

# Storming the Cathedral: Collaborating for Innovation in Mobile Markets

mob rule

by Wojciech Ozimek

If innovation is to become the next core competency, it must become a truly collaborative discipline. Isolated R&D departments and ivory tower product strategies, unlinked from the market dynamics and abstracted from the actual capability to deliver, cannot handle the demand for innovations. To match the rising demand for growth, innovations have to become massive, cheap, and sustainable.

The area of mobile services is a good example of how these three (to a large extent contradictory) qualities can be pursued by leveraging large networks of partners. Such value networks enabled by technology-based “innovation platforms” foster collaboration, enable profit and risk sharing, and focus on core competencies.

This article will provide readers with a “structured walkthrough” of the phenomenon of mobile services markets, explaining why collaboration and value networks create the most plausible model for product innovation. I will also explain how standards and technology platforms can enable collaboration among independent partners and present the key challenges and obstacles confronting the successful development of a value network.

## NONVOICE SERVICES: EXITING THE PRICE COMPETITION CYCLE

“Mobility” seems to be the new buzzword in the post-e-business world. The telecommunications market is growing rapidly, especially in Europe and Asia. According to the latest market data from the EU, the market penetration for mobile phones has reached 86% [7]. The revenue of mobile operators is still dominated by voice transmission, but as the fierce price competition for these basic services pushes revenues and margins down, telecoms are desperately looking for new products that will drive future growth. Their main goal is to get out of the price competition cycle. Voice services are getting cheaper and cheaper each month, and the competition is more and more intense.

Entering the nonvoice services market looks like the right way to change the battleground from “price-oriented” to “innovation-based.” But it’s also a huge change in the way telecommunications companies conduct their business. The new mobile services (such as mobile games) are very different from voice services in a number of ways:

- **Shorter product lifecycle.** New products (games, information services, etc.) are

developed quick and will disappear even quicker. The value of the service and information depends on just-in-time deployment. Consider a set of mobile games related to a new movie, for example.

- **Many different customer segments.** Mobile services dedicated for youths (instant messaging [IM], dating, etc.) are quite different from those built for business (e.g., fleet management).
- **Large number of products.** The nonvoice product range is broader, and specific services target many virtual markets.

These factors make entering the nonvoice market an enormous challenge for telecoms, which are used to monopolizing their markets. In order to self-sufficiently cover the whole range of competencies and capabilities required for developing, marketing, and delivering nonvoice mobile services, they would have to change their organization. To produce mobile games, they would have to establish creative departments to invent entertainment solutions; to produce commercial applications (e.g., mobile intranet), they would have to organize teams with specific vertical industry knowledge. Some telecommunications companies attempt to build such units,

only to discover that their efficiency, creativity, and market leverage are seriously compromised by the dominating “network-oriented” culture typical of telecoms. In most cases, it soon becomes evident that the “do it yourself” attitude makes little sense in the case of nonvoice services.

It’s no surprise, then, that the world market leader, Japan’s NTT DoCoMo, has taken a different approach. The mobile subsidiary of this telecommunications mammoth has been created and is managed by people from the media industry. The business model is based on truly generous revenue sharing between the application creators and the operator. Applications are created by third-party suppliers. Anybody with a good idea can create services for the mobile network. DoCoMo provides these services to end users in exchange for a fee, retaining 15%-30% of the revenue from network traffic that the company generates. A client chooses the service that suits her needs. This model does

not require telecoms to produce services inhouse.

The Japanese experience proves that mobile services are likely to generate new, fast-growing segments to existing service marketplaces, and — more important — to generate new markets. While DoCoMo’s early results are compelling (25 million subscribers in two years), it should be noted that the company’s success is founded on a large network of companies that develop, market, and deliver services via the DoCoMo network. DoCoMo partners are often the ones who have to take the business risk associated with bringing innovative services to market and making them profitable.

To become a value network, DoCoMo had to “open the market” in terms of providing open standards, open access to network and infrastructure services, and so on. By giving away some control, the company created the entire “world” of mobile applications, a world guided by customer demand and the innovation capabilities of

a value network. The DoCoMo managers empowered developers by giving them access to the market, and they empowered the end users by giving them the right to choose their favorite applications.

**MARKET VIEW: FROM CATHEDRAL TO BAZAAR**

The movement from voice to non-voice services represents a clash of mindsets, cultures, and business models similar to the one Eric S. Raymond has described in his book *The Cathedral & the Bazaar* (see Table 1) [8]. The telecommunications company of the past was a hierarchical world of closed systems. But the notion of “openness” has finally come to the telecom world, courtesy of the open source software community. The modern nonvoice mobile network operator (MNO) is a value network of collaborating companies.

