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Forensic Audit Internet Video Caption, Subtitles, & Transcription Banner URL-TEL Automation: ADA Compliance E-Evidence, Eaves Dropping AV, Surveillance Recording Archives, Business Continuity, Contingency Planning Backup & Disaster Recovery

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Abstract

This study deals with the topic within 2 main perspectives. The first perspective is the institutional instructor and professor's perspective. The 2nd perspective is the students ADA perspective. This is the perspective of a student that is hearing impaired, but does not know sign language. Therefore, in such special cases, the institution, such as a university is required to provide such a student with a professional captionist to comply with ADA (American with Disabilities Act) laws. Together, these complementary perspectives draw a more complete picture compared to either view point by itself.

Forensic Audit Internet Video Caption, Subtitles, & Transcription

Forensic Audit Internet Video Caption Subtitles, & Transcription describes how to repurpose ADA captions compliance services for other purposes, such as auditing, sharing the high cost of a professional experienced human captioner. First we want to share the captions of a single university course, with additional sections of the same course. Thus, we divide the average cost by more and more units of credit hours, reducing the cost per hour. In addition, we can use it for auditing purposes, ignoring for now the legal and privacy issues of a "big brother" environment.

This technology enables the auditors to know what exactly goes on in the classroom in real-time and retrospectively.

HD (High Definition) Video SD (Secured Digital) Memory Card Upload to Google Video

As soon as we finish recording a 20 minutes HD (High Definition) video to an SD (Secured Digital) memory card, we upload it to Google Video for immediate distribution, playback and download. We upload it during the class. That means that after the first 20 minutes of the class in progress this video starts its upload process, which depends on the bandwidth speed. In a fast network, this video will be available on Google Video within the first 30 minutes of the class.

Google Video Thumbnail Playback with Banner Ads from Character Generator (Green) Image Overlay (Red) Real-time Captions (White Upper Case) and Posterior (After the fact) offline Captions (White Mixed Case) Screenshot: 7 displays the image of Google Video Thumbnail Playback with Banner Ads from Character Generator (Green) Image Overlay (Red) Real-time Captions (White Upper Case) and Posterior (After the fact) offline Captions (White Mixed Case). This variety of banners and captions shows a sample of the technologies and techniques we integrate into this process.

Image of Google Video Thumbnail Playback

The image of Google Video Thumbnail for Playback, enables a surfer to quickly scan 100 thumbnails, each of which is a DVD chapter, and select the relevant minutes to playback for exam or classroom review. Furthermore, the attached text, as well as the captioned text help the search engine index and find the appropriate clip, among millions of video clips posted on the WWW.

Banner Ads from Character Generator (Green) Image Overlay (Red)

Banner Ads from Character Generator (Green) have several advantages over their counter parts Image Overlay (Red) banners of URL-Tel. These URL-Tels are Universal Resource Locators or web site addresses, that also spell a vanity telephone number long distance toll-free, as well as local (305 area code). The advantages of the Character Generator URL-Tel is the fact that we generate it "on the fly" while the camera is running and we have a wide variety of flexibilities in coloring and positioning the banner, without turning the camera off.

Both ads attract sponsors who will underwrite and finance the enterprise, providing funds and resources for this effort. The importance of such a URL-Tel is that it enables any device that can surf the internet and make telephone calls to execute such activities by a press of a button on a phone or a PDA (Personal Digital Assistance) or by a single click of a mouse on a virtual button on a computer screen.

The surfer, and the viewer or the listener, simply click the button, and the device calls the phone number and surfs to the URL listed on the banner Ad. As soon as the device completes the call the surfer can talk to the operator, surf the website of the sponsor, and pay for services on line or on the phone. In either case, the owner of the video gets the commission and the credit for the purchase, while the sponsor gets the benefits of the ads. At the same time the surfer get fast efficient service

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that is related to the contents that the surfer is interested in viewing or listening, such a class lecture at a university, in our case. For example, the surfer can purchase a HD DVD to supplement the low Res Google Video.

Character Generator (CG) Banner URL-Tel Ad with Multiple Sponsors & Variable Rates

The Character Generator (Green) Banner URL-Tel Ad provides the instructor with the flexibility to re-color the image of the character. The instructor can change it from the current Green to a variety of other colors that better fit the background, such as Red, Blue, Purple, Yellow, etc. Likewise, the instructor can change the font size from average, to small and large, depending on the background space availability, or simply turn it off, all together. In addition, the instructor or the controller of the camera can move the banner ad, from the very top of the screen, the current position, down the screen, in multiple positions, all the way to the bottom of the screen. That is important so that the banner ad, does not cover an important object, hindering the view of a student who is trying to write down the blackboard instructions.

Most importantly, this CG Banner Ads, can be sold in increments of minute by minute, so if many sponsors are interested in funding such activity, each sponsor can get a few minutes of exposure at different rates, and in different times during the lecture. For example, the rate for the beginning of the lecture, when most viewer are still awake, can be much more expensive, then the last minutes of an accounting lecture, when most viewers are sound asleep, especially if they are watching it from bed, before they go to sleep.

Image Overlay (IO) Banner URL-Tel Ad with Water Mark and Other Special Effects

Unlike CG Banner ads, Image Overlay (IO) Banner URL-Tel Ad has to be loaded prior to starting to shoot with the camera. That makes it static and less flexible, in a way. On the other hand, since the instructor, rather than the manufacture of the Character Generator, controls the image, the instructors have the full Green Screen capability to structure the image as they please. Thus, the image can be almost transparent or entirely transparent to the naked eye, like Water Mark, it can contain Special Effects, and provide for subliminal ads, that the user may not even be aware off. Of course this poses all kinds of ethical and legal issues, which are beyond of the scope of this study. For now, we would like to stress the operational facet of this research leaving the other issues for future research. It may also restrict the sponsor sales to one single ad per camera turn-on. Plus, it requires the instructor or the institution to prepare the images prior to the beginning of the camera shooting, and load the image overlay before the shooting starts. Thus the stream of revenues maybe lower and the added work requires more time and effort.

UPPER CASE White Real-Time Captions Synchronized With the Video Playback

The UPPER CASE White Real-Time Captions Synchronized with the Video Playback is very effective for ADA compliance of deaf that cannot read sign language. The captioner, human or machine, adds the captions in real-time, without sufficient time to edit and correct mistakes. Therefore, the quality may suffer for the sake of minimizing the time to market and the sub-second delay between the voice and the caption, as well as real-time translation, if such is available. It is also much more expensive, especially if we use an experienced US local human transcriber, as is the current case, costing $50-100 per

hour. In contrast, it is opposed to a remote outsourced transcriber in India, China or Pakistan, or an automated software based transcriber such as Dragon Naturally Speaking (DNS) costing about $200 for the professional edition.

Mixed Case White Real-Time Captions Synchronized With the Google Video Playback

The advantages of the Mixed Case White Real-Time Captions Synchronized with the Google Video Playback are that it is much cheaper than its counterpart. All you need is the software and an audio file, after a training session of the instructor's voice recognition, minimum cost employee can click the button to initiate the transcription, edit the file, while listening to the audio, and uploading the edited, punctuated, and corrected transcript to the WWW for printing, and to Google Video (or another video streamer) for playback, indexing, and download, as well as DVD burning, etc. The bigger advantage is that we have more time for editing and correction, and therefore, the quality can be much higher, while the cost will be much lower.

That may be especially difficult for instructors with heavy and unique accents that the voice recognition software is not familiar with, and has trouble learning. The accuracy rate may be too low to make sense of the text quickly and inexpensively. In contrast, if the speaker can speak in a manner that the voice recognition engine can accurately transcribe, than it is extremely cost effective, and quit simple to process.

Burning A DVD with the Captions Extend It to Multiple Languages Increasing ROI

As we connect a real-time DVD burner to the cameras, burning a DVD with the captions in one language, we can extend it to multiple languages. Since the DVD can handle up to 7 different languages, we can add to the English subtitles, translations in different languages, such as Spanish, Chinese, Arabic, Hindu, Russian, and German, etc. This way during the play-back the view can select the language of choice, and with voice over, the view can read and hear the alternative languages. This will expand the marketing potential of the DVDs to many markets that are beyond the English speaking countries. Such potential new market territories may further increase the ROI of such enterprise, which is the center focus of this study.

Upload Unedited Master DVD to the WWW Server DVD-Burner E-Commerce Site

The http://www.kunaki.com demonstrates a near real-time DVD-Burner online on the WWW internet, including a shopping cart and a sales site.

Following are the URL of both for a Java Programming course:

Shopping Cart   http://Kunaki.com/Sales.asp?PID=PX00ZXPL3I

Sales   http://Kunaki.com/MSales.asp?PID=110081

As soon we finish burning a DVD, which is usually an hour long the instructor executes the software that uploads the image of that unedited master DVD to the WWW server DVD-burner e-commerce site, with its shopping cart and online accounting system. Depending on the bandwidth, such upload may take an hour or so, in a fast university bandwidth. So typically the instructor will initiate the upload process after the recording has been completed, and about 2 hours later, this DVD will be available for purchase using this shopping cart.

Kunaki Shopping Cart Check-out and Estimated Ship Date & Cost Calculation Screen

Appendix 4 shows the Kunaki Shopping Cart Check-out and Estimated Ship Date & Cost Calculation Screen, displayed for the surfer who orders a DVD from the web site. After the instructor finished loading and submitting the DVD for "manufacturing," which may take a couple of hours of a batch processing, or even-all night long for a slow DSL (Digital Subscriber Line) of about .3 meg up speed.

The batch file will reach the DVD-Burner server site http://kunaki.com/ and will proceed to the next step: http://kunaki.com/New.asp?cc= and follow to the next step:

Screenshot: 8 describe the Kunaki DVD-burner Site Master DVD and DVD-Cover Image Upload Dialog box. The instructor or student assistant or batch file (such as Robo-Form) fills out the fill-in-the-blank spaces, and online goes the DVD and the DVD cover image.

Kunaki DVD-burner Site Master DVD and DVD-Cover Image Upload Dialog.

The instructor, the assistant, or the batch file will fill out the form including the following information:

Product type: audiovideogamedata / other, add UPC bar code: yes no more info Title: sub title: original release date: copyright message: studio: studio web site: director: director web site:, starring:, production company:, catalog number (ASIN):, genre:, region:, encoding:, rated:, video format:, audio:, run time:, description / requirements: & bold fields are required fields, all the information required for the shopping cart and the e-commerce site.

