

Viral Learning: Taking Advantage of All Channels to Learning

Jay F. Graser
SRA International
Fairfax, Virginia
Jay_Graser@sra.com

Michael K. Anthony
SRA International
Fairfax, Virginia
Michael_Anthony@sra.com

ABSTRACT

Viral marketing has been used extensively to sell products and even win elections. In record time, it can distribute a message or concept to a large population of even a niche market. A Pew Internet study (2010) shows that of 2,259 adults, 75% who find news online receive it through forwarded e-mail or posts on social networking sites. Additionally, half of those adults will forward that same news to others. As learning professionals, we must consider whether this same communication channel can be used to improve human performance and learning effectiveness in a targeted audience. Even engaging CBT is often no competition for the barrage of information and communications channels available to the average learner. Learning must become an integral part of an increasingly multi-tasked audience who no longer has the time to get their news from the source, let alone volunteer to participate in web-based learning. However, one downside to using a viral approach to learning may be that once the learning objective is released, controlling the message can be problematic. This paper will explore the possibilities of using viral media as a tool for education, training and human performance. Some of the questions this paper will explore are:

- What is viral marketing and how does it map to education, training and human performance?
- What media are considered capable of making a concept go viral?
- How do you reach the right target market?
- Once the message is released, how do you maintain control?
- What are the pros and cons of using viral learning?
- What are good candidate topics for viral media?
- What are poor candidate topics for viral learning?
- How can viral learning be measured?

ABOUT THE AUTHORS

Jay Graser is a retired USAF officer with 27 years of training industry experience. His work has ranged from certifying platform instructors to pioneering Category D flight simulators. He is currently a Program Manager with the Emerging Learning Technologies group of SRA International. At Sikorsky Aircraft, he led a team responsible for training customers to operate and maintain over 3400 aircraft worldwide. In addition to being a guest speaker for Southern Illinois University's Workforce Education Curriculum, Mr. Graser has presented the following: "Computer-Based Simple Games; Affordable Ways to Engage Learners," to the Society of Applied Learning Technology, New Learning Technologies 2011 Conference; "Expedient Application of Simple Gaming for Learning and Assessment," to the 7th Annual Innovations in e-Learning Symposium; "Effective Acquisition of Virtual Worlds; Ensuring Return on Investment" to Interservice/Industry Training, Simulation, and Education Conference (IITSEC) 2009; "Investigation Enhancement through Information Technology," to International Society of Air Safety Investigators, 2003 Annual International Seminar.

Michael Anthony is the Multimedia Program Manager and Lead Technical Integrator for the Emerging Learning Technologies Group at SRA International. He has been instrumental in delivery of 75+ training applications for the military and government customers including exploration of virtual worlds and games for training, and conducted performance based research for the Air Force Research Lab for over 10 years. He obtained his MS in Experimental Psychology and BA in Psychology from the University of Texas at San Antonio where he has worked as an Associate Professor of Psychology. His recent work has involved the design and development of a serious game to teach visual detection of Improvised Explosive Devices, as well as the design, development and integration of SCORM and web-based Intelligent Tutoring Systems, blended learning applications, and the integration of evolving technology-based training applications including virtual worlds and gaming. His presentations and papers include Panel Member, Design of Serious Games: A Community Dialog. IITSEC 2010; Proposed Framework for Instructional Games Ontology. 2nd Instructional Game Developers Workshop, 2010; A Framework for Promoting High Cognitive Performance in Instructional Games. IITSEC, 2009.

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INTRODUCTION

Marketing and learning have similar challenges. In both cases, one of the greatest obstacles is often, how to reach the largest audience at the lowest cost. Viral marketing has proven to be a cost effective means to rapidly reach a target market. In this paper, we will explore if the same could be true for a viral approach to learning as a delivery strategy option during the instructional system design process. In particular, we will define viral marketing and seek to map it to similar aspects of learning, including measuring its impact. We will look into the types of media that can be used to make a concept go viral. We will review things to consider in reaching the right target market, yet maintaining control once the message is released. Within this context, we will present potential candidate topics for viral media. Finally, we will propose some experiments to explore the uses of viral learning.

WHAT IS VIRAL MARKETING?

