White Paper

Embracing Personal Video For Organizational Learning

by

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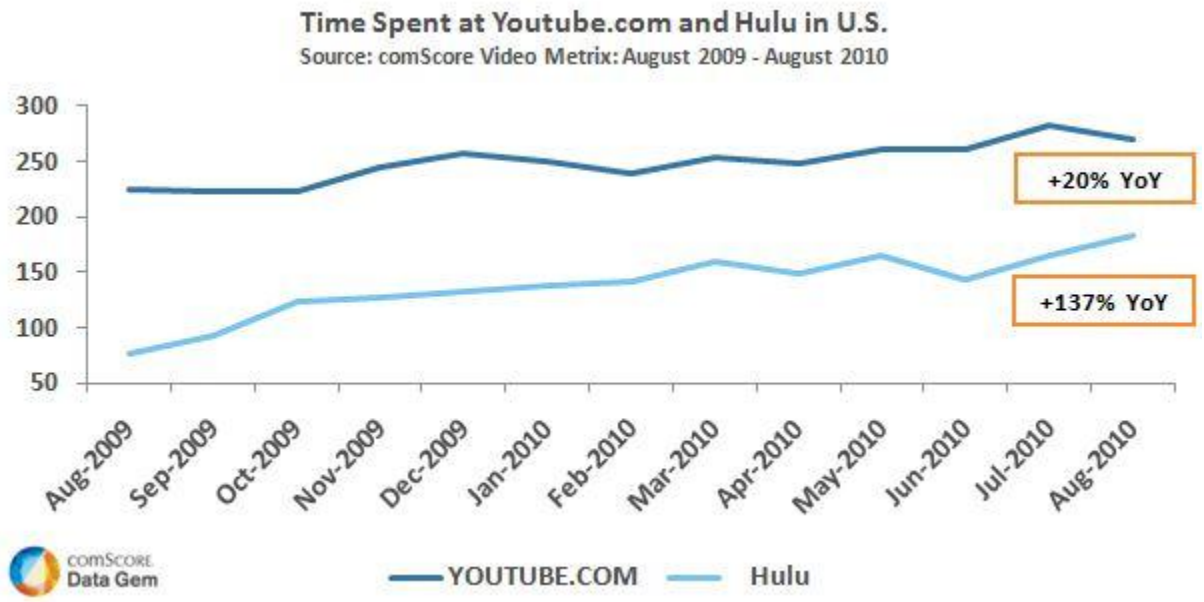
It's Time to Embrace Personal Video for Organizational Learning

By Daniel W. Rasmus

Americans like watching video. According to the The Nielsen Company American adults watch an average of 35.6 hours per person, per week[1]. From August 2009 to August 2010 ComScore analysis reveals a 20 percent Year-over-Year increase in YouTube engagement, while Hulu was up 13.7 percent[2]. Yet at work, we insist that people write down what they know, and file it away in online databases. Most people's lives revolve around e-mail. We know from personal experience that much of that written content is abandoned some after it is placed into the repository, if it is every looked at in the first place.



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With an aging workforce on one hand, and a high-turner prone younger workforce on the other, perhaps it is time to actively add video to the arsenal of tools that help people transfer knowledge within organizations.

The Crumbling Barriers to Personal Video at Work

Barrier One: Professional Video The first barrier to crumble between regular individuals and video is the thought of: Why me? Why am I important enough to be on video? Historically, moving images were professionally produced, and they featured world leaders and athletes, politicians and entertainers. Home movies put the recording of life into the hands of individuals, but those films were mostly for the capture of family memories, not for sharing knowledge. And for the most part, they didn't include sound. It wasn't until the 1976 release of the Video Home System (VHS) by Panasonic and JVC that video became instant. Sharing became as easy as popping a tape into a friend's VHS player. Although some

