

Herding Cats Through the Gates of Cyberspace

The Process of Introducing Virtual Collaboration and Learning Technology
As a Tool For Large-Group Interventions

By Gail Terry Grimes* and Claude Whitmyer**

* CEO, FutureU (The University of the Future ^{LLC}),
529 Arkansas Street, San Francisco, California USA
Phone: (415) 824-7726, Fax: (415) 824-2651, gail@futureu.com, www.futureu.com

** CIO & CLO, FutureU (The University of the Future ^{LLC}),
529 Arkansas Street, San Francisco, California USA
Phone: (415) 648-2667, Fax: (415) 824-2651, claud@futureu.com, www.futureu.com

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Abstract

Virtual collaboration and learning (VCL) technology seems tailor made for large-group interventions. Web-based meetings, asynchronous discussions, data sharing, group document editing, just-in-time training, online surveys and an expanding array of other tools appear to hold great potential for organizational change and learning. However, organizational development professionals who anticipate a swift, easy introduction of technology mediation may be in for a rude awakening. Without appropriate facilitation, any VCL initiative may flounder and, with it, the intervention it was intended to support.

In the mid-1990s, organizational clients started asking the authors to help them facilitate the introduction of technology mediation. From those assignments has come a set of principles for successfully introducing any VCL toolset to a large group. This paper describes those principles, their application in various settings, the challenges that invariably arise, a range of proven solutions and insights, and the promise inherent in this next phase of human interaction.

Four Types of “Cats”

In 1997, Warren Bennis published *Managing People is Like Herding Cats*,¹ in which he described aspects of human nature that mimic the stubborn independence of cats, inhibiting organizational change and frustrating organizational developers. If Bennis is correct, then the process of getting a large group of humans to embrace one or more tools for VCL must surely compare to the Super Bowl for cat herders.

The usual challenges of group motivation and transformation are here aggravated by the technology itself. Even the best hardware and software will malfunction. Often the learning curve is significant. Emotions may run high. Moreover, not everyone brings to the table the same general skill level or the same attitude; in fact, addressing this variety of response to technology is a key element in the successful introduction of any VCL tool.

To expand on Bennis’ metaphor, when it comes to VCL there are four types of “cats”: Early Adopters, Late and Non-Adopters, and a large, uncommitted, though not necessarily uninterested, group of Middle Adopters. Each group is sufficiently idiosyncratic to interfere with collaboration and learning if not given appropriate attention.

Non-Adopters will never see a practical use for technology in their lives; they do not think it is for them, and they may be right. Usually closer to retirement than not, they tend to exhibit well-established, highly productive work habits that require nothing more sophisticated than a telephone to get the job done. In the authors’ experience, CEOs, university chancellors and medical directors—typically with an assistant who screens, prints out and summarizes their email for them—tend to be Non-Adopters, as do some “tenure-track” professors.

When a new VCL tool is being proposed or introduced, the change manager is well advised to leave the Non-Adopters to their own devices rather than struggle to engage them in

the new media. Overall communication is best served by keeping Non-Adopters informed and engaged through the least technological means possible. That may mean copying them on important emails but connecting by voice or in person if a reply or a more in-depth conversation is needed. Ultimately, this will take less time than attempting to bring them along. Better to move on to other, more promising audiences for VCL.

Early Adopters, by contrast, tend to leap on every new tool before the ink has dried on the manual. They do not simply embrace technology, they advocate for it. Eliciting buy-in from this group is not the problem; reining them in, is. Leaders who allow their Early Adopters to take the lead on VCL without supervision may wake up one day to an invoice for far more technical power than is needed and with a distracted workforce that cannot contain its outrage and frustration. As will be explained, a more methodical approach, with Early Adopters motivated yet governed, will vastly improve results.

Early Adopters do have a valuable role to play in the process of introducing VCL. Formal training aside, most people learn how to use technology gradually, from colleagues. When Early Adopters are recruited as advocates, mentors and trainers prior to a larger rollout, their own motivation swells, and others are inspired by their success and sustained enthusiasm. The result is a higher return on investment for the organization.

