

Running Head: Podcasting

Podcasting and Really Simple Syndication (RSS)

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ABSTRACT

The simple nature of podcasting and Really Simple Syndication (RSS) belies the power for change embodied in them, either singly or in tandem. On the surface, podcasting is merely the recording of an audio file in MP3 format for sharing on the Internet, an MP3 player or some other device; this chapter covers the history and technical aspects of that process. Podcasting and the RSS feeds that keep consumers of podcasting connected to the source are examined as part of a larger movement in computer-mediated collaboration that centers on mobility, immediacy, and interactivity. Podcasting, as a personal tool or an organizationally managed one, is examined in terms of types of podcasts, their current applications and future extrapolations including wearable, wired technologies to support them.

INTRODUCTION

The purpose of this chapter is to introduce the basic concepts of podcasting and Really Simple Syndication (RSS) and trace the development of these technologies as a significant influence on communication models. Both of these terms have only recently entered the lexicon for educators, trainers, managers and other Internet users. Podcasting was recognized as the Word of the Year for 2005 by the editors of the New Oxford American Dictionary (Biema, 2005). The term was defined as "a digital recording of a radio broadcast or similar program, made available on the Internet for downloading to a personal audio player"

(<http://en.wikipedia.org/wiki/Podcasting>, n.d.).

"Podcasting" in this sense is a frequently heard term that peppers the speech of savvy Internet users. This generic sense was the result of the popularity of Apple Computer's tiny handheld MP3 player the iPod. Since it's entry into the digital music player market in 2001, the iPod has caught the attention of a broad audience. Biema (2005) reports that in late 2004, a Google search for "podcast" returned zero results; the same search conducted in 2005 generated a real contrast over 77 million results. Podcasting literally burst into the lexicon of Internet jargon in 2005, evidence of the power of the metifor as well as the ubiquity of the practice. Biema explains the etymology of the term:

The "pod" in "iPod" suggests Apple's device is small and compact but chock full of good contents, like a pea pod. The word "pod" began as "cod" in Old English, meaning "the husk or outer covering of any fruit or seed." The "pod" spelling isn't recorded until 1688, according to the Oxford English Dictionary. (2005, paragraph 8)

A posting at News for Nerds (Slashdot.org), (<http://slashdot.org/>), dated August 12, 2005, reviews *"Todd Cochrane's Podcasting: The Do-It-Yourself Guide,* (<http://books.slashdot.org/article.pl?sid=05/08/12/1650234&from=rss>). The reviewer for Slashdot.org notes that the simplest description of podcasting is just someone producing audio files and syndicating them with a RSS feed; listeners use some of the many available applications to download audio files to an MP3 player, which may or may not be an actual Apple iPod. Whether creditable to ingenious marketing or a serendipitous choice of available descriptors *podcasting* has become the preferred, synecdochic term for downloading audio files to an entire class of MP3 players, in much the same way that Coke® is used in some parts of the country to simply mean a carbonated beverage or Kleenex® is used to mean a facial tissue.

A podcast is an audio file in a specific file format, MP3, which is MPEG-1 Audio Layer 3, though it is almost always referred to as MP3. MP3 is a compression format, meaning that the file is compressed to a more manageable (smaller) size. There are other file formats, but MP3 is the most common for the small devices, such as the digital music players (MP3 players). MP3 players, such as the iPod, have become extremely popular mobile devices. MP3 format is available on the Internet so that it can be listened to on a computer, MP3 player, Personal Digital Assistants (PDAs), and some cell phones.

Since podcasts and other Internet-based communication tools are very dynamic and may change more frequently than traditional print products, many podcast consumers and producers use a companion tool called RSS (Really Simple Syndication), though it not absolutely necessary to have RSS in order to produce and use podcasts or blogs. There are RSS content use programs, sometimes called feed *readers* to which the user subscribes in order for the user to *automatically* get notice that there is something new on that blog or podcast. In essence, the reader to which the

user has subscribed regularly runs down the list of subscriptions for that user and, if there is new content, sends it on to the user. The *syndication* in Really Simple Syndication (RSS) comes from the web feed or the subscription service. RSS is really a collection of web feeds, just as the name suggests.

Web feeds typically deliver web pages or links to web pages, sometimes accompanied by a brief summary of what is on that page, depending on the sophistication of the web feed. For example, a university may provide RSS, and interested parties may subscribe. When there is new content on the page, the subscribing party is notified, with a one or two line description of the new content. Users can subscribe to this type of service with CNN®, various professional organizations, schools, publications, podcasts, and other web sites.

