Information management and delivery

Keeping ahead of the opportunities

Current and evolving technologies to collect, process and disseminate data and solutions

by Bill Hatton, *Keyworth*

It is not by chance that the BGS have been developing a strategic business plan to underpin the work of the survey in this new millennium. The new plan has been designed to equip the BGS with the structure and resources to deliver technically advanced science to meet the increasingly rigorous requirements of our customers. At the core of the BGS strategic plan is a will to integrate high-quality geoscience with rapid, efficient, and well-organised information delivery. The acquisition, presentation, interpretation and communication of geoscience information, in the most efficient and cost-effective way, depends on the application of appropriate information technologies. My role, as Head of Information Systems, is to ensure such systems are in place to deliver this plan, together with the necessary human resources and infrastructure. Information Systems (IS) must maintain and advance the BGS as the pre-eminent provider of relevant and high-quality geoscientific data, information and knowledge to its customers and stakeholders.

Information technology, driven by the commercial business world, is moving rapidly in such areas as eBusiness, data communications and multimedia. Add to this another layer of complexity called geo-informatics and you can see the challenge ahead for IS in the BGS. In response to this challenge, the BGS is developing robust and flexible policies to collect, process and disseminate data and solutions in the most efficient manner. Leverage of investment will be realised when IS delivers business gains, with integration into all parts of the business model. As most senior IT mangers know, it is not easy to demonstrate how much value IS investments are returning to the business plan. We are overcoming this problem at the BGS by breaking down the IS resource into a carefully monitored inventory, shown in the diagram opposite. Information systems themselves cannot change the course of an organisation, but their integration into every aspect of its business can. That is what the BGS aims to do.

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The articles in this issue of *Earthwise* illustrate some of the ways in which Information Systems are being applied in geoscience projects and in the management and dissemination of information, including e-commerce and the increasing use of Geographical Information Systems (GIS) and Web delivery. They also show the effort being placed in achieving the correct investment balance between the four perspectives shown in the diagram opposite. The development of a clear IS

Geological mapping is being accelerated through new technologies. Photogeological interpretation in the laboratory allows geologists to plan a more efficient fieldwork campaign; data can be captured rapidly in the field using GPS-based systems; customised maps combining geological data with 3D topography can be quickly created.

