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Action Research: Fly in the Cloud then Share the View

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Abstract

There is a growing bifurcation of society into those who are Informed (techno-savvy) versus the increasing number of people who are Uninformed (non-techno-savvy) when it comes to utilization of cloud-based Web 2.0 applications. The authors propose wide-spread participation in a cloud-based application. This action research is designed to gather input about one cloud-based technology that has the potential to move users from Uninformed to Informed by the nature of efficient work flow, collaboration, and shared resources (Charles & Dickens, 2012; Fisher, 2011).

Action Research: Fly in the Cloud then Share the View

Today, new technologies are being developed en masse; many of the technologies are cloud-based, meaning they are available to anyone at any time, some at no cost, from any Internet-ready device, and regardless of the operating system on the device. Cloud computing, “the act of storing, accessing, and sharing data, applications, and computing power in cyberspace” presents “users with unprecedented opportunities and challenges” (Anderson & Rainie, 2010, p. 8).

Because ubiquitous access to files and information sounds too good to be true, many people have dismissed the notion as some kind of myth, unreachable, unattainable, and certainly too complicated to stop current activities in order to implement. It seems, too, that authors are loathe to present information in digestible chunks when it comes to new technologies. Information about Web 2.0 or cloud technologies comes in intimidating complexities, almost as though there were a challenge to cram as many applications as possible into one article. Yet, the brave who take ten minutes, perhaps because of prompting by friend, by job, by child, by someone or something, to actually download a cloud technology, may open a new world for themselves. However, they may not tell a soul. They just soar forward, with increased power to get the job done, and they don't think it is important enough to tell anyone. Or, they think the naysayers would simply dismiss what they had to say. So, they just keep quiet and become one of the Informed surrounded by the Uninformed.

Even though there is growing evidence of pedagogical advantages from use of cloud-based technologies, who has the time it takes to wade through the constant barrage to find those that could be most useful? In other words, educators in the field may not have time to test and adopt cloud technologies that can improve productivity and transform work flow. The benefits

of the multitude of cloud-based technologies are unknown to many; the authors posit that research, collaboration, and productivity are limited from the outset when conducted with older forms of technology rather than cloud-based services.

By virtue of reading this article, you are invited to participate in this action research – to find out for yourself just how valuable cloud computing can be to you and your colleagues, and share the outcomes with colleagues. This research is not invasive, complex, or convoluted; simply put, it involves downloading and using *one* cloud-based program, then completing a short questionnaire about your experience of using the technology. The WIIFM (what’s in it for me) is the knowledge you gain about a technology that WILL help you professionally (Greene & Ruane, 2011).

Technology has out-paced the rate of adoption and the time it takes professionals to test and implement a new technology. This action research focuses on challenging professionals to test a cloud-based technology and report the outcomes – How easy was the cloud-based program to use? How often did you and your colleagues use the program? How did the cloud technology increase productivity? A shared narrative about results of using a cloud-based file storage platform that is free and platform independent may contribute knowledge to the field and decrease detrimental information overload that causes many to shut down when it comes to utilization of Web 2.0 technologies.

Review of Literature

What is Cloud Computing?

Many people seem to be confused about the term cloud computing. Most think it is something other than a computer network to store, access, and share data from Internet-connected devices. Armbrust, et al. (2010) define cloud computing as “both the applications

delivered as services over the Internet and the hardware and systems software in the data centers that provide those services” (p. 50). In truth, the cloud is pervasive, but many do not realize its presence; for every iPad, for example, “it’s estimated there are seven back-end tools you don’t see – computer servers – that provide such services as search, streaming, database access, and connectivity” (Pirie, 2012, p. 40).

In a survey (Citrix, 2012) of 1,000 Americans, only 16% could explain cloud computing, and 54% said they hardly or never use the cloud, yet 95% of them actually use the cloud for banking (65%), shopping (63%), social networking (58%), gaming (45%), storing photos (29%), storing music (22%), and file sharing (19%). In addition to confusion about cloud computing, there are a number of deterrents such as cost for fee-based services, privacy concerns, and security concerns. In the education arena, adoption has been more challenging; utilization of cloud computing to enhance instruction occurs in isolated case studies that are generally focused on individual technologies (Denton, 2012).

According to Scheuermann and Bielec (2011), pleading ignorance or not knowing that cloud-based technology helps prevent data loss, increases access to data, increases collaboration and productivity is not defensible and does not negate the reality that “open source programming and cloud technology both play major roles in the future of teaching and learning” (p. 22). The question becomes *when* you will use cloud computing rather than *if* you will use it. In fact, if you had anxiously awaited the January 2013 release of the new Microsoft Office 13 suite and have already purchased the license in its new multi-machine format, you, like the author keying in this sentence, are working in the cloud with SaaS – Software-as-a-Service.

Anytime, Anywhere Access Through Cloud Sharing

When busy people need to collaborate, there is growing emphasis on ever-present access to information needed by the group. High performance depends on maximum efficiency among team members and technology to ensure the best performance. Place-based barriers are eliminated, and collaboration is maximized when all participants can access the information when needed and as needed. Cloud sharing provides team members 24-7 access to information. This connected learning illustrates “how far we’ve come and where we might be going: a shared purpose between learners and peers, a production-centered focus on creation and curation of things, and an openly networked atmosphere in which to work and learn” (Stephens, 2012, p. 48).