[1] http://blog.nielsen.com/nielsenwire/wp-content/uploads/2011/01/nielsen-media-fact-sheet-jan-11.pdf
[2] http://www.comscoredatamine.com/2010/09/minutes-per-viewer-at-youtube-com-and-hulu-in-u-s/

stigmas still exist about appearing on camera, popular culture is quickly eradicating those. Students in dorm rooms, group outings and family pets are now common subjects for video. Over 7.5 million viewers on average watch ABC's *America's Funniest Home Videos* to see crazy animal antics and human pratfalls. And reality stars, from the Kardashians to Mike "the Situation" Sorrentino of *Jersey Shore* fame have become celebrities themselves, by mostly being themselves. Although many "reality" television shows aren't all that real, they have clearly removed the requirement to be a trained professional before getting in front of a camera.

Barrier Two: Access to Recording Technology Along with the onslaught of video programming over the air, on cable and through the Internet, technology has nearly eliminated the next barrier to video: access. Mobile phones commonly come equipped with video cameras, increasingly two of them: one for shooting video and the other for video chatting. According to CTIA-The Wireless Association, America reached a 96-percent penetration rate for wireless subscribers in 2010[3]. Almost everyone now owns a video camera.

In fact, according to eTForecasts[4], PC penetration is at over 95 percent. As notebook computers replace desktop computers, and monitors come equipped with cameras, most people buying new devices will have a video camera pointed at them all the time. Prices of High Definition (HD) cameras that record at 1080p have dropped near, or in some cases under, $100US, the price point at which a technology becomes generally accessible to all consumers.

Barrier Three: Storage Anyone who has managed film, video or floppy disks libraries knows that storage was expensive, both in terms of media, and in terms of time. With storage costs for 2 terabyte hard disks reaching the $100 mark, storage has become a commodity. A 2 terabyte drive will hold over 200 standard DVDs or over 40 high quality Blu-ray equivalents. Much of the video shot, however, is of lower quality, making the storage limits even more impressive. Of course, you will probably need at least two drives, because you will want to backup all that video.

Consumer trends in storage extend to the enterprise, where disk space is becoming nearly limitless for most practical purposes, either through huge corporate server farms or through pay-as-you-go cloud services. Storage is cheap and organizations that want to start capturing video won't have a problem finding a place to put it.

Barrier Four: Bandwidth Bandwidth, like storage, has become relatively inexpensive, and its quality has improved. Although consumers still complain about dropped calls or inaccessible cellular data services, when they do have a connection that connection is usually good enough to stream video. Those with home-based broadband have no issue streaming video to Internet enable devices. Large enterprises also have big pipes, often optimized for streaming video internally, as well as from external sources.

Barrier Five: Incorporation The four barriers to the use of video in enterprises leaves one more barrier: the willingness to incorporate video into the lifestyle of the firm. Having people sit in front of a computer and talk to themselves, or schedule time to be interviewed may be far from common practice. Organizations that recognize the value of video will accept it through clear use by management, by managers sharing their own knowledge, and regular requests for video as a means of fulfilling a knowledge request from all levels of the organization. The formalization of video as a tool for knowledge capture creates permission for its use.

[3] http://www.ctia.org/advocacy/research/index.cfm/aid/10323
[4] http://www.etforecasts.com/products/ES_pcww1203.htm

Making the Case for Capturing Knowledge via Video

Video has many advantages over other formats. It is not ideal for capturing all forms of knowledge, but it clearly has advantages over text, images or audio. Here is a list of video's advantages.

Sensory-Rich Context Video permits people to capture events, processes and practices with sound and images. Experts can watch them and comment on what they are seeing, in person, or as an audio overlay track. Many aspiring directors and film buffs know that if they want to learn about how movies are made, the audio commentary by a director on a DVD proves a source of invaluable insight. The sensory-rich clues in the action prompt the director to return to the emotional state that better traces their memory than if they were to recall something cold. Video creates rich context.

