

Expanding Access to Learning

The Role of Virtual Universities

BY CAROL A. TWIGG

Center
for Academic
Transformation

AT RENSSELAER POLYTECHNIC INSTITUTE

Expanding Access to Learning: The Role of Virtual Universities
by Carol A. Twigg
© 2003 Center for Academic Transformation

Center for Academic Transformation
Rensselaer Polytechnic Institute
4th Floor, Walker Lab
110 8th Street, Troy, NY 12180
518-276-6519 (voice)
518-695-5633 (fax)
<http://www.center.rpi.edu>

Preface

Almost every state in the United States is engaged in some kind of virtual university effort. Plans for these new organizations tend to emphasize the need to establish a postsecondary educational system that is accessible, efficient, and responsive to the needs of citizens and economic stakeholders; to create educational opportunities that can be delivered to new populations of potential students; to minimize costs; and to enable students to continue to work while attending college, as the following excerpt from the Kentucky Virtual University (KYVU) home page exemplifies:

The mission of the KYVU is to be a student-centered, technology-based system for coordinating the delivery of postsecondary education that meets the needs of citizens and employers across the Commonwealth. . . . Consistent with the statewide strategic agenda for postsecondary education, the primary purposes of the KYVU are to:

- Enhance and expand educational access and increase educational attainment across Kentucky.
- Upgrade workforce skills and expand professional development through basic and continuing education.
- Increase collaboration and foster efficiency and effectiveness in delivering courses and programs.
- Enhance educational quality.
- Increase global competitiveness of Kentucky's educational resources.

—KYVU, 1998

Many state leaders believe online or distance learning can expand educational access and contribute to economic development and do so cost-effectively. Most also believe the best way to organize those efforts is to put resources into a virtual university consortium (VUC). In some cases, the consortium involves only public institutions: the Education Network of Maine, Georgia G.L.O.B.E. (Global Learning Online for Business and Education), the State University of New York (SUNY) Learning Network, UMassOnline, and the University of Texas Telecampus. In other states, the effort involves both public and private institutions: the Illinois Virtual Campus (IVC), Kentucky Virtual University, Michigan Virtual University (MVU), and the Ohio Learning Network.

Are these VUCs meeting the goals for which they were established? For now, state and system leaders view VUCs as a vital part of the solution for meeting statewide educational and economic needs, yet these consortia have yet to prove their long-term viability. Indeed, some question how far these efforts, as currently constructed, can go toward meeting key state goals related to economic development. In addition, some wonder whether the VUCs will be able to innovate fast enough to stay ahead of the innovations in online learning that are occurring on individual campuses.

What have we learned thus far about the advantages and disadvantages of different VUC organizational models? What business models work best? What are the political and policy obstacles that

must be overcome in order for a virtual university effort to succeed? Are there potentially more-effective models in addition to those already in existence? On July 18–19, 2002, a group of higher education leaders gathered at the Aspen Institute in Aspen, Colorado, to discuss those and other issues facing higher education institutions and state policy makers as they create new kinds of organizations to promote online education. The topic was “Expanding Access to Learning: The Role of Virtual Universities.”

The symposium was the sixth of the Pew Symposia in Learning and Technology, whose purpose is to conduct an ongoing national conversation about issues related to the intersection of learning and technology. Symposium participants fell into four categories: (1) leaders of state-based, virtual university consortia; (2) leaders of substantial campus-based, online initiatives; (3) leaders who have experience with both campus-based and statewide efforts; and (4) noted higher education thinkers on the topic of technology-mediated programs. By blending those active in creating strong online programs in institutional settings with those experienced at the state level, we hoped to create an exchange that would enable us to assess the viability of a variety of organizational approaches to successful initiatives.

By design, we excluded several aspects related to virtual university developments. First, we focused our discussion primarily on statewide virtual university initiatives rather than on stand-alone virtual universities or individual campus

efforts in developing online learning venues. Second, we did not spend a lot of time discussing the benefits of online learning or how well the virtual university consortia promote online learning. Online learning is a means to an end; it is not an end in itself. The purpose of establishing virtual university consortia is not to engage students in online learning; it is to increase access to higher education, enlarge the college-going population, promote economic development, and so on. Online learning is a means to achieve those goals. States are making investments in virtual university initiatives above and beyond their investments in existing institutions because they believe they can make a special contribution to achieving state goals. Consequently, we centered our attention on assessing how well today's models are achieving those goals.

This paper is organized as follows:

- The paper first discusses how and why the collaborative model has become the default model in virtual university initiatives despite differences in the drivers behind their establishment and the functions they perform, and it raises questions about the efficacy of that model for meeting state needs.
- The paper then identifies and discusses five critical success factors drawn from the experiences of the existing VUCs that, when combined, can create the most effective approach to increasing access and promoting economic development within any given state.
- Building on this delineation, the paper then describes a new, entrepreneurial approach to virtual university initiatives that is based on a system of targeted incentives rather than on a collaborative model.
- Finally, the paper presents a number of case studies interspersed throughout the text. Three of them—CCCOOnline, the Tennessee Board of Regents Online Degree Programs, and UMassOnline—exemplify the most-successful VUC efforts to date. One—University of Maryland University College (UMUC)—illustrates the issues surrounding the dominance of one online institution within a state. Another elaborates strategies behind scalable online instructional models. Two others—KYVU and MVU—describe how both prominent VUCs have moved beyond a focus on higher education to include other segments of the state's education economy.

States are making investments in virtual university initiatives above and beyond their investments in existing institutions because they believe they can make a special contribution to achieving state goals.

A few words about terminology are in order. Throughout the paper, for simplicity's sake, the abbreviation *VUC* is used in reference to the state-based virtual university consortia efforts that were the focus of our discussion at the symposium. Similarly, variations on the phrase *meeting state needs* are used to encompass the common goals of expanding educational access and

contributing to economic development that most state consortia have.

This paper, like the discussion in Aspen, builds on the good work of the individuals who participated both virtually and in real time. Before our meeting, the participants submitted written answers to a series of questions concerning the factors driving virtual university initiatives as well as the organizational and financial issues and the policy questions they face. Their responses, elaborated by the discussion, helped frame this paper. Our intent, however, is not to produce a report of the discussion but rather an independent analysis of the issues discussed that will benefit the higher education community as a whole.

The goal of the Pew Symposia is to approach topics related to learning and technology from a public interest perspective. Many constituencies bring self-interested agendas to discussions about technology: administrators worry about facing competitors; faculty worry about keeping jobs; and vendors worry about selling particular hardware and software. So too do different segments of the higher education community bring competing agendas that often reflect political considerations first and quality concerns second. The Pew Symposia are intended to produce thoughtful analyses and discussions that serve the larger good. Please let us know whether we have met that goal.



I. Emergence of the Collaborative Model

When we consider the emergence of the state-based virtual university phenomenon, it is amazing how rapidly these new organizations have proliferated. A current study sponsored by the State Higher Education Executive Officers and the Western Cooperative for Educational Telecommunications, which seeks to investigate how well state-based virtual colleges and universities are meeting their public policy goals, has identified 63 distinct organizations to survey.

Despite the fact that the higher education community tends to refer to all of the state-based organizations as virtual universities, the names they have chosen for themselves are quite varied. Of the 13 organizations represented at the symposium as examples, only two of them are actually called virtual universities: Kentucky Virtual University and Michigan Virtual University. Others prefer *virtual* or *electronic campus*, as in the Electronic Campus of Virginia, the Florida Virtual Campus, the Illinois Virtual Campus, and the Louisiana Board of Regents Electronic Campus. Coming in third in popularity is the use of *online*, as in Community Colleges of Colorado Online (CCCOOnline), MarylandOnline, and UMassOnline.

Other VUCs, like the Tennessee Board of Regents Online Degree Programs and Arizona Regents University choose to include their governing board's name. Two reflect their consortial nature: the Connecticut Distance Learning Consortium and the Florida Community College Distance Learning Consortium. Finally, in the category of other are the SUNY Learning Network and Georgia G.L.O.B.E. But just as there is little relationship between Michigan State University and Buena Vista University, despite the similarity in names, so two does MarylandOnline have more in common with the Illinois Virtual Campus than with other VUC that adopt the *online* nomenclature.

Both the general higher education community and the VUCs themselves tend to think of the VUCs as being more alike than they are different. Yet when examining the most predominant of the VUCs—the 13 organizations represented at the Aspen symposium—one is struck by how different they are despite their surface similarities. One of our goals at the symposium was to understand both the similarities and differences among the organizations represented. Too

frequently, discussions about these initiatives end up comparing apples and oranges and, as a result, produce little enlightenment.

Among the many different drivers behind existing VUC efforts are:

- Coping with increased numbers of traditional-age students
- Serving educationally underserved communities
- Offering opportunities for degree completion to those who have attended college but failed to graduate
- Providing for more than occasional bilateral agreements for transfer of credit between institutions
- Affording nontraditional career professionals and workforce development candidates access to higher education
- Providing streamlined access to the state's institutions via a portal
- Creating a mechanism to offer degrees not offered by existing institutions
- Taking advantage of online learning to meet enrollment growth at less cost
- Overcoming the possibility that the state's institutions will be left behind in the new, highly competitive online environment

Despite the diversity in the drivers behind the establishment of these initiatives and the range of functions they perform, these state consortial efforts have much in common. All operate a portal—a Web site that lists participating institutions and courses and, in most cases, degree programs offered online. Almost without exception, each state has adopted a collaborative model. None of the consortia are degree granting, and none offer their own courses; rather, they list those of the participating campuses. In most cases, their primary operational activity is as a referral service.

Is there a relationship between the goals of a particular virtual university initiative and the organizational model that results? It appears not. Figure 1 illustrates the similarities and differences among the organizations represented at the

	AZ	CO	CT	FVC	FLCC	GA	IL	KY	LA	MA	MD	MI	NY	TN
Foster access to existing higher education courses and programs	▲	▲	●	▲	▲	▲	●	●	▲	▲	▲	●	▲	▲
Manage a Web portal to promote access to state institutions	▲	●	●	▲	▲	▲	▲	●	●	●	●	▲	●	●
Provide a forum for discussion among member institutions	●		●	▲	▲		▲	●		●	●	●	●	●
Foster collaborative online course and program development	●	▲	▲					●	▲	▲	●	▲		▲
Provide statewide faculty development		●	▲					●	●	●	▲	●	▲	●
Develop new courses and programs	●	●	●			●		▲	●	●	●	●		●
Provide technological infrastructure and support		▲	▲	●	●	●		●	●	▲		●	▲	●
Coordinate marketing services	●		●		●	▲		●		●	●	●	●	●
Provide integrated student services	▲	●	●			●	▲	▲		●	●			▲
Coordinate non-credit work force development training			●			●		▲	▲			▲		
Create a mechanism to offer degrees not offered by existing institutions								●	●			●		
Manage virtual library						●		●						

Figure 1. Similarities and differences among VUCs

● performs function ▲ "top three" function

symposium. Despite differences in the functions they perform, it is remarkable how, without exception, these state consortial efforts have adopted a common, collaborative model, which calls to mind the old saying, When the only tool you have is a hammer, every problem looks like a nail. In the case of VUCs, collaboration seems to be the answer no matter what the problem happens to be.