The term “Viral Marketing” appears to have been first popularized in the Fast Company article “The Virus of Marketing” by Jeffrey Rayport in December 31, 1996, where he refers to viruses as being “self-perpetuating, self-propagating entities.” He also said, “When it comes to getting a message out with little time, minimal budgets, and maximum effect, nothing on earth beats a virus.” (Rayport, 1996) This seems to parallel nicely with typical learning programs, operating on minimal budget, yet trying to effectively reach a target audience in minimal time.

Definitions

Merriam-Webster defines viral marketing as “marketing designed to disseminate information (as about a new product) very rapidly by making it likely to be passed from person to person especially via electronic means.” (Merriam-Webster, 2011) Maria Petrescu and Dr. Pradeep Korgaonkar define viral marketing as, “Online and offline marketing activities performed to influence consumers to pass along commercial messages to other consumers.” (Petrescu, M., Korgaonkar, P., 2003)

Operational Definition of Viral Marketing

For the purposes of this paper, we will employ the Merriam Webster definition combined with a key point from Jeffrey Rayport. He points out, “every marketer aims to have a dramatic impact on thinking and behavior in a target market.” (Rayport, J., 1996) Therefore for the purposes of this paper, the operational definition will be, “*marketing designed to disseminate information very rapidly by making it likely to be passed from person to person especially via electronic means, having an impact on thinking and behavior in a target market.*” In short, it’s not enough for the target audience to simply view the material and pass it on, it needs to drive changes in thinking or behavior.

Media Used

Viral marketing is really not a new concept. Before we had the internet and digital forms of social networking, marketers called this “word-of-mouth.” In Dr. Ralph Wilson’s article, “The Six Simple Principles of Viral Marketing,” he states, “Off the Internet, viral marketing has been referred to as word-of-mouth, creating a buzz, leveraging the media, network marketing. But on the Internet, for better or worse, it’s called viral marketing.” (Wilson, R., 2000) The significant difference is the speed with which that word-of-mouth can spread through the use of electronic media.

Therefore, for the purposes of this paper, we will consider any form of digital media that can be used to spread word-of-mouth as candidate media for viral marketing and, in-turn, viral learning. These media include, but are not limited to email, You Tube, virtual worlds, Facebook, text messaging, cell phone photos and videos, as well as digital games.

Examples of Viral Marketing

One of the most prominent examples of viral marketing if not the earliest was Hotmail. In 1996, Sabeer Bhatia and Jack Smith offered free web-based email. They

started the company in July 1996, by September 1996, it had more than 100,000 subscribers, by January 1997 one-million subscribers and a year and a half later, 12 million subscribers. They accomplished all of this by placing the simple message “Get your free email at Hotmail” at the bottom of every email and generating revenue by selling banner advertisements and offering advanced services for a fee. (Montgomery, A., 2001)

Another example of viral marketing is Burger King’s “Subservient Chicken.” The problem to be solved at the time was that they were not competing well in the chicken sandwich market. Burger King made improvements to their chicken sandwich, but wanted to make a big splash with its launch. So they turned to the marketing agency Crispin Porter + Bogusky. In conjunction with the Barbarian Group, they created the concept of a web site with a man dressed in a chicken suit chicken who could apparently respond to any command the viewer typed in. His responses included doing jumping jacks, dancing, doing push-ups, and watching television. The site received one million hits in the first day and 20 million hits in a week. Clearly with this amount of traffic, it had gone viral, but did it have the desired results of increased sales? After a month of the campaign, Burger King reported that the sales of their chicken sandwich went up 9% over the first month of the campaign and “double-digit” increase in brand awareness. (Anderson, M., 2005) Possibly another indicator of its success is the fact that it is still in operation more than seven years after its launch. If it was not having the impact on sales the Burger King executives expected, they would likely have pulled the campaign long ago.

Consider how these two examples might be used to deliver some form of learning. In the Hotmail example, the approach was very simple, using a short message at the end of each email leading to a free Hotmail account. Could we replace the message with a link to a compelling storyline containing a lesson to be learned? In the Subservient Chicken example, the target audience was drawn in by the novel functionality of the web site. Through their interaction with the web site, they developed brand awareness, which may have driven up sales. Similarly, if you post a particularly engaging Flash-based game to the internet that had a learning objective buried in it, it could go viral to the target audience if the game was engaging enough and easy to pass on.

