

Constant connection is changing the world

by Ken Denman, CEO, Openwave Systems

The advent of constant connections is breaking down the centralised control by government, media groups, enterprises and the like of all types of communications including personal, news, entertainment and financial. Even monetary transactions are increasingly moving to mobile networks. When most people have camera phones and use blogs, social networks, Twitter, and YouTube the traditional channels for news or even entertainment begin to lose relevance. Soon, constant connections via mobile to social networks seem likely to centralise most of our daily interactivity.



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Human history is full of inflection points - events that alter the daily course of events and set history on a new trajectory. In the last half of the 20th century, modern technology accelerated the frequency of these milestones to roughly 15-year increments - consider the effect of integrated circuits, the personal computer and the world wide web on our daily lives.

Today we are witnessing the next inflection point at the intersection of the Internet and telecommunications. Networks, devices and content are in place to allow constant connection at an affordable price. Connecting to the people and the information that matter to us - whenever and wherever we want - changes how we communicate. This change is expected to bring dramatic improvement in our societies and quality of life. It will certainly play a key role in the next surge of economic growth.

What might constant connection look like? What does this new paradigm mean for all of us? And what can mobile technology do to guide and accelerate it?

Transformation 1: Instant mass communication

Since the dawn of organised society, great power has come to those who have held control of communication and information channels. Not surprisingly, control that has been mostly consolidated within larger governing and private entities. We have gotten used to hearing stories about a government hiding bad news from its people or a newspaper campaigning for the publisher's pet cause. Centralised control over mass communication has shaped laws, social trends and even the fate of countries.

With the advent of constant connection, this control is breaking down rapidly.

When the majority of people are armed with camera phones and can post freely to blogs, social networks and Twitter, it becomes extremely difficult for anyone to delay the reporting of news (true or false), let alone hide it indefinitely.

Some real-life examples:

- Networks of activists in North Korea smuggle cell phones into the country and use them to post news to websites in other countries. These activist networks were the first to report unrest after a recent currency revaluation.
- Taxi drivers in Mexico are equipped with camera phones they can use to report crimes.
- Several private citizens recorded a shooting by police in Oakland, California. The events shown in the videos resulted in the filing of criminal charges against the officer involved.

Transformation 2: We communicate through social networks

To most, mobile communication means making phone calls and checking email. Yet, worldwide, to a growing generation, social networking is rapidly emerging as the most important method of mobile communication. Years from now, we might not remember Facebook, but social networking will still be the foundation for most of our personal connections.

Mobility is a natural match for social networks as it keeps people in touch wherever they go and whenever they want. Social networking is emerging as a dominant behaviour on the mobile web:

- Mobile usage of Facebook doubled in 2009 to 25 million users;
- A study in the UK found that Facebook accounted for about half of all mobile web page views in December 2009; and
- A survey of US mobile web users found that 60 per cent of total mobile web usage time is spent on social sites.

Transformation 3: Everyone pays for things instantly

People in the developed world take access to credit for granted. Banks send us credit card offers whether we want them or not, and credit cards are accepted just about everywhere. However, in much of the developing world, credit cards are very difficult to obtain and to use. Also, visiting the bank might require a long trip into a city, and carrying a lot of cash is both inconvenient and dangerous. For these reasons, in some areas payment systems built around mobile devices are already having a big impact:

- Twenty-one banks in India now allow depositors to make purchases and funds transfers using their mobile phones. These banks are presently handling about 190,000 transactions per month;
- In Kenya, a mobile banking system has more than two million customers who deposit money through local retailers that sell phone cards. Customers can also use their mobile phones to transfer money to anyone with a mobile phone; and
- In the Philippines, millions of people use mobile phones to make payments and exchange money. The system even enables people working outside the country to send money home.

The challenges of constant communication

All these transformations depend on a wireless network that is fast, ubiquitous and capable of transferring huge quantities of data whenever needed. Today's mobile networks have grown substantially, but the demand for mobile data has grown even faster. Estimates say that global mobile data traffic will increase 66 times between 2008 and 2013¹. Unless we act now, the benefits of constant connection could be delayed for years or even decades.

Here's a shortlist of what we need to do:

- Prepare the network for mixed media - Video is the biggest driver of web traffic today, generating more than 33 per cent of total consumer web activity, and is predicted to go above 60 per cent by 2013. As smartphones, tablets and wireless PCs proliferate, more video traffic is moving onto the wireless network, creating some of the wireless overloads experienced to date.
- Optimise for signalling, not just files - Although human usage of the network results in transfers of large files, machine-to-machine communication has a very different pattern. Mobile applications like email and wireless devices such as sensors and appliances generate constant streams of small updates - things like 'tell me if I have any new messages', or 'here's the temperature I'm sensing right now'. This type of traffic can easily overwhelm the signalling resources of a network. Implementing an all-IP infrastructure is the only practical way to address the issue.
- Build social networking into the network - As we become continuously connected, social features will become an inherent part of the network itself. Users will have profiles defining a constellation of different communities and interest groups they belong to, and the information that they are and are not willing to share with each one. One login should let them interact with all of those groups. This is an obvious place where operators can and should add value.
- Build context awareness into the network - There is no single modification to the network that can handle all of this change. Instead, optimization must take place in many different places, tuning performance in real time to make the best possible use of limited resources. Collecting, analysing and utilising contextual data - the who, what, where, when and how of the network - will make the network run smoother. Some simple examples that exist today:

- o If we know which videos and documents subscribers are viewing most, they can be cached at the edge of the network and delivered more efficiently;
- o When the network is especially congested, we can use compression schemes that sacrifice a little quality, but ensure timely delivery; and
- o If we know which network resources are available to a user, and what the user is trying to do, we can intelligently split the traffic between 2G, 3G, and WiFi networks.

Next steps

Cooperation between the computing and communication industries is essential. Here are three steps we should focus on:

- Be willing to abandon the old ways of doing business - Clinging to old business models will not save a company; rather it will ensure that they get left behind. The time to change is now, while we still have a financial cushion and the time to try a few experiments and find new ways of doing business;
- Enhance freedom of choice - From the rise of the iPhone to the growth of the Internet itself, it is clear that consumers respond strongly to freedom of choice in both applications and services. Operators should get ahead of that trend by making it even easier for people to find and use new applications and content. The wave of the future is not more app stores; it is a distributed app and content store built into every website; and
- Focus development on users, not technology - The mobile industry has a long history of floundering when it tries to force customers to adopt new technologies, such as multimedia messaging, rather than solving meaningful problems in their lives. To prosper, the industry needs to get a much better understanding of customer needs and trends. A key element in this is real-time analytics, combined with flexible software and services that can adjust on the fly as usage patterns change. Change and flexibility need to be built in from the user experience outward.

At a time when many people are talking about economic stagnation and lowered expectations, I am optimistic about our collective future. The actions we take in the next couple of years will determine whether we get to the era of constant communication awkwardly and slowly, or smoothly and quickly. ●

¹ Cisco network traffic forecast: http://en.wikipedia.org/wiki/Internet_traffic