

»LOCATION-BASED SERVICES

GPS Phones Will Boom, but Hurdles Loom

Of all the applications of GPS, the one offering the biggest and most broad-based business opportunities – and some of the greatest challenges – may be the cell phone. Mobile phones enabled with GPS are expected to increase in number at an astonishing rate over the next decade and a half – from around 200,000 sold this year to as many as 2 billion sold annually by 2020. These numbers have entrepreneurs and telecommunications service providers salivating at the possibility of creating an entirely new class of revenue-generating location-based services. And indeed, the cell phone's ubiquity, portability and association with specific individuals ought to make it a perfect device for delivering a range of such services, many of them as-yet undreamed of.

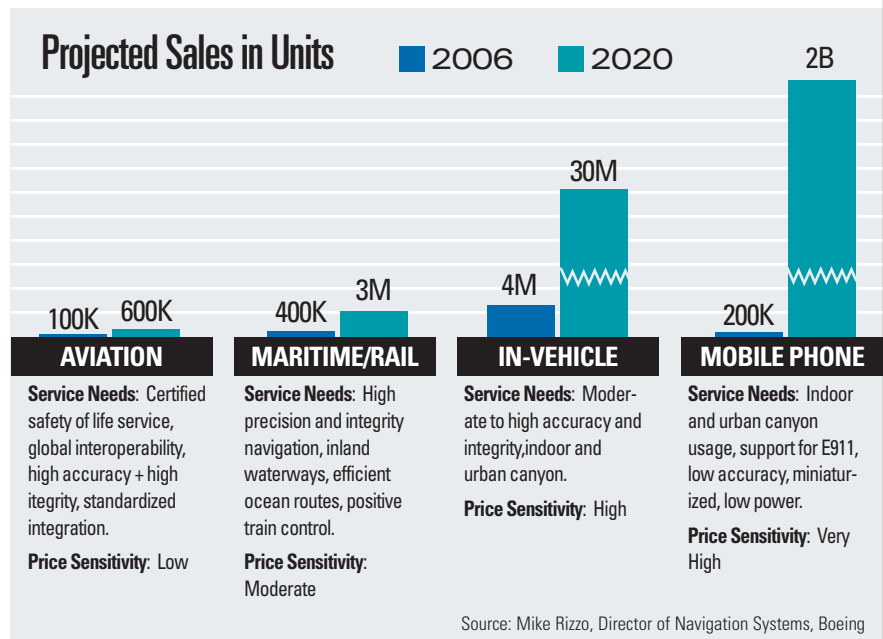
But there is a problem, and the problem gets at the heart of the GPS system as it exists today. As Mike Rizzo, Boeing's director of navigation systems, noted in a presentation at February's Munich Satellite Navigation Sum-

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– MIKE RIZZO, Boeing

mit, "Planned GNSS does not fully meet the needs of the largest-growing segment [the mobile phone market]." Specifically, Rizzo singled out GPS's near-total reliance on satellite communications as a key obstacle that must be overcome if cell phones are to realize their potential as location and navigation devices. "We need to look beyond the 'space-ground-user' stovepipes, and consider a robust system solution," Rizzo said in his Munich presentation.

Rizzo noted that satellites' increasing power and numbers, while considerable, cannot meet the specific needs arising from the emerging boom in



GPS phones. Users of mobile phones and other portable devices have been conditioned to expect reliable voice, messaging and Internet service in a range of physical locations, including inside structures, and even below ground in basements or transportation tunnels. But even though users will expect GPS cell-phone services to operate with this same level of reliability and ubiquity, today's satellite-driven system, reliant largely on line-of-site communications, is not up to the task.

Is the lack of "anywhere-on" capability a show-stopper for the big numbers being forecast for GPS phones – or for the emergence of new classes of location-based services reliant on such phones? Rizzo thinks not. But, as he explained in an interview after the Munich Summit, achieving GPS services at levels corresponding to the projected numbers of GPS phones depends to a large degree on development of a more robust system. "I believe there's a need to create an infrastructure that goes along with those wonderful satellites in

order to give users capabilities at all times in all locations. By augmenting satellites, we'll enable entrepreneurs to come up with killer apps [delivered via cell phones] that we cannot even imagine right now. We'll enable that kind of capability in the future."

The augmented infrastructure Rizzo describes is expected to derive from a number of directions. Directional signals can be embedded in communications repeaters, cellular transmissions, and TV signals, for example.

Where there is a need, generally there also is business opportunity. So who is best positioned to capitalize on the need for an evolved system capable of meeting the demands of the emerging GPS phone boom? Rizzo believes there will be opportunities for established providers of land-based systems, and large systems integrators. "It [the solution] is going to come from all over the place," Rizzo asserts.

– *Lester Craft | Group Editorial Director, GPS World, GeoSpatial Solutions, Cadalyst, Sensors*