One only has to look to the news to see the effects of viral marketing on a more global scale. Starting with Tunisia and Egypt, the concept of democracy has been spreading in a viral fashion. The means included Facebook and Twitter, but also texting, photographing

and filming via cell phone. The uprisings began with something as simple as a video from a cell phone that was passed from one person to another, until it went viral. (van Till, 2011) If viral marketing can drive political change, what prevents it from being used as a tool for learning?

WHEN DOES VIRAL MARKETING BECOME LEARNING?

Operational Definition of Viral Learning

While we would not consider our search exhaustive, we found little to no references to viral learning. For example, there is Mary Griffith’s book, “Viral Learning: Reflections on the Homeschooling Life.” However, the book is about getting interested in homeschooling and does not have any attributes related to viral marketing. There does not appear to be a readily available definition of viral learning. Based on the definition of viral marketing, one definition of viral learning could be, *“learning or training designed to disseminate a learning objective very rapidly by making it likely to be passed from person to person especially via electronic means,”*

Attributes of Viral Learning

Viral Marketing and Viral Learning are not directly interchangeable. In Dr. Ralph Wilson’s article, “The Six Simple Principles of Viral Marketing,” he lists the following (Wilson, R., 2000):

Viral Marketing

1. Gives away products or services
2. Provides for effortless transfer to others
3. Scales easily from small to very large
4. Exploits common motivations and behaviors
5. Utilizes existing communication networks
6. Takes advantage of others' resources

We can now take these six principles and modify them to work as attributes to describe viral learning.

1. Gives away products or services (otherwise stated, you must have a hook):

While in your typical training environment, you probably would not be giving things away, the point to this principle is that there needs to be a “hook.” In a perfect world, everyone would want to learn just for the sake of learning. So, what can we do to incentivize people to participate in viral learning? What is our “hook?” This participation differs from typical learning

participation in that as instructional designers, we need to compel them to pass the information on, not just reach the learning objective themselves and stop there. The rules of instructional system development apply to viral learning, just as they do any other medium. The instructional designer will need to complete a full analysis, including what would motivate participants to pass the information on to others in the target audience. It cannot be considered viral unless it is passed on at a reasonably high rate. What can we do to make it interesting or novel enough to make people want to pass it on?

In the case of Burger King's Subservient Chicken, the "hook" was the ability to interact with the character in a novel way. Participants felt compelled to pass the link to the site on to others because of its interesting and off-beat design. Although, in passing along the link, they increased brand recognition for Burger King, which was not their motivation for passing it on.

Another potential hook is an ongoing storyline. The material could go viral based on an interesting story line, and the learning objective could be embedded in the story. The challenge becomes creating a story concept or "cliffhanger" endings to each installment that would be interesting enough to drive participants to pass it on to others.

In one case, our customer was motivated by quirky games. Word spread quickly that the games were engaging and judged by the line at our display booth, they were very popular. So in that way, word-of-mouth made it go viral. However, woven in to the game were lessons in grammar. The design of the game was so exciting that the participants felt motivated to pass the word to others, without taking any note of the fact that they were learning grammar in the process.

An additional hook could be humor. However, this can backfire if you do not have a good understanding of your audience. What is humorous to one audience may be offensive to another.

2. Provides effortless transfer to others:

This principle applies just as well to viral learning as it does viral marketing. In applying all the principles, it is important during analysis that you understand your audience's environment, including their available infrastructure and how they typically communicate. For example, I can post a series of clips to You Tube, but if You Tube is blocked for that customer, then the approach will not work.

Consider that in the Arab Spring example of viral marketing, the internet had not had much penetration in Tunisia. Despite this, the uprising went viral through cell phones. (van Till, J., 2011) Ensure whatever medium you use can be easily forwarded to other participants, regardless of whether that is a link to a web site, a file attached to an email or text over a cell phone. Find out what the target audience's typical communication channels are and pick the path of least resistance to their passing it on. Without the capability to easily transfer the information to others, it cannot go viral.

3. Scales easily from small to large:

Consider the load that your viral learning delivery may put on the existing system. For example, if you are using a file attached to an email, and you expect it to be forwarded by 5,000 people in your company, you may bring the mail server to its knees. This was also the limitation for Hotmail, as they could not add mail servers fast enough to keep up with demand. (Montgomery, A., 2001)

Another scaling issue to consider is if you drive participants to a central link, can that link handle the number of hits it will receive? If they need to download a video, will the network handle multiple people downloading all at once? Can you consider creating smaller files to reduce the impact when you scale up?