What accounts for the predominance of the collaborative model? At first glance, the answer would seem obvious. Since the basic idea behind all virtual university initiatives is to leverage the state's existing educational resources in service of state needs, it is necessary to have the cooperation of existing institutions. Needing the cooperation of existing institutions does not, however, require the development of a collaborative model; other strategies are possible. One needs to look to other dynamics in American higher education for an explanation.

A watershed moment in American higher education occurred in 1996, when 18 of the nation's governors announced their intention to establish Western Governors University (WGU). Feeling the press of increased demand for postsecondary education coupled with the high costs of traditional educational practices, WGU advanced a vision of a new kind of university, one that would be more responsive to statewide needs. Traditional higher education institutions were characterized as inflexible, costly, unwilling to change, outmoded, and unaligned with an information economy. Established as a free-standing, degree-granting institution, WGU is rightfully credited with accelerating the development of online programming among traditional institutions.

The establishment of WGU, coupled with the accelerated growth of the University of Phoenix, made every state take a long hard look at the stand-alone model. Would creating a new, independent institution be the best way to deal with the expressed educational needs of states? Such a model would



seem to be a wonderful vehicle for eliminating the barriers that were preventing learners from reaching their goals in a reasonable timeframe and at a reasonable cost. Many state leaders also believed that competition from an innovative and entrepreneurial virtual learning structure would create change and accelerate responses by established providers.

What most states have concluded, however, is that stand-alone virtual university initiatives are too expensive to initiate and sustain both fiscally and politically. As one participant put it, the experience in Maine—where the establishment of a separate degree-granting entity, the Education Network of Maine, led to its eventual downfall—was an event of singular

The assumption that a collaborative model will get you where you want to go is totally unsubstantiated. Collaboration is an extremely difficult thing to accomplish in higher education, just as it is in the world of business.

importance in making it clear to the next generation of virtual university framers that if you mentioned *degree-granting university* in the same breath as *virtual university*, you were destined to fail.

Many in higher education say the ability to grant degrees is the one remaining asset that existing institutions have in this new, competitive world of online education, and so it is one that should be jealously guarded. By offering degrees, the new entity would be foursquare in competition with the state's other institutions. Having a separate virtual institution would likely mean taking resources away from already-taxed colleges and universities. The virtual institution would become just another new institution at the trough competing with other institutions for scarce resources. A separate public degree-granting institution would face struggles with existing institutions that would view it as somewhere between a nuisance and a serious threat that needed to be destroyed. One by one, states unanimously decided that finding a way to meet state educational needs without competing head-to-head with existing institutions would be an easier way to proceed. Thus, the collaborative model was born.

Most of today's VUC models assume that collaboration among diverse institutions is the way to achieve state goals. In a particularly emphatic expression of that view, one participant said, "I do not think there is an alternative to collaboration for traditional higher education. In fact, I think that increased interinstitutional cooperation will be remembered as the most valuable effect of the online learning revolution." But as one symposium participant remarked, "If collaboration is the answer, tell me again: what is the question?" All too frequently, VUC initiatives begin by asking how existing institutions can collaborate as if collaboration were an end in itself. Rather than beginning with a programmatic goal and deciding that a collaborative effort is the best way to achieve it, too many talk about collaboration as the goal or as an end in itself. Instead, the question should be, Collaboration for what?

The assumption that a collaborative model will get you where you want to go is totally unsubstantiated. Collaboration is an extremely difficult thing to accomplish in higher education, just as it is in the world of business. Unfortunately, there are precious few examples of success in either, especially in relation to the number of collaborations that have been attempted. A scan of degree programs offered via VUCs reveals that no more than a handful of collaborative programs exist and that those that do have been incredibly time-consuming and slow to develop. As one participant put it, the cultural differences among U.S. institutions are so great that the "friction levels" do not go down very rapidly.

Nevertheless, collaboration is the model of choice. Having rejected degree granting as the significant differentiator, VUCs tend to follow one of two models of collaboration, one of which is relatively passive and one of which is relatively aggressive. An example of the passive approach is the Southern Regional Electronic Campus (SREC), which brings together hundreds of institutions into, as one participant put it, a "voluntary online collaborative." Often cited as an example of effective collaboration, the SREC enables students to browse an electronic catalog of courses and programs offered by the 16 participating states' institutions. The SREC does not enter into local political or funding struggles but rather provides a neutral platform that supports both customers and providers. Many in the VUC movement view mounting such an online catalog as a significant achievement, yet it is not clear how listing courses in a database represents collaboration.

Also in the passive vein, library consortia are held up by advocates of collaboration as another model for successful, long-term collaboration. As one participant commented, "From

OCLC, Solinet, and similar overarching collaborations to local interlibrary loan arrangements, the Kentucky Virtual Library and its counterparts elsewhere point the way to sustainable inter-institutional cooperation.” The Kentucky Virtual Library, which links very nearly all libraries in the commonwealth of Kentucky—including public and private postsecondary, K–12, municipal, military, and some corporate—is the fiscal agent and manager on behalf of a statewide consortium of 46 licensed databases. Similarly, some VUCs engage in joint provision or joint purchasing of faculty training, joint marketing of online programs, and joint provision of information technology support structures as similar examples of effective collaboration. While such joint purchasing arrangements are indeed valuable, they are a far cry from collaborative program development and delivery.

Illustrating the aggressive approach are those VUCs that adopt the term *virtual university* in their name, such as Kentucky Virtual University and Michigan Virtual University. While neither organization is degree granting—ostensibly avoiding the “Maine” problem—including the word *university* in the name can be viewed as taking an aggressive stance vis-à-vis the state’s existing institutions. Unsurprisingly, many of the existing campuses reacted negatively to the formation of KYVU and MVU. Both were generously funded, which was interpreted by the existing campuses as being competitive with their own interests. Both also began their operations by attempting to centralize a number of functions such as course management systems and student support services in the name of leveraging resources. Neither organization has been particularly successful in gaining the cooperation of the state’s higher education institutions, especially the four-year institutions. As a result, both KYVU and MVU have broadened their activities and now operate more like broad-based educational development agencies than what the name *virtual university* would suggest. Each has taken on roles that make significant contributions to the well-being of their state, but there is a considerable difference between their founding goals for online higher education and where they are today. (See the case studies on page 7 for more details.)

A major strength and a major weakness of America’s higher education institutions is their independent competitiveness. Some have characterized the business of higher education in America as a cottage industry. After all, there are nearly 4,000 institutions. By definition, they do not thrive on cooperation and collaboration. Autonomy, perception of quality, and competition for students and for resources, to name a few,

are factors that are deeply ingrained in the culture of higher education.

Collaborative program development is particularly difficult to accomplish. The institutions that are the least collaborative in curriculum ventures tend to be those with a strong faculty influence on campus. Most faculty members say no one teaches a given course as well as they do—and certainly not someone from another institution, even if it is a faculty member who teaches at Oxford. There is suspicion that another university’s online course will not meet the quality standards of one’s own institution. Academic turf and the like

By definition, higher education institutions do not thrive on cooperation and collaboration. Autonomy, perception of quality, and competition for students and for resources, to name a few, are factors that are deeply ingrained in the culture of higher education.

can sometimes be worked out among institutions that view one another as peers, but as one participant put it, “Lord help the poor status-inferior college that attempts to work with one of the big boys.” One might well ask, Why would a state not take the proven path of least resistance in meeting its educational needs and view collaboration as a mechanism to invoke when no single institution can meet those needs?

Is there a relationship between the consorcial model adopted by most states and the state’s progress in fulfilling the goals for which they were founded? Do some states have approaches that are more promising than others despite their surface similarities? The symposium discussion revealed significant differences among the ways in which the VUCs operate as well as a number of factors that are critical to success, both of which will be examined in the paper’s next section.



case

The Virtual Universities: Kentucky and Michigan

Kentucky Virtual University www.kyvu.org/home.htm

The mission of Kentucky Virtual University (KYVU) is to be a student-centered, technology-based system for coordinating the delivery of postsecondary education that meets the needs of citizens and employers across the commonwealth. KYVU's enabling legislation mandates KYVU to work with Kentucky's public colleges and universities—siblings in the system overseen by their parent, the Kentucky Council on Postsecondary Education.

With generous initial funding in the amount of \$7 million for the first two years, KYVU created a single portal for admission and registration, supported the building of online courses by individual institutions, and achieved collaboration in a number of areas, such as use of a single admission form, 48-hour turnaround for admission processing, and some commonality in learning management systems. Thirty of KYVU's 32 for-credit programs come from Kentucky colleges and universities, as do 81 percent of its 6,281 students (spring 2002 unduplicated head count).

Kentucky's public colleges and universities do not offer all of their Web-based programs or courses through KYVU. The institutions have not fully or always welcomed the centripetal force represented by the KYVU. Some universities and colleges have been more willing to collaborate with the KYVU than others. The terms of the collaboration are closely negotiated and often contested. Even with the KYVU's main partners, day-to-day procedures and the overall relationship are works in progress subject to much scrutiny and intervention. Attempts to develop online master of business administration and master of science in library science programs were unsuccessful. Existing programs would not develop online versions because they did not want more students—despite numerous requests from prospective students. KYVU investigated importing degree programs from other states but lost the political battle within the state. In the end, it was evident that among the four-year institutions there was neither the will nor the incentive to collaborate inter-institutionally.

As a result, KYVU will continue to be a portal to Kentucky's Web-based programs and to work with those institutions that want to collaborate, but much of its emphasis has moved away from developing traditional online degree programs. KYVU has established partnerships with the Kentucky Department for Adult Education and Literacy, the Education Professional Standards Board (the state's certification board for K–12 teachers), and other Kentucky government agencies to create professional development and workforce skills training curricula.

The relationship with those clients is different from that with higher education for two main reasons. First, the government agencies see KYVU as an independent contractor rather than as a sibling attempting to exert control over the family business. And second, the agencies have turned to KYVU for a turnkey, end-to-end solution, whereas the colleges and universities have diminishing need and less desire to outsource to KYVU. Online learning is not a core competency for state agencies, but it is—or soon will be—for the colleges and universities.

KYVU's partnership with the Department for Adult Education and Literacy exemplifies its growing emphasis on resolution of access issues at important entry points and its drive to improve skills among Kentucky's least-advantaged citizens in ways that fall outside the purview of traditional colleges and universities. A 1997 survey found that about 40 percent of Kentucky's working-age population were at the two lowest levels of literacy as defined by the U.S. Department of Education. The goal is to decrease the number of Kentuckians whose literacy level hinders them from participating fully in today's economy. Several universities and colleges, most notably the Kentucky Community and Technical College System, are involved in the online literacy effort, but the Department for Adult Education and Literacy and KYVU shape and control the initiative. Tellingly, the curriculum is licensed from third parties.

