Beyond the Electronic Portfolio: A Lifetime Personal Web Space

Rather than limit people to the e-portfolio model, why not develop a model providing a personal Web space for everyone, for their lifetimes and beyond?

By **Ellen R. Cohn** and **Bernard J. Hibbitts**

The electronic portfolio (e-portfolio) is higher education's new "got to have it" tool—the show-and-tell platform of the millennium. Hundreds of academic institutions are variously studying, using, or innovating e-portfolio systems. Indeed, the current e-portfolio movement is spawning new university committees; on-campus training modules, books, campus-wide information campaigns, jobs, and a potentially profitable industry niche for software companies and consultants. Moreover, faculty and institutions that adopt e-portfolios appear cutting edge and innovative to their colleagues and students.

E-portfolios seem to be inherently "good." Instructional designers tell us that the process of constructing an e-portfolio stimulates our students to engage in reflective thinking. E-portfolios will provide accreditation agencies with tangible evidence that students achieved standards-based outcomes. New graduates will use e-portfolios to showcase their creativity and accomplishments, notably to gain an edge in the job market. Not surprisingly, university career placement centers regard the e-portfolio movement as an opportunity to link academic outcomes to the workplace.

Despite the presumed goodness of e-portfolios, unanswered questions remain. Where is the body of rigorous, research-based evidence that supports the e-portfolio as a pedagogical and presentational tool? Is there a downside to e-portfolio use? (For example, will programs sacrifice key learning objectives and other course assignments to create room in their curricula for this activity?) From a cost-benefit perspective, is it prudent to commit a university's faculty, administrative, information technology, and student resources to a time-consuming process that may be operational for only two to four years per student? Do we know for certain that graduating students who bring electronic portfolios to their job interviews will be more competitive than students who furnish paper-based portfolios?

Of even greater concern, as the culture of the e-portfolio proliferates, it will contribute to an ossification of the current prefabricated, one-size-fits-most e-portfolio model. Institutions and commercial entities that bind their energies and resources to current e-portfolio constructs may be slower to develop and embrace a yet to be developed transformative educational paradigm that more completely integrates education across the lifespan.

Is a technology-enhanced, show-and-tell, glorified resume truly the best result possible? Technologies surely exist to develop more innovative approaches. Yet, the thirst for a new and transformative paradigm is not widely apparent.

What do we wish for? That every citizen, at birth, will be granted a cradle-to-grave, lifetime personal Web space that will enable connections among personal, educational, social, and business systems. What follows are some possible attributes of such a space, though we suspect *EDUCAUSE Quarterly* readers might imagine many more.

LPWS Attributes

What do we envision in referring to the lifetime personal Web space (LPWS)? Imagine a magnificently equipped (with software, communication, search, and multimedia tools), beehive-configured Web space that possesses sufficient organizational plasticity to accommodate the user's developmental capacities and needs across a lifetime. The LPWS will thus be organized more like our brains than our file cabinets.

The virtual structure could consist of multiple cells with flexible entrance points. It would allow connections between internal cells, as well as seamless connections to external entities (Web based courses, mentors, peer reviewers, libraries, and so forth). The LPWS will store searchable content (personal, educational, social, business) that was important in a user's past and make it accessible for future use, as well as current projects. Since technology changes over time, the older sections of the Web space (for example, K–12 grade content) might be technologically less sophisticated, but would connect nonetheless to newer additions (such as postgraduate work activities).

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The primary user would decide whether a cell is private or public (potentially functioning as an e-portfolio or Web site) and who will be permitted to enter various parts of the structure. Some cells may be off-limits (even invisible) to all but the primary user. Moreover, the user will decide which cells connect to others and which do not. As the user matures, an analysis of the types and numbers of connections might assist in setting goals and strategies for subsequent personal and professional development.

The LPWS will be engineered to be available anywhere, any time. It will be universally accessible to persons in most circumstances, including those with disabilities and children and adults without homes.