Finally, even the best solution may need human intervention. If participants have questions or content needs to be rapidly updated to adjust for a larger audience, do you have the mechanisms in place, such as a help line and trained staff? If you are going to direct questions to the organization's usual help desk, have you considered the impact of the added call volume and given the help desk staff job aides to guide them in helping callers?

4. Exploits common motivations and behaviors:

This principle is similar to the first, but it is more directed at, once the viral learning module reaches the participant, what do we want them to do with it? Common motivations include, greed, and the desires to be cool, loved, popular or understood. Greed may sound a bit harsh, but consider this is what drives us to download free software, when we may not even need it. The sense of popularity will be driven by different things for various audiences. For example, if my target audience is made up of engineers, I may find that they are motivated to solve a mechanical problem and then pass it on to their peers to see if they can stump them

on the answer. This will give the participants bragging rights when they manage to solve the problem or puzzle. Remember that we are trying to motivate them to both learn from the material and pass it on to others.

5. Utilizes existing communications networks:

This is where we as learning professionals really need to collaborate closely with the information technology (IT) support team. Viral learning may not apply a Learning Management System (LMS) in the same way traditional training does. Rather than the content being hosted by the LMS, it may be hosted on a common server or web site, or even be a file attached to an email. In order to give students credit for the training on the LMS, you need to create a link between a tracking application on the company's network and the LMS. It could also mean connecting non-traditional training delivery systems, such as text messaging to the LMS. In traditional computer-based training, we ask them to break from their routine and sit in front of a computer and attend training. In viral learning, the learning should travel as a part of their normal routine, communicating with colleagues, searching the internet and socializing.

Take advantage of the fact that at work people aren't constantly doing work. Thirty years ago, we passed "word-of-mouth" through water cooler conversations. Now that our audiences are often part of a distributed workforce, including teleworkers, the water cooler conversations have been replaced by texting, Twitter, Facebook and email. Remember that viral learning is an electronic version of word-of-mouth.

6. Takes advantage of other's resources:

You could also consider this "piggy backing" on other programs. Rather than make the learner come to you, go to the learner. Can you embed a link in an email trail that you know your target audience reads? Can you add a banner to a web site they frequent? Can you create a pop-up that comes up when they open the time keeping application? Could you embed the learning objective in a company public relations event that will be picked up by news agencies? Does it matter that the learning objective will go out to more than just your target audience? If not, consider weaving the learning objective into a public event that would be widely publicized and then passed from one employee to another.

Benefits of Viral Learning

A primary benefit of viral learning is its relatively low cost. The concept has been used in marketing as a

means to get more out of the marketing budget. Innovations, such as viral marketing are often born from necessity. In the case of Hotmail, nearly all the venture capital was spent on hardware and personnel, leaving little budget remaining for traditional marketing. Sabeer Bhatia and Jack Smith had to find a low cost way to rapidly reach their target market and one of their venture capitalists suggested the viral marketing approach they ended up using. (Montgomery, A., 2001) A viral approach allows you to quickly reach a large audience at a low cost per student. We could potentially say the same thing for posting a traditional web-based training to the company LMS, but it probably would not get distributed as quickly. The word-of-mouth effect of viral learning compels people to participate, driving a rapid distribution, as opposed to traditional web-based training where you can find yourself cajoling people into taking a break from their routine to view the web-based training, resulting in a slower deployment. Therefore, another primary benefit is speed of deployment.

Measuring the Impact

As with any approach to training, measuring the impact of viral learning is a challenge. If you search the internet, you will find that while the idea of viral learning is not a new one, there has not been a great deal of study done in the area. In fact, beyond a few blog posts and the earlier mentioned book entitled "Viral Learning: Reflections on the Homeschooling Life" (Griffith, M., 2007) the majority of the material relates to viral marketing vs. viral learning. Therefore, for the purposes of the paper, we will use literature examples from viral marketing to show how viral learning could be measured.