In Our Example the Java Programming DVD Course Information Includes the Following

Java Programming, Director: Rushinek, Studio: US Studios, Producer: (305)OnMyDVD.Com Starring: Rushinek, Starring: S. Friedman Rushinek, Ph.D., Genre: Education, Instruction, Professional, Region coded: All, Run time: 60 Minutes, Disc: DVD, Release date: October 31 2007, and by (305)OnTrial.Org Copyright (C) OnMyDVD.Com 2005.

After completing the upload process and the "manufacturing" order submission, the shopping cart is ready for the surfer to order the DVD online. The surfer, simply surfs to the URL, fills out the form, and checks out. Following is the shopping cart for a sample DVD about a Java programming course: http://kunaki.com/Sales.asp?PID=PX00ZXPL3I

Kunaki DVD-burner Site Shopping Cart & DVD Cover Image Rotation Dialog Box

Screenshot: 9 shows the image of the Kunaki DVD-burner Site Shopping Cart & DVD Cover Image Rotation Dialog Box. At this point the surfer can fill out the form, by pulling down the pull down menus:

The surfer can click the [Rotate Case] button and display the case from front view, rear view, side view, and inside view. At the retail price of $10.00US, the surfer can select the quantity from the menu, the quantity of 12345678910 or more copies of the DVD. Then the surfer selects the state: in our case FL for the state of Florida the zip code the country (chose from a pick list of countries such as: Argentina, Australia, Austria, Bahrain, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Costa Rica, Croatia, etc, sorted alphabetically.

The dialog box then calculates the Shipping Costs while displaying the information entered by the uploader of the DVD and the DVD cover image. In this case the shopping cart dialog box displays the content of the Java Programming course, and related materials as follows:

Java Programming, Director: Rushinek, Studio: US Studios, Producer: (305)OnMyDVD.Com Starring: Rushinek, Starring: S. Friedman Rushinek, Ph.D. , Genre: Education, Instruction, Professional, Region coded: All, Run time: 60 Minutes, Disc: DVD , Release date: October 31 2007, and by (305)OnTrial.Org Copyright (C) OnMyDVD.Com 2005.

At this point the surfer can proceed or rotate the case, switching from the front view of the case to the next rotation:

Kunaki DVD-burner Site Shopping Cart Case Rotation to the Back of the Case View

Screenshot: 9 shows the Kunaki DVD-burner Site Shopping Cart Case Rotation to the Back of the Case View, from the initial position of the front of the case view. User can see the UPS (Universal Product System) code, which is a bar code that a cash register machine in the retail book and DVD stores can easily read, and register for charging of a credit card or cash payments. In our case of the e-commerce site, users can also pay with PayPal.

Kunaki DVD-burner Site Shopping Cart Case Rotation to the Side Spine of the Case View

Screenshot: 10 show the Kunaki DVD-burner Site Shopping Cart Case Rotation to the Side Spine of the Case View. To see this view the surfer presses the [Rotate] virtual button on the upper left side of the shopping cart screen, and the case rotates.

Kunaki DVD-burner Site Shopping Cart Case Rotation to the Inside of the Case View, and Google Tool Bar Tip Message, with McAfee Personal Firewall plus Application Wants to

Access the Internet Question? Grant Access, Grant Access Once, or Block All Access.

Screenshot: 11 show the Kunaki DVD-burner Site Shopping Cart Case Rotation to the Inside of the Case View. It also shows the Google Tool Bar Tip Message, raising the issue of automating the fill-in-the-blank dialog boxes. As we have discussed before, there is a variety of form filling automation software, some of which has free public domain software, such as the Google tool bar, and/or the Robo-Form software. To speed the upload and ordering form filling process, we have used such programs in addition to custom written routines, as well as other method of automation. However, this topic is beyond the scope of the current study. We will deal with it in more depth, in future research.

Firewall Application Grant Access, Grant Access Once, or Block All Access…?"

Another important issue is the McAfee Personal Firewall Plus Application warning overlaid dialog box telling the surfer that the "Kunaki program Frame is requesting Access the Internet." It proceeds with a multiple choice question to the surfer whether the surfer wants to… Grant Access, Grant Access Once, or Block All Access…?" The issues of computer security, business continuity, contingency planning, as well as backup and disaster recovery are more within the scope of the current study, especially as it pertains to the reuse of videos. From this perspective, we would like to mention that users should have an effective security policy together with anti-virus and firewall protection. Such firewall should issue warning to the user to raise their awareness, and most importantly to enable them to run the software that they need.

A common mistake among incompetent IT (Information Technology) staff is to go to the extremes, of either prohibiting any access to the internets' WWW beyond a simple browser access. In such a restrictive environment, users, such as professor's doctors may not be able to upload videos and DVD to an internet site. Thus, they may not be able to perform their job optimally. On the other hand, the other extreme is not to provide any anti-virus and firewall protection exposing the users to undue risk, especially whenever video downloads are involved.

Computer Security, Business Continuity, Contingency Planning, As Well As Backup and Disaster Recovery

The focus of the current study is the use and re-use of these videos for computer security, business continuity, contingency planning, as well as backup and disaster recovery. Even in the most protected environment certain viruses can invade creating a disaster that brings down an entire infra-structure, including the mainframes, the laboratories, and even the internet service for an extended period of time. In such disaster events the traditional backup and recovery completely ignores the backup of the instructional contents for training and teaching organization, while focusing on the accounting records, etc.

Re-Using Video DVD Archives For Anti-Virus Recovery Of A Stand-Alone DVD Player Without A Computer.

In contrast, the current study focuses on using and re-using videos and DVD archives for such recovery. In a case of anti-virus recovery disaster, such archived DVD library can be used (without a computer) until such time that the computer become available again. In the meantime the instructor and the students can playback the DVD in a regular DVD player without a computer, using last best previous semester recordings. This is the advantage of our approach of using also DVDs as opposed to the more traditional approach of relying on DVD other media that can be played back exclusively on computers, precluding the use of a stand-alone DVD player without a computer.

Kunaki How to Use the Kunaki Sales Page To Sell Your Product

Screenshot: 12 show the Kunaki "How to Use the Kunaki Sales Page to Sell You is Product" instructions screen. It includes the following information: Kunaki contact us Sales page, and the sales page URL for product PX00ZXPL3I is: http://Kunaki.com/Sales.asp?PID=PX00ZXPL3I

The sales page URL for all your products is: http://Kunaki.com/MSales.asp?PID=110081

Kunaki is telling the author of the media that "You can include a link to your product sales page on your web site or a personal web page such as http://MySpace.com by copying and pasting the HTML code below. "

You can include a link to the sales page for all your products by copying and pasting the HTML code below. Notice that this URL: https://kunaki.com/HowToSalesPage.ASP?PID=PX00ZXPL3I&PublisherId=110081

Is using the HTTPS, Hyper Text Transferee Protocol Secure, which is important for securing and prohibiting the unauthorized user access to the confidential financial information for abuse and fraud.

Kunaki CD / DVD Publishing Service Monthly Summaries for Java Programming

Appendix 5 shows the Kunaki CD / DVD Publishing Service Monthly Summaries for Java Programming, and its related information. It shows a table with the following information: Kunaki CD / DVD Publishing Service monthly summaries for Java Programming with these headers:- "month gross sales $ refunded sales $ qty sold qty refunded net sales $ details customers."

Kunaki -- CD / DVD manufacturing and publishing service , with Notices: Products which have not been ordered in 180 days are considered inactive and will be automatically deleted. To keep a product active you can order one unit every 180 days.

Appendix 6 deals with the Kunaki Accounting Department of "CD/DVD manufacturing and publishing service, with Notices: Products which have not been ordered in 180 days are considered inactive and will be automatically deleted. To keep a product active you can order one unit every 180 days."

Online Accounting System for the Internet WWW DVD-Burner Server on-Demand Services

Kunaki also tells the publishers that "Orders with 500+ units will be shipped free with UPS Ground to addresses in the 48 contiguous states in the USA." Each publisher, in our case the Professor instructor and/or the university, has a "Publisher Id: 110081."

Kunaki is telling the publisher that: "Your retail payment checks will be mailed to the following address," as the publisher has provided, describing the following:

"Email:	Street Address:
Password:	Street Address:
First name:	city:
Last name:	state/province:
Organization:	zip/postal code:
Division:	country:
Telephone:	checks payable to:

Send publisher payments with PayPal to my PayPal account:" where the publisher can enter a PayPal account to be paid.

Kunaki further describes the "Checks mailed for month: Jan-2007 Feb-2007 Mar-2007 Apr-2007 May-2007 June-2007 July-2007 Aug-2007 Sep-2007 Oct-2007 Nov-2007 Dec-2007 Jan-2008 Feb-2008 Mar-2008 Apr-2008." It then shows the report of all the other products with the following headers: status, creation, product id, title manage/accounting, delete date, configure/product, and order. So it shows that the java Programming DVD is still active. While the rest of the products have been deleted for lack of activities:

"Active		Oct 31 2007		PX00ZXPL3I	Java Programming
click here		accounting	delete		
Deleted		Jun 1 2007		PX00PX5MO3	(888)DVDU.Org Dr.
Rushinek Course on Computer Audit and Data Mining Using WizSoft WizDoc Count Same					
Rule and WizWhy		history			
Deleted		Jun 21 2006		PX00OTJ6B1	SharePoint Web
Server (888)DVDAthorEd.Org with Windows XP and Office XP-Installing and Running					

Microsoft	history			
Deleted		Jun 8 2006	PX00ZDOPTT	Balance Sheet Effect
of W/P Credit	history			
Deleted		Jun 8 2006	PX00ZODX8I	Work In Process
Available Cost	history			
Deleted		Jun 8 2006	PX00ZR6S22	Java Applications
history				
Deleted		Jun 8 2006	PX00MODUHP	Management
Accounting and Control	history			
Deleted		Jun 8 2006	PX00N4ZX70	Managerial Acc-
Effect on Profit	history			
Deleted		Jun 8 2006	PX00ZQ54RY	Traditional vs.
Functional Income Statements		history		
Deleted		Jun 8 2006	PX00Z79ZV7	Install nero6 bundled
with Sony DVD Direct	history			
Deleted		Jun 8 2006	PX00ZWG3C3 Java Applications for Business	
Applications	history			
Deleted		Jun 8 2006	PX00Z6L5ZA	sensitivity analysis
calculates affected par		history		
Deleted		Jun 6 2006	PX00ZXEEEL	BackupRecord
DVDRecord (888)ITISJob.Net		history		
Deleted		Jun 5 2006	PX00ZC5A4C	(305)DVD-
Course.Com_(888)DVDAuthorEd.Com_DVD_Autoring_Burning_Publishing_Web-				
Casting_Streaming_and_Podcasting		history		
Deleted		May 23 2006	PX00Z550LG	Business
Continuity and Disaster Recovery Remote DVD-Server Burner (888)ISITJournal.com Evaluate				
the adequacy of backup		history		
Deleted		May 18 2006	PX00Z1BJXL	Business
Continuity and Disaster Recovery, Evaluate the adequacy of backup and restore provisions to ensure the				
availability		history		
Deleted	Apr 27 2006		PX00ZF14TP	IS Audit
Process EDP & IT	history			
Deleted	Apr 17 2006		PX00ZRWGSD	IT
sssGovernance Auditing Controls (888)Nets-Expert.Org/Net		history		
Deleted	Apr 15 2006		PX00ZZLWSB	IT
Governance		history		

Click here to view your recent orders (status, invoice, delivery tracking) click here to order your products.

