

Information superhighways get streetwise

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Never underestimate the potential for the fate of whole industries to turn on a dime, especially when Google is involved. On October 28th 2009, in Google's ever expanding quest to be the source of everyone's information, it took aim at the GPS navigation device industry with the release of Google Navigation, the first turn-by-turn navigation application to be distributed free on smartphones. The reaction was fast and furious. On the day of Google's announcement, the share price of the largest of the GPS device companies, Garmin and TomTom, fell 16% and 20% respectively, reflecting the market's fear that Google was undercutting their most significant and lucrative products, their so-called Personal Navigation Devices upon which so many otherwise lost drivers now depend. While both Garmin and TomTom have the resources to adapt to this environment by focusing on custom hardware and specialized navigation products, the landscape has been permanently changed. On January 21st 2010, Nokia announced that it too would hereafter include free turn-by-turn navigation software in its smartphones.

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The GPS device makers may not be the only navigation companies threatened by Google. Less noticed, but probably of equal import, was Google's announcement that it would be suspending its relationship with Tele Atlas, the supplier of detailed road maps upon which a great many navigation and mapping systems depend. This was only a year after switching from NAVTEQ, Tele Atlas's main rival and essentially only other company with a similar comprehensive set of road maps. Rather interestingly, Google did not announce a return to NAVTEQ, but a source at Tele Atlas confirmed that Google had instead preferred to rely, as it has in so many other areas, on its own data and on user-created content.

Google's displacement of first NAVTEQ and then Tele Atlas, although done in an almost trivial manner, is in fact no small matter, especially not for the companies that acquired them in 2007 (Nokia of NAVTEQ and TomTom of Tele Atlas) for \$8.1 billion and \$2.7 billion respectively. The service provided by these firms is no mere series of lines crisscrossing each other on a diagram, but a meticulously collected ensemble of geographical and descriptive information of almost every navigable corner and avenue of developed civilization. To be able to provide precise and practical

directions to users, a typical street section mapped out by a NAVTEQ surveying vehicle may have more than 200 data points describing such details as direction, gradient, medians and a wide variety of similar data. The sheer difficulty of generating a new road database from scratch was at least a part of the justification for the high valuation of the assets of these map companies.

Of course, that was so 2007, an era known not just for being the peak of the 2000s market bubble but also the predecessor to so many things that have since changed media irrevocably. Among them include the rise of location-based services riding on top of the aforementioned GPS-enabled smartphones – the Foursquares, Gowallas and MyTowns of the world that are already generating massive amounts of geo-social data on the basis of simple mobile games. This is on top of the user-generated content contributed through open source mapping projects, such as Wikimapia or OpenStreetMap, where users can not only tag relevant destinations, but can also change and correct street layouts.

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None of these factors, however, may be nearly as significant as the very fact that Google now has at its disposal a resource that is collecting far more than 200 data points per street segment, that is, its fleet of photo-collecting Street View cars. Already generating both awe and controversy by imaging vast swaths of the roadways of North America, Europe, Australia and Japan (and surely more to come), Google has already collected not just a 'map' more elaborate than any that could ever fit on a page but, with its own fleet and its own processing algorithms, all the information it could need to reproduce its own navigation tools.

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While much of the discussion of Street View up to now has centered around privacy, it bears considering the implications of Google offering a ground visualization of much of the navigable world. If NAVTEQ and its maps could once be valued at over \$8 billion, what can that mean for Street View? Not only may it be useful for navigation, already there is talk of placing advertising within the Street View world, and not merely as ads placed alongside the viewing window. Virtual digital signage and virtual promotions and offerings may become a new form of roadside advertising as Street View, and potential other similar offerings, inevitably become integrated into smartphones and GPS devices. Such an asset, in the hands of a player with such a dominant position in the world's mindspace, could be lucrative indeed. With so much talk in the last few years about the value of virtual online



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worlds, ironically, the most valuable virtual world may end up being a virtualization of the real world itself.

In the short run, end-users will always demand precision and accuracy, especially when it comes to providing something as important as driving directions. The professional and value-enhanced map gathering methods of Tele Atlas and NAVTEQ may yet win the day for now, but the rise of Street View and user generated map content may spell a new era of cartography and personal navigation. Expect Microsoft and other map services (such as Yahoo and AOL Mapquest) to develop their own similar capabilities, or to acquire the few companies that tried to implement Street View-like capabilities before Google came along. The one thing that is clear is that this is likely only the beginning, with many more capabilities and changes to the landscape ahead of us. However, the era is here. It can be said – there's a map for that.

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