

By Michael D. Fetting

In the book “The World Is Flat” by Thomas L. Friedman, he describes the choice concerning using technology as; if you are able to use it you must, because your competitors will. This view is being embraced within the Nazarene denomination, as indicated by the 80% of the respondents, in a recent technology survey, who gave a positive response to “I believe our use of technology makes the ministry of our church more effective”. None of the pastor respondents indicated that technology was a waste; however 8% did indicate that some technology was unnecessary.

This is a change from our early church days when we avoided technology, such as technology associated with the movie industry. We now see the importance in Friedman’s statement through examples like the Jesus Film project, which is a testimony to the tremendous value of the technology of drama and movie production to convey the gospel message.

Kerby Anderson in “Technology, Spirituality, & Social Trends” talked to the major trends in technology and society. He identifies the benefits and warns the reader of the dangers emerging with each technology he explored. His investigation spanned the internet, human cloning, and human genome project. While an extensive discussion on all these areas is beyond our available time, we will focus on what the future holds for the church as technology continues to change the world.

Friedman spoke to the lowering of barriers of global commerce as a premise to how the world could be viewed as flat. He spoke to the elimination of distance as a barrier and the advances of technology as an enabler for facilitating the bi-directional communication necessary to address business opportunities. To answer the question of what does the future hold, we must consider what impact a local church could have on the global community.

At no other time in history has it been easier for the local church to actively be involved with ministries that span the globe. This is to say that the local church has access to tools which enable it to effectively cross the barrier of distance that accompany a global ministry. Technology is allowing access to almost anyone that is serving people, from next door to those on the other side of the globe.

The key to this transition is the ability to communicate. The best example of emerging technology that enables organizations to achieve this goal is the internet. The internet, as a global network, provides low cost communications around the globe. The advances of the global network have enabled real-time communication to bring remote resources together to solve problems in a more efficient manner.

The initial impact of the internet had been within the national boundaries of the developed nations, but the developing nations have also recognized the advantage of this technology. While the developed nations are working on the convergence of old to new, the developing nations have started with technology based on emerging standards. This will increase the opportunity for the developing nations to quickly become effective partners in the global community.

Beyond the commercial benefit of the technology, is the broader benefit of communicating information in general. We are finding ways to use technology to eliminate the barriers that contributed to the inefficiencies in the old way of doing ministry. From personal communication to the broadcasting of news that impacts the world; technology is truly making the world a smaller place.

To explore the impact of technology on the church we will examine a few of the more recent developments: World Wide Web, Email, Instant Messaging, Blogs, P2P, Video Conferencing, and Voice Over IP. There are additional topics that we will touch upon; however, an exhaustive study is beyond the scope of this article.



World Wide Web

The World Wide Web (WWW) has steadily grown in popularity for communicating information. Churches are using the World Wide Web to convey information, about who they are and why they exist, by creating websites.

The websites provide the means to communicate via the internet, by delivering content and collecting information. Bi-Directional communication can often be achieved by allowing site visitors to participate in a discussion area called forums. A forum allows the posting of messages and responses to facilitate the sharing of information. A forum is generally focused on an interest of the administrator or a particular subject related to the purpose of the website.

Online event registration for church ministries, such as Vacation Bible School and Caravans, which would also include a computer based check in process that allows quick confirmation of the participant and assignment to the appropriate age group and class room. The information gathered should be secure and used to insure the physical security of the child. Future trends include photo images of each child with a corresponding image of the parent or guardian.

WORLD INTERNET USAGE AND POPULATION STATISTICS

World Regions	Population (2006 Est.)	Population % of World	Internet Usage, Latest Data	% Population (Penetration)	Usage % of World	Usage Growth 2000-2005
Africa	915,210,928	14.1 %	22,737,500	2.5 %	2.2 %	403.7 %
Asia	3,667,774,066	56.4 %	364,270,713	9.9 %	35.7 %	218.7 %
Europe	807,289,020	12.4 %	290,121,957	35.9 %	28.5 %	176.1 %
Middle East	190,084,161	2.9 %	18,203,500	9.6 %	1.8 %	454.2 %
North America	331,473,276	5.1 %	225,801,428	68.1 %	22.2 %	108.9 %
Latin America/Caribbean	553,908,632	8.5 %	79,033,597	14.3 %	7.8 %	337.4 %
Oceania / Australia	33,956,977	0.5 %	17,690,762	52.9 %	1.8 %	132.2 %
WORLD TOTAL	6,499,697,060	100.0 %	1,018,057,389	15.7 %	100.0 %	182.0 %