Late Adopters are often just as highly aware of the existence of technology as Early Adopters, yet they look at it quite differently; they know it is out there, and they know they may be expected to use it, but they tend toward neophobia, and they exhibit their resistance either through timidity or hostility. Comfortable and often successful in their old ways of communicating, they fear a loss of face if they should not perform well using the new media. To transform their disdain and anxiety into compliance and enthusiasm takes time and patience.

Late Adopters will most likely come on board if they are allowed to observe repeated success in others. Always invite, never coerce them. Offer multiple means of communicating; distribute a paper survey as well as an electronic version. Make opportunities available for over-the-shoulder participation. When Late Adopters are allowed to dip their own toes in the water, they will often, in their own time and with support and encouragement, become converts and full participants.

Early, Late and Non-Adopters, together typically comprise only a small minority within any large group. The rest of the population is typically made up of individuals who rarely think about technology and have formed no strong opinions of it. Initially neither resistant nor eager, they may quickly move to one camp or another as evidence mounts around them within the organization. The fears of Late Adopters, if left unchecked, may infect the larger population and inhibit progress not only on the introduction of VCL but on any surrounding interventions. Conversely, members of the middle group will quickly achieve the same mind set and skill level as the Early Adopters, *if* their introduction to the technology is handled well.

Thus, from its earliest conception, a VCL initiative must be carefully managed. The same types of population sub-groups, and the same patterns of behavior, have been observed by the authors inside a range of organizations, irrespective of industry. Moreover, the authors have witnessed, time and again, that large financial investments in technology, and fervent wishes for institutional transformation, go down the drain when sub-groups are neglected or carelessly managed during a VCL ramp-up. To maximize return on investment in any intervention, introduce VCL with attention to each segment of the population.

Principles, Applications, Challenges and Proven Solutions

Based on more than a decade of experience at facilitating the introduction of VCL into large groups, the authors have distilled the following general principles:

A successful VCL initiative must have interest and meaning for the group.

Harkening back to Bennis, at least two of his principles have relevance for the introduction of VCL to a large group: Attention and Meaning.

Bennis advises leaders to steer their population's collective attention toward whatever the intervention's desired outcome or goal may be, and to inject that outcome with meaning. This eye-on-the-prize approach is intended to increase awareness of possibilities and make the outcome worth the struggle. When introducing VCL tools, the intertwining principles of Attention and Meaning work together to create buy-in and staying power.

The process of gaining and holding a group's attention must begin well before the technology purchasing decisions are made. A group will more fully embrace the tools, and use them more effectively, if all members are invited early on to describe how they currently interact and share information and what is missing from those experiences. Then they should be invited to assist actively in selecting tools that fit their needs and preferences.

This process is best illustrated by an example. A consortium of scientists from many disciplines and many institutions was established in hopes that, by working together across time, as a virtual community, the scientists might uncover truths that would otherwise remain buried behind traditional barriers to cooperation. However, geographic distance, busy schedules and the solitary nature of much scientific work prevented the consortium from meeting face to face more than occasionally, and so the consortium's administrators attempted to introduce VCL as a catalyst.

The IT staff selected and installed a full complement of hardware and software, including sophisticated document and data-management systems, as well as videoconferencing rooms at each of a dozen primary sites. Unfortunately, the scientists failed to embrace any of this technology, and some tools turned out to be so inappropriate to their needs, so difficult to use, and, for some, so utterly incompatible with their available technology, that a mood of irritation and disappointment soon set in. The entire undertaking—not just the technology initiative but the virtual community itself—threatened to languish.