Combining podcasting with RSS greatly increases information access, resulting in a more dynamic tool. Those users who are developing and uploading podcasts to the Internet may want to include RSS as a feature in order to insure the connection to users is more immediate.

Consumers of podcasts may want to subscribe if RSS is available in order to receive immediate notification when there is a new podcast available. RSS might be considered an energy booster for podcasting.

This chapter is a description of the technical characteristics of these two tool sets and their relationship in practice. Detailed information is included on the technology required as well as the procedures and organizational policies considered co-lateral to making the decision to use podcasting and RSS, with a diverse audience of readers in mind.

BACKGROUND

Any discussion of the history of podcasting must be considered *recent history* by any standard and, as some have suggested, to speak of history in reference to a popular surge of this type is

somewhat amusing (Clique Communications, n.d.). A brief overview will help define the context for understanding podcasting as a computer-mediated communications tool. The preparation of an overview of the brief history of podcasting may not be as easy as it sounds. There are about as many stories about the origins of podcasting as there are podcasters. For example, the web log of Lucas Gonze (n.d.; <http://gonze.com/weblog/index.cgi/histcast.ongoing>) fixes August, 2004 as the birth date of podcasting. Clique Communications (n.d.) identifies Adam Curry, a Disk Jockey by trade, as the true pioneer of podcasting. Curry joined efforts with Dave Winer, an experienced software developer and business man who developed RSS. The ‘dawn of podcasting’ included the demonstration of syncPod by Kevin Marks at BloggerCon in 2003 (Clique Communications, n.d.). According to Van Orden (2005), the word ‘podcast’ first appeared in an article written by Ben Hammersley for *The Guardian* on February 12, 2004, where “podcast” was used as a synonym for audioblogging or amateur Internet radio postings.

(NOTE: If you want to see a podcast by and about Adam Curry, go to:

http://weblogs.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=weblogs&cdn=comp&tm=18&gps=109_9_1020_620&f=00&tt=14&bt=0&bts=0&zu=http%3A//dailysourcecode.com/)

While some of the historical sources on podcasting differ with respect to names and dates, the consistent references to its connection to blogging are significant historically. Blogs have proliferated exponentially on the Internet from 2000 to the present and have provided, as some suggest, a bridge to podcasts. Blogs are still more prevalent than podcasts, though demographics suggest podcasting will continue to grow rapidly because of the technology and the interest of youthful users (Meinardus, 2006). Meinardus, citing Bridge Ratings (http://www.bridgeratings.com/press_11.12.05.PodProj.htm), avers that podcasting will continue to erode the listening audience for traditional radio, with podcasting accounting for at least 15% of radio’s time-spent-listening by 2010, up from today’s 6%. As Richardson (2006b)

emphasizes, many of these tools (blogs, podcasts and wikis) are connected in their use, with their potential for impact sometimes heightened by the combination of tools.

Audio files on the web have existed for sometime. For example, a web site called Talking History (<http://talkinghistory.oah.org/>) began in 1997 to post audio files on the history of items and events, and it added podcasts in 2006. During the period since 2000, the Internet has evolved from its early role as an information source and has begun to grow in importance as the preferred forum for users to publish and disseminate their own thoughts and ideas (Richardson, 2005).

Podcasts are part of that evolution, made possible by the merging of new and refined technologies, in the form of high-speed Internet access, RSS and MP3 players. Podcasting may be characterized as a tapestry of loosely-knit, complimentary technologies employed opportunistically. When the pure oxygen of open communication channels came into contact with the spark of the generation that is always connected (Johnson, 2005), it is easy to understand how podcasts flared onto the wider screen of society, beyond the technologists and early pioneers.

While many of the current and early-adopting podcasters were from somewhat non-traditional backgrounds (DJs, political activists, commentators, technologists), podcasting quickly began to move more into mainstream applications, such as K-12 classrooms, marketing, higher education, and non-profit groups, as the tools became more user-friendly and MP3 players more common. Now mobilecasters, such as <http://www.melodeo.com/>, serve as portals to on-demand podcasts, radio and video for PC and mobile phones. Podcasting is moving into the mainstream at breakneck speed.