Click here to ship one or more products to a list of recipients and addresses. Click here to ship one or more products to a CSV-list of recipients and addresses. Click here to view and fund pending XML and multiple-recipient orders."

Click here to read about our XML service.

Kunaki Online Accounting System with Inventory On-Hand of Active and Deleted DVDs, and Wholesale Cost per DVD order

Screenshot: 13 describe the "Kunaki Online Accounting System with Inventory On-Hand of Active and Deleted DVDs, and Wholesale Cost per DVD order." When the publisher, in this case the professor and instructor clicks the "click here to order your products." Option on the Hypertext menu revealing the publisher order dialog box,

with the direct cost per DVD, of $1.75 or about $2.00 if we add some extra costs. Still at a price of $10 per DVD to the consumer, this cost of $2.00 produces a contribution margin of $8.00 per DVD, or 80% Contribution Margin Ratio (CMR). This is extremely profitable, even at these extremely modest selling prices per DVD of $10, compared to the going rate of a technology instructional DVD of $100.00, this price is lower and discounted by 90%.

Contribution Margin (CM) Of $32,000 Can Be Quite Profitable If It Sells that means that if a class of 100 students orders 1 DVD per person the contribution margin will be $8 per DVD*100 students= $800. In a typical semester, a typical professor will have about 40 contact hours, producing about 40 DVDs. If the professor sell DVDs for all these hours, then the total Contribution Margin (CM) will be $800 per 1 hour class per DVD * 40 DVDs for 40 hours = $32,000, which is more than the average professor earns for teaching a typical university course. So it can be quite profitable if it sells!!!

Real-time Remote and Local Human Captionist Using Stenography Machine and Encoding Equipment

The traditional Real-time Human Captionist Using Stenography Machine and Encoding Equipment entail a person located locally at the same classroom as the instructor. Or alternatively, the captionist can be remote, she can be located at a different location then the instructor and the classroom, getting the audio signal over telephone POTS (Plain Old Telephone System) or Skype VOIP (Voice over IP), and return the captioned text to be merged at the lecture location. This way only the raw voice transfer take place one way, and back comes the caption that the remote captionist produces. This is one of the experiments that this study deals with. In addition to that it deals also with other types of video transcription, captions, and subtitles. The other types of captions involve recording the voice in real-time, but automatically transcribing it with software, such as Dragon Naturally Speaking (DNS).

Automated Software Transcript Cost Effective Seo Google Video

Then after the transcript is done, using the archived voice recording files. The user adds the time-codes into the transcript. In the next step the time-coded DNS transcript can be inserted into the video, which has been uploaded to a video web site, such as Google Video. Google Video lets users add time-coded transcript to the video file, to view it during playback and to better index the videos by their contents, in addition to the text originally uploaded, but is not displayed in sync with the videos. This approach is much cheaper since it does not require a skilled and very expensive real-time captionist. However, the quality is also not nearly as good as a professional captionist. However, the savings in cost are about 99%, but the loss in quality is only 40% (depending on the speaker). So it is much more cost effective, and sufficiently good for indexing and SEO (Search Engine Optimization) of the videos, by search engines like Google and Yahoo.

Banner URL-Tel Automation

Banner URL-Tel Automation refers to the video overlays off a URL (Universal Resource Locator) internet address, which is also a telephone number. Automating the instant communication as soon as a viewer or listener clicks a button on a screen of a computer, or any other device, such as a PDA (Personal Digital Assistant) or phone, the devices dial the phone number and surf to the web site for further services. Such automation brings additional banner advertising revenues, increasing

the ROI (Return on Investment) and offsetting some of the costs of such services.

We deploy automated transcription software, such as Dragon Naturally Speaking (DNS), to further reduce the cost of a human transcriber. Of course, the quality of software transcription right now, is still inferior to a professional human transcriber, but the cost is disproportionately lower, even if we add an outsourced human transcriber and editor to the mix. What we are doing is using DNS for the initial transcription recording, while also Skype-cast the lecture using VOIP (Voice Over IP) for free telephone transmission to outsourced human transcribers and editors in China, India and Pakistan, to supplement DNS. Such outsourced cautioners, transcribers and editors, reduce the costs by about 90% while reducing the quality by only 10%.

ADA Compliance E-Evidence

ADA (Americans with Disabilities Act) Compliance E-Evidence, Eaves Dropping Av, Surveillance Recording Archives deals with compliance with laws that level the playing field with able bodied, people with normal hearing. This is only one category of compliance services. This approach facilitates other compliance requirements such as Sarbanes Oxley (SOX), and HIPPA that deals with an HMO (that is publicly traded and subject to SOX) that provides health care and is also a teaching university, providing medical training and research services.

The auditors can attach the AV (Audio Video) clips to their work-papers to demonstrate that the doctors comply with both SOX and HIPPA, without being physically there, just using the real-time and archived AV. Again the cost of using such evidence is much lower than the traditional auditor travelling to the Doctors facilities, interrupting their work, and filling out forms and papers to audit the compliance and prepare their working papers. This of course, is not a perfect substitute to the traditional audit; rather it is a very effective and efficient experimental complement.

Eaves Dropping AV, Surveillance Recording Archives

The auditors can audit live classes and see if the instructor Doctors show up to work, and teach what they are supposed to teach, and if they comply with the various requirements of SOX, HIPPA etc, by eaves dropping. Furthermore, the can repurpose the AV Surveillance Recording Archives as e-evidence (Electronic evidence) for their work-paper. The forensic auditor expert witness, can later on re-use such archives as forensic evident, for expert witness testimony and computer litigation support, in a variety of dispute resolution mediations and litigations.

Business Continuity, Contingency Planning Backup & Disaster Recovery

Business Continuity, Contingency Planning Backup & Disaster Recovery deals with a teaching hospital emergency situation. For example if a disaster like a hurricane of an earth-quake strikes, the professor doctors, the students interns, as well as the teaching hospital all switch to business continuity mode, using the contingency plan. The teaching hospital moves to an alternative location out of the disaster zone, with the patients, doctor professors, and students interns. Instead of the traditional live lectures, the re-use the AV archives from the previous semester, to supplement the WWW (World Wide Web) internet cyber teaching and learning facilities, such as an LMS (Learning Management System), similar to Blackboard, or Moodle.

Classes and medical services continue according to the Contingency Planning Backup & Disaster Recovery procedures that have been practiced, rehearsed, audited and approved prior to the disaster.

As the reader can see such topics are discussed in the literature as well as in professional meetings, such as the AAA 2008 Annual Convention (http://aaahq.org/AM2008/cpe/cpe11.htm and http://aaahq.org/AM2008/cpe/cpe02.htm) as part of a CPE (Continuing Professional Education) program.

One of the unique facets of our approach in raising the ROI primarily on the revenue side, adding several new revenue streams to the Income Statement. This approach changes completely the balance sheet, and makes such services much more affordable and even profitable to all the involved parties including but not limited to the following: the institutions (universities and training institutions), their administrators, professors, doctors, students, patients, interns, security guards, parents (that now can observe their children in the classroom in real-time, or relatives that can monitor their patients from afar) auditors, etc.

Repurposing ADA Compliance University Lecture Captions for Forensic Audit, Security Surveillance, Google Video Transcript, Distance Education, CPE, Sponsorship and Fund Raising.

This will be the advantage, if our method ends up working, at the end of every class a student like him will not only have your stuff but have a fully burned DVD with the captions in it. Are you getting it? So what is the purpose of what we're trying to do?

HD High Definition Video Ensures That The View Can See Greate Details

Currently manufacturers optimize video recording equipment only for one of the objectives at a time. Therefore, we have to rig equipment that targets one of the objectives for other purposes. For example, HD (High Definition) digital video cameras have been optimized for movie production, yet we are using them for other purposes, such as surveillance, forensic audit, and instructional video recording. The reason that HD is so important for instructional video is that the student has to be able to read exactly what the instructor writes on the board. Likewise, for security purposes, the security guard has to see an intruders face and be able to recognize the intruder if he leaves the crime scene and walks across the university campus. To combine the HD technology with legacy technologies the HD digital video may have to be converted to analog video, and vice versa. For this purpose we are using several adapters such as the Plextor analog to digital, A/V (Audio/Video) component (RCA) interface to USB (Universal Serial Bus) interface.

To conserve resources some of the equipment has sensors that check if there is any activity. If there is no activity such equipment shuts itself off automatically. Hence, the instructor explains to the class that the equipment may shut itself off. Following is a conversation that explains such issues:

"If you don't activate it within 15 seconds or so, it shuts itself off. >> Did you use the Plextor now? And you're getting it?

Plextor.

So. I never see the image.   We are getting some image here.

I see captioning, yes. Okay. So I'm starting to record, actually. Okay. So we are recording now. So let me just give you a little explanation. But in the meantime explain the equipment. Because we are doing

something a little different here. Can we flatten this just a tad, like so? We have it on; we want to explain to you some of the changes that we made. Let's start the recording also here. Can you help me with burning?"

Using Multiple Camera For Backup and Recovery in Case a Camera Fails

Unlike a normal surveillance environment in a CCTV (Close Circuit Television) the monitor may not display the image in every classroom. However, in our situation, the monitor displays the image for the benefit of the professor and the students in the classroom. This way the hearing impaired student can read the caption in real time and understand the lecture, without having to rely on sign language. Some of the hearing impaired do not understand sign language, and most hearing students do not understand sign language as well. As soon as the main camera fails, the instructor and the students notice it and switch to the backup camera. Thus the instructor explains it to the class, as follows:

"What we're trying to do is first of all, our first camera fried. So this is our backup and recovery. You can see how good looking you are in the little viewer here. You see that?"