The value network — a group of organizations that are interlinked through various value-generating relationships with the aim of providing products or services to the target market — is a fundamental structure for achieving a large supply of services. The architecture of this value network, its internal economics, and the resulting service supply potential differ with respect to two key dimensions, which are:

1. Ownership of the standards used for the definition of services and their integration with the MNO infrastructure
2. Revenue-sharing policy and the underlying partner management policy of MNOs

Table 1 — Cathedral- Versus Bazaar-Style Telecoms

Cathedral-Style Telecom	Bazaar-Style Telecom
Price-based competition	Innovation-based competition
Focus on control	Focus on innovation
A few large customer segments	Many small customer segments
Cooperate with selected, large service/application providers	Cooperate with anyone with fresh ideas (cooperation based on “goodwill rules,” not selection process)
Select the application for the customers (focus on procurement)	Empower the customers; give them the right to choose services (focus on customer community)
Closed IT environment	Open IT environment based on open standards (empowering the suppliers)

MNOs build platforms that enable fast creation of new nonvoice services and their integration with underlying network and application infrastructure (location-based services, billing services, CRM, ERP, etc.). These platforms are proprietary solutions, so initially the most typical situation is that MNOs own and manage the standards required by external mobile content partners. On the other hand, most of these platforms are based on technologies that provide a relatively cheap means of implementing independently managed standards, using services integration platforms such as Web services. The existence of such standards changes the economies of investing in mobile content. Independent standards-based services are generally cheaper to develop and have broader reach, thanks to the independence of the standard.

Revenue-sharing policies of most MNOs in Europe are currently biased toward short-term MNO interest. MNOs avoid giving away more than 30%-40% of revenue, raising the entry point for external service providers very high. By comparison, DoCoMo tends to retain 15%-30% of service revenue, offering partners a very attractive share — approximately twice as much as European MNOs.

Partner-oriented revenue-sharing policies along with independent standards implemented by major MNOs are forces capable of shaping a very different mobile services landscape by creating a strong opportunity for independent service brokers. These are the

organizations that — taking advantage of open standards — are able to assemble a service portfolio around their core business competencies and then offer the entire portfolio to all MNOs.

Large media companies are the potential service brokers in the infotainment area. They have most of the skills, partnerships, and business know-how to create, market, and deliver infotainment products, such as multiplayer games associated with large-scale media events (the launch of a major movie, reality show, etc.). They are used to managing teams of creative workers, media planners, copywriters, authors, actors, and production managers, and they have the financial assets and properties needed for this kind of endeavor. All they need to do is to produce the part of the “show” that is associated with new media — mobile services.

It is natural that these organizations will become the “infotainment brokers,” cooperating with infotainment incubators, providers of infotainment content management infrastructure, MNOs, and/or specialized virtual MNOs. The advantage of this scenario for MNOs comes from the fact that independent brokers take care of the essential services required for a mobile service to hit the market. MNO responsibilities, risks, and rewards seem to be best balanced in this scenario, and there are strong incentives for other players to develop a broad supply of different kinds of services.

The proper composition of a value network supports innovation.

Small, agile companies may introduce new ideas that cannot be foreseen by corporate R&D departments. Independent service brokers can create an intermediate layer between themselves and the telecom world. This intermediate layer may be oriented at vertical markets — for example, media.

In the next section, I will show why mobile market characteristics depend so much on small companies and individuals. Let’s consider the source of innovation.

### **PEOPLE VIEW: SOCIAL EFFECT**

A mobile device is a very personal tool. It is always with the user (subscriber), always on, and always connected. The birth of such a powerful communication tool has a strong social effect. Very simple text messages based on short message service (SMS) technology have been the key enabler of the “texting youths” culture. In countries such as Poland where the Internet and mobile telecommunication have been growing quickly at the same time, SMS messages are much more popular than e-mails. They are convenient, available anytime, anywhere, and very cheap.

A lot of young people buy mobile phones just for texting. Some telecoms have special rates for young people that include a number of free SMSs. It’s not unusual to see young people chatting, flirting, and dating using SMSs. This new communication technology affects our culture, language, and even health. According to BBC News [10], it is

text messages from lovers that reveal 87% of all marital infidelities in Italy. As an SMS can contain only 160 characters, there is a whole dictionary of “texting slang” that helps people communicate faster. (The Australian Bible Society runs a service that sends Bible verses using “SMS speak,” such as “4 God so luvd da world” [2].) Frequent texting may also lead to Mobile Thumb Syndrome (tenosynovitis) [11].