<http://www.internetworldstats.com/stats.htm>



Email

Snail mail, the traditional postal service, is being replaced by electronic mail, which refers to the sending of written word by electronic means from one computer to another. The simple text message 'qwertyuiop' of the first email in 1971 has been extended with embedded images, audio, and video content within today's email messages.

The popularity of email has led to an expanding number of undesirable messages (SPAM) which will eventually force a change to the architecture of our current email system. In addition, the volume of email will continue to drive advances in how email is transmitted, stored, and delivered. An example of advances in email is the verification that email came from a real person, rather than a mass mailing application, by sending an email to you for reply before sending the original to the destination.

/PRNewswire/ -- Email remains the killer app for the Internet, evidenced by the many opportunities and challenges facing providers and users of email. Understanding how and where email usage will occur in the future is the focus of a new IDC study titled Email Usage Forecast and Analysis, 2000-2005.

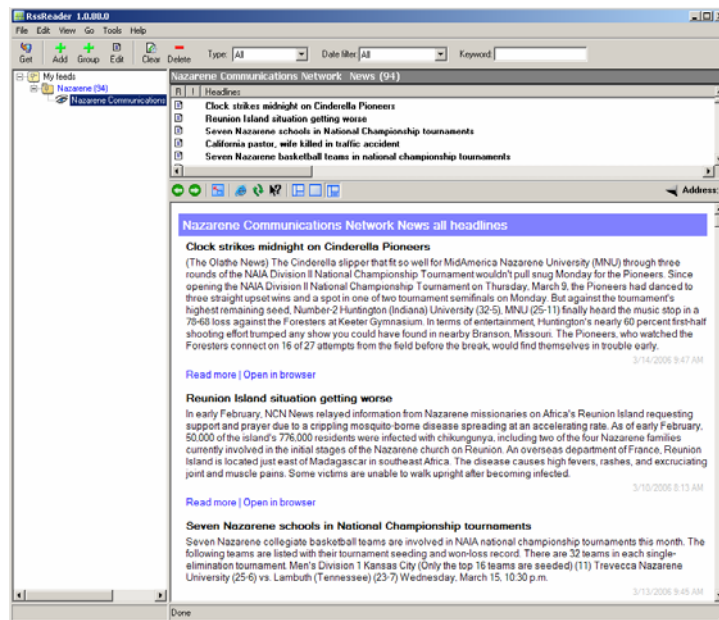
According to IDC, the number of emails sent on an average day is expected to hit 10 billion worldwide this year. By 2005, this will more than triple to a staggering 35 billion emails sent daily. In addition, Web browsers will finally surpass all other primary ways of accessing email mailboxes in North America this year.



