Push to eXperience

"We started by asking how families communicate and share experiences."
– CRYSTA METCALF, APPLICATIONS RESEARCH

As spatial boundaries and modes of communication converge, Motorola is creating disruptive new technologies to give people the experience of being connected from anywhere, at any time. Push-to-eXperience is one such example. Seamlessly blending content and conversations in real-time by pushing a key on a mobile device.

GENESIS

Not All Technology Starts with What Can Be Done
Some of the Greatest Advances Begin with Finding Out What Needs to Be Done.
In 2001, we decided to do research on how families really communicate to see what innovations could serve everyday problems and what opportunities might exist by simply observing how a family shares information. "Rapid ethnography" research methods were used to gather pertinent information on how six households in the Chicago metro area communicated in their natural setting, the home. The data collected described the use of media from greeting cards to instant messaging, and underscored the impact of face-to-face contact on the frequency and intimacy of communication events. It was found that friends and family separated by distance not only talk together about what is going on in their lives, but they also want to engage in purposeful communication that more efficiently and effectively involves the sharing and manipulation of artifacts. Technologies for long-distance communication did not support this type of interaction, an opportunity Motorola Labs believed they could exploit.

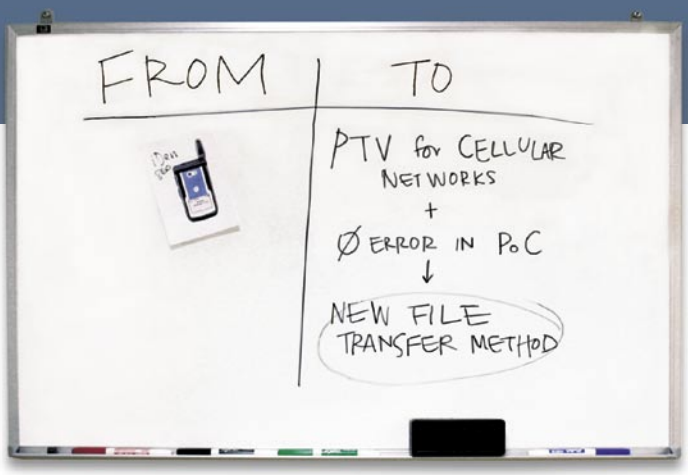
A Picture Is Worth a Thousand Words: Push-to-View (PTV)
The initial application concept focused on providing users, separated by distance, the ability to feel closer to each other, or to complete tasks, with the use of a shared object, image or artifact. Users engaged in a two-way social or task-based Push-to-Talk conversation would have the ability to augment the dialogue with a shared photo or image. The content itself would then become an essential part of the conversation.

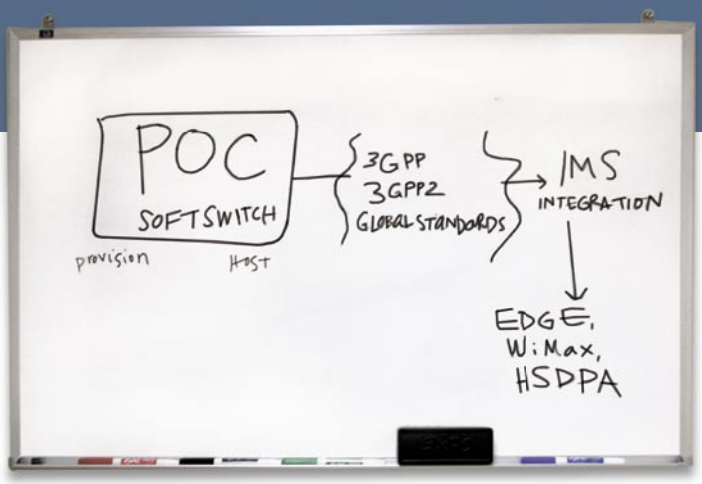
"BY BEING FIRST TO MARKET, EARLY ADOPTERS ARE BEING DRAWN TO OUR INNOVATIONS."

– PRASHANT VELAGALETI, APPLICATIONS RESEARCH

"IT'S A QUESTION OF EVOLVING THE USER EXPERIENCE AS THE NETWORKS MOVE FORWARD."

– DEPANKAR NEOGI, CORE NETWORKS DIVISION





REQUIREMENTS

On to Commercialization

The initial prototype, implemented on an iDEN smartphone running Java and Linux, demonstrated the basic functionality of the application. Still, many hurdles needed to be overcome before the application could be commercialized. How could the iDEN Push-to-Talk communication session and packet data services be seamlessly combined into one easy-to-use application? How would mobile devices discover and address each other? What performance burden would this new application place on the device and the network? Partnering with the iDEN development team to address and answer these and other research questions, the first Push-to-View commercial application shipped on the iDEN i860 handset.

Can Lightning Strike Twice?

Could the same application using Push-to-Talk over Cellular (PoC) technologies be created? Technically, could the Push-to-View (PTV) experience be enabled over traditional cellular networks? While numerous ways to support the application were developed, a consistent challenge had to be addressed – namely the assurance that the picture files transmitted in a PoC environment were received without error. Any error would produce a corrupted file, which would inhibit the receiving party to view the image. The common softswitch technology, sufficient for transporting voice streams, simply did not provide the reliability necessary for sharing images.

Towards an Intelligent File Transfer Protocol

In order to successfully accomplish transferring picture files over a PoC network, a new intelligent file transfer method was required. The solution would need to have minimal impact to the network infrastructure while using an existing framework of technologies. So in order to integrate content into a conversation in real-time, software would need to be developed that could manage the reliable transmission of large files while streaming audio.