Business Continuity Planning Backup and Recovery HD VS SD High Versus Standard Definition

Business continuity planning and backup and recovery procedures are particularly important for security reasons. In the event that a master camera malfunction, another camera that was previously uses as a VCR (Video Cassette Recorder) recording highly compressed AV (Audio Video) to a Sony memory stick, takes its position, as a master camera. The reviewer of the AV recorder will be able to stick the memory stick in a telephone or a PDA that has a memory stick reader, and view the lecture without internet connectivity, or offline. The compression rate of the memory stick is high enough that it stores about 5 hours of AV lecture in a 2 Gig space. This way it looks perfectly well in a 2x2 inch telephone screen. In contrast, the HD video takes 2 Gig for 20 minutes of lecture time, it is optimized for HD 2X2 feet monitor, or even a movie theater size screen.

Sponsors Can Front the Caption Cost in Return for the Right to Display Their ADS

Computer manufacturers may be potential sponsors that are interested in advertising to college computer students. Such manufactures, could be IBM and or Dell corporations that have toll free vanity telephone numbers and matching domain names such as 800-Buy-Dell, etc. The instructor explains the idea of raising money through sponsorship to the students, as follows:

"Look at the screen here. Unlike before, now we have overlay, and this is for sponsors so we can put IBM 800, IBM.com. And IBM will pay. I want you to understand the revenue stream that will come to the university to be able to fund it. One of the obstacles that universities have now is they cannot afford to put a captioner whenever they want because it's too expensive so what they do is try to minimize and discourage the hearing impaired. Unless they beg for it, they don't give it to them. I told them that I'm even prepared to pay for it. But they didn't want to let me do those, because they said we are afraid to set up precedence, because everybody will come and demand to have a captioner because it's prohibitively expensive."

Universities May be Credited With Sales Commissions Derived From Their Recordings

In our case, if you playback the attached Google video hyperlinks you will see that ads overlaying the video. One ad at the top of the screen advertizing the (888)DVDU/CPE1.Org company. Another ad, at the bottom of the screen advertizing another company (305) OnTrial.org/net company. Important to note that these are not only ads, but also live hyperlinks, similar to Skype-out phone numbers, those are much more than just ads. These URL and vanity telephone number hyperlinks are active. The viewer of the video can click the device, such as a wireless phone or a PDA (Personal Digital Assistance) and the device will ring the phone number and surf to the web site automatically. This way if the viewer buys merchandize from the ads, the university and or professor will be credited by the sales commissions of the purchases. Such additional sources of income will help fund the captioning expenses.

Where is the Cash Coming From - From Banner Vanity Telephone Numbers and URL

"Office of Disability Services," http://www6.miami.edu/umbulletin/info/serv/arc.htm *is typical offices in a university that help comply with a variety of acts such as the ADA (Americans with Disabilities Act). Such office assists students with disabilities to compete with the remainder of the student population. Occasionally, such an office has trouble getting a note taker to take notes for a student with disabilities, and in such a case they may send the instructor a letter asking the instructor to assist in finding a note taker.*

When the instructors offer to fund a professional captioner, the office refused to collaborate claiming that it is too expensive, and it may set a precedence that is too demanding. "So I told them we are working on this project to generate a lot more revenue so you can fund it and have a lot of extra cash coming to you. And the problem is that many of them don't understand where the cash is going to come from.

So one of the sources that it's going to come from is from the sponsors. As you can see from this little screen there is overlays like (305)OnTrial.Org/Net. On the bottom in green -- on the top in green and on the bottom there is another advertising, (888)DVDU-CPE1. Org. These are vanity telephone numbers and URL (Universal Resource Locator - internet addresses) banner overlaid on the videos. The idea is to demonstrate how sponsors will advertise their services or products, and fund such transcript, caption and subtitles services. Likewise, it can include a security telephone number and URL, to report emergency or safety issues to the proper authorities by a click of a button.

Video Overlaid Banner Vanity Telephone Numbers and URL Automating Call & Surf

"This advertising is not just advertising; these are hyper texts that if you play it in a telephone, for example, and the telephone is equipped with Internet access and can use Java, there will be JavaScript. When the restaurant plays or clicks on it -- when the student plays or clicks on it, it will play the telephone number. 800, IBM and allow the students to surf to the website." Using such technologies as Skype, the Java programming language and XML (extensible Markup Language) the wireless phone acting also as a remote control and a video player, can also automatically ring the number displayed in the banner, and surf the URL that is displayed in the banner. This way the student, viewing the lecture video, can the operator of the sponsoring organization, as well as surf their web site. In this case the vanity telephone number will be (888)DVDU.Org or (888)3838.674, and the web site http://

www.DVDU.Org. This is 888 DVDU.org or CPE1.Org, whichever is available.

Commissions Earned Due to the Sales of the Sponsors Will Go Back to the University

So if it's a telephone device that can surf the Internet like some of the PDA phones, the student can click on it, it will port them to the website and simultaneously dial the 800 IBM number so they can order stuff from the web. All the commissions will go back to the university and the professor to fund this payroll process -- whole process. So this is why it's important from an additional revenue standpoint. That's going to fund the whole process in addition to what I explained to you before, about transcribing it, editing it professionally and making that editorial stuff available. So the way it will work is it will take the raw text coming out of the captioner. At the end of the class, let's say the class end at 9:00. By 9 or 10 minutes will be uploaded to a web server

The Professor Will Upload the Captioned Videos and Audios, and Text Transcript Files

">> What will be uploaded to a web server?

>> THE PROFESSOR: The text and the video and all this stuff that we are recording." The idea is to outsource the final editing to a professional counterpart around the world that will edit the transcript and correct it overnight Miami time. For example, in a computer auditing course that ends in Miami at 9 pm, Miami time, most of the text transcript will be available around the world by 10 pm, which is 10 am China time. Thus, a Chinese or an Indian professor of computer auditing can start editing the transcript, and finish editing it by 5 pm China or India time, and upload the edited version back to the server. This way the edited version will be available to the students early morning next day at the latest, if not a few hours later, by about midnight Miami time, and Midday China time. Likewise, we are recording several AV files in different format and different compression rates. We are burning high quality DVD-R, for immediate upload to an e-commerce site with a shopping cart that will be available for purchase as fast as the bandwidth permits. Likewise, we are recording HD (High Definition) .mp4 files, optimized for progressive download and internet transport, as well as highly compressed mpg files, optimized for playback on small telephone and PDA screen, on a removable media (SD, MS, and other flash cards). In addition we record also audio files in multiple file formats like mp3 optimized for internet transport and download, as well as voice files optimized for automated transcripts using software such as Dragon Naturally Speaking, etc.

Students Will Supplement Classroom Notes With Videos Audios and Captioner's Transcripts

"The Indian counterpart will be in India, for example, start the morning. While here it is night, they will be working all day long in India editing it, correcting it, formatting it, and at the end of the night our time and at the end of the day their time, they will be done and they will be uploading the edited version with a lot of corrections and much more -- much more readable than anything that can be done by a captioner. Because it will have pictures and notes from professionals with a lot of experience. And that's going to become available immediately as soon as they are done, which may be in the morning or maybe three or four hours later. So that students -- the hearing impaired can take that and supplement it," with the notes that they got from class, which they or other students have taken.

We Optimize Each Media For a Different Target Application, Use Them Also For Backup

In the event that one or more sources of content are damaged, the other sources can serve as backups. For example, the .mp4 HD AV (High Definition Audio Video) can recreate the .mp3 files and the standard definitions AV files. This method of recording and streaming the content of the class is also a part of a boarder business continuity plan and a backup and recovery method, for an event of a disaster such as a flood or a hurricane.

"In addition to that, in real-time we are also burning a DVD. So the students at the end of the class can take the DVD drop it in a DVD player without a computer at home. Any home DVD player that is connected to a television, and while they are going to sleep they can watch already the lecture and let it play all night long. Sometimes it will not only put them to sleep, but give them an opportunity to review the class. So this is the idea. What we're doing, taking the video output directly out of the camera, by passing all the equipment, running it into the encoder, adding the captions in real-time, taking the output from the captioning and rerouting it back into our system. That means not only can we broadcast it in real-time, but we can get multiple copies. One copy going to the DVD another copy going to the computer, and yet another copy going to our hard drive.

The important thing to understand, we record it here in multiple compression rates. One of the compression rates is a very high compression rate. Just to give you an idea. 20 minutes that we record here in the class in HD-- mean high definition video -- will take 2 gigs. Another level of compression is about 100 times more compressed. So instead of taking 2 gigs for 20 minutes, it will take 2 gigs for about eight hours. That high compression level is recording it directly to a memory stick, and that is another thing that we can do. We can hand them a memory stick and they can pop the memory stick into a telephone that has a memory stick device in it. The only difference is you see the picture is small. This is the size of picture that will play on a telephone. It will be perfect resolution for a telephone. It will not be very good if you use it on an HD television and you make it very large. But that will give the ability to the student that is hearing impaired to walk away from the class with an SD card, which is a secure digital card. Do you have any card lying around? Here you can see inside, you can see these little cards inside are called SD cards. These little memory cards. The important thing to understand is the compression is optimized for memory cards, which means you can take a memory card like that, pop it into your telephone that has a memory card slot, and you will have the whole lecture on that. You don't even have to have a DVD player. So if it goes out, if it works in another job as a night guard or some other job that lets him watch a telephone, he takes the SD card with a lecture, click it and he will get inside his telephone not only the video of the lecture, but also the caption of the lecture. That is another avenue of dealing with the hearing impaired. And now he can watch the class on his telephone and see the captions in the telephone. What is the problem?

We Are Also Broadcasting The Video Live For Free Using Free Services Such As Ustream

">> We're having now problems with uStream

>> THE PROFESSOR: but now we have a copy on the hard drive

with the captions for you. So you don't have to use that. This is the point I was trying to explain. This system will be much more robust, so if the computer doesn't work, there will be no way that everything will not work at the same time.

>> And also here you need Internet connectivity

>> Right. Here you don't.

>> So sometimes when the Internet goes down --

>> David: This will just be to broadcast

>> THE PROFESSOR: but many times you will want to broadcast. But at least you will have backups on DVD backup also on a hard drive

We Are Using A Hard Drive Recording Device With Wi-Fi Capablities As a Backup Procedure

If the computer connection to the internet WWW (World Wide Web) fails, we are using a standalone hard drive recording system with Wi-Fi connectivity, so it can upload the media without any connection to another computer.

"*>> And this device can broadcast. This is a Wi-Fi device. Our hard drive has Wi-Fi connectivity. This means we can upload or broadcast from here without a computer just in the event that all the computers don't work, we can go directly from this device to the Internet without having a computer.*

>> So we're trying all different methods here. That's why we need backup and recovery methods.

Repurposing Last Semester Classroom Captioned Video Audio And Edited Transcript Files To Continue Classes During And After Disasters As Part of a Business Continuity Plan

In the event that the university is submerged in water due to a flood, students and professors resume classes from alternative predetermined locations around the world. Participants in the course, professor and students provide an alternative address, far away from the present potential disaster area, to resume classes.