Michigan Virtual University

www.mivu.org/

The Michigan Virtual University (MVU) is a private, not-for-profit Michigan corporation established in 1998 to deliver online education and training opportunities to the Michigan workforce. Despite an initial focus on higher education, MVU now concentrates on noncredit workforce development and continuing education with very little activity at the baccalaureate level. Engaging online learning to help accelerate statewide workforce and economic development were cornerstones in the development of MVU. Its prototype was Michigan Virtual Automotive College, established in 1996 by the state of Michigan, Michigan State University, the University of Michigan, and the auto industry. The automotive college became a division of MVU and now has an expanded focus as the Michigan Manufacturing Training Network.

MVU began in an environment of consensus about the need to use online learning for helping meet anticipated retirements and reduced numbers of entry-level engineers and technically prepared employees. Environmental scans were conducted, and statewide groups discussed the scope and direction of online learning. Finally, institutional and private-sector seed capital was committed to provide about \$30 million in start-up resources to begin a virtual university.

MVU has tried to serve as a general catalyst to encourage higher education institutions to engage in online program delivery. In its early days, like in Kentucky, the MVU provided both a complete environment for faculty to build courses at no cost and an online instructor-training program. Also like in Kentucky, MVU provided a number of small grants to encourage Michigan's colleges and universities to offer programs that would meet state needs. And again like in Kentucky, MVU views itself as a good neutral party that can foster collaboration among institutions. It has had some limited success in developing common courses, but there are no collaborative degree programs online yet.

Today higher education makes up about 20 percent of MVU's activities, and most of that is at the community college level. Like KYVU, MVU does not offer credit-bearing courses on its own but rather operates a portal that aggregates the online offerings of both public and

private four-year institutions. Similarly, some Michigan institutions offer online programs with no connection to MVU. MVU provided seed funding for the state's community colleges to operate the Michigan Community College Virtual Learning Collaboration, which includes a common catalog, articulation agreements for transfer, a common tuition structure, and a revenue-sharing plan among the providing colleges. Community colleges generate about 16,000 enrollments a year in a number of certificate programs as well as one or two associate degree programs.

As in Kentucky, many of Michigan's higher education institutions are not interested in providing certain kinds of courses or services for certain customers. In those cases, MVU looks to the private sector for online learning solutions, particularly short, noncredit workforce development courses for specific market sectors. Today the bulk of MVU's activities focus on noncredit, workforce development needs and demands, including:

- *Information technology training.* MVU provided more than 800 online IT-training courses from Thomson Learning at no cost for all K–12 and higher education students, teachers, and staff and all of Michigan's 170,000 small businesses and their 700,000 employees.
- *Career development.* MVU provides an extensive online career development system for 98 percent of Michigan's K–12 schools. MVU developed and hosts the TalentFreeway, Michigan's online career-advising program. In addition, MVU worked with PricewaterhouseCoopers LLC to build an online career guidance tool for the eArmyU program.
- *Online corporate training.* MVU's Corporate Learning Services group provides joint venture support for Michigan companies to develop custom online training and education courses and to access extensive libraries of online courses. In the past year, more than 15,000 corporate learners have been engaged in online learning, accounting for about one-third of MVU's activity.
- *Virtual high school.* MVU's virtual high school enrolls 55,000 students from 200 Michigan high schools in online courses, accounting for about one-third of MVU's activity.



II. Meeting Statewide Goals: Critical Success Factors

What do the higher education community and state policy makers really want to know about VUCs? They want to know which of the VUCs are successful in meeting state needs and the specific goals for which they were established and why they were successful.

How should one gauge success? Size might be a possible answer. Certainly, all of the VUCs love to cite size and growth rates as indicators of their achievement. Here is a list of the states represented at the symposium and the number of course enrollments each counted in the most recent academic year:

Florida	130,000
Maryland	95,310
Illinois	46,678
Georgia	40,000
New York	39,000
Louisiana	25,000
Arizona	24,800
Michigan	16,000
Tennessee	13,000
Connecticut	10,000
Kentucky	9,217
Massachusetts	9,164
Colorado	8,000

Unfortunately, these numbers do not tell us much. In some cases, the consortium involves only public institutions: the SUNY Learning Network, UMassOnline and Georgia G.L.O.B.E., for example. In other states, the effort involves both public and private institutions: the Illinois Virtual Campus, Kentucky Virtual University, and MarylandOnline. Even VUCs that represent a state system vary according to the size and type of system. SUNY has 64 campuses—including universities, state colleges, and community colleges—whereas UMass has five universities. Some VUCs involve a subset of the state's institutions. CCCOnline, for example, comprises the 13 public community colleges in Colorado, and the 16,000 enrollments in MVU come entirely from community colleges as well. Finally, many states, like Florida and Maryland, simply aggregate all of the state's online enrollments rather than differentiate new students who have enrolled as a result of the presence of the VUC from existing on-campus students

who are time shifting a portion of their studies to online work.

What are the elements of success that, when combined, can create the most effective approach to increasing access and promoting economic development within any given state? What can we learn from the experiences of the VUCs thus far? Discussion at the symposium and subsequent analysis revealed that those VUCs that adhere to the following recommendations, in general, are making more-rapid progress in meeting statewide goals than those that do not.

1. Keep your focus on increasing access for new students (rather than on supporting institutions).
2. Find out what students and states need, and create a mechanism to respond (rather than aggregating what institutions have to offer).
3. Leave the resolution of long-standing higher education policy issues to state policy makers (rather than trying to solve them in the VUC).
4. Create a business plan for self-supporting sustainability (rather than relying on state allocations).
5. Use a cost-effective development and delivery model (rather than a bolt-on model).

A theme running through each of these recommendations is rejection of the collaborative model in favor of more-focused, more-learner-centered, and more-entrepreneurial approaches.

A theme running through each of these is rejection of the collaborative model in favor of more-focused, more-learner-centered, and more-entrepreneurial approaches. Such approaches not only go further to increase access by enrolling students new to the higher education enterprise but also point the way to a clear and certain sustainable future. Let us now examine each of these in detail.

1. Keep your focus on increasing access for new students (rather than on supporting institutions).

When they consider the many drivers behind existing VUC efforts, state policy makers are partial to those that are decidedly consumer oriented, including serving educationally underserved communities, offering opportunities for degree completion to those who have attended college but failed to graduate, affording nontraditional career professionals and workforce development candidates access to higher education, increasing the college-going rate and the percentage of citizens holding degrees, and creating a mechanism to offer degrees not offered by existing institutions. Those VUCs that are most closely aligned to these drivers capture their focus on students in their mission statements.

- VUC will provide highly accessible educational opportunities that will result in a continuously improving, better-educated workforce and thereby contribute to personal prosperity for our citizens and a strong economy for the state.
- The mission of VUC is to provide citizens unlimited, learner-centered access to higher education, integrating state-of-the-art educational technologies with best practices for curriculum and instruction, to guarantee learner satisfaction and success with their education goals.

In contrast, many VUCs predominantly support institutional needs rather than student needs. So too do these VUCs capture their focus on institutions in their mission statements.

- The VUC will provide a single point of presence for distance learning offered by the state's public and independent education institutions; provide a high-quality infrastructure by maintaining a state-of-the-art Web-based delivery system that is available to all members; coordinate the delivery of asynchronous education and worker training; market VUC member courses and programs; improve the quality of the state's distance-learning products and services through rigorous assessment efforts, including the implementation of a statewide assessment program; provide a forum for discussion of distance learning in the state and demonstrate new techniques for asynchronous delivery; and provide faculty development opportunities.
- VUC is a statewide, intersegmental consortium dedicated to championing distance learning in the state. Through collaboration among the state's community colleges, colleges, and universities, VUC will sponsor a state-of-

the-art home page and Web gateway for online higher education in the state, conduct statewide faculty technology training for online teaching and online course development, initiate and facilitate online course and program collaborations among member institutions, help member schools with the student user-friendly instructional support infrastructure essential to 21st-century collegiate operations and to online course delivery, and conduct marketing and student recruitment for member institutions.

If the focus of a VUC is on increasing access and serving students rather than institutions, it measures its performance against how many new students it is enrolling. Knowing who is studying online (and why) and how enrollments map to state goals is an essential piece of data for assessing how well the existing VUCs are meeting state goals. Many VUCs routinely aggregate *all* students in their state or system who are enrolled in online courses when they report their enrollments. Consequently, one must ask what percentage of the enrolled students are new students versus what percentage are on-campus students who are shifting some of their studies to online courses in order to measure increased access. Representatives of each of the 13 states represented at the symposium was asked to answer that question, but only three states were able to do so: Massachusetts with 10,038 online enrollments, 100 percent of which are new students; Tennessee, with 13,000 online enrollments, 75 percent of which are new; and Georgia, with 40,000 online enrollments, 45 percent of which are new.

The remaining 10 VUCs could tell us how many course enrollments they had in any given academic year, but they could not distinguish between new students and students already on campus. When asked to estimate the percentages, the consensus was that the majority of VUC enrollments are simply on-campus students studying online at their home campuses, with estimates ranging from 75–99 percent of the total. Thus, despite an explosion in online activity, it appears that most of today's enrollment in VUCs consists of current students who are engaged in an alternative option to classroom learning. Indeed, in many states, a relatively small number of institutions account for the majority of the enrollment within a consortium, and those are the institutions that were already engaged in a substantial outreach effort using online delivery prior to creation of the VUC. University of Maryland University College, for example, accounts for 68,250 of Maryland-Online's 95,310 online student enrollments.



Although providing online alternatives can improve each institution's quality of service to students, doing so is a long way from serving the burgeoning needs of the knowledge economy. Some would argue that time shifting (taking courses online versus in a classroom) benefits working adults and thus increases access, and that is certainly true. But most states have funded VUCs with the goal of serving students who could not be served through traditional structures rather than encouraging time shifting by existing students.

2. Find out what students and states need, and create a mechanism to respond (rather than aggregating what institutions have to offer).

Despite the fact that most states are establishing VUCs in order to expand educational access and contribute to economic development, many of those efforts begin by offering what current institutions want to offer rather than what prospective students actually need. Identifying which segments of the economy drive and need additional postsecondary learning experiences would seem to be essential to meeting state goals. Participants were unanimous in favoring demand studies and were near unanimous in noting that most VUCs do not do them.

Analyzing particular markets, developing a marketing plan, and marketing the virtual campus are key success factors in converting prospective students to enrolled students, yet too often, such actions are afterthoughts in traditional nonprofit higher education. Demand studies seek to identify what kinds of programs are not currently available to those who seek access to higher education as well as what programs may be required in the future.

For example, as part of its planning process, Georgia G.L.O.B.E., the University System of Georgia's distance-learning initiative, commissioned a six-month study of workforce needs and attitudes toward studying online. Conducted by three organizations, the study consisted of:

- A statewide survey of 500 registered voters, conducted by Beth Schapiro & Associates of Atlanta
- Focus group research and analyses that included both online learners from University System of Georgia institutions and random sample groups from the general population
- A geodemographic study of distance learners conducted by Carnegie Market Research of Boston

In addition, research conducted by Bill Drummond and Jan Youtie of Georgia Tech Research Corporation, identified 19 key job categories with strategic importance to the state that require a college degree and are experiencing annual shortfalls of 100 employees or more. According to the study, the job categories with the largest shortfalls are information technology and business. Georgia G.L.O.B.E. was also able to capitalize on a series of data-based studies of workforce needs commissioned by the university system's Intellectual Capital Partnership Program.