TECHNOLOGY

Push Structure

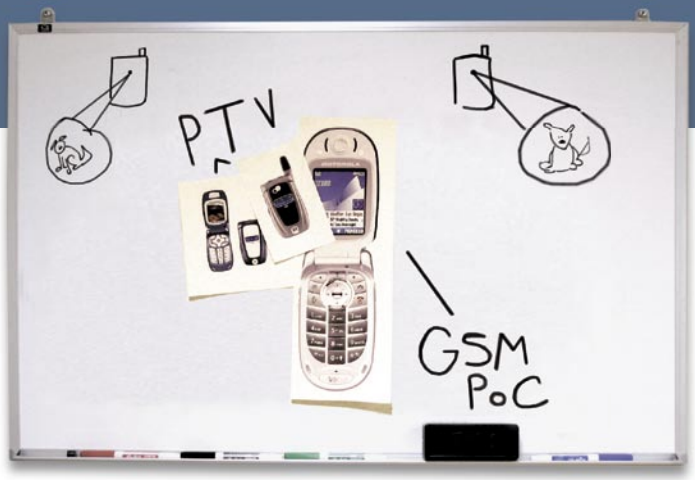
What has evolved from the Push-to-View technology are Push-to-eXperience (PTX) technologies and ideas. Based on Internet standards, PTX will utilize PoC softswitching solutions to provision and host PTX services. And as new applications and services are identified and developed, dedicated servers will increasingly be integrated into a core IP Multimedia Subsystem (IMS). Following the global standard defined by 3GPP and 3GPP2, the ability to offer network controlled multimedia services, using a consolidated protocol, opens up tremendous opportunities.

Building Out the Network

It is clear that optimum service delivery and the full potential of PTX will be achieved when IMS-based networks with high bandwidth availability – perhaps EDGE, WiMAX or HSDPA – have been implemented. Today however, with the prevalent 2.5G networks, users can immediately start reaping the benefits of Motorola's compelling solutions with their Push-to-X family of products.

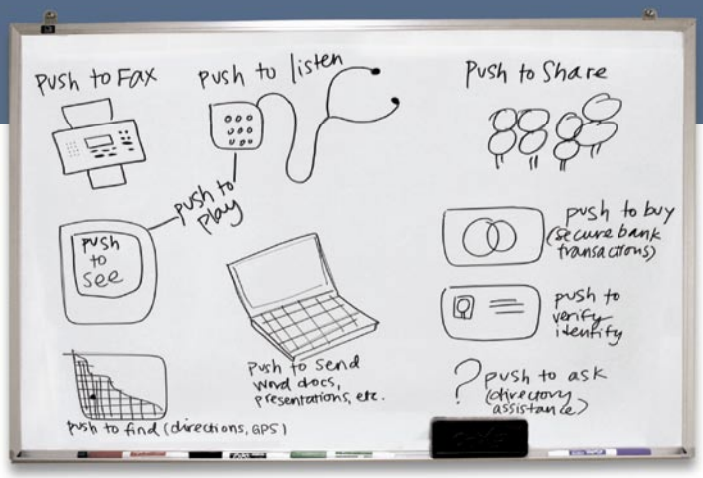
"WE DEVELOPED KEY TECHNOLOGY-ENABLERS THAT LET US ADDRESS TODAY'S CHALLENGES, AND ENABLE TOMORROW'S NEXT GENERATION SERVICES."

– VIVEK THAKKAR, MOTOROLA TECHNOLOGY



"IMAGINE A DEVICE THAT CAN THINK WITH YOU AND DELIVER THOSE THOUGHTS WITH A PUSH OF A BUTTON."

– NEAL FOSTER, MOBILE DEVICES BUSINESS UNIT



PUSH-TO-X TODAY

A Unique, Industry Leading T echnology

Push-to-View is an industry first, extending Motorola's leadership position in commercial PTX offerings. Push-to-View is currently shipping on the Motorola iDEN i760, i850, and i860 handsets. Soon, the GSM PoC solution, including the v557p handset and related infrastructure components will be in market. A number of patents have been filed by Motorola in the areas of mixing PTT with packet data services, as well as the reliable transfer of data in a PoC environment.

POTENTIAL

It's All About How and When Our Minds Work

Your mind doesn't wait for a convenient time to wonder where a delivery is. Your mind does not always want to wait to see pictures of your family. When you think of a particular song, that is when you want to listen to it. Push-to-eXperience is all about providing functionality on-demand – when and where it is most needed, when and where it is asked for, in the simplest, most seamless way possible. Upcoming PTX solutions will build on Motorola's current work to enable a host of new applications to enrich people's communication. Work is underway in Motorola Labs and the various product groups to help make this happen worldwide.

Blending Content and Communications So the Whole Is Greater Than the Sum of the Parts

Push-to-eXperience will enable advanced real-time communication experiences capable of enriching our lives by means of instant self-expression. Push-to-eXperience will foster closeness to others, help us access and share information, and communicate in ways that are more compelling than any single application has ever done.

About Motorola's Technology Organization

Motorola's Technology Organization is researching and developing technologies that will make it simpler for us to move between environments, share experiences with our friends, families and colleagues, and seamlessly communicate with our products. Our work will make it possible for products to communicate with each other and configure themselves to individual and service provider preferences. As well, we are developing intelligent networks that can configure and heal themselves for consistently superb performance. The Technology Organization includes Motorola Labs, Standards, Early Stage Accelerator and the Global Software Group (GSG).

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