One model for measuring learning is Donald Kirkpatrick's Four-Level Evaluation Model which includes: Reaction (what did the student think of and feel about the learning event), Learning (did the learning event increase knowledge or capability), Behavior (what is the extent of change to the student's on-the-job behavior), and Results (what is the effect of the student's performance change). (Kirkpatrick, D. & Kirkpatrick, J., 2007)

Reaction in the classroom is often measured using surveys asking the students how they liked the course. In the case of viral learning, it may interrupt the impromptu, word-of-mouth nature by requesting each participant fill out a survey. However, reaction to viral learning can be measured by how many people pass the module on to others, which we can assume means they like it. This measurement technique can be simplified

if participants are driven to a central web link and you have a means of identifying them, such as their corporate logon or IP address. In short, they won't pass it on if they don't like it. To verify the assumption that the participants like it, follow-up by surveying a representative sample of the target population, as opposed to including a survey for each student and taking the risk of interrupting the process.

At the Learning level of Kirkpatrick's model, we could embed the need to go to certain links as a part of the learning module in order to confirm they understand the material. Tracking their clickstream could provide some evidence that they comprehend the material. Participants could be given a choice of links. The links could be designed so that if they understand the material, participants would typically choose one link. However, if they did not understand the material, one or more of the other links could function much like a plausible distractor in a multiple choice test. This measurement in particular parallels well with measurements used in viral marketing. Marketing firms earn their fees by having a good understanding of the measurable impact of their viral campaigns. In Alan Montgomery's paper, "Applying Quantitative Marketing Techniques to the Internet," he describes using clickstream data to track whether or not the viral marketing effort was effective. (Montgomery, A., 2001). This approach could be used in a way that leverages Sharable Object Content Reference Model (SCORM) 2004 inter-SCO (sharable content object) remediation. In a similar web-based training project, we used the inter-SCO remediation capability to redirect students to previous SCOs if their responses in later SCOs indicated that they did not understand the material in the previous SCOs. After viral learning is deployed, there could be sites that the target population is meant to go to if they met the learning objectives, such as a game, video clip or other interaction. However, unlike using an LMS to host traditional computer-based training, the tracking system would need to rely on the network's ability to identify users and track their clickstream. Then the clickstream data could be fed to the LMS indicating whether or not participants have successfully achieved each SCO. This data could be used to implement the inter-SCO function to direct participants back to a brief interaction as remediation for that SCO.

Beyond learning, the measurement challenges are the same as with any other medium. We can survey supervisors or possibly even customers to determine if the learner's behavior has changed. As for results, we can potentially track correlations between deploying a viral learning campaign and measures of mission performance. If the goal of a viral approach is to

change behavior and, therefore impact results, a political campaign may be a good example. During President Obama's 2008 campaign, in a three-month period, he more than doubled his fund-raising base. More than \$10 million of his second-quarter contributions were made online, and 90% of them were in increments of \$100 or less through viral marketing. (Tumulty, K., 2007) Much like a learning situation, not only did they have to motivate the participants, but they had to move them to action. In this case, the action was donating money, in the case of a learning objective, it's the change in behavior on the job and the resulting impact on the mission.

Viral Learning Media

In our research, we did not see any reason viral learning could not use the same media as viral marketing. However, applying standard ISD principles is still necessary. Consider plugging the various media available into a media selection scoring tool or matrix in order to ensure that the medium you select (text, Facebook, You Tube, email, etc.) is a good fit for the learning objective and audience. Just remember that what makes it viral is getting people to pass it on, very similar to word-of-mouth. Some of the best training has come from stories and fables passed down through the generations. Consider what medium would best facilitate people "passing it on."

Target Audiences

If you think of viral learning as simply a part of "new media," then you may limit your target audience to those who are comfortable in new media. However, if you look at it as just another form of "word-of-mouth," then it opens up the possibility of using it for a wide variety of audiences. For example, a CEO of a billion dollar corporation may not gravitate to surfing You Tube for the latest viral video. However, if he runs across advice or a business tip that he deems worthy of passing on, as simply a good business practice, he is more likely to pass it on to others who would benefit. The trick is to analyze the target audience and find what would motivate them to pass the information on to others.

WHEN IS VIRAL LEARNING A GOOD DELIVERY SELECTION?