LPWS Precursors

Our concept of the LPWS incorporates both existing and envisioned technologies, a nearly 60-year-old vision of the future, and time-tested educational practices that reach back to medieval times. The LPWS shares attributes in common with a microfilm-based device proposed by Vannevar Bush (1890–1974) in his now classic and prescient article "As We May Think." He wrote,

> Consider a future device for individual use, which is a sort of mechanized private file and library. It needs a name, and, to coin one at random, "memex" will do. A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.[1]

Looking much farther back in time, we can see that the LPWS also possesses characteristics of *vade mecum* (things you carry with you), such as "commonplace books," the personal journals that contained authors' writings, references, and resources. Commonplace books originated in ancient Greece and were carried about by writers well into the nineteenth century. These compendiums functioned as both personal references and were the precursors of modern-day portfolios.

The LPWS we envision will also possess characteristics of the *paidogogos* (a person who walks with you, as in the case of Greek slaves who accompanied Roman boys to school). The LPWS could be programmed to remind, support, stimulate intellectual development, and even cajole the user-student to action.

LPWS Benefits

The LPWS offers benefits beyond those currently available with other technologies, from educational to social.

Educational Continuity: Less Knowledge Left Behind

Few students maintain ready access to both the content and products from their K–12 years. College students typically sell their books and lose access to their collegiate course management

Web sites. While an e-portfolio provides ready access to selected work products, intent and effort are required to transport content between separate, often incompatible systems. The LPWS construct will enable users to preserve more knowledge over time and to forge richer connections between their academic and work endeavors.

Imagine the following LPWS-based scenario. A third-year medical student working on a problem-based learning (PBL) scenario confronts an unknown but vaguely familiar medical term. She searches her LPWS and revisits the Latin vocabulary she learned as a sophomore in high school.

The same PBL presents the need to understand cranial nerve function, concepts she acquired as a senior in a college-level neuroscience course. The LPWS cues the student to the prior content and provides a link to the relevant portion of an archived undergraduate neuroscience course management Web site. The LPWS also links seamlessly to the medical school's library archives and to the student's notes of patients she previously observed in clinic.

The student posts her PBL research in a portion of the LPWS that connects to the course Web site, where she receives feedback from her peers and the faculty preceptor. At the end of the PBL exercise, she commits the content she generated to her electronic portfolio. All of the student's activities are accomplished and preserved within the same personal Web space. The LPWS construct could thus preserve and link didactic content, learning assessments, and products generated by prior, current, and present knowledge.

A Convenient One-Stop Shop

It can be daunting to relate to multiple e-mail accounts, course management systems, and e-portfolio accounts. Together, these challenge users to recall multiple addresses and passwords and to monitor numerous Web sites for new messages and activity. Such siloed systems do not promote connectivity or communication immediacy. The LPWS could serve as a one-stop shop for electronic activities by housing and linking personal content libraries, work spaces, communication networks, and public areas. This personal Web space would be structured according to the user's unique concept map and learning style, not by predetermined institutional or commercial templates, though templates would be available.

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Community-Building

The LPWS will seamlessly link individuals to larger communities, thereby facilitating interpersonal connectivity versus fostering social isolation. Within an academic setting, for example, the LPWS could link students to their research mentor's electronic laboratory network or to a global learning space. The JURIST Web site (http://jurist.law.pitt.edu/) is an innovative example of the latter. JURIST presents continually-updated legal news edited at the University of Pittsburgh's School of Law by Professor Bernard Hibbitts and his volunteer staff of more than 30 law student anchors and beat reporters. Hibbitts created a global learning space with public and private archives, legal scholars "in residence," and space for his students. He oversees quality control and ensures that the site duly acknowledges the contributions of others.

JURIST, which has spawned international spin-offs, encourages community participation and feedback via blogs, e-mail, and discussion boards and maintains regular communication with subscribers. The strength of the JURIST model lies in its plasticity. It simultaneously preserves valuable content and integrates new scholarly activity, pedagogical methods, and technologies.

Future Challenges

A rigorous evaluation strategy will be necessary to address the validity of the core principles, usability, and economic costs and benefits of the LPWS.