The authors of this paper were brought in to help rethink the original approach to VCL and attempt a fresh start. Working closely with a cultural anthropologist engaged by the consortium to study this dilemma and make recommendations, they employed both virtual and traditional channels to invite all of the consortium's support staff and every scientist in the group (from principal investigators to undergraduate students, amounting to some 500 individuals in all) to contribute to a summary understanding of the group's collective needs and preferences for sending and receiving communications and information. A discussion of potential obstacles and possible solutions was encouraged. Aggregate findings were immediately and widely disseminated, as was an in-depth analysis. A report was posted on the group's Web site using software that allowed for a separate, asynchronous, text-based discussion of each paragraph in the document.

The overall exercise elicited some surprising and important findings, not the least of which was that nearly half the group was using Macintosh computers rather than IBM-compatibles. Because many VCL software packages are platform dependent, a good many members of the consortium had therefore, by virtue of software choices that had been made without their input, been inadvertently excluded from participation. This vital finding henceforth

eliminated many VCL tools from the field of consideration. A potentially fatal “insider-vs.-outsider” scenario was thus averted.

Perhaps most important of all was the greater sense of inclusiveness that emerged from the inquiry process. With the authors’ guidance, the leadership had essentially taken Bennis’ advice and gained the members’ attention, focused it on VCL, and encouraged the members to formulate for themselves the meaning that VCL could provide in their work. Obviously not every member of the group took part in the inquiry to the same extent (although every principal investigator and co-investigator did fully participate, as did large majorities of other key stakeholder groups, such as IT and Administrative support). What matters, however, is that a precedent of decision making by consensus had been set, the topic of virtual collaboration and learning was now squarely on the table, and the members had started to consider what VCL might mean to them.

Once a tool is in place, leaders must actively and repeatedly draw attention to its availability, modeling its use and best practices. Tools quickly “rust” from neglect, yet such a fate is not uncommon for even the most expensive hardware and software. The authors were not surprised recently when the training director at a major medical center shrugged her shoulders, shook her head and said, in the presence of her boss yet without apparent embarrassment, “I think we have that software, don’t we? I’m not sure.” Costly as the training tool in question had been, it had never taken hold, and nobody minded admitting so. Moreover, the tool’s “failure” was likely to discourage, or at least slow down, further investments in truly useful solutions.

Attention alone, however, will not ensure that a VCL tool will make a positive difference in an intervention. Members of the group must not only have the tools in their minds; they must be motivated to use them.

According to Bennis, motivation derives from personal meaning. When an individual finds meaning in an action, that action gets done, despite challenges. Thus, the frustrations that surround an emerging technology, and the rapid evolution of the tools themselves, call for frequent, gentle reminders that perseverance will pay off. Consider the early days of the automobile, when cars routinely broke down, and people simply got out and waited for repairs. The outcome—getting quickly from here to there—meant enough to motorists to overshadow the inconveniences.

Certain technologies are bound to cause anxiety at first. More than a few Edwardians drew back in alarm when first handed the ear piece of a telephone. Country folk may to this day hesitate to board an elevator. The effective leader gently but repeatedly draws attention to the benefits that await on a higher floor, at the other end of the phone line, around the next bend in the road, or through the gates to Cyberspace.

Such examples should not be taken to imply that pep talks alone will inspire a group to embrace a complex new technology. Nor do the authors wish to brush aside the difficulty of building a participatory culture, especially inside a traditional organization where leaders hesitate to ask employees what they think. This fear of “opening Pandora’s box” characterizes the persistent tension between “Theory X” and “Theory Y,”² a subject well covered by other writers; however, what should be emphasized here is that, in the authors’ experience, members of an organization managed by “Theory X” (authoritarian management) are the slowest to accept new technologies. With VCL, as elsewhere, when individuals affected by a change are omitted from the conversation, the organizers should expect resistance, often through subtle, even unconscious, sabotage. On the other hand, where there is participative management, there tends to be greater personal meaning, and it is in such a context that an organization is more likely to

become a *virtual* organization, with a commensurate rise in individual productivity, team performance, status as “employer of choice,” and readiness for whole-system transformation.

VCL technology must be useful and usable.

