Economic Impact of Satellite Application Services

NOTE: *This is culled from an economic impact study we did for an earth atmosphere monitoring instrument we proposed but it gives a sense of the interest in space data. This is by no means comprehensive but it gives a specific flavor of the kinds of applications and services that can be considered.*

Environmental Monitoring/ Pollution Control**:** There is an increasing need for more and better information to guide our actions. Environmental monitoring is traditionally the responsibility of local and central government entities, environment agencies, and global organizations. Such organizations have responsibility for monitoring environmental conditions, setting and enforcing regulations, introducing measures to maximize energy efficiency and providing information on air quality, etc.

Similarly, commercial companies that are undertaking operations that could potentially damage the environment often have to undertake mandatory activities monitoring, as well as actively undertaking monitoring that goes beyond the legal minimum to provide early warning of problems before they become too serious. Examples include large-scale chemical plants, power stations and oil refineries.

Customers**:** government organizations (central and local), environment agencies and global organizations (UN), operators of large industrial sites, and their regulators. Many scientists would be interested in this area of work, who would expect the data to be available at low cost/free. As such operational research support organizations may be possible customers.

Value of Opportunity: Unknown as of yet.

Carbon Monitoring: The opportunity is the determination of Carbon (both state and change) from space so as to have a global unbiased coverage. Carbon offsets are "emissions-saving projects or programs" that in theory would "compensate" for the polluters' emissions - the "carbon credits" generated being used by industrialized governments and corporations to meet their targets and/or to be traded within the carbon markets.

Customers: Governments, local authorities, energy generation companies, regulatory authorities, UN, World Bank, Scientists

Value of Opportunity: The 2009/10 global market for carbon markets intelligence has been valued at $50bn. It is growing strongly at 12%-15% per annum. This comprises all carbon market activity for which data derived from space systems and delivered as part of wider services is already, or may in the future, be relevant. The market is not waiting for observations from satellites to come on stream; it is already 'making do', but it is waiting on satellite observations to reduce uncertainty and risk and cost. TuLIPS is likely to have a role to play in this markets but would be in conjunction with other information source, both from space and on the ground.

Natural Resource Exploration: Historically, hyperspectral remote sensing has had a lot of interest from the exploration community and in particular from the mining companies.

The ability to very accurately create maps of different characteristics of surface geology together with a problem-space that can accept coarser data than many other markets.

Customers: Mining companies, exploration consultants, oil and gas operators

Value of Opportunity: The Metals Exploration Group (MEG) in a recent report have stated that investment in exploration has rapidly grown over the last few years to a global figure in 2011 of $18.2bn. With such high cost activities taking place, increasing the efficiency and accuracy of the initial surveys prior to establishing major facilities on the ground is vitally important.