Control Video provides the ability to view portions of a process or practice over and over, including slowing down the action, and rewinding to review detail. Depending on how much video exits, and the sources of the narratives, it can deliver multiple perspectives, including points of view at various stages of a process, comparisons across applications in location or time. Even the most astute viewer or process recorder is likely to miss something if they are jotting notes at the pace of an activity. Video allows for multiple viewings of the same event so that every detail can be gleaned.

Convenience Some firms have found that a switch to mobile video increases use because it recognizes the reality of placeless work, permitting people to view and learn anywhere, anytime. Video can be delivered to any Smartphone or media player, PC or tablet. Unlike text, video can also be a multiple person experience, which can include a review of meaning and implications as part of the experience. Video creates a much more intimate and immediate venue for learning than does the review and later discussion of text-based documents. And of course, neither approach is mutually exclusive.

Non-Invasive Video cameras can be set up to record work practices without the invasiveness of interviews. They can capture a field of view for physical processes, which can be important to augment steps not recalled or accurately described by the participant. They can also passively capture meetings, so that those meetings can be replayed by absent team members, or studied by people transferring into a new role.

Deep Historical Record Learning is not static. As organizations continue to evolve, video creates a benchmark against which to test theories and confirm data. When video combines with written or audio recollection, the combination is more powerful than either form of media alone. Video plays an important role, both as a prompt for people sharing their thoughts about what they are viewing, and as a new artifact in its own right.

Stories Although video can capture factual dissertations that dryly recount steps in a process or a list of lessons learned, video, unlike most business writing, lends itself to storytelling. If those who use video start with activities like teaching back, 20 questions, task analysis, event recall or walking through a case study, then they will imbue their stories with more detail, and therefore more knowledge. Even seemingly difficult to record experiences like solving an equation can be captured using "protocol analysis" that asks the participant to think out loud about what their brain is doing, including any missteps or trace backs. These can be very enlightening to people learning something new, and they can also be valuable to the expert in evaluating their own approach. With multi-layered production, the expert problem solver could record a video track that discusses the original problem solving video, creating yet another level of insight. (See the sidebar *Capturing Knowledge from Retiring Employees* for more detail on knowledge acquisition techniques)

Between the falling economic and technical barriers, the social acceptance of video, and the value of video as a medium of knowledge capture, it is time to start thinking about video as a major component of any knowledge management program.

Rethinking Knowledge Management

Knowledge management suffered from two major flaws when it was introduced. First, it was too focused on altruism as a motivation. Second, knowledge management relied on the technology of structure to envelop the disclosed knowledge. People had to record what they knew, and then place it into repositories rich with curated metadata.

In the era of social media, altruism is replaced with a market, and with relationships. Motivation comes from reputation; it comes from *quid pro quo*. We need not create artificial monetary incentives that try to get people to share what they know. In a social media environment people share what they know because they receive value from the sharing. This however, presumes that organizations permit the creation of knowledge markets and that those markets create their own rewards.

It is true that not everyone participates in the social media experience, and it may well be the most knowledgeable people will shun the new experience at its onset. The effort turns then, not to getting people to share what they know, but to engage in the social environment. E-mail and other technologies of isolation help keep people in silos. Social media helps get people involved in sharing what they know as part of their day-to-day work. Knowledge transfer becomes part of routine communication. People's need to belong creates motivation as the fabric of new knowledge moves into the social environment. By focusing on learning and sharing knowledge through the mediation of technology, rather than using technology to capture the knowledge, people may find the contextual, human-to-human exchange its own incentive.

Creating enterprise "YouTubes" is a key technology requirement for the video-enable social enterprise. These internal video sites need to easily facilitate the upload of video, along with tagging and searchable text that describes the video. But rather than turning these new video artifacts over to librarians, individuals will code them with tags and descriptions they feel are appropriate. As the video is encountered by others, they can augment its search terms to make it more discoverable. If people have a passion for what they are sharing, they will take the time to make the content easy to find. In the long term, software will be able to extract meaning from audio, video and textual documents so that the organization of content becomes much less labor intensive.