Why Use the Cloud Storage Function of Cloud Computing

A Google search of the terms “data storage in the clouds” will net millions of results; even if the word “reviews” is added, the results are only narrowed to fewer millions. In other words, information on how to locate and use cloud-based technologies is readily accessible via the Internet. Sites such as <http://www.cloudstoragefinder.com/> provide the latest reviews. Therefore, the authors of this article focus on reasons to utilize cloud storage rather than a review of various cloud-based services. Before discussing reasons for adopting a cloud function, the authors ask that you consider two scenarios and ask yourself if you have ever experienced these dilemmas.

Imagine it is finals week. You have been working frantically to prepare exams or end-of-semester reports. At midnight you completed grading, saved the end-of-semester reports, and went to bed. After collapsing in bed you thought, “I should have put that file on my USB drive and emailed it to myself.” The next morning, the alarm sounded at 6 am, you rushed around

with your morning routine, took a moment to save the files to your USB drive, attached them in an email, closed your computer, grabbed your coffee, and headed out the door at 7 A.M.. With a 15 minute drive to work, you had about 45 minutes to use the copy machine to prepare for an 8 A.M. class. You were already anticipating the feeling of satisfaction that would come from taking the last copy from the copy machine, meaning your work would be completed before your 8 A.M. class. You arrived at your school computer at 7:15 A.M., reached in your bag and realized there was no USB drive. Where is it? You forgot to grab it off of your home computer. No problem, you emailed it to yourself. You opened your email, and, similarly, there was no email. It slowly dawned on you that you closed your laptop immediately after hitting send, so the message with the files attached is still sitting in your out box at home. It is now 7:25 A.M., and it would take at least 30 minutes to return home to retrieve the files. Are you getting the picture? Do you have a “been there, done that, feeling?” If so, you are going to love cloud data storage!

Scenario number two – you have been assigned to work with a colleague on some narratives for the upcoming visit from the accrediting agency for your college. You each work on the narratives and email back and forth in order to stay abreast of each other’s progress. You get ready to put the final copies of the various narratives together, and now you need to figure out which email is the final copy of each of the narratives. There are six sections and each section was emailed back and forth four or five times. Sorting through is going to be a nightmare. Again, “been there, done that?” Have we got a solution for you!

The Silver Lining in Cloud Storage

As noted by Pirie (2012), “The cloud is the emerging architecture for a super-connected world, enabling easy access via the Internet to copious amounts of computing resources globally” (p. 40). Gregg (2010) shared benefits of cloud computing that include:

- effective offsite data-backup and storage
- cost savings
- less printing
- better utilization of IT personnel
- time saving
- more efficient collaboration

The most salient point to be made here, however, is that of portability – users can access files from home, the office, other client locations, or anywhere they are, and with many different devices. Groups of individuals can be given access to shared folders and files to maximize accessibility for collaboration, and, “by making interaction more natural, access...is available to more people and the focus shifts to the desired outcome” (Pirie, 2012, p. 40). As Gregg (2010) pointed out, “Users can consume services at a rate that is set by their particular needs. This on-demand service can be provided at any time” (p. 2).

The cloud storage service used by the authors for this action study is Dropbox (<http://www.dropbox.com>). As previously mentioned, reviews of sites can be found at <http://www.cloudstoragefinder.com/> According to the reviewers on this Web site, Dropbox is listed as 6th among the top ten services. This is pointed out simply to say that though the authors are fans of Dropbox, because this is the one they have successfully used for years, it is not an

attempt to persuade the reader to any one service. Other authors (Greene & Ruane, 2011) summarized their selection and use of Dropbox as follows:

Dropbox gave us the flexibility we needed to share not only documents but charts and images as well, and in a very streamlined way. We found Dropbox to be essential during the editing stage of our book, when we went from working with discrete sections to pulling together a finished manuscript. (p. 456)

Storm Clouds Can Exist

Although cloud-based technologies and storage are powerful tools for teaching, learning, and collaboration, there are concerns that go with the territory. “While cost and ease of use are two great benefits of cloud computing, there are significant security concerns that need to be addressed when considering moving critical applications and sensitive data to public and shared cloud environments” (Gregg, 2010, p. 3). Whether an individual or an institution makes a move to the cloud, there are security issues. Although the focus of this article is limited to cloud file storage for individuals, there are still drawbacks to be discussed. First, there are too many choices (Waters, 2011). Literally, there are hundreds of cloud-storage options, and hasty decisions can lead to wasted time or resources. The authors of this article suggest time can be saved through shared narrative among peers about the successful adoption and utilization of particular technologies.

