

Secret Weapon

There is an apocryphal story about an inventor summonsed into the presence of the highest military commander of the UK. The story dates back to World War II. This inventor had announced the invention of a secret weapon with huge destructive power. The weapon could also operate invisibly, from a submarine.



He explained in great technical detail to the high-ranking military officers assembled around the commander how the submarine should be constructed in order to remain for a long time invisible beneath the sea surface. The high level of expectation amongst these officers could be read from their faces. After a while, however, they began to show impatience. Finally, the commander interrupted the inventor: "But what about the secret weapon itself? What does it look

like, how does it work?" The inventor broke off his vigorous explanation in real astonishment. He stammered: "...but I thought the secret weapon you mention was already in existence, or isn't it?"

Shopper

This story sometimes comes to my mind when attending spirited presentations treating the great influence of present day Information and Communication Technology (ICT) on the way geo-data will be used by an ever-growing number of casual users. The standard example used to explain the unparalleled capabilities of this new technology is the shopper. He or she, or both, are standing in a busy street of a metropolis. She wants to obtain, within a few seconds, information about the location of a shopping mall where a broad assortment of clothes is on sale. He wants information about the shortest route to get there. He requests and receives the location information from a location-based service supplier on the display of his mobile phone and the pair continue happily on their way.

Taken for Granted

Is this a realistic scenario? Maybe; maybe not. What is entirely clear, but is never openly expressed by anybody, is that just like in the case of the World War II inventor, only one part of the complete scenario is stressed in these illustrations. This part is the benefit to be gained from making use of the new transport medium. The transport medium is now not called a submarine but (high bandwidth) Internet and wireless network. The existence of the secret weapon seems, as in the mind of our inventor, to be taken for granted.

Deeply Hidden

What is the secret weapon of any GIS? The answer is quite simple and basic. It is the geo-data. Where does geo-data come into the scenario of the general ICT

adepts? Often its existence is simply quoted by a reference, maybe hidden somewhere very deep in a scheme on slide number seven. It seems that within the Information Technology community, where one stumbles through TLAs - Three Letter Abbreviations - like XML, API, IMS and SVG, geo-data is considered to be a necessary but insignificant detail.

Blind Data

Indeed, we produce geo-data faster and in larger volumes than ever before. This is particularly true as a result of the expansion of airborne and space-borne sensors producing high-resolution imagery (e.g. IKONOS) and elevation data by use of, for example, laser-altimetry, also called LIDAR. But all this data is automatically sampled; that means it is blind data. For many applications such data requires an additional and labour-intensive interpretation process to make it usable. For example, when we want to extract from satellite imagery the suitability of a piece of land for forestry, many interpretation processes have to be undertaken. These processes present real and difficult problems and these can by no means be solved or substituted by rapid traffic.

Faith

Even when we are able to transport gigabytes of data in a split second, we still have to create and maintain the secret weapon: the geo-data. Let me make an analogy with the construction of our inventor's submarine. Say the construction is carried out at a certain seaside location. Today's transport technology is perfectly capable of quickly bringing together many diverse construction components. However, these parts are designed and created with different types of submarines in mind. Although the elements may fit exactly together, due to the proper use of standards for nuts and screws and bolts, the submarine may look after completion like something put together by a child - amusing, but not quite right. The resulting construction might never be capable of carrying out its intended work beneath the sea. This same fate may await us in allowing the careless merging, fusing and integration of geo-data over Internet and wireless communication networks. Indeed, the average user is enabled in the creation, within a few minutes, of more garbage than ever before.

Real Problems

The technological thrust of the Internet and Wireless Communication revolution will undoubtedly bring many good things and much profit to the geomatics profession and market. However we, as geomatics specialists, should stand firm our ground under the pressure of all the hot air blown out through the wireless and fiber-optical transport media. We will benefit from new possibilities but new technology does not solve our main problems, or those of our clients. Geo-data forms the secret weapon and backbone of any GIS. It is at this level that the real problems are located.

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