Text messages are not only an IM tool. Howard Rheingold, in his book *Smart Mobs: The Next Social Revolution* [9], discusses the birth of self-organized communities (“smart mobs”) based on mobile phones and the Internet. It appears that simple text messages can be used to coordinate large masses of people. Let’s take as an example the demonstration that ousted President Joseph Estrada in the Philippines. In 2001, more than one million Manila residents, coordinated by text messages, assembled in a peaceful demonstration against the head of state, ultimately forcing him to resign. The smart mob defeated the hierarchical world of politics.

A commercial example of smart mobs are the “street games” played with SMSs. One of the most successful is BotFighters, prepared by It’s Alive for telecoms in Finland, Ireland, and Russia. The game idea is simple. Each player can register on a Web site and thus become a “bot” — a battle droid armed with virtual sensors and weapons. Players walk through the real streets of a real city looking for

opponents. The position of each gamer is tracked by the location system of a mobile network. If two members are near each other, they are both notified about the “encounter” with SMSs sent by a game server. Each of them can either attack (by sending the appropriate SMS) or run (using his own legs, car, public transport, or whatever means are available). The game quickly evolved from an exotic event to a smart mob. In each country, players formed clans and groups to fight enemies. In Moscow, during the first six weeks of the game, the players sent one million SMSs.

Smart mobs are not only about text messaging. All “people connecting” technologies are welcome. The latest revelation is Bluetoothing. This new “social game” exploits Bluetooth functionality available in modern handsets that allows discovery of nearby devices. As a result, users can be informed about people who are near them and are willing to communicate, flirt, protest, or what have you. The new technology is simple. The user changes her device name to the slogan or sentence she would like to communicate (e.g., “Looking for ...” or “I’m against ...”) and waits to be discovered by other people in the vicinity. One of the more controversial uses of Bluetoothing is the “Bluetooth Users Against Bush” initiative [3].

All the examples above are signs of a new form of social coordination. Very often they are invented far away from the “hierarchical world” by smart individuals and

self-organizing communities. Smart mobs are another example of bazaar-style evolution of the mobile market. The innovation is born “in the streets,” outside the commercial market and outside the academic world, where the Internet started. Very simple tools (such as text messages, Bluetooth) are used to create applications for large groups of people.

Although smart mobs may use just the Internet (one example is Slashdot, with its discussion scoring system), it was mobile devices that triggered the revolution. Cheap, always available, and always connected technology is the key enabler for the new services. The common use of mobile phones around the world made them ideal for smart mobs. The success of new technology features such as next-generation networks or multimedia messaging will depend on ideas that have to be developed by individuals, communities, and small companies. So the most challenging task is to include these sources of innovation into a mobile applications value network.

### **JOINT VIEW: SO WHAT?**

In the previous two sections, I presented two views on mobile innovations. The first was a “market view,” which postulated an “open” approach for telecom companies (variants of DoCoMo, “bazaar-style innovation”). The second was a “people view,” which shows where innovation is born and how smart mobs utilize mobility.

So how can we start building mobile value networks? What are the conclusions?

- **Mobile innovation is like farming.** Innovation in the mobile world is like managing a farm. You start with planting new ideas, use open standards to grow partnerships, and feed small companies well using fair revenue-sharing policies. Let's all benefit from the ecosystem. If the business soil is well prepared and rich with new possibilities, the innovations will evolve.
- **Don't follow; invite leadership.** Nicholas G. Carr's rule of "follow, do not lead" won't work with telecoms. Each month the prices of voice services are less and less profitable, and the nonvoice services are "just around the corner." People in the street are using text messages to play and work. The choice is simple: telecoms can just take money from SMS traffic, or they can open access to additional services (location-based services, micro-payments, etc.) and benefit from added value.
- **Don't lead alone; invite collaboration.** "Leading alone" is not a viable option either. DoCoMo got it right and proved its model by inviting innovators into its value network. Contrast this with the failure of new-generation mobile network licenses, an overpriced and mainly technology-oriented "innovation." Additional bandwidth offering the ability to send video in real time is fine, but it's just technology. The "new-generation services ROI"

will depend on all this smart mob activity that will be invented by people using such technologies as UMTS, EDGE, and the like. Be prepared for the fact that innovation may come from someone outside your company.