Podcasting's has reached a certain level of maturity with respect to its use as an instructional tool (Richardson, 2005, 2006b). In 2002, Georgia State University was among the very first

campuses to put together a pilot academic program using iPods (Blaisdell, 2007). In the fall of 2004, Duke University (North Carolina), in a widely publicized move, gave iPods to its 1,650 incoming freshman class as part of the Duke Digital Initiative (Duke University, (n.d.). Today, there are active iPod programs on many other campuses around the country, including those at Stanford University (California), Drexel University (Pennsylvania), University of Michigan, University of Dayton (Ohio), and Virginia Tech (Virginia). More universities and colleges are joining this list (Blaisdell, 2007; Galuszka, 2005). The use of podcasting in educational settings is driven in part by the explosion of iPod use in general (Stephens, 2005) and the *always-on* nature of the Internet and its users (Baird & Fisher, 2006; Johnson, 2005). “Podcasting lectures merge students’ habits of reviewing course material with the current iPod frenzy” (Zhou, 2005, paragraph 7). Princeton University even has its own podcasting clearing house (<http://www.http://uc.princeton.edu/main/>), where users can find a podcast on the Electronic Frontier Foundation that includes discussions on podcasts (http://uc.princeton.edu/main/index.php?option=com_content&task=view&id=1296&Itemid=9). K-12 schools have also begun adopting podcasting as an instructional tool (Balas, 2005; Johnson, 2005; Lucas, 2005; Richardson, 2006b). The George Lucas Foundation’s magazine and website, *Edutopia.org* (<http://www.edutopia.org>), feature stories about K-12 schools’ use of MP3 players, such as the iPod. In *Synching up with the iKid* McHugh (2005), describes the use of social technologies (blogs, wikis, RSS) that allow students to shift from simply consuming media to actually creating it on their own tool set. The Kaiser Family Foundation Report (2005), entitled “Generation M: Media in the Lives of 8-18 Year-olds”, includes scenarios from this age group that show them multi-tasking, using multiple forms of media while engaging in homework, and, in general, interacting with new technologies comfortably. In 2006 there were

over 400 podcasts from K-12 classes listed on iTunes and over 900 education-related podcasts listed on Yahoo (Collins, 2006). Apple Computer Inc. introduced "iTunes U," a nationwide expansion of a service that puts course lectures and other educational materials online and on-the-go via Apple's iTunes software (CBS NEWS, January 28, 2006).

Mainstream businesses are also beginning to examine and use podcasting as a tool (Radin, 2007). In 2005, a Data Memo for The Pew Internet & American Life Project (Raine & Madden, 2005) described the current status for iPod (MP3 players) and podcasting. Over 22 million adults in the United States own an iPod or some other MP3; this number represents 3% of the men and 9% of the women in the population. In the 18-28 year old market, 20% of the age group own some kind of MP3 player. Twenty-nine percent of the people who own an MP3 player have downloaded a podcast, meaning over 6 million adults in the United States have downloaded a podcast, as of 2005, and this technology has not yet reached its maximum potential penetration in terms of adoption (Raine & Madden, 2005). As of April 2006, 20% of American adults and 26% of Internet users reported that they owned either an iPod or an MP3 and as of August 2006, twelve percent of Internet users say they downloaded a podcast (Madden, 2006). According to Bluestreak (2006), of the 1000 consumers selected from over 1.5 million households, 100% of respondents use email, 88% use text messaging, 71% use message boards, 63% use blogs, 36% use podcasting and 28% use RSS. It may be assumed that businesses, like educational institutions, are using or considering the use of podcasts as a communication medium, while exploring the potential of podcasts as a computer-mediated collaboration tool. Rincon (n.d.) suggests that businesses consider using podcasting to offer late-breaking industry news, in-depth information to niche customers, and access to information from industry experts via podcast

interviews available on the web site. Gahran (2004) lists applications for podcasting, including the following:

- interviews to supplement news coverage or commentary
- audio recap of the top stories on a news site (as a way to draw traffic to the news site or provide an additional advertising channel)
- issue updates from advocacy organizations or their PR firms
- specialized industry news from professional or trade groups
- investor news
- sermons, speeches, or debates
- audio from conference sessions
- quick highlights from newly academic or scientific research papers (abstracts translated into plain language)

Podcasting for information sharing, marketing and training seem to be popular applications, with some podcasts being included on web sites simply as a means to drive traffic to the site itself.

