

## All Together—the Re-emergence of Convergence

Last year when the video iPod first hit the market, I shared with some colleagues my belief that this marked a change in the mobile industry. If consumers can get used to—and enjoy watching—video on a small, handheld screen, the potential of the mobile handset has been radically increased.

A knowledgeable co-worker who had seen video on phones launch and fail in Europe assured me people simply would not watch anything on screens that small. It was the wrong device for that medium. A week later he came back very excited after having seen the device in action. The experience was so superb, it was bound to be a success, he told me.

Technology and behavioral trends are steering the market towards more streamlined handheld devices to provide all of our mobile data and entertainment needs.

In the 1990's, “convergence” was *the* buzzword. As technologists we were all preparing to be dazzled with toasters and blenders that networked to our PC, TVs that doubled as computers (or was it the other way around?), and mobile phones that would both start our car and enable global videoconferencing.

While these concepts have either disappeared or haven't yet come to pass, the concept of convergence is again becoming techno-chic. And while there will never be a single gadget to control all of our data and entertainment needs, it is becoming clear that our mobile handsets are preparing to take on capabilities that currently require multiple devices.

In fact, recently some technologies and systems already *have* converged. As mobile phones adopted text messaging capabilities, pagers have all but disappeared from the hips of everyone but doctors. Other technologies did not merge with anything, but instead faded from existence. WebTV was supposed to bring the World Wide Web into every household, marketed to those who feared technology or couldn't afford a PC.

What pushed these systems over the cliff of irrelevance? Plainly put, the market did not want them, at least not as they were.

Now in 2006 we are surrounded by a torrent of information, as well as devices and technologies with the promise of making it all easier to use. It's highly likely you carry a mobile phone, and perhaps a PDA as well (or maybe a Blackberry or Treo to suit the needs of both?). You probably have a separate MP3 player for the gym or your morning commute. And even though you take your laptop just about everywhere, you might also have a portable DVD player for long trips when your laptop just won't last. Maybe you also have a gaming device of some sort.

Will all of these devices soon be available in a single, sleek, thimble-sized gadget that clips neatly onto your Bluetooth headset? Highly doubtful, but the pace in which the market works to streamline what consumers use seems to accelerate daily.

However, many barriers—both real and perceived—have led to the delay in the true convergence of our myriad mobile devices.

There are very real technical hurdles at the moment. Consumers are now accustomed to streamlined hardware, but as features are added the bulk of the device will inevitably increase. And if you give design deference to the screen size for a great video experience, how does that impact the keypad? Where should gaming and music controls go? And beyond the phone itself, the network infrastructure necessary to carry all of these data-heavy and disparate data-types are complex and extensive.

Another obvious stumbling block is the ease of use for a consumer. It will be difficult to create a simple and usable device that does everything we want: text, photos, downloading and viewing movies, music playback, instant messaging, radio, voice calls, and push-to-talk. For example, although MMS was introduced to the market **in 2002**, its adoption was sluggish due mostly to the difficulty consumers found in its use. Though introduced later, the North American market has seen a faster take-up rate of MMS usage largely because operators worked to make it simple for their customers to understand and utilize. Both the hardware design of converged devices, as well as software interfaces will need to be sufficiently straightforward and intuitive to foster mass adoption. Handset manufacturers and operators alike have their work cut out to make this all work to the end-users' satisfaction.

Yet perhaps the greatest issue in converging multiple functionalities into a single device is the most difficult for any company to address directly: the mindset of the consumer. A mix of preconceived notions and bad experiences with previous convergence attempts make many would-be adopters hesitant, at least initially. It will take substantially innovative devices and early adopters' acceptance to make the industry really move.

Fortunately this hesitancy—in the case of the mobile consumer—can be quickly overcome. By its very nature the world of mobile communications is dynamic and forward-thinking. Mobile users already accept and expect constant evolution and innovation, particularly the early adopters. And there is little lag for the rest of the market since worldwide customers upgrade their handsets biannually on average.

And the technological improvements to make this all feasible are being implemented. Operators are building out their 3G networks for higher bandwidth transfers, chip sizes on handsets are shrinking while capabilities are increasing, and major innovation players are working to get their technology embedded into the mobile phone.

Always follow the innovators. Microsoft has been pushing hard on its mobile strategy since even before it conceived of CE or shifted its entire strategy to .NET. Ingenuity defines Apple, and they have desired to own the personal media experience for quite

some time. Sony, Motorola, NVIDIA, and hundreds of other innovative companies are all working to bring their vision to the mobile phone.

Newer handsets are bought as prepackaged media hubs, able to make voice calls, take photos, record video, play music, send and receive text, browse the Web, and complete small purchases. So while there are some things your mobile phone will never be able to do, anything that does makes sense as a functional component of a small portable media and communications device will make it in before too long. You can expect to see and use one soon.