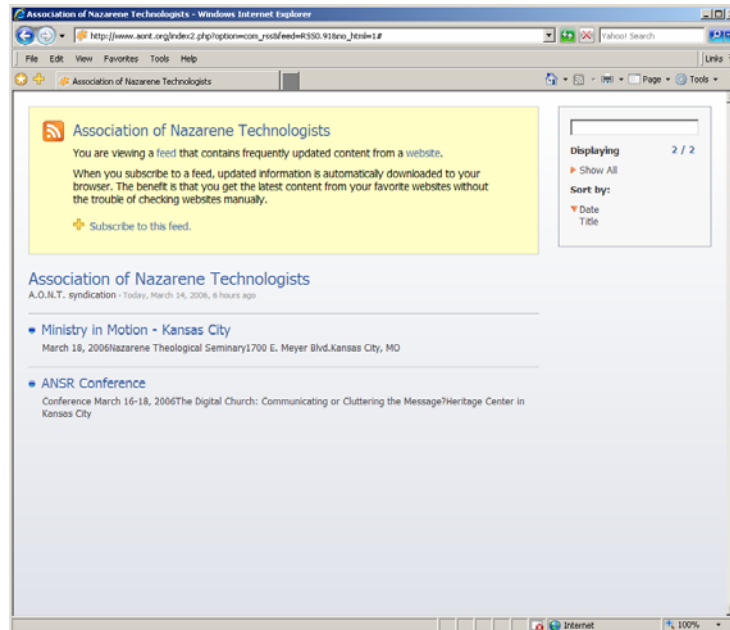
Real Simple Syndication

Real Simple Syndication (RSS) was originally developed to allow the exchange of information between websites. A website would utilize an RSS reader to retrieve new content published by another website and present it as local content. This type of content is most evident in news services that pull news stories from other sites, for example: news.google.com or www.yahoo.com.

Newsreaders like Feedreader (www.feedreader.com), RSS Bandit (www.rssbandit.org), and NetNewsWire (www.ranchero.com/netnewswire) are desktop tools that allow users to subscribe to RSS and ATOM enabled sites. The use of RSS was adopted as a means of broadcasting seismographic with geocode information after the tsunami disaster in December 2004. Additional uses could include prayer lists, ministry meeting notices, etc.



RSS and ATOM have begun to replace electronic mail and newsletters as the preferred means for distributing information. Internet browsers are beginning to become RSS aware, so that when you visit a website that offers RSS it will ask if you are interested in subscribing.



When available, your website should have RSS enabled, even if you don't use it, because it will be used by your visitors and build traffic to your site.

The TechSoup (www.techsoup.org) website has useful information on blogging for non-profit organizations in their how-to database.



Instant Messaging

An instant message (IM) application allows real-time communication between individuals. IM can best be compared to a two way radio, in which each user can send a message to another person. The greatest benefit of this technology is the real time aspect of the communication.

IM vendors have extended their services beyond simple text messages to include audio and video; however, the current quality of service is below industry standard analog broadcast used in the television industry. IM will continue to expand as a method to communicate in real time with associates around the globe. Future advances will include global group messaging.



Blog

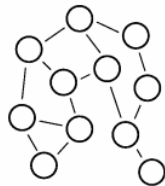
Blog is derived from the phrase web log. A web log is a website in which content is recorded on a regular basis and is intended for either public or private consumption. A blog generally represents the personality of the author or a particular subject, such as food, politics, or religion. Since appearing in the mid 90's, blogging has emerged as a popular means of communicating information around the world.

Blog sites have become the means for communicating information related to current news stories in a quick and timely manner; bring a greater amount of information to the reader than what is available in our sound bite oriented news outlets. We will continue to see this media as a source of information to those utilizing the internet.



Peer-to-Peer

A peer-to-peer (P2P) network is a collection of computers that utilize disk storage on each of the computers in the network rather than relying on a single file server. The P2P networks are typically constructed in an ad-hoc manner, with members connecting and disconnecting as they desire. Such networks are useful for many purposes, such as, sharing files that contain audio, video, or data (program files, e-books, etc.)



A pure peer-to-peer network does not have the notion of clients or servers. Each system will simultaneously function as both "clients" and "servers" to the other peers on the network. This model of network arrangement differs from the traditional file server model where communication is usually to and from a centralized server. A typical example of a file server model would be a client initiates a download and the file server reacts to that request.

Networks such as Gnutella (www.gnutella.com) or Freenet (freenet.sourceforge.net) use a peer-to-peer structure and are sometimes referred to as true peer-to-peer networks, although Gnutella inform peers of the network addresses of other peers.

The Foundation for P2P Alternatives (www.p2pfoundation.net) monitors the advancement of the technology and the impact it may have on society. The downside of P2P is the frequent sharing of copyrighted material without the permission of the owner.



Video Conferencing

The declining cost of video hardware and the increasing bandwidth of the internet have led to larger number of organizations investing in videoconferencing systems. The introduction of low cost systems based on a webcam, personal computer systems, and broadband internet connectivity has contributed to the growth of this technology in the general public. Furthermore, the availability of free software, often as part of instant messaging, has made software based videoconferencing accessible to just about everyone.