Social media is not a single channel technology. Ideally, as on the Internet, videos or conversations in one channel will prompt recognition in another, as when a video goes "viral" with its link being posted on Facebook, Twitter, StumpleUpon and other sites. Video can play a role in change management by helping people visualize future states. Knowledge need not be limited to current practice, but can include knowledge about envisioning the future of an organization, a function, practice or a technology. Organizations need to avoid asking its workers to create "viral videos" but rather watch to see what does become viral and understand the meaning of that social phenomenon within the organizational context.

Much of knowledge management, however, remains about a specific piece of knowledge, required at a specific moment—a moment that seldom seems to coincide with the capture or creation of that knowledge. But that is changing. In formal systems with managed repositories, the attempt is made to anticipate and forecast what knowledge will be required and make sure it is available. With social enterprise, search may be less about typing in the right keywords and more about knowing the right

people. Asking a social network for information may lead to more contextually precise content, including appropriate video material, than would the same query posted to a search engine. And unlike search engines, people can provide more definitive statements about what does and doesn't exist, which may prompt the creation of a video or document just-in-time. Many knowledge management implementations focus on answering specific questions from others, which ties a specific instance to an answer, creating metadata and context passively. The ubiquity of video capture devices offer a good alternative to typing out an answer or otherwise documenting a solution. Video is ideal in situations where props or physical examples would augment the answer.

Venkatesh G. Rao, of *Ribbon Farm*, suggests there is a war brewing between Millennials and Baby Boomers over knowledge management and social media. Baby Boomers either see knowledge management as a failed 1990s discipline or continue to adhere to its ideological roots that steep it in terms like *expertise location*, *knowledge capture* and *communities of practice*. The action oriented Millennials want to get things done and move on, in a fluid, organic and dynamic virtual environment. Millennials don't resonate with the creation of knowledge artifacts left lying around for others to consume. In most circumstances, Millennials would find little value in history. For them, the innate complexity of today's working environment means that looking backward translates to being wrong. Only by asking in the moment does one get the most current and useful answer.

The reality of the need for enterprises may lie somewhere between these extremes. Deep, highly managed repositories have not always paid off for those trying to justify initial investments through the reapplication of the knowledge they hold, but the Millennial propensity to look at all knowledge as fleeting and ephemeral may prove inadequate for really tough problems that require historical perspective or deep knowledge about a product or process. Social media and video may prove the best technologies for bridging this chasm between business need and willingness to engage. Social media creates the channel for those answers of the moment, but it also permits the sharing of existing content when it is relevant—helping balance the need for innovation with the need to reduce risk and maintain context.

And with the ubiquity of video capture devices, and the ever lower cost of bandwidth and storage, more of that knowledge is likely to be captured in video, where the future may encounter not only the knowledge it needs, but to also understand the context and the personalities of people who experience that knowledge first hand.

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Personal video is a mature technology. It is easily accessible and cost effective to use for capturing knowledge. Commercial software is now mature enough to share that knowledge effectively over intranets. Microsoft uses video extensively in its internal training system, Academy Mobile, which offers podcasts for the sales organization on marketing campaigns, best practices and a host of other topics. Academy Mobile is driven by low cost video, including personal podcasting. Deloitte is experimenting with video on a project called Real World Consulting, which uses an MTV theme to encourage project teams to capture information about projects and practices, in real-time, while they work. A Fortune 500 packaged goods company is using MediaPlatform's PrimeTime to capture video of product lines in action so they can better share knowledge about the relationship between information technology and

operations with IT staff. And video-based story telling is helping spread the value of co-created development in places like the farming and fishing communities of the Niger Delta[5].

The ascension of social media from a college-aged playground to a legitimate enterprise business tool also places personal video at the forefront of tools reshaping the way people talk to each other, and it often represents the bulk of the data they leave behind. Video offers rich, contextual, multi-layered experiences that are difficult to replicate in text or audio. Tomorrow's business people may no longer talk about knowledge management, but they will continue to talk, and they will continue to learn and to pass along what they know through the most responsible channels available, and it is highly likely that video will be a channel of choice as the second decade of the Twenty-first Century unfolds.