- **Explore the power of the smart mob.** Personal computers were a success, and they created a whole new culture. The Internet was a success, and it created a lot of new cultures. In many countries, mobile phones are much more popular than PCs and much more available than the Internet. So talk to teenagers, and try to use SMS. There is a whole world hidden from "casual business phone users." If you are a company manager, hire media-related persons or cooperate with media or marketing firms.
- **Architect your value network.** If your company is a telecom, work with potential or actual service brokers and stimulate their growth. Be as open as possible to attract them and create "win-win conditions." If your company is a service broker, try to work with as many independent companies as possible. Talk to students, hackers, and mobile maniacs. They will deliver innovation and take many of the risks. If you are a small company or "mobile world discoverer," start by finding a broker or build a coalition with other companies. There is still a huge cultural gap between small, innovative companies and large telecom organizations.

- **Adopt the Agile Manifesto principles.** Whatever your role in the value chain, try to deliver high-quality products to customers by talking to them in their language. Find motivated individuals and teams, and "give them the environment and support they need and trust them to get the job done" [1].

### HP Bazaar

An example of an open and independent service broker is HP Bazaar. Five years ago, some people at HP decided that they are "the mob in mobility" [5] and started to build an open bazaar-style organization. The foundation for their work is a still-growing set of rules — a kind of constitution [4]. The HP Bazaar works both as a broker and an incubator. It stimulates people to cooperate and to build new solutions together. The business model is simple; new ideas created by small companies are easier to sell under the HP brand and using large company sales power. The Bazaar rules themselves are a good starting point to talk about mobile innovation. For example:

- "Rule 23. Arrogance sucks. We may be good and proud of it, but so are many others. Our success comes from partnering with customers and bazaar participants, big or small, new or old, serious or hilarious, from any part of the world. We will always assume they want to and can do a good job, unless proven otherwise. They most often do." [4]
- "Rule 14. Small is beautiful. Small gorillas are cute, easy to

handle, friendly, and eat less than big ones. The best way to guarantee a friendly big gorilla is to be good to him when he is small. In a new market there is no way of knowing early enough which gorillas will be the big leaders, so the only alternative is to play with all the small ones.” [4]

One of the HP Bazaar initiatives is Habbo Hotel, created by Finnish company Sulake in cooperation with HP, Magenta Sites, and Orange. It’s a virtual community for teenagers — a “Hip Hangout for Mobile-Minded Teens.” The users can use the virtual hotel space for safe and interactive entertainment, chat, and shopping. It’s a place that kids own and where they can develop their own set of rules. According to Sulake, this smart mob reached 1.8 million registered characters.

The example of HP Bazaar shows that building a value network of companies must be based on an attitude of cooperation. Switching from a hierarchical world built around large corporations to bazaar-style cooperations is a change of rules. To put it in IT terms, it’s like switching from classic software development to agile, extreme methods — including joint code ownership.

Building open value networks requires a friendly IT environment based on standards. There should be no entry barrier for individuals, communities, or companies. We need an open platform: an operating system for communities.

### An Operating System for Communities

The lifetime of a mobile product may be extremely short. A social event or a location-based game may be just a few days or a few weeks long. So from the technical point of view, the most important skill is agility. If someone wants to deliver solutions for smart mobs, he must take the risk of preparing complex solutions in a very short time and right on time. If the control is distributed among a group of creative companies (value chain), the whole project will be much more complicated. The need for some “creative environment” is obvious.

The environment should be an open (in terms of standards and interfaces) software platform that allows:

- **Quick development of applications.** The designers and programmers should focus on logic and not on access to telecom services such as messaging, location services, and billing.
- **Quick assembly of applications from ready-made services.** For very simple mobs, the nontechnicians should be able to prepare an adequate solution using a “visual environment.”

The basic functionality of such a platform should be smart mobs-oriented. It should offer basic access to users’ profiles as well as basic mechanisms for location-based services, presence, and IM. The main idea is to catch “the essence” of a mobile community — and offer the services in real time.

For example:

- If the community is playing a street game, then the platform must handle information about location and interpret messages sent by players as game commands.
- If the game is about dating, the whole application will be an instant messenger, but with additional functionality such as a real-time “emotion communicator” (an onscreen indicator showing what/how other people feel).

Considering that the same person may be the member of a few different communities, the platform must also be able to manage the user context. For example, when you’re playing, you will only be notified about game events. When you’re looking for “like-minded” persons, your device will switch to “seeker” mode. The platform will check your current context and act upon it to offer appropriate services and information.

