Don't forget about the power of paper

by Elaine Byrne

Information and communication technology (ICT) has been credited with many important benefits in the business world. Among these are increased productivity and connectivity, improved communication and network development and improved delivery of services, especially government services. Many policies promoting the use of ICT have resulted in large investments in ICT infrastructure and the launch of e-governance initiatives. Often the expected potential fails to materialise because of the disparities in ICT access, connectivity and skills. The exaggerated potential presented in policies also leads to expectations not being met.

The South African government has an impressive constitution and legislative framework that recognises the right of citizens to have proper health care. About 80% of the population relies on State-provided health care and workers in public health care provide services formally and at outreach programmes in communities.

The potential of ICT to enhance existing reporting systems is increasingly being recognised by developing countries. The espoused benefits of health information systems for the delivery of health care are no different. Claims often attributed to ICT in the health care sector include improved access to information, leading to improved knowledge and decision-making with the overall outcome of the improved delivery of health services.

At the risk of being labelled a Luddite, this article focuses on the forgotten powers of paper and the importance of people in the move to a more informational society. In 2000, I read *The mantra of modelling and the forgotten power of paper*, an article by Marc Berg. This paper crystallised many of my misgivings when I hear technology or technical artefacts being promoted as the solution to all problems.

Berg talks about important signs and symbols associated with paper systems. He explains how paper forms in the health care sector assist in processing data; how they add structure to the data; and how they help coordinate activities and events. These paper-based systems are part of the coordinated activities of health care workers in an organisation. In contemporary times when there is much talk of the potential of ICT in the health sector, Berg notes that one can learn a lot from these paper-based information systems, as their successful implementation cannot be matched by other applications in the health care sector. Furthermore, the social nature and activities surrounding information systems often prevent the potential benefits of ICT from being realised. Most people are happy in their comfort zones and undergo some stress when change is introduced into their lives. Computerised information systems that require trust in abstract systems and often require computer skills, add to the stress.

Emilio Mosse (2005) experienced the reluctance of people to accept a new computer-based health information system in Mozambique as it interrupted social patterns and valued interaction between staff.

In much of my work regarding health information systems in South Africa, the importance of getting paper and 'people' systems right before introducing technical artefacts is often overlooked. In the health sector this has serious implications for resources diverted to technical systems that are never implemented. This implies that hospitals or clinics don't have a functioning information system from which to plan and manage the provision of services. However, the funds diverted could be better utilised in the roll-out of an effective anti-retroviral treatment programme, for example. There are, of course, exceptions to this – one being the Health Information Systems Programme (HISP) that began in the 1990s.

The HISP began as a collaborative research project between the University of Cape Town, the University of the Western Cape, the Norwegian Computing Centre and the Provincial Administration of the Western Cape. Its objectives were to allow health staff in local clinics to take control of and benefit from their own health information.

A software system was designed for collecting and managing data at district level – the DHIS software. In February 1999, based on some of the achievements of the pilot phase, the Department of Health adopted the strategies, processes and software developed in the pilot districts as the national standard.

The HISP is ongoing, in different forms, in Mozambique, India, Tanzania, Ethiopia, Malawi, Nigeria and Vietnam. The success of HISP can be attributed to its bottom-up approach and the system's flexibility. At clinic and community

level, the system is primarily paper-based. At district level and upwards it is computerised.

The flexibility of the system allows for context-specific changes. So, for example, in the large municipal areas, where most of the clinics are computerised, the DHIS software is actually used. Furthermore, the approach adopted was to strengthen processes around the design, implementation and sustainability of the information system, with a focus on the local level and building the capacity of health workers to use information more effectively and operate ICT for this purpose.

However, very little focus is placed on the people indirectly affected by the system (paradoxically, the exact same people that are supposed to benefit from these systems) and the implications on the social aspects of the organisation in which the system is placed.

The University of Pretoria's Department of Informatics believes that

information systems are developed by people for people, and therefore, that they are social systems. Thus, its view of information systems is an interdisciplinary field of study in which information, information technology and the integration of IT within organisations are studied to benefit the entire system.

It is hoped that using such an approach will augment the chances of information systems being fully utilised once implemented. ℹ

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future gadgets

Built-in Printer

How it works: Instead of a camera sending images to a printer, the printer will become an integral component of the camera itself. A technology called Zink, or zero-ink printing, uses heat to imprint images directly onto paper embedded with colour-dye crystals.
Who's working on it: Polaroid
Due out: 2009

The Polaroid PoGo™ can connect instantly to almost any bluetooth supported camera phone.