

# The Internet operating system and geospatial technology

by Matt Ball

The Internet operating system is a concept promoted to describe the increasing importance of services and applications that are accessible via any web browser. The concept is directly related to the growing use of smart phones to access the same application experience regardless of the operating system or the device. It also ties well into the growing use of cloud resources where capacity is getting so robust that entire desktop software functionality can be accessed without even having to install software on your own machine.

The thought is that the increasing reliance on the Internet for processing, applications and services occur outside of the environment of your individual computer's capacity or operating system. A search engine is a good example for this shift as you can type in your query into the same window regardless of the device, and you draw on remote resources to get your result. This evolution has come about given a more open framework and set of services and APIs, not a proprietary and closed computing operating system.

One of the earliest successes on the Internet was the maps and directions from Mapquest, which in itself could be considered an Internet-based application. The web mapping experience has grown steadily in sophistication, to the point where we can now access a free Internet mapping platform to find exactly where we are, to route ourselves via multiple modes of transportation, while accessing further details about our surroundings. All this has occurred via the Internet operating system, which increasingly offers more live and real-time services.

## ALWAYS CONNECTED

The importance of the Internet operating system wouldn't be nearly as great if it weren't for the fact that increasing numbers of people spend nearly all their waking hours tethered to the Internet for work or pleasure. We increasingly rely on the same computing resources that we used to only be able to access via a desktop computer, regardless of where we are located or what computer we have at hand. This portability of our computing experience is made possible thanks to common browser interfaces.

Our ability to pinpoint our location is central to a growing number of services because location becomes a filter to put our mobile experience into context. We now have free mobile mapping platforms that pinpoint our location, provide routing instructions whether we're walking, biking, using public transportation or a vehicle, and provide rich information about the landmarks around us.

On a recent trip to Philadelphia, I was able to plan my route to the center of town via a rail link, with walking

instructions, and was able to correct my direction and heading. At a complicated intersection I was asked if I needed directions, and at that same moment my handheld directed my site to the sign I was looking for. The ability to easily self-navigate our world will only get better, so much so that we'll be able to avoid that bewilderment which comes from navigating a new space. This capability wouldn't have come about without an open Internet operating system. Without that openness, we wouldn't be seeing the growing trend to open up so much more government geospatial data that will serve to further enrich the mobile experience.

## MYRIAD POSSIBILITIES

There are some very interesting things to expect from an open Internet operating system in the future. Its ability to act as a middle processing ground between various applications could provide control over when and where data about an individual can be collected or used. It could also perform functions of language and data translation, seamlessly changing the display depending on the context of the user or the desired application. It might also act as a filter to remove old or bad data.

In the geospatial realm, we might want that operating system to perform data transformation or fusion as a sort of seamless and fast middleware function between applications. It might also run certain algorithms or spatial analysis functions before updating the display with an informed idea of how to react to or navigate our surroundings. The operating system might aggregate inputs from distributed nodes to inform different applications about the conditions around us.

Having an intermediary piece of computing power and capacity that can act between services and applications is an intriguing idea. We're seeing increasingly powerful geospatial tools online, with better collaboration, greater speed and power, online analysis, and more data to enrich the experience. Increasingly, the key toward realizing the full promise of geospatial technologies is in a fast and processing-enabled Internet. A more active and capable Internet operating system might help accelerate the realization of this vision. [First published in *v1 media*.]

## References

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