"This system is good for backup and recovery. It's good for archiving. Also think about the example of Katrina, Tulane University was out of commission for a semester. What happens to their students? They don't want to lose those students because if they transfer to another university, they may just decide to stay in that university. Here I can capture those students and say: At least take those classes that you had last semester. They are on, they are archived, those classes. Because a lot of times they were dispersed also to faculty members. You can do it for short periods of time and use it for continuity measure. So in disaster recovery and continuity, you can perform just as well."

American With Disablities Act (ADA) Compliance Financing Through Facilitating Distance Education, Continuing Education, Textbook Authoring, Surveillance And Forensic Audit

Normally, ADA compliance can be very costly. Therefore, universities are many time reluctant to grant it to students and professors with disabilities. Universities are also concerned about setting a precedence that will promote the idea; for fear that every ADA

person will demand a full video captioning service. The repurposing of such captioning for additional applications may help fund the compliance with ADA, and at the same time produce a mummer of additional pros and cons that we may have to deal with.

Continuing Professional Legal Medical & Engineering Education (CPE, CLE, CME, CEE) and the Requirements Of Continuing Education Units (CEUs) To Maintain Professional Certificates

Some of the additional applications of ADA compliance for the hearing impaired include but is not limited to be distance education, where some students that are not present in the class can view or read the edited or raw transcript of the class and use it for distance learning. Further, it can also relieve some of the students present in the class from excessive pre-occupation with writing notes, at the expense of listening to the class. It can also be repurposed for Continuing Professional, Legal, Medical, & Engineering Education (CPE, CLE, CME, and CEE). Professional organizations, such as CPA (Certified Public Accountants) associations worldwide, require their member an annual minimum Continuing Education Units (CEUs) of credit to maintain their certificate valid. Such alumni will only be happy to help fund their university while earning the credits that they need, especially if they can earn them also in a self-study mode, with the flexibility of listening to live, or archived audio and video clips on demand. Instead, most of them are forced to participate in such classes in the most inconvenient times such as after hours, at week-ends, which may also be the least effective times for additional learning.

Publish Or Perish And Integrating Textbook Authoring With ADA Captioning And Subtitling Google Videos

Integrating it with textbook authoring may give the instructors additional fiduciary incentive not only to publish, and comply with "publish or perish" paradigm, but also to prepare better for the classes and ultimately teach more effectively. Likewise, it will make the resulting textbook; a lot more attentive to the actual need of the students, rather than cater to the perceived student needs, or what the instructor thinks that the students need. As a result, the instructors may prepare more for the class, students will have a greater input into the process of textbook authoring, and most importantly the textbook revisions will be much more up to date due to the automatic and repetitive continuous quality improvement processes that are taking place.

Why Should We Let The Professors Repurpose The Captioned Edited Transcript For Test And Textbook Authoring Purposes Did We Not Pay Them Too Much Already?

Some administrators may be too short sighted to see the benefits of letting the professors repurpose the captioned transcript for test and textbook authoring and publishing purposes, claiming that they are already over-paying them, for dubious quality of teaching services. However, we have to understand the marginal added utility of such professor's efforts. Even the most experienced court reporter or captioner, as was the case in our study, where a professional court reported with about 20 years experience, did an excellent job, transcribing and captioning these videos, she made some mistakes, that may be crucial to the complete understanding and accuracy of the transcript and the captions. That is especially more prominent, as some of the professors are foreigners with a variety of accents that

makes it more difficult for a student, and a computer to understand and correctly transcribe. As such foreign accents become more and more common with the globalization of higher education and business this challenge becomes more and more relevant.

Professors Can Become More Empathetic And More Sensitive To The Learners Ability To Absorb The Material And The Captioner Ability To Transcribe The Lecture Correctly

For example, a case in point in this experiment was the name of a web site's domain name, which is "http://www.OnAFree.com." The captioner consistently misinterpreted it as "on free.com." Even though, it is a small mistake, which is oblivious when one watches the video, and sees the URL, as the professor demonstrates it, it may also be very confusing to a blind and deaf person trying to go to the site and check it out.

The professor needs the extra incentive to go back to the transcript of the captioner or the court reported read it carefully and correct it. Furthermore, the professor learns to monitor more effectively the captions and watch it more carefully in real-time, correcting it as early as possible, and preventing such errors from proliferating throughout the course, confusing more and more viewers.

Automated Continous Quality Improvement Process That Is Very Cost Effective

Likewise, it teaches the professor to be more sensitive to the students and listeners ability to follow and absorb the material, especially when the professor has been teaching this subject for some 30 years (30 years times 10 courses a year, about a total of 300 times) and can reach an extremely fast pace of speech leaving even the fastest court reporter, students and listeners way behind the ability to listen, absorb, process, and transcribe correctly the lecture. A typical professor that spend a few years working in the domain of say "Management or Managerial Accounting." Following that, that professor spent another 20 or 30 years teaching the course of "Management Accounting" as exciting as that may be to some professors, it may get old after a while. This is especially true if the audience of students is usually totally uninterested in the subject, has poor preparation and aptitude to learn such a topic, and most importantly is required to take such a course, due to the degree that they pursue. The professor may become bored with the subject, tired of teaching it, feeling that there is very little to be gain by listening, viewing and reviewing his own lecture, and teaching it one more time.

Yet, when such a professor does listen, and does view and reviews his own lecture one more time, especially when it includes a captioned transcript, edited by another expert from around the world, this professor may be surprised to see, how much more there is to learn. Not only will the professor learn something new about the topic, but also about himself and ways to improve the professor's public speaking and communication skills. This is a valuable lesson that even the slowest learning professor may experience due to such meticulous and thorough review of the professors' videos, audios, transcripts, and overall demeanor. Such a system may induce even the most reluctant tenured professor to improve his teaching, and in turn improve the learning experience of his students, as well as advancing the field of study one more step forward.

This will induce, over time, an automatic continuous quality improvement process that will lead to better and better work for all

parties, on a grand scale, assuming that it will be adopted by many organizations. It should have a positive competitive affect, on the university, the professor, the students, the captioner transcriber or court reporter, the security system and the entire system. As we apply a broad integrated systems approach to the whole process, it will become a self-fulfilling process. Such an automated self-fulfilling process of continuous quality improvement can be very beneficial, extremely cost effective, and contagious. So more and more institutions will adopt it making it a standard of continuous quality improvement on a very large scale.

Integration Into The Surveilance And Forensic Auditing System May Impove Security While Reducing Cost

Integrating the surveillance systems into the video and audio recording and captioning process will reduce the cost of recording the lecture exclusively for ADA compliance, by sharing the cost for multiple applications. More importantly, it will eliminate the classic problem of "Ghost Security Cameras and Ghost Security Guards." These are the common problems similar to the famous case of the "2007 Virginia Tech University" killing of more than 30 students and professors, and mal functioning or none-existing security surveillance system that permitted the killer to walk away from the killing zone for 2 hours and then come back and kill another class of students and professors. This is consistent with the famous symptom of high security camera that mal functions for years without anybody noticing, a high security door that is left ajar, so people can come in and go out frequently without using the key. Likewise, it is typical of the "ghost security" officer who is missing or "asleep at the wheel," and endless litigation about security over-billing that drag forever, costing the tax payers a fortune and do not help improve the public safety and security, as reported by the Miami Harold.

Ghost Security Guard Excessive Litigation Costs and Forensic Auditing

Miami Harold reports the details of such cases in a recent article, as follows: "http://www.miamiherald.com/news/breaking_dade/story/486235.html." "30 months after it began, 'ghost posts' audit still pending." Posted on Mon, Apr. 07, 2008, by LARRY LEBOWITZ AND SCOTT HIAASEN, llebowitz@MiamiHerald.com. " In August 2006, Miami-Dade County's top auditor found evidence that Wackenhut Corp. had billed the county nearly $1.6 million over a three-year period for 69,000 hours' worth of work that its employees -- private security guards who patrol .."

Integrating such activities into the security system, will save some of the recording costs and technical difficulties, but more importantly, it will force the security staff to work. Students and professors will be continuously monitoring the recording and live broadcasting of the classes to ensure that they get the AV files and transcripts that they need. At the same time they will be forcing the security staff to operate the cameras, and the security infrastructure, in tip-top shape, instead of waiting until it's too late, like the tragedy of 911 at the US, twin towers in NY City, etc. And, in the event of security lapses the audit and the legal teams will not have to wait for 3 years, 69,000 hours' worth of ghost security billing later and $1.6 million later. Instead, they will offer prompt deficiency remediation that will "nip the problem in the bud." Likewise, the auditors instead of working on it 3 years after the fact will be more pro-active, preventing problems for mushrooming 3 years later, and $1.6 million too late, to no avail.

Improving ADA Voluntary University Compliance Relieving The Disabled From Begging

">> This is another issue that I wanted to explain to you. Right now universities are saying: What do I care about these ADA people? I'm going to do the minimum that I need to do with compliance and let them go to other schools or whatever they want to do, because I cannot afford to spend so much money for captioning.

But what we are telling them, from now on it's not only going to be for ADA students" Only, what you are going to do is take the videos and store the videos off-site. In the event of a disaster, that the whole university is submerged, you are going to lose a lot of money because the students like what happened to Tulane University, it was submerged. A lot of students from Tulane University couldn't graduate unless they switched to another university. And a lot of professors couldn't afford to stand a couple semesters without income. So they went to another university. In the meantime the university lost a lot of money because the students that went to UM and other universities, once they settled here, didn't want to come back."

What Happens When Disaster Strikes And The Business Continuity Plan Is Also A Disaster

"The university lost the professors and students. The students were upset with the university because it caused them inconvenience. But what really matters to the university is the bottom line and the cash. They couldn't recover the money. Those students are lost for good and the professors are lost for good. What we are telling them to do instead, what we will do is take the videos from last semester. Repurpose them for the next semester and tell the students: Don't worry about it. If we have a disaster the university is submerged. We are going to switch instantly to online. All the videos from last semester will be used as substitute for the current semester. Made available to you free on the Internet and the notes and everything else, and we will continue the class just the same. You don't have to go to another university. Professors will get paid and students will pay and graduate just the same. The only difference, instead of having everything live we will do as much live as we can."

Such services as real-time WWW (World Wide Web) broadcasting, web-casting, video pod-casting, and internet archiving used to be prohibitively expensive. But more recently they have become total free and very user friendly. Such web sites as Google Video, You Tube, and Ustream are making such services very accessible even to the least computer literate person. More over the younger generations of students and professor are much more comfortable with the new media than the older generation of decision makers and administrators. Therefore, such trends of using new media more effectively will only intensify in the future leading to such integration among seemingly unrelated activities.