Gahran (2004) suggests allowing new bands to release new music via a podcast on the business' web site as a marketing strategy. Dugan (2005) lists twenty creative ways to use podcasting. The content may be as varied as the developer wishes and still be tagged as a podcast. The medium itself is an attractive product, and the message, when properly framed, will be consumed when the medium is engaged.

MAIN FOCUS OF THE CHAPTER

Podcasting is easily described in terms of the equipment required and the process used. How podcasting might generally be used in higher education, K-12 schools and businesses is

becoming increasingly evident. However, there are other significant issues associated with the development and use of podcasting in order to fully grasp the gestalt of podcasting as computer-mediated communication.

Equipment

Hardware

Podcasts can be recorded on a desktop computer, laptop, digital MP3 recorder, PDA, PocketPC/Handheld, cell phone with voice recording, and a professional digital recorder (Cochrane, 2005). A podcast is created on a desktop computer or laptop via its internal sound card and a microphone (mic). An analog headset/mic (boom mic) plugs directly into the motherboard sound card. This type of mic has been found unsatisfactory for creating podcasts due to the electromagnetic interference in the computer, which causes noise on the analog line and effects the audio recording quality (This Week in Nuclear, (n.d.). A digital USB headset mic plugs into an USB port so that it bypasses the internal sound card on the computer, resulting in better sound quality (This Week in Nuclear, (n.d.). Both types of headset mics are inexpensive and can be found at most computer, office supply stores and discount stores.

In order to put music behind a podcast, it might be useful to acquire a mixer. A mixer has many functions, but most relevant here is its capacity to record music at a lower volume level while recording voice at a higher volume level for a podcast (Geoghegan & Klass, 2005). Additional features of a mixer for a podcaster are special effects, the ability to record telephone interviews and its professional sound quality (Cochrane, 2005).

A more mobile alternative to using the desktop or even laptop is to make a podcast using a digital MP3 recorder. These are especially useful for recording presentations, lectures or conversations because they are very small and compactly designed. Some digital recorders have

a built-in mic, which may produce unsatisfactory sound quality. Better sound quality can be produced with a digital MP3 recorder that has a line-in feature. This line-in feature allows the attachment of an external mic. The type of mic used depends on the setting in which the podcast is being recorded. If recording a lecture, a unidirectional mic would be best because the mic will pick up a clear sound wave from only one direction (Geoghegan & Klass, 2005). If recording more than 1 or 2 people at a time, an omnidirectional mic would be a better choice (Geoghegan & Klass, 2005). Once the podcasts have been recorded, they are typically transferred to a desktop or laptop computer via a USB cable for editing in a software program.

Professional digital recorders can be used to make podcasts. These devices are designed to record very high quality audio in either Wav or MP3 format which must ultimately be converted to an MP3 format (Cochrane, 2005). Most professional digital recorders have an internal hard drive or a SmartMedia card for storage. These devices are multichannel, and some models can function as both mixer and recorder.

PDAs and Pocket PCs can also be used to record a podcast. Each device must have a built-in recorder. There are third-party software programs for Pocket PCs that will upload podcasts to a hosting service over a wireless Internet connection for immediate access by the public (Hardy, 2006).

A podcast can be recorded on a cell phone that has the voice recording feature. Magid (2006) writes, "Cell phones don't have the best microphones in the world, so don't expect sound like anything like professional broadcaster. But this isn't about professional broadcasting: it's about regular people getting their voices heard from wherever they happen to be" (paragraph 14).

Voice Genesis offers a service that allows podcasts to be delivered to a cell phone but also

permits the creation of podcasts. Creating podcasts with your mobile phone is called mobcasting (mobile podcasting) (Magid, 2006)

Software

Recording/editing software is needed to record podcasts on desktop or laptop computers. The audio editing feature of this software is needed to edit audio files from a desktop, laptop, PDA/PocketPC, cell phone, digital MP3 or professional digital recorder. There are a number of recording/editing software packages, but one of the most popular programs is [Audacity](#), an Open Source software program for Windows and Mac platforms (Wikipedia, n.d.). The following are just a few of the particular features found to be key to producing and editing a podcast

(Podcasting News, n.d.):

- Record from microphone, line input, or other sources
- Export MP3s with the optional LAME encoder library
- Edit with cut, copy, paste, and delete
- Use unlimited undo (and redo) to go back any number of steps
- Rapidly edit large files
- Remove static, hiss, hum, or other constant background noises

Applications

Applications, in the sense used here, refers to a review of the range and types of podcasts—often defined by their use or their development strategies—rather than a specific listing of examples.