In general, a tool is most *useful* if it accomplishes something meaningful and practical (e.g., improve communication, reduce cycle time, simplify data location). A tool is most *usable* if it has a friendly interface and a short learning curve. In a large-group intervention, organizers cannot afford for the population to get bogged down by an overly complex, overly powerful tool. Unfortunately, software developers tend to design for themselves and for the Early Adopter, the so-called “power user,” not the average individual. The result is a tendency for even the most promising tool to evolve into a juggernaut.

For example, version 4 of Microsoft Word has about 100 possible commands, whereas version 6 has more than 1,000. Research indicates that the average computer user regularly employs only about 20 commands. Everything else is just clutter. Only Early Adopters are likely to take the time to master the so-called power of the tool, yet the entire population must wade through all the software’s instructions, icons and other useless (to them) debris.³

The practitioner who conducts a careful needs assessment before introducing any new or additional VCL technology will, provided, of course, that the right questions are asked, soon discover what members of the group perceive as their central communication issues and what solutions might prove most usable and useful to them.

Especially valuable in any needs assessment is at least one open-ended question that essentially asks, “What’s on your mind?” The answers here often produce the richest data of all about the participants’ skill level, attitudes, problems and ideas for useful solutions. For example, the needs assessment for the scientific consortium described above revealed that most group

members *wanted* to collaborate, but that some felt “out of the loop” when it came to VCL (“None of the fancy virtual stuff is available to me in my far-flung position.”) This information led to some rethinking about the allocation of funds for technology and a greater effort to address issues of usefulness and usability among the least sophisticated members of the consortium.

The quality of the VCL experience may be positively influenced when participants are trained in best practices and provided with easy access to answers for frequently asked questions.

From childhood on, modern human beings receive plenty of practice at traditional forms of communication and learning. They sit in classrooms, attend meetings, write letters, fill out surveys, make phone calls. Although formal training is available in all these processes, most people get along without any, because the processes are so ingrained in society that learning how to do them is simply an organic part of growing up. When adults participate in an intervention, they might benefit from some additional training (in brainstorming, for example), but for the most part the intervention processes (meetings, surveys, trainings), however innovative their model, nonetheless build on familiar life experiences.

Introduce VCL to an intervention, however, and suddenly even the most sophisticated individual may face challenges. The medium itself becomes a barrier to communication and learning.

This was the case for senior managers enrolled in a one-year fellowship sponsored by their professional association. Traditionally, the content (leadership skills) had been taught face to face. Then, to accommodate more learners, provide them with peer support and eliminate geographic barriers, the association started offering the workshops as facilitated asynchronous online modules. The content remained the same, but the medium had changed, and participants no longer came to the fellowship with the necessary skills or experience to excel. In catlike

fashion, they retreated from the unfamiliar venue. The technology had become an obstacle to learning.

Then the authors of this article provided the association with 1) a two-week facilitated online module covering best practices for the online classroom and 2) a Web-based answer bank about how to use the VCL tools. The new module became an integral part of the fellowship, delivered at the start of each cohort, prior to any other content. This preparation armed the new fellows with best practices and the assurance of easy access to technical answers. The technology quickly became invisible, and within a year, association leaders were reporting a “significant increase in the quality of participation” in all subsequent, content modules.

As the menu of available media grows,
individuals must cultivate the skill of choosing the right tool for the job.

The temptation is to try to make each new tool, especially the high-end ones, fit every need. People want to get their money’s worth, after all; however, a slavish attempt to fit square pegs into round holes may reduce the quality of communication overall. No tool can or should replace all other means of interaction; sometimes, for example, talking face to face may be the best way to solve an interpersonal problem. The authors recommend training in how to determine which medium is best to use when.