Among the findings:

- Georgia citizens are interested in using the Internet and telecourses to acquire more education in fields in which the state is experiencing shortages of educated workers.
- Over 40 percent of Georgia adults would be interested in attending a college or university in the next three years.
- Over 60 percent of those surveyed indicated they would use either the Internet or Georgia Public Broadcasting to take college-level courses.
- Most of those surveyed listed child care, work schedules, family obligations, and long drive times as barriers to attending campus-based courses.
- Over 65 percent have access to the Internet at work as well as at home. Over 75 percent of suburban residents and over 50 percent of rural and urban residents have access.

The VUCs in both Connecticut and Massachusetts incorporate demand data into their ongoing operations. In Connecticut, the Connecticut Distance Learning Consortium operates a grant program to assist institutions in creating online programs or certificates. As part of that process, all institutions proposing online degree programs must supply evidence that the program will meet a Connecticut workforce need. All institutions proposing online certificate programs have their proposals evaluated for workforce need by a key state workforce development agency: the Office for Workforce Competitiveness. In Massachusetts, UMassOnline relies on market research conducted by a UMass system office of economic development that aggregates and analyzes marketing data from multiple sources. UMassOnline conducts an ongoing request-for-proposal process that solicits campuses to develop online programs. Campuses that propose programs must provide evidence of marketplace demand.

The more self-supporting a VUC is, the more likely it is to be demand driven. Both UMassOnline and CCCOnline receive no state support but rather rely on their ability to deliver needed programs to the market. Both work with member colleges to develop programs that are known to be in high demand. For example, in response to a critical shortage of nurses in Colorado, CCCOnline funded the development of an online nursing program. Despite resistance to that initiative among nursing faculty in all of the state's colleges, it went forward because of the high level of political and financial support coming from the system office through CCCOnline. Guidelines for participation in a VUC are provided by state higher education policy, and the incentive to participate is obvious and easy to understand: cash.

In Colorado, a large project that resulted in common course numbering, descriptions, content, and student outcomes for general education core courses preceded the establishment of CCCOnline. Those policy decisions paved the way for the CCCOnline model whereby multiple institutions can offer common online courses as part of that common structure. Courses and programs are not developed collaboratively. Instead, CCCOnline centrally manages and staffs all course and program design and development. CCCOnline hires faculty to build courses and programs, trains that faculty, and provides quality assurance. Courses are built only once. Faculty are independent adjuncts drawn from both the Colorado community colleges (50 percent) and the broader higher education community (50 percent) and are paid the adjunct rate of \$1,650 per course. When faculty join CCCOnline, they become adjuncts at all of the institutions. Faculty participate in a very rigorous training program; they must attend two workshops per term even if they have been teaching for a while. CCCOnline does ongoing faculty reviews against established standards—such as response time to students—and those who do not meet standards are terminated.

Because of existing policy in Massachusetts, online programs developed for external student audiences, as opposed to programs that serve existing campus students, must be offered through UMassOnline. UMassOnline conducts an ongoing request-for-proposal process that solicits campuses to develop online programs. Any campus can propose to offer a program online, provided it has evidence of demand for the program and a business plan to recover costs. Tuition varies and is set at market price. All tuition is set above what subsidized students pay. For some programs, tuition is triple the in-state tuition rate. Currently, 92.5 percent of tuition

revenues goes to campuses, and 7.5 percent goes to UMassOnline. The incentive for program development is that campuses can generate revenues by offering successful programs, and UMassOnline provides substantial assistance in ensuring that success. UMassOnline also solicits campuses to develop programs in specific identified areas of state need.

In contrast to the examples cited, most VUCs are consolidators of existing content, reflecting, perhaps more than anything else, the specific interests of individual faculty and, sometimes, departments. Academic programs are too often indiscriminately supply driven. Member institutions offer their best programs, whether or not potential VUC students would be interested in them. In some cases, they may even focus on underutilized faculty or other institutional resources. The result is that most VUCs produce an online course catalog representing the current offerings of participating institutions, many of which do not necessarily have anything to do with any certificate or degree completion program. This is not entirely surprising. During the initial stages of VUC development, the issue is not so much a limitation in what current institutions want to offer but rather what they have available to offer. Recognizing that their curriculum development process is slow and cumbersome, many institutions take their first steps toward online offerings by opting for the easiest approach: adapting an existing degree program for distance delivery. State consortia then link these offerings together. What is needed is a shift in the culture of higher education toward recognition that off-campus programs are different from on-campus programs and demand different approaches.

Many institutions are still driven by anecdotal evidence of programming needs; very little research is done to determine customer needs. Institutions typically seek advice on program offerings from faculty, corporations, and various other entities and often do not seek information from the potential consumers themselves. The sophisticated marketing tools used by consumer-driven companies are seldom found in universities—either virtual or real. What is generally missing in the traditional supply-side, anecdotal approaches is much, if any, coordinated activity aimed at systematically acquiring concrete evidence of demand that would identify which segments of the economy drive and need additional postsecondary learning experiences.

The absence of demand-side information has the potential to lead virtual university efforts astray. With a twofold mission—to expand access and to contribute to economic development—underlying information for guiding VUC



development is key. Achieving the goal of greater access needs to rely on an understanding of the numbers and kinds of students currently being served. Without such data, gaps cannot be identified and programs to be offered get selected based on someone's beliefs about what some students need.

3. Leave the resolution of long-standing higher education policy issues to state policy makers (rather than trying to solve them in the VUC).

Many virtual university efforts are attempting to solve long-standing higher education policy problems such as residency and transfer and the need to create programs that are more responsive to state needs. Weaknesses that plague traditional institutions—like lack of articulation agreements, student services, tuition issues, grading inconsistencies, intellectual property issues, and faculty workload—become magnified in the VUC setting. Indeed, often when those involved in VUCs talk about collaboration, what they really are interested in is solving policy issues like transfer of credit between institutions. A question naturally arises: Should the new organizations be expected to solve these problems, or should the problems be resolved by policy makers and/or institutions within the existing structures of higher education?

Most VUCs are consolidators of existing content, reflecting, perhaps more than anything else, the specific interests of individual faculty and, sometimes, departments.

Some of the symposium participants say VUCs can be used by states as change agents to stir up the more-hidebound institutions. Their reasoning is that almost all of the policy issues encountered in distributed learning—like articulation, residency, and workforce responsiveness—are higher education policy issues exacerbated by the distance or frequency of impact. Because the VUCs work directly with consumers (students), the reasoning goes, they are well situated to use information on consumer behavior to advocate for policy change. The more they know about online students, the more they may be able to effect policy change by bringing that knowledge to the table.

KYVU, for example, labored long and hard to institute policy changes that would accommodate what was needed in order to serve students more expeditiously. Rather than resolving those policy issues at the policy level, Kentucky expected them to be resolved in the context of creating the KYVU. KYVU did succeed in instituting a common application for all private and public colleges in Kentucky *if* the student registered through KYVU. That change took more than nine months to accomplish, leading one well-seasoned virtual university consultant to change his mind about the value of spending time on such issues. KYVU did accomplish one policy change: it deleted the minimum age requirement for college attendance *if* the student applied through KYVU. Neither the common application nor the minimum-age change translated to traditional on-ground policy.

Among our examples, Colorado has achieved the most significant policy changes because of the nature of its model, but even there, the changes are limited. In any course, CCCOnline faculty have students who are registered at various community colleges. At grading time, faculty needed to use a thick book to ascertain what grades to give based on the individual colleges' grading policies. This was insupportable for many reasons—for example, students receiving different grades for the same work. In 1998, the colleges adopted a common grading policy for CCCOnline students, but not for all students. In 2002, the colleges adopted the policy for all students. Before common grading, there had been 33 possible grades (with only 26 letters in the alphabet!); there are now 9. Unfortunately, the colleges have agreed only to a common format, not to a common meaning. A grade of A in one college might equal 93 percent, while at another it is 90 percent. There is still work to do.

Is the attempt to resolve long-standing policy problems a worthwhile investment of the time and effort of the VUCs, or is it a diversion from the main mission? Despite a lot of talk about the ability of the VUCs to be catalysts for policy change, we have seen very few changes as a result. Issues like transfer of credit predate and are generally disconnected from the creation of online learning experiences. One is inclined to take the pessimist's view that if the institutions have not resolved this problem in the preceding 50 years, why should we expect the existence of computers and fiber optics to change that situation?

The majority of symposium participants say policy problems should be resolved by policy makers and institutions within existing higher education structures and applied to the entire

education enterprise rather than being passed on to the VUC. They say it is doubtful that any VUC, in and of itself and notwithstanding strong state interest and involvement, can successfully address most of the policy issues raised by online learning. Georgia, for example, was able to deal with such issues as in-state and out-of-state tuition and fees only at the highest level in the state. In Massachusetts, after a very careful study of policy problems involving three different cross-system committees, it became clear that the problems cannot be solved by UMassOnline but rather must be solved by the University of Massachusetts.

Where policy issues that impede the development of VUCs have been successfully resolved, policy makers rather than the VUCs made the necessary decisions. Florida has legislatively mandated common course numbering and full articulation among its public universities and community colleges. In Colorado, an extensive three-year effort that resulted in common course numbering, descriptions, and content, as well as student outcomes in the general education core, preceded the establishment of CCCOnline.

In Tennessee, the governing board was the catalyst for policy resolution. A mandate from the Tennessee Board of Regents (TBR) to create the Regents Online Degree Programs (RODP) forced the board's constituent institutions to confront and eventually resolve most of the policy issues that attend any serious virtual campus initiative: issues of residency, transfer, scheduling, revenue sharing, and so on. Students who take any course offered by the RODP can transfer the course to their home campus and apply it to the degree program. Without pressure from a governing or coordinating board to resolve such issues on a predetermined schedule or without a set of pre-cast policy solutions by a governing board or legislature, the process of working through interinstitutional committees would have bogged down under the weight of the resistance to change—especially collaborative change—that flourishes in higher education.

4. Create a business plan for self-supporting sustainability (rather than relying on state allocations).

Because of the stringent fiscal situation most states face, many policy makers have an image of a VUC that will draw on existing resources or “leverage what we already have.” The implication is that a major new initiative to meet unmet state needs does not require an investment on the part of the state. The simple fact is that it costs money to do anything new, even if a

Policy problems should be resolved by policy makers and institutions within existing higher education structures and applied to the entire education enterprise rather than being passed on to the VUC.

key part of the new initiative's strategy is to draw on existing resources or to be self-supporting in the long run. Seed money or venture capital is required. When institutions are operating near capacity, as is basically the current situation in most states, and capacity is basically a measure of personnel resources, there are few non-personnel budget items that can be tapped for reallocation to create a pool of venture capital. Any strategy for leveraging a state's existing resources to serve unmet educational needs must provide seed money or venture capital.