CTI (Computer Telephony Integration) and VOIP (Voice Over IP Internet Protocol)

This is where CTI and VOIP come to the rescue. Professors can lecture over the WWW for free, and the students can listen and interact with the professor and the other students in real-time, using Skype and other similar free services.

"Skype cast -- the professors will Skype cast the lectures. But that is not as good as live video. So we will make available the videos of the professor for the entire class to the new class and use it as a substitute. You will be able to get the videos for free and you will be able to get all the other materials, and everybody will continue just the same. So those that need to graduate, you don't need to worry about postponing graduation. And professors that need the money don't have to worry about us stopping the payment because of the disaster. You will get paid just the same. You will just have to designate an alternate place where you will move and have an alternate e-mail and everything else will continue as usual. The only difference is we will not run it from the computers in the university. Because they will be submerged. Instead, well have an alternate location that is out of the hurricane disaster area. So for example, if I'm Tulane University in New Orleans or whatever disaster area it is, the alternate place will have to be a place that is far away from a hurricane area like let's say New York City or Montana or Hawaii, or another location. And instantly, as soon as the university is submerged, the whole university switches to the alternate location and continues with the backup and recovery plan just the same. And then they will say: Hey, this is another story now."

The Reaction Of Administrators To The Idea of ADA Compliance Integration With Security

"Now you're telling us that while we comply with ADA we're also securing our cash flow in the event of a hurricane and this becomes part of our business continuity backup and recovery plan. And for that we spend millions of dollars anyway. So we will just take this and then we integrate also the recording, we don't need to have a cameraman because we will use the surveillance and recording system. And that will prevent disasters like Virginia tech where someone comes into a class, kills a couple of people at the university premises, then goes off campus, companies back two -- comes back two hours later and slaughters another 30 people."

How Will The New IP Digital Security System Work Better Than The Old CCTV Analog Security System

"Right now we have to secure our surveillance and security system in the event somebody kills a couple students, immediately the surveillance system will kick in, alert the authorities in real-time. Announce on loud speakers there is shooting in" classroom "102 in the Jenkins building. Please do not come in. Inside the Jenkins building there will be speakers that will announce to the killer: We are watching you on our telephone in real-time. The police are waiting outside, please lay down the arms and stop shooting and everything will end up peacefully. Just as an insurance policy, a lot of universities have to spend a huge amount of money. But they don't think about the idea of complying with ADA compliance and instructional materials. So all we are telling them is why not killing three birds with one stone: Take care of the ADA, take care of the distance learning and your security needs, and your business continuity, backup and recovery all at once. And that way you pay once, you get all the objectives done, and you get in addition to that, the real-time transcription. Even translation and editing. And when your transcription comes to India, let's say, it is inexpensive enough to get also translation added to it."

This way when a dispute arises, instead of having to go into years of forensic audit work, and endless litigations, the solution to the dispute will be only some quick Google Searches away. The auditor can retrieve the videos for free attach short clips to their working papers, and provide hyperlinks for the rest of them, resolving the problems earlier more efficiently and more cost effectively.

Burning High Definition High Quality DVDs To Supplement The Lower Resolution Video Pod-Cast

"So when the edited DVD comes out, not only will it have edited subtitles and captions, but it will also have multiple languages and DVD you can have up to seven different languages. Which means if the lecture is done in English, for example, the Indian can produce another -- take the captioning English and translate it to Spanish? Let's say the top five languages. For example, Spanish, Arabic, Chinese and Indian. And then the DVD that will come out of them will be much more saleable in India. We are talking about a billion people. In China, another billion people, and in Latin America plus Spain and all the Spanish countries, another billion people and another billion Arabs. So you are talking about -- that's making it tremendous, especially since this university that will do it will have a monopoly worldwide that the whole worldwide will catch up and it will be a huge sensation, from a PR standpoint. So that's basically the idea of leveraging the ADA and combining it with a bunch of other things. And then the expense of hiring a captioner looks like nothing compared to all the benefits and the stream of cash flow that the university can experience."

Professors Concerned About The Loss of Privacy And Their Intellectual Properties

"The problem is that you have professors that will be reluctant like I'm a law professor and I'm paranoid about my intellectual properties and I will object to that. So you come to the professor and tell them: Look, now your little concerns about intellectual properties are nothing compared to the amount of money that you will may if -- first of all, you will become an instant author. As soon as we take the transcript and edit it and publish it, you will be the author. So without doing anything besides your measly lecture, now you will be paid royalties for every sale that we make. So this law professor that typically will be objecting to it because he thinks this will be infringing on my book that I'm going to write. Now he gets editorial royalty, and the publisher and the university will have the incentive -- the university will get a cut from all the sales also. So there will be huge incentive for them to help promote it and then the expense that they pay to the captioner will look like nothing compared to the huge revenues, especially since there are very little expenses since it comes out of the existing surveillance system."

Universities Publishers And Students Will Have An Automated Vetting Systems Screen Rating And Ranking Professors Classroom Videos Audios And Transcript Files

Due to the internet way of working sites such as Google Video and Digit help produce an automated vetting and WWW indexing system. Surfing students view the video pod-casts, web-cast, and other materials have the options to rate, rank, and comment them. These comments, rankings, ratings, create an automated vetting system that publishers, future surfers, and others can use to find the best of the best in every category. That way students are no longer limited to their own professor lectures, they will be able to find other professors lectures about the same topic that may explain a specific topic better than their own professor, leading to an overall long term improvement in leering and teaching.

"So that is basically some of the ideas that we are working with, and when the university fully sees that it works, they will be only glad to extend it to the other classes, regardless of the idea or not and that will make it a lot better. Because instead of the ADA compliance that is the minimum that you will be giving -- they will be giving you, you will have DVDs, different languages, and it will be much better quality than just an unedited version. You will have an edited version illustrated and so on. At the most one night after the recording will be done."

Integrating Computer Assisted Adaptive Testing To The DVD And Video Pod-Cast Mix

">> But there's another area that can be added, and that is computer assisted adaptive testing. Remember we talked about recording clips, and on the DVD we break down into a one-minute clip, and we've -- we can create, then, a pre-text of -- a pre-test of questions, and we can map the clips to the questions.

So when a student gets one of the questions incorrectly, they can request, then, to get an explanation from the video to explain their deficiencies.

>> And we can demonstrate it, since we can use this monitor, if you go to -- if you can go to" http://www.OnAFree.com, "and go to the section OnAFree.com to see a sample of this test, we will demonstrate to you a sample of this test. Sam can you turn off the lights a little bit so we can see the screen here. Something happened to our computer here."

"Okay. What we are trying to do now is we are trying to browse to OnAFree.com to demonstrate to you this testing system. By the way, this test, since it is written in the Java programming language, will run off a telephone. So let's say that the disabled person wants to practice after the class. He doesn't have to even have a computer. Go under" the OnAFree.com" web site "and see the section, the button on the left-hand side that is listing 'Internal Control Evil.' is the second button from the top or the third one. And inside it scroll down to the point that you see a video -- what is it called?

>> 1 secure policy video.

Interactive Java Script Adaptive Video Assisted Testing System That Can Run On A Telephone Removable Media Card, Web Server, Or A Stand Alone PC (Personal Computer)

">> Click on it, and it will open a screen which is a test. This screen in the upper left corner has a place to put your name. Type your student name there. Let me put on my glasses because I cannot see one thing that I'm trying to aim at. So now I can see it. You see that there is a little space on the top where the student is going to type their name. Okay. Lee. And now you see there is a question. The first question reads: Service provider documented security policies, plans and so on. Let's say that the student answer is going to be true. So click T. for true. Notice that underneath the question there is a little thumbnail. Click on the thumbnail. What that will do is open a video that shows the professor explaining the question.

Java Test For Security Policy Video Assessment Scoring Internal Controls

Appendix 2 shows the "Security Policy Video Assessment Scoring Internal Control Compliance." Much like other tests, it calculates the performance of the organization regarding compliance with internal controls requirements of Sarbanes Oxley, ADA (Americans with Disabilities Act), etc.

The same kind of assessment can apply to any academic or training course.

As we reveal the source code, we can see the Java script statements, following are some examples: The "<noscript>" statements is setting up the Font Color, "<h3>Javascript not enabled</h3>. Then, the "</noscript> terminates the previous block of code. The "<script language='JavaScript'>" script language statement declares Java as the script language.

The following statements demonstrate the Java script If statement syntax:

"if (navigator.appName.indexOf("Netscape") >= 0) {

if (parseInt(navigator.appVersion.charAt(0)) < 4)

Output of This Assessment About Security Policy Video Assessment

As we can see the output of this assessment show the "Name: University of Miami," the "Score: 1 / 3 points (33%)" and the title of this assessment: "1SecurityPolicyVideoAssesment." The assessment proceeds with the type of question being "True/False," Indicate whether the statement is true or false. Following is the "Narrative for .112~ Service Provider documented security policies, standards, plans and procedures are available for review." Following is the correct answer: "T," the score of this correct answer: "1." and the narrative of the 1st question ".112~ Service Provider documented security policies, standards, plans and procedures are available for review."

Likewise, it shows the "ANSWER: T," and the rationale "Rationale for .112~ Service Provider documented security policies, standards, plans and procedures are available for review." The assessment then show the "POINTS: 1 / 1," etc.

Screenshot 5 shows the Expert Video thumbnail it will displays the message: "movxxxx.mpg. When we place the cursor on the thumbnail it displays the message: "movxxxx.mpg. After pressing the [Score of 1/3 points (33%) for Compliance with Security Policy Video Assessment Internal Control Requirements calculated after completion of this survey assessment. After the users press [check your work] button the assessment calculates the score.

Hyperlinked Vanity Telephone Numbers & URL Banners Sponsors ADS Overlaid On Videos

"So this is a video, and you see the little advertising promotion there or sponsor" (305)OnTrial.org, "which is advertising a telephone number and website," URL. "You can see that this video will have captions too. And just for the sake of speed, let's go to the end. We are going to skip the last two questions. Close the video. And go to the end. That's more questions that we will skip on purpose. Notice that at the end there is a button check my work. You click on check my work and it will tell you -- leave the message for a second. It will tell you, you did not complete blah, blah blah. We know, say okay. And it will give you your grade. Go to the top and see that our grade is 33% out of 100. Now know when we go to the end it has also remedial information so there is another hyperlink that will explain to you if you click on it -- and I took out the video, so if you click on it, it will not play the video because I didn't have space on my server. But it will play another video that explains to you why it is important.

