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Images Paediatr Cardiol. 2000 Oct-Dec; 2(4): 1–3.

PMCID: PMC3232492

## Of networks, large and small

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### Abstract

Computer networks are constantly and radically changing the way in which the medical professions think and work. This article briefly explores some of these innovations.

**MeSH:** Information Services/trends/utilization, Internet/trends/utilization, Informatics/methods, Organizational Innovation, Information Storage and Retrieval/standards, User-Computer Interface, Confidentiality, Internet/economics/organization & administration

The development of facilities that allow human beings to communicate wherever they may be has undoubtedly served as some of the most important catalysts for progress seen in the last century and to date.

Information technology developers have always sought to tackle real life problems involving not only data processing but also data transfer. The ability to share data between one computer and another was certainly a step in the right direction.

From the simplest Local Area Network (LAN) used at home or in a small office, to the largest global network, the Internet, the basic and most important facilities offered by networking of computers are the ability to share and transfer information between the various units and the ability to search across the basic units of the network. In effect, the whole network becomes one big repository of information stored in various units, the whole repository may potentially be used to obtain specific, required data which may be processed on any of the units. Computer networks are facilitating interactions that were previously unthinkable.

Small networks are being used in clinical settings such as medical offices and hospitals to facilitate administrative tasks as well as increasing efficiency. Thus a clinician who sits at his desk is able to access detailed reports of appointments, work on medical notes of his patient, communicate with colleagues and members of his team as well as receive laboratory results all from the comfort of his desktop.

Larger private networks or Intranets are used by a number of organisations for use by various employees. These provide opportunities for members of an organisation to access (depending on authorised access levels) data from other units on the network. It also provides opportunities for intra-organisation news to be disseminated instantly to all units within the organisation.

The largest public network of our time is the Internet. The Internet has opened incredible opportunities for members of the medical professions. What is probably one of the most significant barriers that the Internet has managed to overcome is the ease of interaction between bodies involved in healthcare. The Internet has provided a vehicle for facilitation of the interaction between providers, consumers, the pharmaceutical industry and academic organisations. The number of units that constitute the Internet is huge by any standards. This allows for both breadth of resources and also allows for depth of knowledge especially when one is dealing with rare or highly specialised topics.

TheSYNAPSE (<http://www.thesynapse.net>) is an Internet based network for medical professionals, which aims to facilitate the interactions between members of medical professionals, academic and corporate organisations. It is member focused and provides news, service and resources for members and their practice. Twenty-five organisations use the network to publish news on the network. News is immediately accessible on the network by all members. The network also provides a number of other resources such as articles from renowned journals like *BMJ* and *UPDATE* as well as *Images in Paediatric Cardiology*. Members of the network can easily contact corporate organisations by filling in a simple form, which is then immediately emailed to corporate members. Membership has reached 1400, which is excellent when one considers that more than half of its members are from Malta, a tiny island in the Mediterranean. The technology behind TheSYNAPSE has been designed in such a way that authorised persons can perform updating and news publishing without any but the most basic computer skills. In fact, the process of publishing has been completely automated. Moreover, all contents of TheSYNAPSE are easily searchable from any page on the network.

Another project which has recently launched by TheSYNAPSE is [conferencesportal.com](http://conferencesportal.com). [Conferencesportal.com](http://conferencesportal.com) aims at facilitating the interactions between organisers of medical conferences, delegates and persons interested in attending as well as exhibitors. It aims to serve as a focus point for anyone interested in attending a medical conference by providing information about planned

conferences and keeping potential delegates up to date with any news that conference organisers may want to publish. Conference organisers benefit from the network, not only by having their conference details listed on the site but also by being able to publish their conference news at any time of day and from any computer which has access to the Internet. They can also receive enquiries from potential delegates should any further information be required.

The developments of these networks have provided all users with very cost effective tools to achieve their main aims. The examples mentioned above are just two examples of how a network serves a community of health professionals in a real life situation.

With the rapid progress and advances in high-speed data transfer technology, computer networks are now able to facilitate the transmission of high quality sound and images as in the case of therapeutic telemedicine and teleconferencing.

With such rapid evolution in such a short time and the virtual disappearance of barriers a number of problems are becoming a cause for concern. These issues include confidentiality, privacy and security issues. These issues tax the skills of ethicists, legislators and security experts. Medical professionals need to be constantly in touch not only with the latest advances in medical practice but also with the developments in technology that affect the way healthcare is practiced.

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