Another drawback to individual cloud storage is that of security. Denial of service and security breaches can be more ominous than simple inconvenience (Gregg, 2010). Reddy and Reddy (2011) illustrated in detail many of the security issues at various levels of cloud computing, including, to name a few, user authorization, authentication, and auditing; privacy; secure data transmission; user identity and single sign-on; audit and compliance with regulations;

and maintenance of integrity in the face of malicious attacks. Simply put, there have been breaches in security of cloud storage services. It is a good idea to read the fine print of the service you choose.

Kincaid (2011) explained the event in June 2011 that “allowed users to log into accounts using any password. In other words, you could log into someone’s account simply by typing in their email address” (paragraph 1). Greene and Ruane (2011) said of the event:

In June 2011, a flaw in security resulted in a short window during which passwords were optional – and about 100 accounts were breached. Both incidents are cause for concern.

Our take-away from these examples: as always, be mindful about how, and where, you store sensitive information (e.g., passwords and financial information). (p. 457).

Dropbox has since implemented a two-step verification security option to lock down files; users may activate the service by visiting the “security” tab in their Dropbox preferences (D’Orazio, 2012).

Does this mean that this and other cloud-based applications are not to be trusted or utilized? On the contrary, materials stored in the cloud should be thought of as public, and collaboration on routine work products can be made more efficient through cloud storage. Nearly all major data storage services refuse to guarantee the safety of data uploaded to their servers (VanCamp, 2012). Risk is present when using any form of cloud technology – social networking, banking, shopping, photo streaming, gaming, storing music, or file sharing. In addition to the possibility of data loss or theft, another possibility less considered as a dark cloud would be the fact that the online cloud services are all subject to the Cyber Intelligence Sharing and Protection Act (CISPA). This means that data can be scanned for any type of terrorism activity. Now, obviously, this should not be an issue, but there are those who believe that the language is too

broad and think the law will allow for abuse down the road in looking for much more than just terrorism. Data contained on a secure home or business computer would not be as susceptible to government inspection (VanCamp, 2012).

How Do I Get Started?

The premise of this writing is that utilizing cloud-based file sharing has the potential to help those who are Uninformed, either due to not using cloud technologies or to using them without actually knowing how it functions, become Informed and realize the power of cloud-based technology to provide heightened collaboration and ever-present access to data.

If you would like to get started with Dropbox and perhaps even take part in this challenge, these are the easy steps to follow:

1. Go to <http://www.dropbox.com> (or use this referral link <http://db.tt/m8CdI00> to get 500 MG bonus free space)
2. Install the Dropbox desktop application on your computer. Installing this file creates a new folder on your computer called **Dropbox**.
3. The Dropbox folder works like the other folders on your computer. The only difference is that the files you place in this folder are available to you anywhere you have access to the Internet. When you install Dropbox on more than one computer the files are automatically synced between devices.

Now those test files that were left on your home computer in the first scenario, not a problem. You either use a computer with Dropbox installed and you are able to print directly, log into your Internet account at Dropbox in order to download and print, or even go to your mobile device and send the file to an email account.

What about the second scenario about collaborating with your colleague? The Dropbox folder makes collaboration easy. In your Dropbox folder you can organize your documents into other folders. You can share any of these individual folders.

Once these steps are complete you are ready to work more efficiently, removing some of the stress from your work environment. Borrowing a quote from an old television commercial, “Try it, you’ll like it!”

The Challenge

Taking the first small step to download a cloud technology leads to big advances. Usually, that first step is taken because someone gave encouragement in casual conversation, at work, or as a challenge from someone more knowledgeable of technology. Herein lies the challenge: download Dropbox (or some other cloud storage program), use the program for one month as part of your normal work routine, and then share your experience and feedback with the authors in an online questionnaire. At <http://tinyurl.com/TBTEAfolder> you will find an html file that includes a variety of links the authors provided at a TBTEA workshop in November 2012. The first link on the page, however, is a link to the survey associated with this study.

The data that is gathered through this action research, and the narrative that is shared, will add to the growing body of knowledge regarding the use of cloud technology and can be used to inform many who are Uninformed that they may be unnecessarily prevented from achieving a higher level of collaboration with peers and utilization of time and resources. Anytime, anywhere takes on new meaning when moving to the cloud; the primary question may likely be, “Why did I wait so long?”

Implications and Conclusions

Utilization of computer technology has always been voluntary, but there is a price to be paid for failure to adopt and adapt. Pirie (2012) summarized the impact technology, and the latest iterations of the cloud, will have on society, particularly in the areas of teaching and learning:

The rapid pace of innovation in technology has had a sometimes disruptive – and sometimes liberating – impact on many fundamental areas of human interaction. The process by which we teach and learn is no exception. Recent developments in technology are having an increasingly profound influence on our discipline. There is a huge interest in technology to shape training and education. That's great news for the learning and development community since opportunities are opening on a global, high scale for radically innovative ways to consume, deliver, and improve training and education for massive impact. (p. 39).

In short, there is an unrelenting drumbeat that sounds the call to readily adopt changing technology as part of a dramatically changing world; those who lean into the change may discover that prescient users of technology are valued by employers, colleagues, clients, and co-learners. The new paradigm may place more value on risk than on entrenched knowledge. Take one step, and the world may look different.

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