the benefits of corporate wide information sharing. We can move out in front of this sea change but it will require a focus and an overhauling of parts of our interface and coordination between systems and DAD beyond what we have had in the past.

In a recent meeting on Office96 there was a discussion of whether the priority should be designing for our installed base or for our competitors installed base or new users. Some math relating the size of these groups, potential penetration and price suggested a focus on the installed base. Although its an interesting calculation it is absolutely the wrong framework to consider our choices in. We believe this "Sea change" is inevitable and are willing to bet all of our success on it. We must optimize for being the best product for these new scenarios even if that means causing disruption in our user interface or compatibility that will cause existing users to wait longer to buy an upgrade. Very few users will switch to a competitive product for non-"Sea Change" related features (unless all of their cohorts are using another product but that is the subject of another memo). Due to the "Sea Change" they will buy an upgrade - the only questions are whose and when. Winning the "whose" is far more important than winning the when. In the early 1990's Lotus surveyed their installed base and found limited desire for graphical interface. By the time it showed up in the surveys it took them too long to respond and users were willing to switch. Microsoft bet on the "Sea change". It takes even more guts to bet on the "Sea Change" when you are the market leader but it is the only way to position yourself for massive upgrades.

Lets do some math on the "Sea change" opportunity. Our installed base has not peaked. My exhortation about studying the saturation phenomena is not to say I believe we are at the peak. In some countries we have only scratched the surface of the new user potential. However we should understand the potential for new users at least on a per country basis. Lets say over the next 2-3 year we get our high end applications installed base up to over 24M users. Lets assume that during the peak 4 years of a sea change 30% of those users buy 3 $150 upgrades and 30% buy 2 and 30% buy 1. This generates $1.6B per year which is almost the size of our current business. During those years we will also be deriving revenue from new users, addons, and new products. With the kind of discounts we are providing right now the $150 might seem high however an upgrade which provide "Sea change" benefits is worth more than an upgrade which only provides more functionality without a "Sea change". Calling these changes to the product "upgrades" may be misleading both internally and externally. We want to draw on our installed base but we want to take them somewhere new.

The "Sea change" to electronic information sharing is a particularly important one because it will bring us closer to our customers. It will also bring our competitors and free software closer to our customers. The effort to learn about upgrades and to install them will be much lower than it is today. Lots of low cost and free software will be easily distributed. Memory and disk size will outrun even our prodigious ability to create demanding software making it easy for developers who are don't spend as much time optimizing to provide adequate products. Although its something to be watchful of I don't think new entrants will be able to redefine the categories enough to take Office out of the mainstream. The value of having the best software will be even greater because of the new scenarios.

Electronic information sharing is not the final "Sea change" that we can see ahead. Microsoft has always assumed that hardware advances will be incredibly rapid and that assumption still holds true. It is critical that we look out ahead to see what other "Sea change"s are coming. There is no rule that says only one takes place at a time.

One "Sea Change" that is still at least three years away but probably not more than 6 years away is the move to extensive use of voice input. This will catch on even more rapidly than graphics interface did. This

will have a deep effect on Office. This is one we should be spending time on today. If a computer had perfect speech recognition how would we choose to work with it? What combination of keyboard, pointing and speech would we use? Of course the early speech devices will be imperfect so we will have to pass lots of context to the voice recognition module from our applications.

I still believe strongly that once a tablet sized computer has the right accuracy and physical characteristics that pen based computing will be successful and that either mainstream applications will address this or a new category will emerge. I believe that linguistic understanding and expert systems will find there way into productivity software over the next decade. I am sure Nathan will provide further thoughts on "Sea Changes" to come.

These "Sea changes" will not affect only Office. Windows also has the opportunities and challenges of all of these changes.

A static view of the world of technology badly misleads one in understanding the value of our installed base and continued commitment to renew our products. I have been guilty of this myself. Articulating the "Sea changes" that we are betting on and preparing the company for them is the most important and exciting part of our work.