Computer Assisted Testing (CAT) Integrated With Classroom Illustrative Video Clips

"In this case it deals with the SOX that are Sarbanes Oxley

compliance. This is a" part of a computer auditing class and test of compliance with internal control procedures for an IT (Information Technology) audit requirements. But, "it will apply equally to any test. The hearing impaired students can take this from an SD (Secured Digital) card. Put the SD card inside the telephone, listen to the lecture, then take the test and when he's done with the test you see that the score was 33%. He can either gain connectivity from the phone and upload this to the server or take the SD card and connect it to a computer and upload the score to the server this way and do his quiz and homework that way off of a phone. And that is an example of a test that will be generated pretty much automatically off of the videos of the class."

Automated Test Bank Generated From Lecture Captions, Transcripts, And Edited Text

"The way the program works, it takes the text that the captioner produces, it parses the text, and it find statements in the text that" the instructor said during the class -- and it makes" a "true/false questions out of it. It takes the statement as it is and then" it "becomes a true/false question, whose answer is true, and then it reverses it, and it makes out of that a true/false question whose answer is false."

The program than sorts the True/False (TF) question that are True (TFT), and TF questions that are F (TFF) and creates Multiple Choice (MC) Questions out of them. The program combines 3 TFT into 1 MC for which choice D All of the above is the correct choice. In this way the program creates a bunch of MC for which choice D "all of the above" is the correct answer. In contrast, the program picks the TFF, and forms from them more MC for which the correct answer is the last choice E "None of the above." In similar manner the program creates an objective test bank very quickly and totally automatically.

This is the way that it automatically builds up a test, just from the text that the captioner types in. And then of course in India they can take it and already edit it a little more and make a more sophisticated test. But that already costs more money and takes longer. But you saw an example and demonstration of the test that we were talking about.

Minimizing Cost And Maximizing Revenue Produces Foundation For Profitable Enterprise

Obviously, minimizing the cost and maximizing the revenue is a simple formula to maximizing the profit, the "devil may be in the details." The details of the trade-offs between cost and quality, the higher the quality, the higher the cost may be. Or, alternatively, the lower the cost the lower the quality may be. The trouble is that as we reduce the cost, approaching a marginal cost of zero, so may the quality go down to a point that the entire project is entirely useless, due to the quality being so low. Marginal cost is the difference in cost between 2 levels of activity. For example, if the cost is a fixed cost such as rent, then the marginal cost is equal to zero, due to the fact that the cost of the rent does not differ among various levels of activities, within a relevant range. For example, if we pay $100 to rent a hotel seminar room plus a speaker, and host 10 peephole and $20 a ticket, our profit will be 10 people * $20 = $200 less cost of $100 producing a profit of $100. If we raise the level of activity to 15 people, within the relevant range of 50 people (maximal capacity of the room) our marginal cost will be zero, and our profit will grow to 15 people * $20 = $300 less cost of $100 producing a profit of $200.

Time Is Money, And Minimizing Time To Market Minimizes The Cost While Maximizing Competitiveness

The turn-around time of producing the contents of the captioned

videos, audios, transcript text, tests, translations, etc, cannot physically be done faster than our proposed methodology, taking advantage of outsourcing, and opposing time zones. This explains, why we are using automated transcription, and offshore surveillance and recording controls of the PTZ (Pane Title and Zoom) cameras in Miami, by operators in China and India in opposing time zones, and reduced cost by more than 90%. Opposing time zones are time zones such that when it is 9 pm in Miami, it is 9 am in China. That is especially significant in high tech areas when frequent changes render outdated legacy systems obsolete quickly. Thus the shortest time to market grants a temporary monopoly to the fastest operators, simply because they are the only choice available at the time. As time goes by other operators may arrive to the market place, but by this time, the lion share of the market may have been already taken by the speediest competitors. Such areas may include computer technology, medical innovations etc. This explains why we emphasis the fastest possible turn-around of an evening class that end in Miami at 9 pm, whose work continues around the clock in China or India starting at 9 am China time. Such a job can end by 12 noon China time, or 12 midnight Miami time.

An extreme example that makes a point is an Emergency Room (ER) example. In such a case, where such work will be crucial is medical technology, such as X-ray services, part of a medical school applied to real ER patients, and a medical interns radiology class. In this case the Radiology Professor may demonstrate the X-ray on an emergency room injury case. The professor takes the X-ray in Miami at 9 pm; upload the X-ray to the WWW at 9:10. At 9:30 am China time, his Chinese counterpart finishes the diagnostics, uploading the results back to the original Miami x-ray portal to be used by the Miami nightshift of the ER, where the professor is long gone, but the work continues non-stop, the night shift interns and doctors get the analyzed images, providing the appropriate, and cost effective and timely service to the patient. Likewise, the Radiology Professor at home, that initiated the X-ray, can have a quick look at the results to make sure that everything is alright just before he or she goes to sleep. If something goes wrong, the professor can then kick start the predetermined business continuity contingency plan for backup and recovery, and then go to sleep.

Driving Marginal Costs To Approach Zero, While Maximizing Potential Revenues

We drive the marginal cost to zero by using PTZ network security cameras (no camera men needed), cameras are connected to the computer, a stand-alone independent DVD Burner (no computer needed), and a stand-alone Wi-Fi Hard Disk Drive recorder (no computer needed) uploading video clips directly from a router to the WWW. The camera contains a web server and an SD drive, controlled by a wireless Wi-Fi telephone acting also as remote control. The captioner is very expensive for the first session, but all subsequent sessions of the same class, can use the captioned video of the first class, and therefore, their marginal cost is also approaching zero. So once, we captioned 1 topic and achieved it, we can make it available to all subsequent classes of an identical topic. For example, let's say the professor teaches Break-even analysis in one session of a Management Accounting class, and we stream and archive the captioned video, then all other 10 sections of the same class can use this clip, with a marginal cost approaching zero. The streaming on UStream.com is free, the progressive download and storage on Google Video is free, the DVD-Burning storage server plus the shopping cart of Kunaki.com are free, and therefore, we keep the cost and the time to market to a minimum.

That cost reduction is especially important for academic topics whose marginal revenue approaches zero. It may be offensive to some professor to realize that their content has a marginal market value that approaches zero. In other words, if their course was not required for a degree, they would have no students, even for free. In such extreme cases, our model will still work because in the most extreme case, that nobody wants any of these contents, besides the ADA viewer, our method minimized the cost, and provides the flexibility to focus on areas that are in higher demand. Since we cannot tell in advance which area are in demand, we can use the automated vetting system of Google Video ranking, ratings, number of hits, downloads and views, and pick the highest demand areas, again at approximately zero cost. Using such a process, we can continuously drop the losers promote the winners, and keep trying new area to find out what works best.

Using The HD (High Res) Camera If The PTZ-NET Cam Is Out, And The LD (Low Res) If Both Are Down, As A Backup And Recovery Business Continuity Contingency Plan

"≫ So what our project is focusing in is reducing the costs.

≫ And increasing the revenue.

≫ And also getting it to market quickly. So by the end of the evening, you already have a DVD produced in raw form. You already have the archive. You already have the broadcast

≫ And you also have the test

≫ And you have the test. We have problems of connection. Do you want to turn off the Sony, a DVD to see if it would work?

The previous camera we were using was HD camera. The video signal is much stronger. This is standard definition video, and the standard definition video, the signal is not quite as strong. So when you have multiple devices, the signal is not that strong. It cannot -- many times it cannot get to the computer. And we had problems getting it to the computer even when we didn't have all the equipment connected. So standard definition video signal is not quite as strong as high definition, and that gave us trouble in the past. Unfortunately our HD camera went out. Temporarily hopefully. I will fix it later. But I tried to fix it within the five minutes in the break, and I couldn't.

≫ So I think this concludes.

≫ This concludes the presentation and we will upload our video here, and it will be available for distribution. It will be available for distribution within 10, 20 minutes after the class.

Now to explain this equipment here. If you don't mind one more time, I would like to aim the camera on so we can explain all this equipment. So this is probably the last time we are going to do this.

(End of captioning file.)"

Legal and Ethical Privacy Issues

This is an example of a transcript without time codes. It was created as a Word Document.*

**This is a text file that was produced by a real-time captioner to ensure effective communication for a person who is deaf or hard of hearing. This file is not a certified, verbatim record, and it should not be quoted as such; nor should this file be distributed without appropriate authorization. We have received a written consent from both the hearing impaired person and the professional captioner on

4/16/2008 for this CIS (Computer Information Systems) course, this is part of Computer Information Systems Course about web technologies development. **

The legal and ethical issues are beyond the scope of this study, as we are focusing on the operational, technical, technological and the ROI issues. For now, these issues are challenging enough, in the near future many of our issues will be resolved, making it a mass market appeal. At that time, users will have to deal with the legal and ethical issues that this study raises. But for now, since nobody else but us, is using these combination of applications and integration, we do not have to worry about a mass market appeal and its related problems.

* This is an example of a transcript without time codes. It was created as a Word Document.*

** NOTE: This is a text file that was produced by a real-time captioner to ensure effective communication for a person who is deaf or hard of hearing. This file is not a certified, verbatim record, and it should not be quoted as such; nor should this file be distributed without appropriate authorization. 4/16/2008 CIS, this is part of Computer Information Systems Course about web technologies development. **

As Lee Lefkowitz (2008) describes the current state of art of the captioning, subtitling and real-time transcription is still way too expensive for the average institution, despite all the new media and new technologies. Following are Lee's descriptions:

"In recent years, emerging technologies has paved the way for Internet captioning to become available to individuals who wish to take advantage of new developments. Internet captioning is the combination of Internet videos with captions that can be read in any language. This project was completed to examine the methods in which Internet captioning could be conducted as well as an examination of the costs involved in providing the service. Internet captioning required the use of technical equipment as well as a stenographer. The costs of operating the technology were relatively small and could be utilized as a method of access for ADA compliance. Internet captioning is being developed in its current state to be expanded when federal legislation requires compliance with internet videos in the near future.

With the rise of YouTube, MySpace, and Google, Internet video has become a recent craze and part of everyday life. Recently, news stations and other television companies have begun broadcasting their shows live via Internet. One problem that exists despite these advances in technology is the lack of access it provides disadvantaged individuals. Disadvantaged individuals can be anyone that is deaf/hard of hearing, speaks another language, or relies on captioning for access to television shows, newscasts, or other multimedia. The purpose of this research project is to create opportunities for those people to have meaningful access to Internet video. Internet video can be used for a multitude of needs: entertainment, educational, or informative. With the expansion of video devices such as webcams and security cameras, consumers can easily access video sources across the Internet."