Characteristics of a Good Viral Learning Candidate

Based on what we have explored in this paper, the following are characteristics of a good viral learning candidate:

1. **Topics that can be delivered in small chunks:** In our research, the typical viral marketing was fairly short. Consider that the Hotmail approach was just a short message at the end of each email, "Get your private, free email at <http://www.hotmail.com>." This should also mean smaller files, making it easier to transfer.
2. **Non-mandatory training:** While you can reach a wide audience, there is no guarantee that viral learning will hit 100% of a target audience. For example, if you are using a viral approach for annual compliance training, you may have to use a blended approach in order to pick up any stragglers. In short, telling someone "you must complete this training" does not really count as the kind of word-of-mouth associated with viral learning.
3. **Limited budget:** Part of the reason viral marketing came into being in the first place, was lack of marketing budget. Hotmail had spent all their money on developing the product, and had little remaining for marketing. Training budgets are increasingly strapped and viral learning could be a cost-effective alternative, given the right circumstances.
4. **Maximum coverage in minimal time:** Topics that need to be delivered quickly may be good candidates for viral learning. Considering the way Hotmail grew, the nature of viral growth means that your message will be delivered faster than traditional training methods. The delivery mechanism grows exponentially. (Wilson, R., 2000)

Examples of Potential Viral Learning Topics

Based on our research, the following topics are probably good viral learning topics.

1. Tips and tricks to supplement standard job guidance. For example, if you check the oil the wrong way on a Sikorsky S-76 helicopter it makes for a pretty funny, yet short, video as oil spews everywhere. Once you see it, you are likely to check it the right way next time.
2. Safety topics that need to be delivered quickly. While you would like to hit 100%, it is probably more important that you hit as many people as possible quickly, if it is something that critically impacts a large

population, such as safety bulletins that impact all pilots.

3. Problem solving skills. For example, research has shown that exercising the skill it takes to play "Where's Waldo" helps in detecting Improvised Explosive Devices (IED). (Benedict, C., 2009)
4. Topics that can be embedded as part of a scenario. This is similar to using stories and fables to achieve a learning objective. A storyline can be carried on as a series of scenarios delivered over time.

Non-examples of Viral Learning Candidates

Considering what we know about viral learning, the following topics are not good viral learning candidates:

1. Highly detailed subjects. Because a viral approach seems to do best when you are delivering a concept or "gist" rather than specific details, it does not seem well suited for topics where every detail must be remembered exactly. For example, intricate steps of assembling something or fine nuances of legal language.
2. Lengthy topics. If it is critical that a large volume of learning be delivered in a short period of time, then it may not be a good candidate for viral learning. A large volume may be delivered as part of a series of viral modules, but it would need to be spaced out over time.
3. Topics where the target audience does not have access to digital media. You may be surprised at how limited this audience is becoming. For example, we could say that farmers in Sudan would fit in this category, due to a lack of infrastructure in remote areas. However, cell phones are fairly common in some regions, leap frogging a more conventional, wired network. If we text farming tips to one farmer, it is bound to go viral, as he forwards those farming tips to his friends and extended family.

Controlling the Message

One aspect of word-of-mouth is the problem that every time a different person tells the story, it changes a little. Moving word-of-mouth to digital media actually helps keep the message consistent, vs. traditional word-of-mouth. The digital media allows you to continually point people to the same source. It could be an attached file, video or hyperlink. Regardless, the message remains unchanged. Note that this is not

completely fool proof. In one viral marketing example, the sponsors thought it would be clever to let people create their own advertisements for the Chevy Tahoe. While it did indeed go viral, the commercials people made did more to disparage the Tahoe as a gas guzzler than to increase sales. (Tynan, D., 2008) Whatever you build, make sure you consider how it might get compromised, either accidentally or by hackers. Also, if the message requires tight control over the authority or the content changes, you may want to consider using a link back to a web site where you can easily update the content, so the only thing that gets forwarded virally is the link. If you use an attached file, once you send it out, version control becomes a problem.

Security Concerns

As with any digital media, viral learning will be subject to the same security issues other new media have faced. In some cases, this may mean blocking access to one form of media. For example, it is not uncommon for government agencies to block access to Second Life. Also, anything that requires downloading a client application, such as a game, will probably run afoul of security restrictions. Once you successfully launch a viral campaign, be aware that you may very well set off spam filters all over the company, either at the server level or individual email boxes. Finally, we must guard against our viral campaign becoming part of an attack on the network. If we ask the target audience to make changes in their typical network security in order to accommodate our viral learning campaign, we run the risk of creating a security vulnerability. Unlike traditional web-based training that is hosted in a limited number of locations, passing something from person to person presents the possibility that each time the training is passed on, it could pick up a computer virus or other undesired attachment. Consult with the Information Assurance team at the target organization before you select a medium for going viral.