The question is, How much money is needed?

All of the existing VUCs required new financial support in the form of a start-up grant and/or operating subsidies. Initial investments in VUCs have ranged from a low of \$240,000 (CCCOline) to a high of \$30 million (MVU). Annual operating costs range from a low of \$140,000 (MarylandOnline) to a high of \$8 million (UMassOnline).

At first glance, one would think that the level of investment would depend on the goals of the particular VUC and on the eventual scale of the initiative. That is certainly what most of the participants believed. The common wisdom is as follows: If a VUC creates a catalog of existing content from multiple providers, provides minimal student services, and helps articulate courses among institutions, it will require a minimal investment. If a VUC provides extensive student services, brokers degrees, or awards its own degrees, then a substantial investment is needed. While that analysis would seem to be true, in fact there is almost no relationship between the initial funding and ongoing operational funding and the functions carried out by the VUCs. More important, there is no relationship between the amount of funding and the ability of a VUC to meet state goals.

Certainly there are examples of a relationship between a low level of state investment in a VUC and low expectations for



its activities. Receiving no base budget funding from the state to finance its operations, Maryland's state consortium is member run and member financed. It has received state grants for specific projects, two for faculty training and another for online tutoring. MarylandOnline says it is achieving only a fraction of what it could achieve toward access, excellence, and cost-efficiency for the state and the member schools. In Illinois, minimal initial (\$649,000) and continuing (\$500,000) state investments have been made. Existing higher education resources were not tapped. IVC's mission is to provide access to information regarding online education from the state's colleges and universities and to provide leadership in online learning, neither of which takes a lot of funding to accomplish. The Florida Virtual Campus and the Florida Community College Distance Learning Consortium received initial state funding of \$350,000 and \$250,000, respectively, and similar amounts for annual operations. In both cases, their activities are limited primarily to supporting an electronic catalog of the state's offerings. In each of those state examples, online enrollment consists almost exclusively of students already enrolled at existing campuses.

Conversely, Michigan Virtual University and Kentucky Virtual University received generous initial funding of \$30 million and \$7 million, respectively, yet today both organizations have had limited success in engaging the state's higher education institutions—especially the four-year institutions—in offering new online programs. KYVU, for example, created a single portal for admission and registration, supported the building of online courses by individual institutions and was able to get collaboration in a number of areas such as a single admission form, 48-hour turnaround for admission decisions, and some commonality in learning management systems. But in the end, it was evident that among the four-year institutions there was neither the will nor

What turns out to be the most important success factor is a combination of a clear focus on serving new students, an incentive system to gain campus participation, and a business plan to support ongoing operations.

the incentive to collaborate interinstitutionally to create either a self-sufficient operation or an operation that was separate from each institution's own identity.

The remaining VUCs are somewhere in the middle, having received relatively generous initial state funding and relatively generous ongoing state allocations, yet most of the student enrollments are those who are time shifting on their home campuses. These VUCs tend to spend their state allocations on campus support activities, operating more or less like a typical state system function rather than creating incentives for new program development. The result is that they become a continuing state expense rather than part of an investment strategy. Given the ongoing state of crisis in state budgets and these VUCs' lack of business plans, they are likely candidates for budget cuts. Not surprisingly, the state of Georgia recently made the following announcement on its Web site:

As the University System of Georgia seeks to streamline its distance learning operations, and as the state of Georgia faces a challenging economy, Georgia G.L.O.B.E. as a name and a unit will cease to exist on January 1, 2003. Many of the functions performed by Georgia G.L.O.B.E. will be assumed by existing units of the system office.

The cost of initiating and operating a VUC can be reasonable with tight, sound management, but a business model coupled with for-profit management techniques is required. Relatively few public institutions are managed in that way, and public VUCs are of the same breed. What turns out to be the most important success factor is a combination of a clear focus on serving new students (those previously unable to attend existing campuses), an incentive system to gain campus participation, and a business plan to support ongoing operations. New programs can begin only when there is evidence that the revenue to support the program will immediately begin to flow. In that regard, three of the nation's VUCs stand out.

CCCOOnline. The initial investment to create CCCOnline was about \$240,000. The system received no extra state funding to implement the initiative. Each of Colorado's 13 community colleges invested about \$10,000, and the remainder was made up from the governing board's operational accounts. The goal was to generate sufficient revenue for CCCOnline to be self-sustaining, including what was needed for ongoing course and program development and revision. Since fiscal-year 2001, CCCOnline has been completely self-sustaining from tuition revenues with an annual operating budget of about \$2 million.

case

Tennessee Board of Regents Online Degree Programs www.tn.regentsdegrees.org

The state of Tennessee maintains that economic development depends on increasing the skill levels of the population, which means increasing access to higher education for adult Tennesseans. Tennesseans lag behind both the national and regional averages of educational attainment, with rural areas lagging far behind urban areas.

In October 2000, the Tennessee Board of Regents (TBR) established the Regents Online Degree Programs (RODP), a series of online degree programs and certificates offered by six state universities, 13 community colleges, and 27 technology centers. Just 11 months later, the first students enrolled. The RODP seeks to maximize effective use of technology for delivery of college-level instruction, provide student access to Web-based courses and degree programs, and encourage and support cost-effective course development and delivery among TBR institutions.

As of April 2003, RODP offered three associate and two bachelor's degree programs, and one certificate. Expecting its first-term enrollment to be 300–400 students, RODP instead had to cap it at 2,000. Enrollments were capped at about 3,500 in spring 2002 and about 5,500 in fall 2002. Total enrollments to date are about 15,000. Through student surveys and system tracking, the TBR has determined that students who would not have enrolled in a traditional institution account for 70–75 percent of its enrollments.

Program Model

RODP students choose a home institution for admission, registration, and the award of their degree, but are free to take RODP classes from other RODP institutions. Students can apply any RODP course to their degree programs at their home campuses. To meet the ambitious time line, the TBR joined with Collegis to assist in RODP's rollout in the areas of business, marketing, and student services planning. Collegis also provides a 24/7 help desk, instructional design consulting, hosting services, and integration of learning management and administrative systems.

TBR's courses are developed to be shared and taught by any qualified TBR instructor. A curriculum oversight com-

mittee has representatives from participating institutions and subcommittees of faculty who design specific academic programs. The committees send out a call for faculty to develop courses within a program. Faculty developers are paid a stipend of \$4,000–\$6,000 to develop a course, which then can be offered by any participating institution.

Services. An online orientation gives students a good understanding of what they can expect from online learning. RODP provides online academic delivery, a virtual bookstore, a virtual library, a 24/7 help desk, and other online student services.

Staffing. The staff consists of 3.5 full-time people, with a number of support functions outsourced to Collegis.

Marketing. About \$50,000 is spent annually to seed Web site search services, to develop promotional brochures and CDs, and to place public service announcements.

Business Model

Initial investment. RODP was capitalized with no new state investment. The initial funding of \$1.2 million came from assessing the existing campuses. There was no requirement for campuses to participate in the RODP. Capital sources are repaid from enrollment revenues.

Ongoing operations. RODP's annual operating costs are \$1.2 million, which are also recovered from enrollment revenues. RODP students pay an online course fee, which equals campus tuition plus 40 percent. The 40 percent fee is comparable in cost to fees the campuses typically add to tuition for things like student clubs and athletic facilities. If RODP students desire to attend campus activities, they can pay an additional student activity fee. A financing plan creates incentives for institutions to participate. Course tuition goes to the teaching institution; 70 percent of the course fee goes to the home campus; and, 30 percent of the course fee goes to the TBR to maintain the RODP. The TBR returned all of the first year's enrollment revenues to the institutions to pay back their initial assessments. The revenue-sharing plan will provide sufficient money to continue the program and to expand academic areas as needed.



Online students pay \$128 per credit, which is about twice the in-state tuition rate and about one-fourth the out-of-state tuition rate. The individual colleges at which students are registered collect the tuition. CCCOnline invoices colleges for services at \$94 per credit, and the colleges net the remaining \$34 per credit. CCCOnline's revenues now exceed expenditures; surpluses are currently being reinvested in ongoing course development and in higher returns to the colleges.

Whether online or face-to-face, there are expensive courses and inexpensive courses. The costs of existing courses and programs merely indicate the choices that have been made, not the choices that are possible.

Tennessee Board of Regents Online Degree Programs. The RODP was capitalized with no new state investment. The initial funding of \$1.2 million came from an assessment of the existing campuses. There was no requirement that campuses participate in the RODP. Capital sources are repaid from RODP enrollment revenues. The RODP's annual operating costs are about \$1.2 million, which is also recovered from RODP enrollment revenues. RODP students pay an RODP online course fee, which equals campus tuition plus 40 percent. The 40 percent fee is comparable in cost to the fees typically added to tuition by the campuses for things like student clubs and athletic facilities. A recently adopted financing plan creates incentives for institutions to participate by dividing the revenue as follows: Course tuition goes to the teaching institution, 70 percent of the 40 percent course fee goes to the home campus, and 30 percent of the 40 percent course fee goes to the Tennessee Board of Regents to service the RODP. The board returned all of the first year's enrollment revenues to the institutions to pay back their initial assessments. The new revenue-sharing plan will provide sufficient money to continue the program and finance expansion of academic areas as needed.

UMassOnline. UMassOnline was able to draw on a \$10-million line of credit provided by quasi-public venture fund for start-up funding. As part of its business plan, UMassOnline will pay back with interest all of the money borrowed. In its second

year of operation, UMassOnline has spent \$1.75 million of that loan, along with a \$2.28-million technology infrastructure grant, and has brought in about \$8 million in tuition revenues and \$2.43 million in additional grants, for a total revenue of \$10.43 million. All revenues are currently being reinvested in growth, although interest on the amount borrowed is being repaid annually. UMassOnline receives no ongoing state support. Operating costs, which were \$8 million in the second year, are supported by revenues from tuition and from drawing on the line of credit as needed. Tuition varies and is set at market price. All tuition is set above what subsidized students pay. For some programs, tuition is triple the in-state tuition rate. Currently, 92.5 percent of tuition revenues goes to campuses and 7.5 percent goes to UMassOnline.

5. Use a cost-effective development and delivery model (rather than a bolt-on model).

Almost everyone in higher education is convinced that online courses and programs are more costly to develop and deliver than their face-to-face counterparts, especially when they meet the best-practice criteria compiled by several national and regional organizations. The common wisdom is that anytime you inject technology into any process, the process becomes more expensive.

To declare that one type of course delivery is more expensive than another, however, demonstrates lack of thoughtful consideration regarding what choices get made in the development process. All instructional implementations—whether at the course or program level—involve choice. One can offer introductory economics for \$1,000 by hiring an adjunct faculty member, or one can spend \$5 million on developing high-quality, multimedia course materials and hiring a Nobel prize winner to teach the course. Whether online or face-to-face, there are expensive courses and inexpensive courses. The costs of existing courses and programs merely indicate the choices that have been made, not the choices that are possible.

