



## EDITORIAL

### THE WIRELESS (STANDARDS) HOME OF THE FUTURE

Andrew Updegrove

The home has always been enabled by formal standards – both discrete (e.g., the dimensions of lumber, plumbing and electrical components), as well as comprehensive (as with the complex systems of standards that comprise modern building codes). The places where we live are also rife with informal standards borne of convention, such as the standard height of stair risers, kitchen counters and chairs. Even the shapes of our wine glasses and the bottles that we use to fill them conform to shape conventions that have evolved to indicate the liquids that they are intended to contain. In each case, we are so familiar with these design elements that we take them for granted even as we enjoy their benefits, both trivial as well as profound.

Today, there is a new wave of technical standards under development that will revolutionize how we live at home. These standards will change the way we control the increasing number of systems we rely upon to control our domestic environments and to entertain us. They will also make our energy use more efficient, our lives more safe and effortless, and the technical quality (if not, sadly, the content) of our video entertainment more brilliant.

Many of these new products and services were imagined decades ago, such as the videophones that tantalized visitors to the AT&T pavilion at the New York World's Fair of 1964, long before the technology existed to make them a commercial reality. Today, that technology is becoming available, and once futuristic products and services are now, one by one, becoming commonplace. Indeed, a modern cellphone is not much larger than Dick Tracy's "two-way wrist radio" – and contains a Web browser, PDA and other features never imagined when Tracy was a "must read" in the funnies of the '50s.

While a number of technical and economic developments of recent vintage have made this renaissance possible (e.g., cheaper, more powerful chips), no single development will play a greater part than the creation of multiple near, medium and long range wireless capabilities and services, each defined and made possible by standards. These standards are being developed by a wide variety of standard setting organizations, both venerable and accredited (such as IEEE) as well as new consortia (like the Near Field Communication Forum (NFC) and EPC Global).

These services will operate at distances as short as a few centimeters (NFC standards enable tasks such as device-to-device identification), to short distances (as with the RFID devices that will tell us what enters and leaves our homes), to intermediate (such as the Wi-Fi standards that already enable our home networks to operate) to long distance (such as WiMax compliant equipment, which will allow large areas to be served with broadband transmissions from a single transmitter).

These standards will also deliver high definition television data to more vivid flat panel displays without connecting wires, as well as digital music provided by new Internet-based services via other wireless devices. They will also enable the delivery of faster broadband services to and throughout our homes, will permit networks of inexpensive sensors to monitor and control our heat, light and safety, and will allow the dramatic upgrading of entertainment systems. With other standards, we will be able to tell where our pets and (if we wish) our children are at any point in time, while not (we hope) allowing others to track us without our knowledge or permission – a result yet to be guaranteed.

There is even hope that some day – perhaps soon – that most evanescent and desirable of all technical grails may be defined by standards: The Universal Remote. (And woe betide us if this vision proves to be an illusion.)

At the same time, industry is being energized by new product opportunities of many types, and vendors are competing to provide us with new as well as upgraded devices. New "standards profile" consortia such as the Mobile Imaging and Printing Consortium (MIPC) are compiling suites of standards that enable new wireless linkages between devices that did not previously exist, allowing us (for example) to effortlessly print pictures directly from our mobile phones to our home printers.

All of these possibilities are maturing nearly simultaneously, and each relies increasingly on the work of several, and often many, different accredited and unaccredited standard setting organizations.

Unfortunately, with opportunity often comes contention, and it is perhaps no surprise that as the stakes have risen, so has the energy with which individual proposals have been promoted. In some cases, this has been healthy, leading to the overlapping development of multiple technologies (e.g., Wi-Fi, Wi-Lan and Wi-Max), no single one of which will be "right" for all situations. But in other instances, as with USB (the standard that may make home video cabling a thing of the past), rival factions have refused to compromise, leaving the consumer to make confusing decisions where the differences between two competing standards will be of little interest.

Notwithstanding such situations, it is likely that in the space of only a few years the great majority of these new goods and services will become ubiquitous. And, with pervasiveness, they will become just as taken for granted as are the home comforts that we already enjoy, so many of which were made possible by the now-forgotten standards development work of the past.

*Comments? [updegrove@consortiuminfo.org](mailto:updegrove@consortiuminfo.org)*

Copyright 2006 Andrew Updegrove