The context changes may be based on “skin concept.” “Skin” refers to the unique composition of services for a given context, visible in the form of a specific user interface. The skin idea is widely used by marketing people and stands for personalization or “predefined” personalization. Users can change their phone theme, or it can be changed depending on context (e.g., location, time of the day, nearby people or devices). For example, one can use “traveler skin” (with distance and localization information) during a journey and “clubber skin” during

playtime. The skin changes the behavior of the mobile phone — its screen content, ring tones, form of presentation. It allows adaptation of the mobile interface to lifestyle or the current situation.

**Case Study: Community Platform**

An example of an “operating system for communities” is tribeware, developed by one2tribe (see Figure 1). It’s an event-driven platform based on service-oriented architecture (SOA) concepts and the Open Mobile Alliance (OMA) Mobile Games Interoperability Forum (MGIF) specification.

**Service Layer**

The service layer includes all fundamental building blocks for “community-oriented” mobile applications. They are based on the OMA MGIF specification. Some extensions include location and presence management. Selection of the MGIF standard doesn’t mean that tribeware is only a gaming platform. The main reason for the choice was a strong focus on community (team) management, IM, and matchmaking. An important part of each community is also a rating or scoring system (Howard Rheingold refers to it as “reputation system” [9]). From a technical point of view, the MGIF specification can handle this through “competition management services.” Thanks to SOA, the same blocks may be used to build quite different applications (such as a location-based game or “my city navigator” managed by a citizens community).

**Execution Environment**

The main challenge is not only to provide services but also to make them available for the developers. We need an execution environment that is open, easy to use, and secure (so the applications don’t interfere each with other). In tribeware, developers can build applications using standard Java applications. There is no need to use component-based development or standards like J2EE — all difficulties are hidden behind a friendly API. But the word “friendly” is tricky. Tribeware is still intended to be easier for non-IT people — at least those who don’t know the term “API” and are not familiar with Java. One of the platform connectors (alterEgo) allows semivisual construction of an intelligent phone interface to the platform.

**Connectors**

Through connectors, the platform can be integrated with

user-communication channels such as SMS centers, WAP and WWW terminals, and “real-time” applications. For Webmasters, tribeware offers a set of Web services to integrate with external applications (such as Web sites or portals).

**Avatars Connector**

Tribeware implements the skin concept in the form of avatars (virtual personalities “occupying” the mobile phone), which act as user agents. Avatars react to context change and allow visualization of messages (for example, those related to emotions). The open “alterEgo” toolkit is intended to support all those who would like to develop their own solutions using tribeware and avatars. The first “external developers” are students and freelancers. The alterEgo is designed to prepare new avatars quickly — in days or weeks, not months.

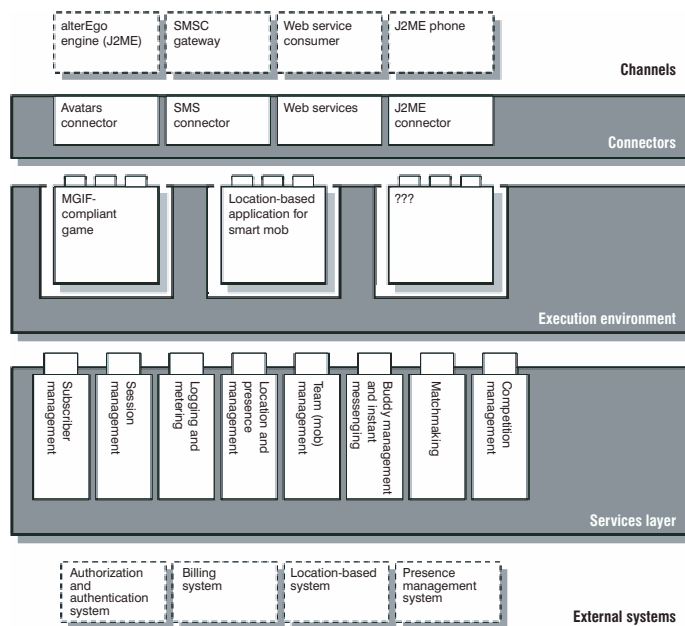


Figure 1 — The tribeware platform.