Given the infancy of most VCL software and the rapid development of new and better options, the superior strategy for the next few years may be to invest in a collection of "best-of-breed" tools, each serving a specific function, rather than to choose an integrated suite for which the vendors have cobbled together a number of under-developed products around a single superior tool. Even though this approach may involve some challenges in moving from one tool to another, it assures the highest level of performance for each function and subsequently the

highest level of satisfaction from users who need tools to actually get things done. For the time being, then, the focus should be on finding the right tool for each specific need rather than worrying about centralized integration.

The same design cycle applies to the introduction of VCL as to any other planning process.

The cycle begins, of course, with analysis—starting with the assessment of need and engagement of personnel, as described above. Attitudinal and skills readiness must also be assessed. Results provide a baseline for measuring success.

The importance of this step cannot be over emphasized. A client in higher education engaged the authors to instruct a group of faculty in the basic techniques for designing and delivering virtual interactive courses. The leadership actively resisted taking the time for a user assessment ("We all use email. Everybody's ready to go."). Not surprisingly, on the first day of the training, some participants demonstrated a complete ignorance of the basic skills (word processing, uploading and downloading files to a Web site) required to create online course material. Had this low level of skill been discovered earlier, remedial training could have been offered to these novices. They would have learned more, and the more experienced participants would not have been held back.

The analysis phase also includes an inventory of tools already available to group members, an exploration of compatibility issues among existing solutions, and a full understanding of how those solutions have been received and used.

Once all the assessment data has been analyzed, the process moves on to an evaluation of potential vendors. (As explained earlier, members of the group should be invited to participate at every step, including here; in the example of the scientific consortium, personal email invitations went out to everyone ahead of each vendor demonstration, which was always followed by a brief

email opinion survey. Thus, consortium members had numerous opportunities to contribute to the analysis phase.)

Once the hardware and software choices have been winnowed to a manageable set of candidates that appear to have the required features, a proof of concept or pilot rollout provides real-world experience with the top candidates. To maximize user adoption, an implementation plan should be constructed for the tools that survive this proof/pilot phase. Depending on the size of the organization, a phased implementation to discrete organizational units may be appropriate. The kind of training described for the previous two principles should be tailored to the reported needs and delivered first to Early Adopters and then, ideally with their assistance, to increasingly interested sub-populations until the entire group is skilled and comfortable with the tools. An evaluation of results is the final stage before the cycle begins anew with the next sub-population.

Adhering at least generally to these steps gives Early Adopters the necessary structure to remain motivated yet moderated. At the same time, the process unfolds gradually enough to avoid panic among Late Adopters and to spark the curiosity of the larger population. This systematic approach also reassures Non-Adopters that all is not chaos or caprice.

A comparison of two examples in higher education provides evidence of an improved ROI when the design cycle is followed. One institution introduced VCL to its faculty by steadily building consensus, skills, momentum and critical mass. The first year, under guidance from the authors, a half-dozen Early Adopters produced imaginative, well-crafted Web-based course materials and later delivered them with learning outcomes equal or superior to those in previous, traditional, classrooms. Their training included not only technical instruction in the use of the learning software but also an introduction to instructional design and group facilitation practices most suited to the asynchronous online setting. This pilot group then mentored the next group,

and so on, with each subsequent academic term successfully bringing more faculty members, and their students, into the technology-mediated classroom.

The other institution in this example took the opposite approach, skipping the analysis process altogether and grouping Early Adopters and Middle Adopters together into a single, 35-member cohort for training purposes. The training itself consisted almost exclusively of detailed instruction in the use of the learning software, including its most erudite features. Any emphasis on instructional design or transferable technical skills was actively discouraged by the leadership. One year later, this faculty was found to have produced no additional course shells beyond those created in the initial training, and only a few new courses had been added to the list of courses already offered partially or wholly online by the institution.

The two institutions had approximately the same budget for the introduction of VCL and a similarly diverse mix in the academic curriculum represented by the faculty. Moreover, both espoused participative management. Yet, they produced markedly different results. Although this evidence is only preliminary, and may or may not be generalized to other institutions or sectors, it does appear to suggest that a methodical approach to the introduction of VCL produces superior results.