Applying Video

Video can be applied to the observation of tasks, and it can be applied to storytelling. Video is also a beneficial complement to text documents.

Here are a few examples where video can play a particularly useful role:

Job Transfers Many organizations recognize that the movement of people between jobs presents an ideal time to also transfer knowledge. The problem is, that after the initial overlap period, people get caught up in their new work and may not have time for reinforcement, follow-up questions or mentoring through challenges. Video can provide a powerful link to history and context so those in new roles can access the wisdom of the predecessors even when they are no longer available.

Outsourcing Outsourcing embraces a wide range of activities, from the physical execution of tasks, to the accumulation of intellectual capital and knowledge. Organizations hiring outsourcers can transfer critical knowledge to their new partners through interviews and other rich media documentation.

Process Documentation Taking a video of a process, be it the manufacture of a digital projector, or the removal of a blood clot, adds relatable detail to what might be boring, inaccurate or unfathomable written instructions. With process documentation, a two-tiered approach, where an experienced operations person comments on the video, further enhancing its value.

New Employee Onboarding Video of the CEO welcoming a new employee to an organization is common. Watching footage of new peers giving the new employee the low-down on lunch spots, after work activities, quirky practices and the definite "don't dos" can help bring a newbie along more quickly than cultural osmosis. Watching past meetings with new teams can also provide insights into performance expectations and social norms.

Millennial Skill Transfer Historically, new employees seldom entered the workforce with skills applicable to the work they would be doing, even those entering with college degrees. That is no longer true. With globally connected workforces, young people often enter the workforce with more social networking experience than their managers and peers. Although they may be far from expert in their domain of employment, they have plenty to share about how to use social media on the Internet. According to the Pew Research Center, three-quarters of Millennials have created social media profiles, and one-in-five have posted videos of themselves online (The Millennials: Confident. Connected. Open to Change. Pew Research. February 24, 2010). Video presents an opportunity to engage Millennials by asking them to share their experiences and lessons learned online. This demonstration of respect for their knowledge can create deeper loyalty as well as encourage continued learning and sharing.

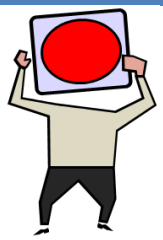
[5] "Digital video empowers communities in the South," *ICT Update*. http://ictupdate.cta.int/en/Regulars/Editorial/Editorial-Digital-video-empowers-communities-in-the-South

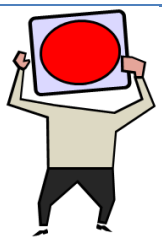
Capturing Knowledge from Retiring Employees

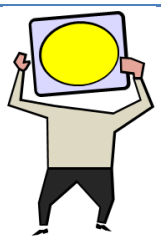
The prototypical brain-drain fear is that of the retiring employee. Rather than asking retiring employees to work right up to their retirement party, organizations should consider allotting time in the weeks leading up to retirement for capturing knowledge. Video makes an ideal passive tool for capturing comments associated with activities like proposal reviews, where team members discuss the proposal, the history behind what was included and perhaps, tidbits that didn't make it into the document. Most importantly, they should talk about why they made the decisions they made about what to include, what to edit, and how they evaluated each other's work. Additional techniques include having soon-to-be retirees discuss their best work, provide career timelines that highlight what they learned during major events in their careers, and going over human resource records to discuss observations from past supervisors and events that lead to promotions.

If you want to practice more sophisticated techniques, here is a list of knowledge acquisition techniques that have proven useful in psychological and artificial intelligence circumstances. They are all proven over decades of use by specialists, and are often overlooked for general business use. As the need for knowledge acquisition grows, and the tools for capturing knowledge move from executable business-rule systems to more organic, non-programmed tools like video, the techniques used to elicit knowledge in a deep way should start be become more ubiquitous as well.