PROPOSED EXPERIMENTS

As we noted earlier, we did not find any literature regarding viral learning, let alone empirical research. However, one purpose of our paper is to spark discussion and research on the topic research. SRA's Emerging Learning Technologies group would consider collaborating with others in this research. For that purpose, we present the following potential hypotheses to explore.

Preference Hypothesis

People would be more likely to participate in viral learning than in other learning approaches.

Audience Size and Speed Hypothesis

Viral learning can reach a larger audience more quickly than other learning approaches.

Behavior Change Hypothesis

Behavior change measurement for viral learning is equal to or better than other learning approaches.

Cost Hypothesis

Cost per student per hour to produce is equal or less than that of other learning approaches.

EXPERIMENT DESIGN

In the process of putting this paper together, we came up with several thoughts regarding requirements for an experiment. In an effort to inspire further research, we present the following thoughts.

Candidate Topics

The topics for early experiments should remain simple in order to focus more on the mechanics of using viral learning as a learning medium. Potentially, tips and tricks around a technical task or relatively simple rules.

Potential Target Audiences

While, if packaged correctly, viral learning should be able to reach a wide variety of audiences, we may want to stick with audiences who are more accustomed to technology, such as technology-focused, communications or government organizations.

Use of Control Groups

In order to measure for a statistically significant difference, those conducting the experiment will need a control group who will receive the training through traditional means. However, traditional may be "in the eye of the beholder." If tested against classroom training there may be more of a difference on variables such as speed to the same size audience and development cost than when comparing viral learning to the cost and distribution speed of highly engaging, LMS hosted web-based training. So, for this reason, it may make sense to have several control groups, in order to compare viral learning to various approaches.

Measurement Approaches

The measurement approaches we presented earlier in the paper would also apply to the experiment. One of the greatest challenges will be creating valid and reliable measures that would apply to both viral learning and more traditional approaches with enough confidence that they can be accurately compared.

SUMMARY AND CONCLUSION

Although there is little to no available research on viral learning, the available literature and research on viral marketing leads us to believe that viral learning is a viable medium for delivering learning. Its advantages over typical learning approaches include low cost per student and speed of deployment. As with any other medium, it has its limitations and must be applied within them using standard ISD methodologies. However, this technique represents another engaging way to deliver learning. Viral learning will only be limited by the imagination required to create concepts such as the Subservient Chicken that will compel participants to pass the information on in a viral, word-of-mouth manner.

REFERENCES

- Anderson, Mae (2005), *Dissecting 'Subservient Chicken'*, New York, NY: Adweek
- Benedict, Carry (2009), *In Battle, Hunches Prove to Be Valuable*, New York, NY: New York Times
- Griffith, Mary, (2007). *Viral Learning; Reflections on the Homeschooling Life*, Morrisville, NC: Lulu Enterprises, Inc
- Khalidi, Rashid, (2011). *The Arab Spring*, New York, NY: The Nation
- Kirkpatrick, D. & Kirkpatrick, J. (2007). *Implementing the Four Levels*, San Francisco, CA: Berrett-Koehler Publishers, Inc.
- Merriam Webster, (2011). *Viral Marketing*, Springfield, VA: Merriam Webster, Inc
- Montgomery, Alan L. (2001). *Applying Quantitative Marketing Techniques to the Internet*, Pittsburgh, PA: Carnegie Mellon University
- Petrescu, Maria; Korgaonkar, Pradeep, (2003). *Viral Advertising in Social Media*, Orlando, FL: Direct Marketing Educational Foundation 15th Annual Robert B. Clarke Educators' Conference
- Rayport, Jeffrey, (1996). *The Virus of Marketing*, New York, NY: Fast Company
- Tumulty, Karen, (2007). *Obama's Viral Marketing Campaign*, New York, NY: Time Magazine
- Tynan, Dan, (2008). *Lame and Lamer: 10 Dumbest Viral Marketing Campaigns*, San Francisco, CA: PC World Communications
- van Till, Jaap, (2011). *Regime Change in the 'Arab Spring' is a System Change*, Arnhem, Netherlands: Netwesties.nl
- Wilson, Ralph F., (2000). *The Six Simple Principles of Viral Marketing*, Loomis, CA: Web Marketing Today