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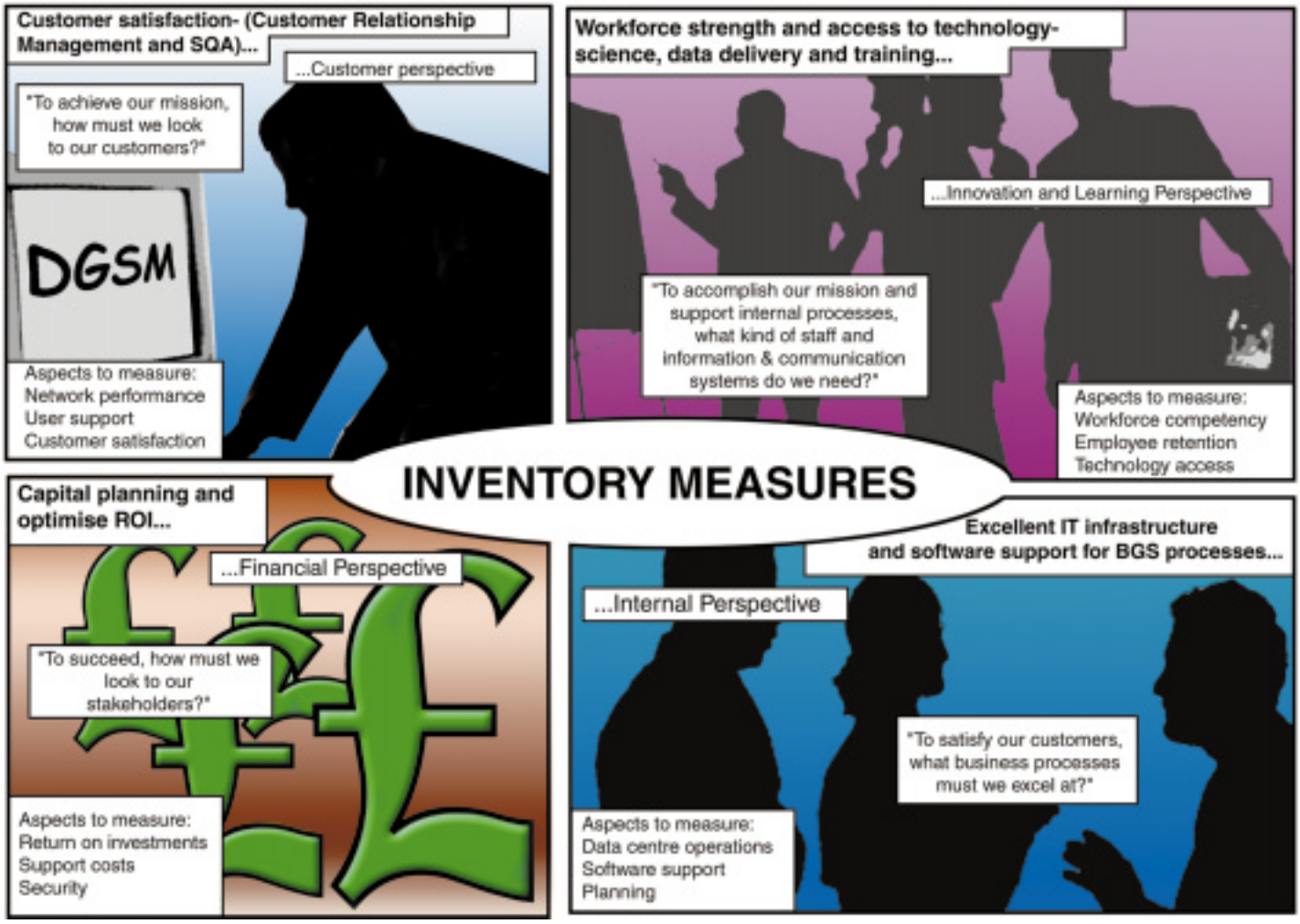

Careful recording of the performance of each of the quadrants in this framework is necessary to provide a well-managed IS resource. There are already signs that the framework is beginning to work, with exciting new initiatives in geo-informatics, working with partner companies and research establishments, using new and emerging technologies in WWW, GIS and data communications.

strategy, involving fully integrated human, infrastructure and scientific resources, will help to provide a flexible and scalable operational plan that is sensitive to customer requirements.

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Advanced computer technology will be brought into every aspect of the BGS's business. Geological mapping, for example, while already using advanced methods like remote sensing, will be augmented by digital field mapping systems such as globally positioned pen mapping (i.e. a geological field slip on a hand-held GIS system), with locational positioning and automated monitoring on local, regional and global scales using satellite communications. The challenge ahead is to place the wide variety of data into a framework that will benefit specialist and non-specialist alike. Specialists will need to access data and models using a variety of GIS 3D modelling and time domain systems, allowing products to be derived via the World Wide Web, digital disks, maps and reports. The key to delivering such a vision is the capability to deliver the inter-operation between systems and data. This will be provided by the Digital Geoscience Spatial Model (DGSM) described in the previous issue of *Earthwise*. The DGSM will exploit new developments in languages such as XML (Extensible Markup Language), a powerful way to communicate complex geospatial information without enforcing a particular style of presentation. Already there are many industry consortia, standards bodies and ad hoc groups working together to establish standards for recording and processing spatial and geospatial information. This will not be easy to achieve, but I am convinced it is just around the corner and many of the articles in this edition demonstrate that the BGS is close to weaving all the strands together into a flexible and powerful delivery system.

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