Havens (n.d.) describes *enhanced podcasts* as podcasts that feature a slide-show format for artwork or pictures that can be included in the podcast. Havens (n.d.) provides an example:

<http://podcasting.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=podcasting&zu=http%3A%2>

www.somatodiscover.com. Havens (n.d.) also describes autocasting, which uses software that converts text-only sources into audio formats, such as creating MP3 files from RSS feeds. This means it is possible to use RSS feed to drag the blog text content into the autocasting software and listen to the newly created audio version. However, *enhanced podcasting* and *autocasting* are not really part of the mainstream use for podcasting. Havens also lists learncasts (i.e., educational podcasts) and mobilecasting using cellular phones. Podcasts directories are proliferating; Podcast.net illustrates the organization of podcasts by categories (<http://www.podcast.net/cat/>).

More relevant here is a discussion of two types of podcasts: real-time (1:1) and synthesis. In real-time (1:1), the podcast is a direct recording, from beginning to end, of something, such as a demonstration, a speech, a discourse, a song, etc. Synthesis, is an abstract, a summary or a portion of a larger whole. An example of this latter case would be an executive summary of a large document, an audio abstract of a speech, or an individual module (step) in a multi-part process.

These two types, real time and synthesis, reflect a combination of content in that in both cases, the content guides the process by which the podcast is organized. Examining each category in more detail may help elucidate the distinctions of the two types.

In real-time podcasting, no attempt is made to abbreviate the content in any way, so the process is a direct recording, 1 minute to 1 minute. If the speech is sixty minutes in duration, then the podcast is sixty minutes long, recorded directly without editing. This is currently the application model most frequently adopted in higher education. Podcasting has been used primarily for disseminating recorded lectures and discussions (Flanagan & Calandra, 2005). At the most basic level, someone dons the recording equipment in real time, delivers the lectures and then posts

them for sharing on a MP3 player or other device (Warlick, 2005). These podcasts, considered the most basic, still require that the podcaster organize the equipment and content for the production. The more formal the product, the more planning is required. For example, if each podcast is part of a series and each podcast in the series must be 18-20 minutes in length, then the content must be carefully scripted and planned. If, on the other hand, someone simply wishes to podcast an introduction to an event, a lesson, or a product, planning requirements is less demanding, though quality and clarity concerns must still be addressed. These podcasts must be well done to carry the content properly (Campbell, 2005). There are clearly many possible uses for podcasting for the classroom (Bull, 2005).

Flanagan and Calandra (2005) describe podcasting as having the potential to do more than merely record what they call “potentially drab” lectures! This potential is related to the second category listed here, synthesis. In a synthesized podcast, someone has intervened and *managed* the content of the podcast in some way. Isakson (2006) cites excellent resources for podcasts of this type, which are extremely attractive to students. The author has used this type of podcast as an assignment for students, asking them to listen to other podcasts and then produce their own original podcast summary. In the case of this latter type, synthesis, there is much more planning required prior to producing the podcast. Alexander (2006) speculates about the impact of Web 2.0, notable for its interactive potential, on podcasts, which may extend this category of podcasts and even result in the creation of newer, more interactive versions.

Issues

There are some important issues associated with podcasting, whether in higher education, K-12, or business applications, and, in fact, these issues extend into the realm of the personal podcast. These issues may be classified as attitudes and concerns, and copyright and ethics.

Both developers and consumers of podcasts have various attitudes and concerns about podcasting, such as those related to individual freedom of speech, what constitutes quality, what is appropriate as content, and how to use podcasting. The question of individual freedom of speech is especially relevant when the podcast is a personal statement of position, such as might be found in political podcasts, personal journal podcasts, and organizational podcasts to support a specific point of view. In these cases, the question is who monitors the content of these podcasts. The answer is: No one. Certainly companies can monitor what is shown on the podcasts on their web sites; schools can do the same, as so can governmental groups. Even parents may be, to some degree, able to direct the content of their youngsters' podcasts. The US House of Representatives and The US Senate created bills to protect free speech and technology, excluding Internet-based journalism and private online exchanges from the proposed limitations on oversight (Rockwell, 2005). The Electronic Frontier Foundation (<http://www.eff.org/>) is probably the best source on this issue and offers an excellent guide for bloggers (<http://www.eff.org/bloggers/>). The very nature of podcasts - - the beauty of the technology and the bane of those who would control its unfettered use - is its inherent anarchy, a characteristic that affirms decentralized control and individual expression.