A fully developed LPWS paradigm will require integration between multiple systems (educational, social, business, and government). It also must be accessible to all citizens, regardless of age, disability, or socioeconomic status.

Significant public policy developments must be addressed to determine where to house these personal Web spaces and how best to protect individual privacy, security, and rights.

What about changes in technology? How will the LPWS integrate current and future technologies so that prior content is not lost during technological conversions? What new standards for interoperability will be required?

Then there are the financial issues. What economic models could support the LPWS paradigm? All these questions will require significant study.

LPWS Personas

We have thus far proposed an individualized Web space that can simultaneously function as a *vade mecum*, a *paidogogos*, a "guide on the side," a life-long storage space that retains work products and their seminal versions, and a virtual exhibit of one's evolving work. The work of an LPWS need not be limited to a person's active engagement in the space, however, not even to the here and now. Even after an individual ceases to work or live, the LPWS can survive as an historical record of that person's body of work—as a virtual, interactive archive, for example, such as a Web-based version of a U.S. presidential library.

We can draw on new and still developing technologies to illustrate how the LPWS might employ chat bots and Persona-Bots to project the originator's personality. These software programs project the personality of an individual through words and physical appearance. The now-famous John Lennon Persona-Bot[2] attempts to recreate the personality of John Lennon using a database of conversations he had during his lifetime.

It might also be possible to animate an LPWS by applying technology developed at NASA's Jet Propulsion Labora-

tory (JPL). Digital Personnel technology synthesizes animated facial expressions with recorded speech. This, combined with chat-bot technology, can be applied to "humanize" an LPWS.[3] Conceivably, other nonverbal attributes such as "odor," and characteristics of a locale via virtual reality, can also be linked to the LPWS. Egolf[4] observed that this controversial technology might allow people with degenerative diseases to "bank" their identities in a computer that stores and recreates their physical likenesses, voices, body movements, and facial expressions. While this might be an early application of this technology, more general usage is possible in the future.

Beyond personality, a comprehensive LPWS technology could strive to capture an individual's critical reasoning strategies. The LPWS could conceivably "work" independently of the person, even interacting and teaming with the LPWSs of others. Could these ultimately develop and morph independently of the lives/involvement of their originators?

Closing Remarks

This *EDUCAUSE Quarterly* Viewpoint offers more questions than answers. It asks readers to consider to what extent we should continue investing our institutional resources, time, and creative energies in the current directions and offers a very preliminary vision of two readers' desire for the future.

Significant advances are possible if *EDUCAUSE Quarterly* readers collectively strive to develop new paradigms that offer more far-reaching benefits to society than the existing models. However, the process is difficult and complex. It is much more comfortable to focus on lesser efforts, such as the e-portfolio.

Nonetheless, meeting the challenge of developing a robust, sustainable LPWS paradigm offers multiple and varied benefits that we believe will be well worth the effort. *e*

Endnotes

1. V. Bush, "As We May Think," *The Atlantic Monthly*, July 1945.
2. See the John Lennon Artificial Intelligence Project, <http://johnlennonproject.com/>. Persona-Bots are developed by Triumph PC Online, Washington, D.C., <http://www.triumphpc.com/jack-the-ripper/about_persona-bots/>, using an advanced artificial intelligence-based logic engine.
3. NASA's Jet Propulsion Laboratory licensed Digital Personnel Technology for commercialization in May 2000, (http://www.jpl.nasa.gov/releases/2000/digitalperson.html> (accessed September 8, 2004).
4. D. E. Egolf, "Augmentation Communication with Synthesized Facial Expressions: A Controversial New Technology," *Technologia: The International Journal for the Advancement of Knowledge and Learning*, Vol. 4, No. 3, July–September 2002, pp. 78–79.

Ellen R. Cohn (ecohn@pitt.edu) is Assistant Dean for Instruction, School of Health and Rehabilitation Sciences, and Associate Professor, Department of Communication Science and Disorders, University of Pittsburgh. Bernard J. Hibbitts (Hibbitts@law.pitt.edu) is Professor, University of Pittsburgh School of Law.