Tribeware is used as a platform for the Xyber Mech project, a location-based game and “pervasive world” constructed jointly by Mobile Entertainment Europe (MEE), Plus GSM (Polish MNO), and one2tribe. Graphicicians, sociologists, and IT specialists were asked to create the “parallel world” of Xyber Mech. Geographical regions in Poland were mapped onto planets and star systems, and the future players were involved in the science fiction work of “inventing” the new world. The location-based game is still under construction, and the community of creators exceeded 1,700 people during the first month of operation. A new smart mob is evolving. This month, students from Polish technical universities will be invited to join the team.

## SUMMARY

One of the HP Bazaar rules is “share everything.” This is also a good slogan for summarizing this article. Some of the effects of this “sharing” approach are stunning. DoCoMo, PCs, Linux, and other groundbreaking technologies and innovations are popular because someone decided to give something up to get even more.

What is needed for a new mobile innovation to be born?

- **Proper value network configuration** that is based on fair risk and revenue sharing and open standards of communication
- **An attitude of cooperation** that allows small companies and communities to submit an

innovation, deliver it through service brokers and aggregators, and be rewarded for it

- **An open platform** that supports cheap and quick product development and deployment

My colleagues and I are convinced that the idea of an “open innovation environment” can be successfully applied outside the scope of mobile markets — wherever massive, cheap, and sustainable technology-based innovation is a key to business success.

## REFERENCES

1. AgileAlliance. *The Agile Manifesto*. Agile Alliance, 2001 ([www.agilemanifesto.org](http://www.agilemanifesto.org)).
2. Bible Society in Australia. *SMS Bible* ([www.biblesociety.com.au/smsbible](http://www.biblesociety.com.au/smsbible)).
3. Bluetooth Users Against Bush Web site ([www.bluetoothusersagainstbush.com](http://www.bluetoothusersagainstbush.com)).
4. Cowen, Amy. “Attitude Adjustment: The Rules of the Bazaar.” *mpulse Magazine*, December 2002 ([www.hpbbazaar.com/cooltown/mpulse/1202-rulesbazaar.asp](http://www.hpbbazaar.com/cooltown/mpulse/1202-rulesbazaar.asp)).
5. HP Bazaar. *Still Not the Big Bazaar Book* ([www.hpbbazaar.com](http://www.hpbbazaar.com)).
6. MGIF. *Mobile and Wireless Gaming White Paper*. MGIF, 2002 ([www.openmobilealliance.org/tech/affiliates/LicenseAgreement.asp?DocName=/mgif/MGIF\\_Whitepaper\\_v1.0.pdf](http://www.openmobilealliance.org/tech/affiliates/LicenseAgreement.asp?DocName=/mgif/MGIF_Whitepaper_v1.0.pdf)).
7. PMR. *The Polish Telecommunications Market to Increase by*

*More Than 13% in 2004*. PMR, September 2004 ([www.itandtelecompoland.com](http://www.itandtelecompoland.com)).

8. Raymond, Eric S. *The Cathedral & the Bazaar*. O’Reilly, 2001.
9. Rheingold, Howard. *Smart Mobs: The Next Social Revolution*. Perseus Books Group, 2002.
10. Smith, Tamsin. “Mobiles ‘Betray’ Cheating Italians.” *BBC News UK Edition*, 15 September 2003 (<http://news.bbc.co.uk/1/hi/world/europe/3110144.stm>).
11. “‘Thumbs Culture’ Causes New Health Problem.” *Peoples Daily*, 17 July 2003 ([http://english.people.com.cn/200307/17/eng20030717\\_120463.shtml](http://english.people.com.cn/200307/17/eng20030717_120463.shtml)).

*Wojciech Ozimek is a Senior Consultant with Cutter Consortium’s Business-IT Strategies and Enterprise Architecture Practices. He is also the R&D Director at Infovide and principal and cofounder of one2tribe. Mr. Ozimek began his career at Polish Telecom, where he was involved in the design and implementation of high-availability distributed systems, object-oriented methodologies, and human-computer interaction design. In 1998, Mr. Ozimek joined Infovide, where he has participated in numerous projects as consultant, architect, and project manager. As R&D Director, he has focused on strategy and business development. Today Mr. Ozimek’s responsibilities include exploring new business areas for the company as well as performing high-level architecture and strategy consulting for select Infovide clients. In 2003, Mr. Ozimek founded one2tribe, a small company that specializes in creating large mobile communities. He is the author of many articles for Polish business and IT publications and is a frequent speaker at conferences, seminars, and trade shows.*

*Mr. Ozimek can be reached at [wozimek@cutter.com](mailto:wozimek@cutter.com).*