The introduction of VCL technology is a continuing, rather than a one-time, process.

No VCL tool has reached maturity. Moreover, new software products come to market every day, while others, often quite excellent ones, may suddenly disappear, leaving customers with no chance of further upgrades, training or support. Market consolidation is adding to the confusion and challenge. Organizers of large-group interventions must weigh the apparent advantages of a new tool against such factors as cost, learning curve and proof of concept. All this said, the addition of VCL to the organizer's toolset will likely be a continuously unfolding

process for some time to come. The authors recommend a gradual adoption of new tools in a way that carefully stretches the comfort level of the group and the organizer—without jeopardizing the intervention itself. This approach is in alignment with the earlier recommendation that specific "best-of breed" tools be used, rather than a less satisfactory integrated suite.

Conclusions and Implications

Ultimately, VCL technology may prove to be the Gutenberg Bible of large-group intervention. It promises to dissolve time and distance, add valuable shadings to communication, deepen evaluations and perform tasks with far greater ease, speed and accuracy than ever before. Using electronic survey software, even a very large and geographically dispersed group may now reach a simple consensus in a matter of seconds. Far-flung participants in a well-facilitated video teleconference say they quickly forget they are not in the same room with other attendees. Facilitators of asynchronous discussions say the participants reflect more deeply on their ideas and thus often produce superior thinking to what comes out of a traditional meeting. (They also say the new medium levels the playing field for gender, race, disability and even shyness.) Automated email messages deliver customized reinforcements designed to deepen learning and improve retention, strengthen group decision-making, improve adoption of desired behavioral changes, and maximize investments of time and resources. Many VCL tools also produce extensive statistics on user behavior that may be used to inform and strengthen long-term project evaluations.

The authors are not advocating for the new media to *replace* traditional intervention activities; far from it (The vitality generated at a Future Search conference is a beautiful and unbeatable thing.). However, if millions of American voters can use the Internet to self-organize a national political campaign on the scale of Howard Dean's; if an instructor in San Francisco

can create a true learning community from among a group of unacquainted and busy executives located in three-dozen states; and if NASA ground crews in Florida, Texas, California and elsewhere can collectively operate a robot on Mars—then surely something big is happening in terms of the role technology can play in *expanding* the capabilities of groups.

This will not be an easy revolution. When Gutenberg printed his first Bibles, the main obstacle to wide distribution was illiteracy. If it is fair to compare VCL tools to the first printing press, then a similar learning curve surely exists today. Individuals must learn the new alphabet of technology before they can “read” with alacrity. As for large groups and the professionals who lead them, they will be best served by a combination of patience and vision.

As has been described, the process of introducing VCL technology into a group requires an intervention unto itself, one that may temporarily disrupt the timing of larger goals. What is uncertain is the extent to which this may be the case, if at all, or whether in fact the assessments, trainings and other activities described in these pages as part of the VCL adoption cycle may actually *contribute* to the larger processes of groups. In fact, in the future, the process of introducing VCL may be seen as fulfilling the “go-slow” part of the commonly heard OD mantra “You Have to Go Slow to Go Fast.” Later, once the tools enjoy wide acceptance, perhaps they will also support and even improve the “go-fast” part of the equation.

The authors see a future in which large-group interventions will be cheaper, faster, and better because of virtual collaboration and learning. Moreover, they predict entirely new approaches to group transformation, facilitated by tools not yet imagined. The human element will always be present, of course, in varying degrees of independence and curiosity. But, just as cats know a good thing when they see it, anyone with an interest in group behavior may expect to see the human herd gradually finding its way into cyberspace.

¹ Bennis, Warren. *Managing People is Like Herding Cats*. Executive Excellence Publishing, 1997

² McGregor, Douglas. *The Human Side of Enterprise: 25th Anniversary Printing*. McGraw-Hill, 1985.

³ Gibbs, W. Wayt. "Taking Computers to Task," *Scientific American*, July 1997.