Knowledge Acquisition Techniques and Their Application to Video

Application of video	Technique	Overview
 Best tools for concept sorting including mind mapping software, 3x5 cards and post it notes on large surfaces.	**Concept sorting**	Concept sorting is a great way to begin a knowledge acquisition session as it prompts people to name the objects and ideas in their area, and then to categorize them in a meaningful way. Concept sorting helps people talk about relationships, test for inclusion and prepare for deeper dives using other techniques.
	**Protocol-generation techniques**	Protocol-generation employs unstructured, semi-structured and structured interviews, reporting techniques, such as self-report and shadowing along with direct observation. Closely related to ethnographic techniques. Protocol analysis asks people to *think out loud* and talk people through their thoughts as they solve a problem. *Eidetic reduction* focuses on critiques and personal observations from the subject about himself/herself.

	**Scenarios**	Scenarios build a narrative that subjects walk through, describing how they would construct a solution for that given scenario (e.g., helping a customer with a technical problem). Scenarios often take several walk-throughs as the subject and interviews explore the topic to gather more detail, test alternative approaches and examine how others approach the same scenario.
 Best tools include personal construct specific software. See Gains and Shaw, Knowledge Acquisition Tools based on Personal Construct Psychology, for examples.	**Repertory grids**	Repertory grids create models for how people elicit, rate, analyze and categorize the properties of concepts. Developed from George Kelly's Personal Construct Psychology.
	**Limited-information** and **constrained-processing**	Limited-information and constrained-processing techniques that limit time or information force individuals to focus on the essential. For instance, the twenty-questions technique provides an efficient way of accessing the key information in a domain in a prioritized order. The interviewer asks the subject to identify something in their domain using only questions that can be answered with "yes" or "no." The technique helps discover heuristics, information requirements and reasoning techniques used by the subject.

 Best tools should be appropriate to the type of knowledge being captured. Process mapping tools, for instance, for processes.	**Diagram-based techniques**	Diagram-based techniques include the generation and use of concept maps, state transition networks, event diagrams and process maps. The use of these is particularly important in capturing the "what, how, when, who and why" of tasks and events.
	**Teach back**	Teach back asks mentees or interviewers to recount what they have learned from the mentors, and then allows the mentors and others to expand and correct their understanding.
	**Event recall**	Event recall is a good way to link storytelling to knowledge acquisition. Ask the person to recall an event that illustrates key points, principles or procedures and describe everything they can about that event and what they did and how they did it. The totality of the event recall session should be captured on video and later transcribed.

About the author

Daniel W. Rasmus, the author of *Listening to the Future*, is an analyst and strategist who helps clients put their future in context. Rasmus uses scenarios to analyze trends in society, technology, economics, the environment, and politics in order to discover implications used to develop and refine products, services and experiences. His latest book, *Management by Design* (Wiley, 2010) proposes an innovative new methodology for the design work experiences.

Prior to starting his own consulting practice, Rasmus was the Director of Business Insights at Microsoft Corporation, where he helped the company envision how people will work in the future. Rasmus coordinated the Microsoft® Office Information Worker Board of the Future, an advisory panel composed of college-aged students who share ideas on how to better serve the Millennial Generation as they join the workforce. Rasmus also managed the Center for Information Work, an immersive experience that helped Microsoft's customers experience the future of work first hand.

Before joining Microsoft, Rasmus was a research Vice President with the Giga Information Group, and later Forrester Research Inc. Rasmus also served as Giga's Chief Knowledge Officer. He is the author of over 220 trade journal articles and five books. Rasmus blogs regularly for *Fast Company*.

Rasmus attended the University of California at Santa Cruz and received a certificate in intelligent systems engineering from the University of California at Irvine. He is currently the Visiting Liberal Arts Fellow at Bellevue College in Bellevue, WA.

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