The conjoined issues of copyright and ethics have attracted more attention in podcasting than attitude and concerns for quality of content. Copyright is really a major issue for most developers and users, especially in educational and business settings. Some copyright protections should be extended to Podcasts. A Podcasting Legal Guide (http://wiki.creativecommons.org/Podcasting_Legal_Guide) was developed to outline both legal and practical issues that are specifically relevant for podcasters, such as using music and video in a podcast. This guide also has information on copyright law applicable to other situations.

“Podcasters share similar concerns to bloggers in relation to defamation, privacy, reporter's privilege, media access, election and labor laws and adult materials.

Consequently, if the content your podcast is likely to involve one of these issues, you should check the corresponding section of the EFF Bloggers FAQ.

(<http://www.eff.org/bloggers/lg/>). (Creative Commons, Podcasting Legal Guide, n.d., paragraph 10)

The Creative Commons (CC) organization has developed six copyright licenses known as Creative Commons Licenses. Once the user selects one of the six licenses, Creative Commons provides the software tools and tutorials needed to add license information to the product. Each copyright license covers a different set of conditions of the copyright.

FUTURE TRENDS

An obvious trend is to video casting (sometimes called vidcast or vodcast). Vodcasting is basically the same as podcasting, but video clips are distributed through RSS 2.0 enclosures instead of audio clips. This technology allows students, teachers, and administrators to easily share video clips. Users would also need a player capable of viewing video files. This type of technology will require a computer to edit video; the file size for these video clips can be as much as five times as large as a podcast file, so it may not spread quite as quickly as podcasting, but the potential for future popularity is certainly there (Flanagan & Calandra, 2005).

Good (2005b) posed the question whether or not videocasting (vidcasting or vodcasting) will replace podcasting in the near future. Though there are some technical limitations to overcome, Good sees vidcasting as the future state of all of those who currently embraced podcasting.



Another trend is toward increased mobility, which means constancy in Internet access, such as that offered by wired clothing. BestStuff.com (<http://www.beststuff.com>) has this description of one such product:

Docker Pants® is introducing gadget-pants to the market for the young and techno at heart. The Dockers® Mobile Pant has special hidden pockets just the right size for cell phones, PDAs, and MP3 players, but the pants look just like normal khakis, not goofy cargo pants. Seven hidden pockets make these Dockers® damned desirable digital dungarees. \$52. (BestStuff.com, n.d.)

Another wired garment is the SyncWear Fitness Tee (<http://www.malachiandcompany.com/>). It has a new pocket with two inner pockets: one to hold an iPod® or other MP3 player and one to hold gym and car keys (so as not to scratch your iPod). The outer pocket is designed for excess headphone wires or such. There are other garments, such as wired windbreakers. Here is a description for a wired vest.

SCOTTeVEST - by SCOTTeVEST, LLC.

Price: \$79 to \$149.99. Features: Up to 22 compartments for gadgets

and more, including special spaces for wires and ear buds.

More info: www.scottevest.com

These wired garments might actually serve to heighten the use of podcasts for computer-mediated communications, whether the podcasts use MP3 players or other smaller, more multi-tasked devices. The immediacy and constancy of access offered by wired garments has yet to be

explored as a force in mainstream podcasting and other forms of computer-mediated communications.

Another of the future trends that, conceivably, could impact podcasting is Web 2.0. While there is some debate as to the appropriateness of the term Web 2.0, those who embrace the idea of Web 2.0 cite some features that would relate to podcasting. One of those is the movement away from web sites as individual repositories of information (called information silos) to the operation concept of computing platforms that allow end users to actually ‘use’ the sites for their purposes. Also Web 2.0 reflects an approach and an attitude about distributing web content through open communications with users freely allowed, even encouraged to use and re-use information. There are other features associated with Web 2.0, but these seem more clearly related to podcasting, as it has been conceived here.

With an emphasis on distributing web content, especially content prepared collectively and collaboratively by users, the potential for richer offerings in podcasts is obvious. In addition, it is more likely that podcasts will become part of larger pieces of work, interrelated by content and use. This would also allow more dialogue among podcast developers, with the ability to use parts and pieces of others’ work. With an emphasis on open communications, the value of a podcast extends beyond the original developer and target users and becomes part of a larger universe of knowledge that can be reorganized at any time without the need for the intervention of specialized technical support. Alexander (2006) describes Web 2.0 as opening up an opportunity for the enhancement of current pedagogy. De Waele (2006) lists 10 trends for the mobile web in 2007. One of these is that more consumer-produced, Web 2.0 content will be available to cell phone users.