Many in higher education approach the cost of instruction as if it were a Platonic ideal rather than the result of a number of design decisions made by the campus faculty and administrators. One thing that experienced online educators know: As you design online courses and programs, you will find that the more you replicate the traditional campus model online, the more your costs will resemble or exceed traditional campus costs. The point is that high—or low—costs are not intrinsic to online learning; they are a result of the design choices each institution makes.

The highest cost component of instruction is faculty personnel. Currently, the job of a faculty member is seen as monolithic: a collection of tasks that are, with few exceptions, carried out by one person. U.S. higher education remains what Bill Massy and Bob Zemsky have called a “handicraft” industry—in which the vast majority of courses are developed and delivered as “one-offs” by individual professors. In most colleges and universities, that repetitive, labor-intensive approach has been transferred to online education as well. A single instructor designs a course and delivers it to a single, 25-student class with the addition of other professional staff such as Webmasters, information technology staff, faculty trainers, and instructional design staff. Success in online learning, some argue, is highly correlated with the training and support that faculty receive, which may be an added expense but also an added value.

That model of online learning does not restructure educational or support processes to take maximum advantage of technology, and it assumes the instructor must be responsible for all interactions by answering every inquiry, responding to every comment, or participating in every discussion personally. As a result, faculty members often spend more time teaching online and interacting with students than is the case in classroom teaching. Indeed, a new, emerging paradigm for online courses calls for a 20:1 or less student-faculty ratio, reflecting the on-campus small seminar. This small-class model limits the ability of programs both to scale—that is, to produce more-cost-effective courses—and to serve more students: that is, to increase access. In some cases, programs with especially high demand are finding difficulty in securing the needed number of instructors. Campus leaders and policy makers are rightly concerned that such applications of information technology are increasing instructional costs rather than controlling or even reducing them.

As VUCs have grown, however, the more successful of them have begun to struggle with the pressure of building individual versions of every section of every course. Several—like CCCOnline and the RODP—have abandoned the every-faculty-member-for-himself approach in favor of designing courses centrally, which then get taught by multiple instructors. The prebuilt course becomes the core for all sections, with some faculty customization of individual sections. Designing online courses via the build-it-once, use-it-often approach dramatically reduces the costs of development for online instruction, especially when the instructors are adjunct faculty.

All RODP and CCCOnline courses are built only once. The Tennessee Board of Regents has established a curriculum oversight committee with representatives from all participating institutions as well as subcommittees of faculty who design specific degree programs. The committees send out a call for faculty to develop specific courses within the degree program. Faculty developers are paid a stipend of \$4,000–\$6,000 to develop courses. Any participating Tennessee Board of Regents institution can then offer the course once developed. CCCOnline hires faculty to build courses and programs, trains

VUCs that rely on an institutional collaborative model may do a good job of supporting institutions as they move to online learning, but it is questionable how effective they are at meeting statewide goals.

the faculty, and provides quality assurance. Faculty are independent adjuncts drawn from both the Colorado community colleges (50 percent) and the broader higher education community (50 percent). The course development process used by both RODP and CCCOnline is designed to ensure consistency and ongoing availability of programs.

Conclusion

VUCs that rely on an institutional collaborative model may do a good job of supporting institutions as they move to online learning, but it is questionable how effective they are at meeting statewide goals. One of the supporting arguments for the establishment of statewide VUCs has been that their existence accelerates the development of online courses and programs among existing institutions. In many ways, they have been successful in their efforts. Although it is difficult to tell what percentage of a given state’s online students would be studying online even if no VUC existed—that is, the total enrollment may simply reflect an aggregation of what institutions are doing on their own—there is little doubt that the VUCs have made a significant contribution to encouraging and supporting many institutions as they become engaged in online learning.

It is also clear, however, that an increasing number of institutions are developing online programs on their own that

case

UMassOnline
www.umassonline.net

Established in 2001 by the University of Massachusetts (UMass) system, UMassOnline serves the educational needs of the commonwealth of Massachusetts and beyond by offering accredited educational programs via interactive, Internet-based learning systems. The initial goals were to provide access to a UMass education for those who cannot be on a campus, to serve community and market needs, and to produce a substantial revenue stream that would support faculty, research, and teaching.

As of April 2003, UMassOnline was growing at the rate of 56 percent per year, down from more than 80 percent in 2002. UMassOnline offers eight graduate and six undergraduate degree programs as well as 17 certificate programs. During the 2002 year, UMassOnline generated 10,038 online course enrollments. Essentially all enrolled students have enrolled because of the programs offered through UMassOnline.

Program Model

UMassOnline draws on the faculty and curricula of the five UMass campuses. Each sponsoring campus has its own course requirements, fee structure, registration procedures, academic calendar, and admission policy. Course credits are not automatically transferable from one campus to another; however, in most cases they can be transferred at the discretion of the accepting campus. One or more of the five campuses awards degrees.

Because of existing policy in Massachusetts, online programs developed for external student audiences—as opposed to programs that serve existing campus students—must be offered through UMassOnline. UMassOnline conducts an ongoing request-for-proposal process as a way of soliciting campuses to develop online programs. Any campus can propose to offer a program online, provided it has evidence of demand and a business plan to recover costs. Campuses can generate revenues by offering successful programs, and UMassOnline provides substantial help to do so. UMassOnline also solicits campuses to develop programs in specific areas of state need.

Services. UMassOnline serves as a portal for students to

access campus online programs. Students connect directly to the sponsoring campuses to access information about campus policies and procedures. UMassOnline provides a reliable technology platform, program development, marketing, quality control, and fund-raising for the campuses. Because UMassOnline does not want to be identified with a single vendor, it has developed its own robust technology platform based on Centra, IntraLearn, and Prometheus.

Staffing. The staff comprises 9.5 people as well as a portion of the Continuing Education dean at each participating campus. UMassOnline also outsources certain aspects of course development and other support services.

Marketing. Market research is conducted by a UMass system office for economic development that aggregates and analyzes marketing data from multiple sources. The marketing budget for the 2002/03 academic year is about \$423,000, which pays for national advertising, for drive-time radio spots; and for marketing relationships with Peterson's and Fathom.

Business Model

Initial investment. At start up, UMassOnline drew on a \$10-million line of credit provided by a quasi-public venture fund. UMassOnline will pay back with interest all of the money borrowed. In its second year, UMassOnline spent \$1.75 million of that loan, along with a \$2.28-million infrastructure grant, and brought in about \$8 million in tuition revenues and \$2.43 million in additional grants, for a total revenue of \$10.43 million. All revenues are currently being reinvested in growth and interest on the amount borrowed.

Ongoing operations. UMassOnline receives no ongoing state support. Operating costs, which were \$8 million in the second year, are supported by revenues from tuition and from drawing on the line of credit. Tuition varies and is set at market price, above what subsidized students pay. For some programs, tuition is triple the in-state tuition rate. Currently, 92.5 percent of tuition revenues goes to campuses and 7.5 percent goes to UMassOnline.

eclipse statewide efforts, whether or not they participate in a statewide VUC. Typically, in any given VUC, a handful of institutions dominate the online offerings. As we have noted, UMUC, for example, has more online students than the rest of Maryland's institutions combined. Most of the forward-thinking institutions—both two-year and four-year—that had sufficient funds and infrastructure to establish their own online programs did so—and well before statewide or consortial VUCs were able to get up and going.

The issue for states is no longer how to engage institutions in online learning in general; there are sufficient critical mass and acceptance throughout higher education for that to remain the goal. The issue now is how to provide incentives so that individual institutions will respond to specific state needs. Institutions may choose to collaborate or not in responding to such incentives, but the burden of decision, action, and return on investment is with the institutions. Institutions can be very nimble and creative when incentives and the will to engage in learning innovations exist. The key is to provide a competitive funding mechanism driven by consumer needs data, stressing collaborative effort only when appropriate.

VUCs that are entrepreneurial and keep their eye on the ball—delivering programs that students need—have the best chance of success in meeting statewide goals.

Can virtual universities innovate fast enough to stay ahead of the innovation that is occurring on individual campuses? Just as the moment has passed for UMUC to be the state or system virtual university (see the case study on page 26), so too may it no longer be possible for online learning to be centralized in any state. Today, however, most institutions want some level of engagement with and ownership of online learning. One participant speculated that the need for state virtual universities may be transitory. When online learning was new and unfamiliar, state consortial initiatives could assist psychologically with encouragement and validation and materially with joint ventures.

On one hand, at a certain point in history VUCs may have been the lubricant needed for a massive shifting of the gears in higher education. Today the moment may be passing. On the

other hand, VUCs that are entrepreneurial and keep their eye on the ball—delivering programs that students need—have the best chance of success in meeting statewide goals. Such VUCs go beyond merely supporting the transition to online learning; rather, they engage existing institutions in program development in ways that build capacity, making them more entrepreneurial and self-supporting. In addition, they do not get diverted from their main mission by trying to solve all of the state's higher education problems.

Having said that, even the best of the VUCs have limitations. The first is that the most successful of them benefit from a relatively narrow focus, frequently within the context of an existing system of higher education. UMassOnline consists of the five institutions that are members of the University of Massachusetts system. Similarly, CCCOnline consists of the 13 community colleges that are part of Colorado's community college system. It may be that they have been successful *because* they are focused on a relatively small piece of their state higher education landscape. These models, however, may not be sufficiently robust to engage all of a state's academic institutions, both public and private, in meeting state needs. How can we build on what we have learned from their success so we can create new models that offer the opportunity for all institutions in the state to be engaged in meeting state needs?

The more successful VUC models take account of student demand and incorporate that information into their program development processes. While several have taken that important first step, perhaps more can be done to match supply and demand, particularly in regard to establishing incentives for institutional participation—as one participant put it, how to increase the “take rate”—and back-up plans when they do not participate. In addition, we have seen that the more successful VUC models are distinctly entrepreneurial rather than bureaucratic in character. What more can be done to develop entrepreneurial capacity to be self-supporting within existing institutions as well as in the VUC itself? Finally, several of these models rely on increasing tuition rates beyond established state levels by charging double or even triple the going rate. In addition, because of the course delivery model they use, some are finding the need to cap enrollment because of the difficulty in finding instructors. Are there more-cost-effective models possible that can take advantages of economies of scale as well as keep tuition levels down? The next section examines those issues and poses an alternative model to address them.

case

Colorado Community Colleges Online www.cconline.org

Established in 1998, Colorado Community Colleges Online (CCCOonline) is a consortium of the 13 Colorado community colleges. CCCOonline seeks to provide access to total programs for citizens who need them, respond to industry needs, and deliver online education by using information technology.

As of April 2003, CCCOonline offered 15 full-degree programs and 11 certificates online. All are available either completely online or in combination with on-campus courses. During the 2002/03 academic year, CCCOonline enrolled 8,087 (unduplicated head count) students, or 11,820 course enrollments. Sixty-five percent of those students were also taking courses on a member campus.

Program Model

Students select a home college for admission, registration, and the award of their degrees. They can take courses at any of the campuses to complete their curricula. Many of the students mix on-campus and online options, but it is also possible for a student to complete all of the academic requirements without going to a campus.