The trouble is that the extra camera in the classroom and the need for camera man place additional technical burden on the institution and the instructor and can be quit costly. The alternative to this is to use the existing surveillance system, connecting it to the computer and the DVD-burner that is typically available to the instructor in the classroom, and use it instead of the extra camera, the extra camera man, and all the equipment associated with it. The best, if the budget permit, is to use both approaches at the same time. This way one system can back the other system up. At the end we can choose the best system,

and discard the archives of the other system, or simply offer more choices to the viewer and user of the AV archives, and broadcasts.

To keep the discussion simple, the next section will ignore the surveillance and integration of the captions with institutional and instructor perspective, while focusing on the ADA student perspective.

Hybrid Model:

The hybrid of an Internet captioning service would provide the following: an educational website where students can enter the "virtual classroom." The students will be able to view the instructor on the video screen giving a lecture. The captions will be embedded into the videos for easier understanding of the material. Active participation is encouraged because the students will be able to ask questions and comment via a chat window below the video window. After the lecture is completed, the video with captions can be uploaded to the site. Students can also have the option of purchasing lecture notes or transcripts of the lecture from the site. The method to achieve this would be that the professor creates the video source by plugging a video camera into the computer. The captionist (who does not need to be present) can receive the video source and plug it into an encoder where it will be combined with the captions. The new video source will then be sent into the "virtual chartroom" where students can view and participate in the classroom session.

Goals:

- Reduce costs

- Make classes available online with more participation

- ADA compliance"

The important goal that we ignore is creating a new set of revenues cash inflows, to the instructor and author of the materials, as well as the institution, whose premises and infrastructure facilitates this effort, and the publishing company that may be involved in publishing text books and tests that the author will create from the captioned transcripts. However, such extra revenues are very important since the raise the ROI of the entire activity, and its mass market utility, well beyond ADA, and a sing ADA student.

"The goal of this project is to be able to project closed captioning across live Internet video. By doing so, an individual can watch videos via computer and be able to understand what is occurring as well as participate if necessary. Not only has Internet video risen in popularity, but the increase in online educational courses has developed as well. With closed captioning, many online educational courses can now have professor lectures streamed across the Internet and allow disabled students, foreign students, and even regular students to understand what is being said as well as participate. The universities can benefit from these costs, because they can allow more students to sign up for online classes. The costs of the captionist and technical equipment can be offset by the additional quantity of students that are enrolled in the courses. While the costs of implementing this technology may be high, it will result in greater profit margins for the school and professors. Internet captioning will also meet ADA compliance requirements and allow students all over the world participate and receive hard earned degrees they may otherwise not be able to obtain.

Current Market:

Devices for Internet captioning have been developed, but are not being utilized for a variety of reasons. The cost of purchasing the devices and a trained stenographer can become costly for a company to

pursue this type of technology. The lack of regulation means companies are not required to provide open access via the Internet. There are some small market companies that are utilizing the technology, but no company has a major share of the market. It is predicted the market will increase exponentially once legislation is passed with increased pressure from advocacy groups and other non-profit organization. The development of the technology to where it becomes self sufficient and cost effective will further motivate stakeholders to lobby for regulation.

Problem:

The FCC rules that require TV shows to include captions don't apply to online programs (one exception requires federal agencies to caption speeches and other videos they provide online). Some groups, including the National Association for the Deaf, are lobbying lawmakers to expand the captioning requirements in the Telecommunications Act of 1996 to include the Internet (Lavalee 2006). Because online captioning is not required, many companies do not spend the money to add captions or subtitles to their videos.

The Project:

1) Before beginning the experiment involving the hardware listed above, a website was designed and created to provide video transmission across the Internet. The website, captionyourvideos.com, was registered using a free domain name from Microsoft Office Live. Additionally, all programming was done through the website.

2) To create the video source, the Samsung Video Recorder was connected to the DVR Station and the Video Distribution Amplifier using RCA cables. The output from the VDA was connected to the input on the encoder.

3) The captioner's stenograph machine was hooked to the captionist computer with captioning software included.

4) The video and the text input from the captionist mix in the encoder. The encoder adds the captions to the video.

5) The encoder was connected to the input of the ConvertX.

6) The ConvertX output was then connected to the laptop via USB/Fire wire cable. The broadcast computer was running Winded as a mode of projecting the DVD video on the laptop.

7) The video signal was then broadcasted onto the video host's website (www.ustream.tv). Upstream relayed the video signal into the embedded video box on the end user website. The end user website is under www.captionyourvideos.com. The end user is able to view the video along with captions on this particular website and actively participate using the chat box that was embedded as well.

The Experiment:

The goal of the experiment is to devise a plan that will create captioning opportunities for students in the future. The ultimate goal is to be able to stream live video with open captions onto a website where viewers can watch in real time or with a minimal delay. The following are the three major portions of the experiment we wished to complete:

First objective:

The first objective was to receive a video signal through the Toshiba laptop. Using the WinDVD program, we were able to receive a video signal through the computer. Next, we were able to embed captions from the encoder into the video screen. Captions and videos could be recorded onto DVDs or the hard drive. (See Screenshot 1).

Second objective:

After securing a video signal through WinDVD, an RCA cable was attached to the output of the encoder. The RCA cable went from the output of the encoder into the input of the digital projector. We were then able to utilize the projector to show a lecture on the screen with real time captions as well.

Third objective:

The final objective of the experiment involved streaming a live lecture across the Internet with open captions on the video. The video was broadcast live from the captionyourvideos.com website, under the "Professor Lectures" page. Video hosting was done through a third party site, ustream.tv (See Screenshot 2), where the video could be broadcast as well as recorded, with captions included, to the client website, www.captionyourvideos.com. (See

Discussion

Our experiment reveals the promising capabilities of internet video captioning services for future generations. The project was completed over a period of 5-6 weeks, displaying the technical expertise needed in a short period of time. Our crew consisted of approximately 4-6 individuals. Each time the hardware was assembled, we were able to improve our assembly times each week, thereby giving us more time to work on the project itself.

There were many problems discovered throughout the project. First, the hardware and software must all be compatible and up to date. By using a digital video recorder with an analog encoder, we were required to use 2 converters to convert the video from digital-analog-digital. Second, the processors of the laptops were not inadequate, but they tended to freeze and slow up the computer. By using a high-powered computer, individuals may benefit in obtaining better results. Third, real time captioning requires highly specialized equipment and a highly skilled captioner to operate the equipment.

Despite the obstacles of the project, the video captioning objectives were completed. The website was able to broadcast live video with captions embedded from captionyourvideos.com. Additionally, video signal with captions was broadcast on a classroom screen while a live lecture was being performed. The primary objectives of the project were completed. With these beginning tools, it is hopeful that the captioning process can be streamlined to provide a more efficient method of captioning Internet videos.

One of the parties that can benefit from Internet captioning are real-time captioners. Captioners are a vital resource in this technology since they provide the real time captioning services. By offering their services online, they have the capability of working with a professional development programmer to create their website in which they can stream a client's video and caption it as well. The end users will then have to register into the captioner's website to view the video from the webcast. The service can be offered to a multitude of clients: educational institutions, courts, television stations, and others. The technology will also allow captionists to reach clients in other cities or countries without ever having to leave home. With this development, captioners can establish an early market share in the captioning industry and become one of the leaders in Internet video captioning.

The use of internet captioning can be combined with other specialized equipment appearing on the market today. For example, security cameras have become highly developed that they often have their own web servers. If a security camera is in the classroom, a cell phone may be used as a remote to control the angles that the camera is pointing. Additionally, captioners may be able to intercept a video signal from the security camera's IP address and caption the video with open subtitles. As new advances are made in technology, new and innovative uses of this equipment will continue to arise.

Recommendations

After producing live Internet video with captions, there was plenty learned that could be applied to future development. The main realization from this project is the potential for future development of access for disadvantaged individuals over the Internet. Below are some recommendations based upon the project for future development:

1) Require regulations regarding Internet Video Captioning

As noted earlier, the government currently does not require captioning on Internet videos. By forcing the government to enforce regulations on Internet videos, the market for Internet captioning can be opened exponentially. Forcing the government to consider legislation will require awareness from a variety of groups: the media, non-profit organizations assisting the disabled, educational institutions, and individuals themselves. The government has the power to open the internet captioning market, just as they did with television captioning.

2) Streamline hardware

As noted in the project, one of the cons was the amount of equipment needed to make the transmission. Using compatible hardware and software can eliminate many pieces of unnecessary equipment. If the video recorder is digital, then utilize a digital encoder and high powered computer that can control all the activities of the transmission and be able to handle the high volume of data streaming into it as well.

3) Make hardware/software compatible with each other

Many of the different aspects of the hardware/software were incompatible with each other. For example, the encoder and converters would not work with a Mac computer. Many manufacturers should consider this when developing their products. In this day and age, versatility is a premium. The more operating systems the devices work with, the better the opportunity for development.

4) Aggressively pursue further development for independence

One of the major considerations that can improve Internet captioning is development for independence. By programming the website to stream live video with captions, it eliminates the need for third party video hosting. Additionally, the website may also be programmed to provide interactive chats between lecturer and end users. Making the website fully independent can provide a highly interactive experience for end users.

5) Market towards government and educational institutions

As noted earlier, once legislation requiring companies to use captioning in Internet video is passed, the market potential will become limitless. Sectors this technology should be applied towards include the government and educational institutions. The government can utilize this technology for a variety of purposes such as captioning hearings, public meetings, and government programs. By setting the standard and requiring other companies to follow suit; access for the disadvantaged can be achieved.

Educational institutions have promising market potential with this developed technology. By placing courses online using captioned videos, they can reach a worldwide market and provide an unlimited number of people with the opportunity to pursue educations from distance learning or people with a finite amount of time, such as executives and other job workers. "

Summary, Conclusions and Implication

In summary, we have reviewed multiple perspectives on the issues of classroom recording and streaming of contents over the WWW. We have reviewed the institutional perspective including issues of turning the professor into an instant published of the unedited AV and automated or manual transcript, and a variety of problems and issues technical, as well as legal and ethical. Most of these issues have not been resolved as of yet and we will deal with them in future research and development efforts.

We conclude that a lot of progress has been made recently, and that the technology is rapidly maturing to a state in which much more progress can be made. However, for now we have not yet found a single instance of integration at the level that we are dealing with. Most organizations have limited amount of integration, which provide enough challenges to avoid additional problems of more integration, and more problems. However, that may change in the near future as technology improves and people can cope and harness it more effectively.

We imply that in the future our vision and experiments may be more wide spread. In the mean time we are going to investigate the variety of issues involved and examine the pros and cons of such a high level of integration, among competing and sometimes conflicting interests, such as privacy, security, safety, and compliance with a variety of regulations from ADA, to SOX, to HIPPA, etc.