Obviously, there are concerns that Web 2.0 elicits from developers of podcasts, especially in higher education where ‘ownership’ of knowledge is an underlying theme in conversations of all kinds. Gonze (n.d.) has an interesting view of the history of podcasting, informed by a vision for the future and centered on the open nature of podcasting. Good (2005a) lists some questions arising from discussions in higher education about the use of Web 2.0 and its associated tools.

These questions are:

- How does podcasting or vodcasting challenge the current instructional model (lectures) used on most college campuses? If all of the lectures are available as podcasts or video casts, will students still come to class and will they still need to come?
- Who owns the content in the electronically captured materials, such as a podcast of a specific lecture? Can the professor use the materials in other situations outside of the university? How is it protected?
- Who is going to edit the materials, especially if the professor worked with a faculty support group to produce the original product?
- How is the copyright managed? Are copyrighted materials verified?

These questions speak to more than the question of the educational utility of podcasts; they really address the broader transformation in the social understanding of what constitutes authority, knowledge, learning, and schooling. When students are expected to learn in a fixed place at a fixed time, or when the professor or trainer expounds on material following a clear, linear path (master-to-unformed apprentice), control over processes is easier. Attendance can be taken. Time spent in class can be measured and qualified. The pattern is centuries old. However, as technology has eroded the boundaries between teachers and learners, students and trainees have

assumed greater autonomy in the determination of the path and pace of learning. It may be that the most significant future trend - - reflected in the proliferation of new and polymorphous technologies like podcasting - - will be the decentralization of authoritative hierarchies and the realignment of traditional structures of power and access.

CONCLUSION

The emergence of podcasting and related technologies is a qualitatively significant event in the social transformation engendered by the increasing influence of the digital age on daily lives. One can easily image a not-too-distant future when it will be said that the technology discussed here was “sophisticated for its time.” Notwithstanding, history must be lived and the future anticipated; the obverse of the statement yields no practical path. What has been described in this chapter is the powerful convergence of discrete technologies, generally qualifying for the appellations “podcasting” and “RSS.”

Research studies have demonstrated that there is no significant difference in outcomes between auditory instructional technology and in-class instruction (Flanagan & Calandra, 2005).

Podcasting in its current permutation may be a very cost-effective way to deliver class instruction without compromising a student’s learning effectiveness. However, this observation may be beside the point. The hierarchy has been flattened, and authority is now a function of quality access. Young learners are riding an empowering social wave in a deep sea of technology, and they have the skills set necessary for it.

Educators and trainers will no doubt find the new dispensation disconcerting, even threatening. Some will decry it on pedagogical grounds, but then, their pedagogy was developed for a different age. The technology described here is in flux. It cannot be assumed that present

practices are stable when judged by antique standards. However, podcasting, RSS, and related technological developments are now requisite, if temporary and transitional, pedagogical tools. Educators who are lifelong learners will adopt them with the objective of enriching the educational process and realigning their methodology with the historical moment.

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KEY TERMS

Bandwidth - It is the amount of data that can be passed along a communications line any given period of time.

Creative Commons – A nonprofit organization that has developed six copyright licenses, known as Creative Commons Licenses, for authors, scientists, artists, and educators to copyright their creative work. Each copyright license covers a different set of conditions of the copyright from "All Rights Reserved" to "Some Rights Reserved."

Mobilecast – Podcasting to mobile phone that has voice recording capability.

MP3 - An audio file that uses an MPEG standard used especially for digitally transmitting music over the Internet.

Podcast - An audio file that has been converted to an MP3 file for playback in a MP3 player, PDA/PocketPC, Cell Phone, or computer.

RSS – Abbreviation for Really Simple Syndication (or Rich Site Summary) RSS is a syndication format that aggregates updates to blogs, news sites, and podcasts.

Vodcast/VideoCasting – A process similar to podcasting, but video clips are distributed through RSS 2.0 enclosures instead of audio clips.

Wav – The native audio file format for Window. Wav files are often the format standard for professional recording and are very large files so they are not practical for use on the Internet, which is why podcasts are converted to MP3s before being uploaded/published to the Internet.
