



Bill Miller

From: Russell Siegelman  
To: Anthony Bay; Bernard Aboba; Bill Miller; Pat Ferrel  
Subject: FW: Internet  
Date: Thursday, September 29, 1994 4:02PM

FYI

From: nathanm  
To: billg; russs  
Cc: bradsi; brianf; chrisp; craigmu; jimal; paulma; ppathe; rogerh  
Subject: RE: Internet  
Date: Monday, September 26, 1994 7:00PM

From: Bill Gates <billg@microsoft.com>

I am a strong believer that the Internet will make it very difficult for us to be able to charge much for an online platform - whether it is narrowband or broadband. It prevents us from having unique access to customers and therefore makes it hard to bootstrap unique technology that is needed for a platform. Without Internet we could get content providers like we got ISVs for Windows. Internet blocks us from having scale. It is too important for us to try and overcome this problem to give up however.

One interesting problem for the Internet is going to be the variety of Web clients that show up in the future. Every self respecting shell and word processor will have Web browsing capability built in. This includes the shell in Windows. It includes the client work Novell is showing. I think it will be very difficult for there to be a compatible extension of this unless some committee is very powerful or unless we do it. If we make extensions we may not choose to make them available to others and then we will try and get content providers to take advantage of our extensions. Of course this only helps Windows as a client and our applications if we do it right - not Marvel. Clearly information browsing will have to include support for lots of new objects like tables, queries, animation, and annotation.

I previously commented on the communication cost issues. Let me now reply to the points you make above.

I basically agree with you that there is trend and potential towards Internet blocking us from getting the usual platform win, but only that - I believe that it is too strong to say that it already blocks us from getting scale. There is a scenario where this is true, but there is substantial scope for us to play a big role - either as a platform player in the usual sense, or something close to it.

The strength of the Internet is that it is the beneficiary of the positive feedback cycle - more people get on, which attracts more content (and causes more BBS postings) which makes it more attractive for others to get on. Today this cycle is based primarily on three primary areas - communications (i.e. email), public domain content, and user contributed content (such as BBS postings). Ultimately people will solve the technical and policy issues with making the Internet capable of doing commerce - i.e. intellectual property

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protection and metering, billing etc. but this is only in its earliest glimmer of coming into being.

The weakness is precisely the point you make about the difficulty of having extensions happen in a compatible way. In the last couple of years we have seen a lot of new protocols and programs sweep the Internet - the time it took everybody to swing around to Mosaic was stunningly fast - but this is because it was expanding into a vacuum.

The hiter skelter world of protocol du jour is perfectly suited for email (where it does not matter much) or user contributed content, because in each case the content is ephemeral and is quickly replaced.

When you start to assume lots of rich content and transaction services you start to act a lot more like the PC market - standards change slowly, ISV buy in is important, there is value to being a kingmaker funding major new work and evangelizing it etc. That is a role which we can play.

Over time I expect to see the following trends to occur:

The Internet up to this point has been the last bastion of grad students and public domain software written by academics. As a result it has also been the last bastion of platform independent software since these people wrote code for the Internet with a mindset shaped by the various random UNIX machines in academia, a high concentration of Macs, and then as an afterthought, Windows. Now that the masses are descending on the Internet they will do so with Windows machines. The "center of gravity" for formats, protocols and so forth will shift toward Windows as the primary platform. The UNIX crowd can circle their wagons for a while and flame away in some forum called [alt.live.free.or.die](http://alt.live.free.or.die), but their time is past. 100,000,000 customers can't be wrong.

Front end software (editors, browsers) will become the key arbiter of formats. If people want to browse spreadsheets they will send Excel files. No bunch of grad students is going to write a public domain spreadsheet viewer that will compete effectively, especially if Excel makes sure that they support use as an Internet browser decently. There are still some formats that will revolve around things which are intrinsically tied to the net, but anything that relays on front end software for creation/display will be driven by that software.

Connectivity tends to make the market share leader become even stronger at the expense of everything else, because of increased sharing. If me and my buddies in a small company all have a weird spreadsheet, fine, we can support each other and trade spreadsheets happily. When we are all on line, people trade stuff a lot more and the people with an app with the second best format are the odd men out. The thing which allowed Apple and other also-ran products (like Multiplan in Europe years ago) to survive was highly localized concentrations of users - within a company or within a discipline (like graphic arts). The Internet will tend to standardize any software product which depends on proprietary files. This is the flip side of the comment above - front end software will set the format standards, and conversely the format standards will determine the front ends. Top ranked products (which also work well with the Internet) should get a big boost.

This suggests that we do a lot to make our apps good citizens. This does NOT mean building a full Mosaic clone into each app - instead we have to focus on what we have to do to make both authoring and viewing easy. How do you embed links (monikers should map well to URLs as we discussed at the Internet retreat), how do you ensure that formatting comes out OK, can the app be exec'ed reasonably from other Internet shells? What do we need to do to make OLE the preferred linking and

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embedding mechanism across Internet connections? There is a lot to do here and we should be working on it.

Content developers will try to remain platform neutral, tool neutral and format neutral, and for the most part they will fail. Once people start to compete they will increasingly become platform and tool specific if there is any advantage in doing so. This includes both the computing platform (i.e. Windows) and also the online service environment, such as how you do pointers (URLs, monikers...), billing and anything else which winds up being embedded in your content/service in a serious way. This will create a new inertia in changing standards.

Getting new formats and protocols adopted is going to no different in nature than getting them established in the PC industry. There is no strong central committee, and even if there was one now there is no reason to think it would survive any more than one would in the PC industry. Public domain software has never competed effectively with commercial software, and this will not change here. Some existing standards will be inherited from the early days of Internet, but the ability for people to agree on new standards a few years hence will be a lot lower than at present. Otherwise you have a very high stakes game where companies compete with their products just as much as in the Dos or Windows world. A large player who can create something significantly new and evangelize it successfully will have a shot at doing this.

Nathan

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