CCCOonline centrally manages and staffs all course and program design and development. CCCOonline hires faculty to build courses and programs, trains the faculty, and provides quality assurance. Courses are built only once. Faculty are independent adjuncts drawn from both the Colorado community colleges and the broader higher education community and are paid the adjunct rate of \$1,650 per course. When faculty join CCCOonline, they become adjuncts at all of the institutions. Faculty participate in a rigorous training program; they must attend two workshops per term, even if they have been teaching for a while. CCCOonline conducts ongoing faculty reviews against established standards such as response time to students, and those who do not meet standards are terminated.

Services. CCCOonline provides online course listing, faculty training, collaborative program development, course design assistance, and quality assurance. If students encounter problems in a course or program offered through CCCOonline,

they seek help through the consortium student service help group. CCCOonline supports WebCT and works to make all courses look as similar as possible for ease of use by students.

Staffing. The staff consists of nine full-time people and part-time discipline chairs, who provide academic oversight.

Marketing. Generally, CCCOonline neither markets nor advertises. Sufficient demand is generated through member institutions' publicity mechanisms and ongoing word of mouth by students. Last year CCCOonline spent only \$6,000–\$7,000 on marketing—primarily to let prospective students know about new programs.

Business Model

Initial investment. The initial investment in the creation of CCCOonline in 1997 was about \$240,000. The system received no extra state funding. Each of the 13 community colleges invested about \$10,000; the remainder was made up from the governing board's operational accounts. The goal was to generate sufficient revenue so that CCCOonline would be self-sustaining, including what was needed for ongoing course and program development and revision. CCCOonline contracted with eCollege, then a fledgling business, to provide a learning management system, a server, a Web site, a help desk, instructor training, and a primitive interface with CCCOonline's Student Information System. Since eCollege charged CCCOonline a fee for every student enrollment, eCollege grew as CCCOonline grew.

Ongoing operations. Since fiscal-year 2001, CCCOonline has been completely self-sustaining via tuition revenues, generating an annual operating budget of about \$4 million. Online students pay \$128 per credit, which is about twice the in-state tuition rate and about one-fourth the out-of-state tuition rate. The individual colleges where students are registered collect the tuition. CCCOonline invoices the colleges for services at \$94 per credit, and colleges net the remaining \$34 per credit. CCCOonline's revenues now exceed its expenditures. Surpluses are being reinvested in ongoing course development and in higher returns to the colleges.

case

University of Maryland University College (UMUC)

www.umuc.edu

The University of Maryland University College (UMUC) serves as an interesting example of two phenomena. The first is the way in which a single institution can dominate a statewide virtual university consortium. In fiscal-year 2002 UMUC had 68,250 online student enrollments (stateside), whereas the other member institutions of MarylandOnline—the state consortium that includes all schools active in online education—had a combined total of 27,060.

UMUC was formed many years ago to serve working adults in general and U.S. Department of Defense personnel in particular. The college enjoyed a level of federal funding that gave it a head start in creating off-campus programs and allowed it to establish itself as a globally recognized brand with its own special faculty and organizational structure. Supported by a large and experienced staff, UMUC was able to move relatively easily from educating nontraditional students in a number of nontraditional ways to educating them online. This process was much easier for UMUC than it has been for the University of Maryland–College Park, which has a great brand but little experience in serving off-campus students. It is not surprising that UMUC continues to dominate online offerings in the state of Maryland.

The second phenomenon UMUC illustrates is how a state's institutions resist designating a single institution as the focus of online education. The UMUC example might seem to argue for selecting one campus in each state and then pouring resources into that campus. That may be an efficient approach, but it would be politically unsupportable and would lose all of the advantages of building on the state's diverse programs.

Starting in the early to mid-1990s, when UMUC was already an online powerhouse and well before the founding of MarylandOnline, the chancellor of the University System of Maryland (USM), of which UMUC is a constituent institution, undertook considerable efforts to have the other 10 system institutions anoint UMUC as the system's virtual university. Under the proposal, UMUC would be the focal institution for online delivery of programs

supplied by several USM schools, would draw and train online faculty from throughout the system, and so on. The proposal stayed on the USM table for several years without being adopted and implemented. At the end of the 1990s, an analogous proposal for the whole state of Maryland was made by some legislators and members of the USM Board of Regents: make UMUC Maryland's virtual university. As recently as the 2002 Maryland legislative session, UMUC itself made a bid to be designated the state's online learning resource, performing functions other institutions would not need to perform. Similar efforts have occurred in other states.

The UMUC-as-state-virtual-university scenario has failed for the simple reason that other institutions in the system and around the state are not willing to cede to a single university the authority to represent them in the online enterprise.

So far, the UMUC-as-state-virtual-university scenario has failed for the simple reason that other institutions in the system and around the state are not willing to cede to a single university the authority to represent them in the online enterprise. From the faculty perspective, the risk is that UMUC would have too much influence on curriculum content and perhaps even on the faculty reward structure. From the perspective of presidents, the risk is that UMUC would draw students away from their own institutions. It could be said that MarylandOnline came into being for the very reasons that the state higher education community would not adopt a single institution as its virtual university and that the state higher education commission did not have the muscle to force such an approach.



III. Statewide Educational Ventures

The goal of most, if not all, of the VUCs is to utilize the well-established, mature educational infrastructure already existing in the state rather than attempting to create a new competitor to serve unmet state needs. In most states, the higher education system is organized in such a way that centralizing support and resources does not seem to be the best option. Even in those states with systems, the institutions are highly autonomous. America's historical institutional independence has not inhibited those institutions that so desired to aggressively, and frequently collaboratively, enter the field of distributed and distance learning—and to do so quite successfully.

Building on what we have learned from the more-successful VUCs, what follows is a description of a new VUC model called Statewide Educational Ventures (SEV) that identifies unmet need for higher education in the state and gives incentives for the development of online programmatic responses.^{*} While serving as an advocate for educationally underserved communities, SEV has as a major goal to build the capacity of existing institutions in response to those communities by developing self-supporting programs that are cost-effective. While this model offers the opportunity for all institutions in a state, both public and private, to be engaged in meeting state needs, the ideas behind it could be modified to be used within a public system or a community college system. They could also be incorporated into an existing VUC.

America's historical institutional independence has not inhibited those institutions that so desired to aggressively, and frequently collaboratively, enter the field of distributed and distance learning—and to do so quite successfully.

SEV's design is based on institutional autonomy rather than collaboration among institutions as a primary value. It also puts its emphasis on offering programs rather than courses.

Each program, whether terminating in a degree or a certificate of some sort, would be offered by an institution as a coherent curriculum—designed and evaluated by the faculty of the offering institution—or by a consortium of institutions that has carefully determined responsibility and accountability for these academic functions.

The core competencies of SEV would be to:

- Identify unmet demand for postsecondary learning in the state
- Contract with providers to meet that demand
- Assess program effectiveness
- Disburse seed money to fund program development
- Structure less-labor-intensive, more cost-effective learning venues
- Identify partners that might benefit from and share in supporting programs

In keeping with what we have learned from the successes of VUCs to date, SEV's focus would be on increasing access for new students—rather than on supporting institutions—by finding out what students and states need and creating a mechanism to respond rather than aggregating what institutions have to offer. SEV would follow a three-step process to identify demand and incent an institutional response. First, SEV would contract through a request-for-proposal (RFP) process with an institution or consortium of institutions to conduct appropriate demand studies to identify and determine the characteristics of educationally underserved communities in the state. Second, after determining the most-pressing and most-promising opportunities, SEV would issue one or more RFPs over time to the state's institutions of higher education to develop a programmatic response either singly or consor-tially. Third, after reviewing the RFP responses, SEV would then contract with one or more of the state's institutions to develop and execute a strategy that would address, on a continuing basis, the educational needs of those constituencies.

**The model herein called State Educational Ventures was originally developed in a consulting report produced by Robert Albrecht, George Connick, Robert C. Heterick Jr., and Carol A. Twigg for the Electronic Campus of Virginia.*

- Identify Unmet Demand for Postsecondary Learning

The first and most-pressing demand study conducted by SEV would identify what kinds of programs—either credit programs or noncredit programs; associate, baccalaureate, or graduate degrees; and in what academic and professional areas—would respond to the unmet needs of the state. In addition, the study would ascertain the level of interest on the part of the state’s citizens to study online rather than on traditional campuses. The results of this study would enable SEV to prioritize educational need and subsequent programmatic development, beginning with those areas of greatest demand and moving on seriatim to address each of the areas that have sufficient critical mass to make program development economically feasible.

The state’s institutions both public and private would have the right of first refusal; that is, the state’s institutions, either alone or in consortia, would have an exclusive opportunity to respond to each RFP. If no institution responds or if the responses received are judged to be inadequate, SEV would then issue the RFP to public and private providers located outside the state. This provision ensures that the state’s institutions have the first opportunity to respond affirmatively to identified state needs, but in the event that they are unable or unwilling to do so, SEV would ensure that those needs are met.

- Contract with Providers to Meet That Demand

SEV would utilize a more innovative RFP solicitation process than simply posting a document requesting an online program in a particular academic or professional area and receiving responses. Despite the fact that a number of any given state’s institutions may have substantial experience in distance learning, the general level of understanding regarding online education among all higher education institutions is relatively low. As part of the goal of building capacity for all of the state’s institutions to participate in the emerging world of Internet-based education, the RFP process would include a significant component that educates existing institutions as to what is possible in this new world. A part of the RFP process would consist of a number of workshops whose purpose would be to train prospective applicants in developing and delivering high-quality, cost-effective online programs.

RFPs would outline a number of requirements that are derived from demand study data and that must be met, as well as a number of generic requirements that promote maximum flexibility for students. Using an RFP that would be

issued for an online academic program as an example, such requirements might include planning statements that address the following issues.

Admission and transfer. Proposals must include a clear statement of admission requirements and requisites for transfer students. In general, one would expect that SEV would have a bias toward programs that transfer all credits for courses with passing grades of C or better awarded by accredited institutions.

Assessment. Proposals must include an assessment plan that describes how the institution or consortium would evaluate the effectiveness of the program in meeting its stated goals. In general, one would expect that SEV would have a bias toward programs that reflect an understanding of how assessment can be used to foster continuous improvement in the ongoing development and delivery of online programs.

Cost-effectiveness. Proposals must include a business plan that demonstrates the program’s cost-effectiveness and how it can be self-sustaining in the future. In general, one would expect that SEV would have a bias toward programs that reflect understanding about the cost of the program’s design—including both human and technological components—in relation to identified student demand.

Enrollment flexibility. Just as students are beginning to expect better, cheaper, faster delivery of student services, so too are

Despite the fact that a number of any given state’s institutions may have substantial experience in distance learning, the general level of understanding regarding online education among all higher education institutions is relatively low.

they beginning to want their academic experiences to have some of the same characteristics. Adult students, with their primary emphasis on professional advancement, want learning that is as close to just in time as they can get, yet almost all four-year institutions still follow the traditional term-based calendar even for their online courses. A very small number of institutions start each of their online courses every two



weeks regardless of the number of students enrolled in a course (Rio Salado College) or use a cohort model in which a course begins whenever 8–13 students are ready to start (University of Phoenix). In each case, no student who wants to take a course ever has to wait more than two weeks to begin collegiate study. In general, one would expect that SEV would have a bias toward programs and program designs that embody these new approaches to enrollment.