Videoconferencing provides individuals an opportunity to communicate in a 2-way distant learning type environment. Furthermore, individuals from all over the world can be brought together from remote or otherwise isolated locations. Individuals with diverse backgrounds can be brought together to learn about a specific topic.

A location of an individual will no longer be a major limitation to having access to information from a distant location. We will continue to see technology enable an individual to communicate information in real time to achieve common understanding. Audio, video, and transmittal of related material will greatly increase the effective communication of information between two points. Using a multipoint-conference-unit (MCU) more than two points can be supported at the same time. In most cases the equipment can be scaled to allow regularly scheduled meetings in fixed locations, or equally supporting on demand meetings as required.



Voice Over IP (VoIP)

In a typical IP network only data is being carried and transmission through the network is fairly simple. The data packet is formed, sent and received. Small delays, packets arriving out of order, or retransmissions are acceptable for data; however, voice traffic is unable to tolerate such problems. Voice packets need a mechanism to move at a higher priority so that voice transmissions are handled in a timely manner. Today, this is accomplished by setting the QoS (Quality of Service) bit in the IP header. All IP headers have a TOS or Type of Service byte. Elements of the network must be capable of understanding and priority traffic based on this setting.

Quality of Service is a term which refers to a set of parameters which provide for performance in terms of transmission quality and availability of service. It encompasses maximum delay, throughput and priority of the packets being transmitted. These transmissions may be Video Conferencing, VoIP, etc.

In a telephone conversation over the PSTN (Public Switched Telephone Network) a circuit is set up between the sender (person who initiates the call) and the receiver (person who answers the call). The same circuit is maintained throughout the duration of the entire conversation. The reliability of PSTN is 99.999%. In IP transmissions, there

are multiple circuits; individual packets could be routed through different circuits throughout the conversation. If the call is to be placed outside of the private network the conversation would be routed to a PBX or Gateway that would place the call on the PSTN.

If a network had unlimited bandwidth potential, Quality of Service would not be an issue. In today's networks, however, there are transmissions of documents, applications, email, backups and a myriad of other data. Adding voice services requires some attention in the creation and maintenance of the network. The public internet does not provide QoS, so the free Voice over IP will always be less reliable than the private networks which provide both the bandwidth and the QoS required for voice and video transmission.

An additional benefit of VoIP within an organization is the reduction of wire required to support both voice and data networks. In addition, most VoIP solutions provide seamless interfaces to computer systems to allow information to flow into applications for call management, donor management, call forwarding, voice mail, etc.

Low cost alternatives for VoIP over the public internet, even with reduced voice quality, are gaining popularity. Companies are emerging with offers to reduce the overall cost service without addressing the reliability of service (QoS).



Desktop Applications on the Internet

The need to manage larger amounts of data will lead organizations to consider ways to move the data entry to the point of origin. This has occurred with many businesses through online applications. The application allows the user to view account information and make requests for changes. We see new applications emerging to transform the way the church collects and manages data at the local, district, and headquarters level. Each new application will allow the ministries to become more streamline and efficient in serving the global ministries of the church.

Examples: Chaplaincy Online, Annual Pastors Report, Continuing Lay Training

Companies will soon be migrating desktop applications to the internet. This will allow the vendor to sell a subset of the functionality, and enable the user to purchase added functionality when needed.



Wi-Fi

Wi-Fi is derived from the words “wireless fidelity” and refers to any type of 802.11 wireless networks. Wi-Fi networks enables computer users to access resources accessible to the wireless network, such as other people’s computers, printers, and file servers.

In a small office the entire staff can freely move from area to area with continues connection to the network; however, large offices require more complex configurations to avoid overlapping frequencies, so more often it is used where it is difficult to reach an area with wire, or where mobile workers are assigned. The wireless term is promulgated by the Wi-Fi Alliance (www.wi-fi.org).

Summary

The desire to improve services delivered to our constituents will drive technology forward. As existing technologies are refined and merged, new ones will emerge creating both challenges and opportunities. Each advancement will be measured by it ability to deliver value to the church. A future of change continues to be seen on the horizon.