Marketing. Proposals must include a marketing plan that is compatible with SEV's overall marketing plan but that includes specific activities to promote the particular program. In general, one would expect that SEV would have a bias toward marketing strategies that exhibit sophisticated understanding of how to reach potential online students and realistically funded efforts.

Student services. Proposals must include a student services plan that addresses how the institution would deal with admission, registration, billing, financial aid, advising, tutoring, grading, library services, placement, counseling, information technology, degree audits, and transcripts. In general, one would expect that SEV would have a bias toward programs that deliver student services via the Web by taking a one-stop-shopping approach, thereby increasing access to information and timely response times.

Technology. Proposals must include a technology plan that addresses both provider and consumer access to technologies. In general, one would expect that SEV would have a bias toward programs that are Web based, asynchronous, and highly interactive.

- Assess Program Effectiveness

SEV would retain responsibility for assessing the effectiveness of the program or project for which it issued an RFP and for which it awarded the contract. The cycle of project efforts would include identifying and establishing a need or a demand for a particular program or project, quantifying that need in order to write an RFP that is attractive to providers and to funding sources, issuing the RFP and awarding a contract, and assessing the effectiveness of the program to determine whether the original demand has been met. If the program misses the mark in some significant respect, SEV must find ways to encourage the provider to modify the offering to accomplish its purposes.

This focus on assessment is not intended to interfere with the provider's mechanism for faculty and course evaluation. Since programs would be the responsibility of the offering

While serving as an advocate for educationally underserved communities, SEV has as a major goal to build the capacity of existing institutions in response to those communities by developing self-supporting programs that are cost-effective.

institution, the responsibility for assessment would be appropriately lodged in the institution and its faculty. SEV would be interested in the assessment and evaluation of program goals and objectives; the provider would be concerned with the achievement of those goals and objectives. Particularly in the early life of SEV, it would be beneficial to engage the services of contractors to assist in evaluating the level of success achieved by the successful RFP respondent. A postmortem of program development and operation would provide several useful pieces of data for planning new programs, not the least of which is the opportunity to avoid replicating past mistakes. The RFP process would be a learning as well as a service opportunity for the state's publicly supported institutions of higher education.

- Disburse Seed Money to Fund Program Development

The provision of seed money for programs identified by SEV is critical to its success and marks a major difference between that organization and those that only identify educational needs. Indeed, the heart of this enterprise lies in uncovering need and matching that need with a provider to meet the need. This would enable the significant educational resources of the state to be deployed to meet most of the learning requirements of the state's citizens.

While research and development funds are a fundamental facet of any business enterprise, they have not historically been a component of college and university budgets. Institutions of higher education typically do not have R&D funds that get used for initiation of new programs. Almost the entire operating cost of a program is reflected in the faculty employed to teach in it and in the staff employed to support it. When institutions find their personnel fully deployed, as is basically the current situation in most states, there are few other segments of their budget left that can be tapped for

reallocation to create a pool of venture capital. Any organization in the midst of transition from one paradigm to another—say, residential, to online instruction—will experience higher costs since it must continue doing most all that it had done under the old paradigm while attempting to create new offerings under the new paradigm. Such a transition will never be accomplished absent seed money. Seed money, or venture capital, would be provided by SEV to overcome the up-front, start-up costs of developing the online program.

SEV would not fund the entire development and delivery costs of new educational initiatives. Rather, venture capital

The presumption is that capital costs are more of a onetime nature or require replenishment funding less often than annual labor costs and fringe benefits. In the case of information technology, costs are decreasing rather than increasing as labor costs are. It seems fair to say that most institutions of higher education are poorly prepared to understand how and where to substitute technology for labor.

would be provided to help defray the initial costs of program development and marketing and to assist the institutions in developing a business plan, structuring offers more cost-effective learning venues, and identifying private-sector or other partners that might benefit and share in supporting the program.

Programs supported by SEV would include a business plan that makes the ongoing delivery of the program self-supporting. For degree programs, some of that self-support may come in the form of tuition subsidy by the state, just as it does for programs delivered on campus. Consistent with prevailing attitudes regarding state support for nondegree programs or certifications, self-sufficiency may or may not include a state subsidy but might include a subsidy from employers whose businesses benefit from the workforce training provided. In

addition, there are attractive alternatives or supplements to legislative funding, as we have seen in Colorado, Massachusetts, and Tennessee through a combination of tuition and fees, depending on market demand.

- Structure Less-Labor-Intensive, More-Cost-Effective Learning Venues

SEV would operate as a conduit for funds to institutions that use them to assist in addressing the educational needs of the future. It would so operate by providing the venture capital to serve students in new and more-cost-effective ways. An important avenue for reducing costs in a labor-intensive industry like higher education is to substitute capital—in the form of technology—for labor. The presumption is that capital costs are more of a onetime nature or require replenishment funding less often than annual labor costs and fringe benefits. In the case of information technology, costs are decreasing rather than increasing as labor costs are. It seems fair to say that most institutions of higher education are poorly prepared to understand how and where to substitute technology for labor.

In contrast, a number of institutions are breaking through the small-seminar model for online instruction and are creating new paradigms that are both high quality and cost-effective. By thinking of ways to take advantage of the capabilities of information technology and the Internet and, in so doing, by reconceptualizing the way courses are designed, those institutions are moving to make collegiate instruction more cost-effective.

The Center for Academic Transformation at Rensselaer Polytechnic Institute has collaborated with 30 institutions to demonstrate how information technology can be used to achieve both quality enhancements and cost savings. The center has demonstrated that individual courses can be designed, developed, and offered at a lower cost than their face-to-face counterparts. All 30 institutions have reduced their costs (from 20 percent to 84 percent, or 40 percent on average). Supported by an \$8.8-million grant from the Pew Charitable Trusts, the center and its collaborators have redesigned 30 large-enrollment, introductory courses, which affect more than 50,000 students nationwide each year. Collectively, the 30 courses project an annual savings of \$3.6 million.

Each of the 30 institutions has conducted a rigorous evaluation focused on learning outcomes as measured by student performance and achievement. Results to date show



case

Can Online Education Scale?

As virtual university consortia (VUCs) have grown, the more successful of them have abandoned the every-faculty-member-for-himself approach in favor of centrally designing courses that are then taught by multiple instructors. Designing online courses via a build-it-once, use-it-often approach dramatically reduces the costs of development for online instruction, especially when the instructors are adjunct faculty.

Almost without exception, however, those online programs that develop courses once continue to use individual faculty members to deliver multiple sections of the same course, each of which is relatively small in size. This model assumes that the instructor must be responsible for all interactions by answering every inquiry, dealing with every comment, and participating in every discussion personally. As a result, faculty members often spend more time teaching online and interacting with students than is the case in classroom teaching. This small-class model

Almost without exception, those online programs that develop courses once continue to use individual faculty members to deliver multiple sections of the same course, each of which is relatively small in size. This small-class model limits the ability of programs both to scale—that is, to produce more-cost-effective courses—and to serve more students, that is, to increase access.

limits the ability of programs both to scale—that is, to produce more-cost-effective courses—and to serve more students, that is, to increase access. In some cases, programs with especially high demand are finding difficulty in

securing the needed number of instructors.

The Center for Academic Transformation's Program in Course Redesign offers a number of strategies that can address the problem. Each strategy takes advantage of information technology and a sophisticated division of labor to enable fewer instructors to serve larger numbers of students. Four basic design principles, which can be used in various combinations, undergird the strategies.

1. Combine multiple sections of a course into one large section.

A key idea in these redesign strategies is that both the development and delivery of entire courses are the objects of redesign. Like the online programs mentioned earlier, courses are designed once—often by faculty teams with information technology support—but unlike those programs, the redesigned courses are delivered in a single section. Virginia Tech, for example, combined 38 linear algebra sections of about 40 students each into one 1,500-student section; Florida Gulf Coast University combined 26 fine arts sections of about 30 students each into one 800-student section; and the University of Southern Mississippi combined 16–20 world literature sections of about 45 students each into one 800-student section.

The advantages of offering the course in a single section are many. Consistent content coverage means that all students have the same kinds of learning experiences. In contrast, those programs that build once and deliver often by using multiple instructors cannot guarantee a consistent experience for students, especially when instructors pick and choose what to cover. Course coherence and quality control improve significantly in the single-section approach. The desired learning outcomes among all students can be more easily achieved, and students are more consistently prepared when they move on to other courses. Treating the whole course as one section also can eliminate duplication of effort on the part of instructors; faculty involved in the course can divide their tasks among themselves and target their efforts to particular aspects of course delivery.

2. *Emphasize student-to-student interaction and teaming.*

As long as faculty members are expected to respond to every student question or interact directly with each individual student in all aspects of a course, it will never be possible to accommodate enrollment growth and provide a high-quality learning experience for students. Strategies that direct course activities to and receive responses from groups of students provide a way out of that problem. Many of the projects in the Program on Course Redesign use teaming strategies, but the University of Colorado–Boulder (see www.center.rpi.edu/PewGrant/rd1award/UCB.html) has developed the most elaborate

Rather than relying on individual faculty members in small sections to provide feedback for students—a technique known to increase faculty workload significantly—courses involved in the Program in Course Redesign incorporate automated grading that sends immediate feedback to students whenever possible.

one in its redesign of introductory astronomy. Although the design relies on face-to-face interaction, it could easily be adapted for fully online use.

The entire class of about 200 students meets twice a week with one faculty member. At the first meeting, the instructor gives a brief overview of the week's activities. About a dozen discussion questions are posted on the Web, ranging from factual questions to complex questions that require the students to draw a conclusion from a variety of facts and principles. Some questions have no definite answer and are intended to elicit controversy. In midweek, students meet for one hour in small learning teams of 10–15 students supervised by undergraduate learning assistants. The students prepare answers collaboratively and carry out inquiry-based team projects. The

teams are supported by software that enables them to collaborate synchronously or asynchronously. All teams post written answers to all questions, and every team member must sign up as a designated answerer for one or two questions.

At the next full-class meeting, the instructor leads a discussion session by directing questions not to individual students but to the learning teams. Before the meeting, the instructor uses convenient software to review all of the posted written answers to a given question. If all of the teams have correctly answered a given question, the instructor skips that question. Instead, he devotes the discussion time to questions with dissonant answers among teams. Periodically, the instructor poses a related question and gives the class time for each team to formulate an answer. The discussion sessions both reinforce the students' learning and clear up misconceptions.

3. *Automate grading and student feedback whenever possible.*

Increasing the amount and frequency of feedback to students is a well-documented pedagogical technique that leads to increased learning. Rather than relying on individual faculty members in small sections to provide feedback for students—a technique known to increase faculty workload significantly—courses involved in the Program in Course Redesign incorporate automated grading that sends immediate feedback to students whenever possible. Rio Salado College, for example, uses Academic Systems mathematics software, which includes a large bank of problems and answers for each topic; Florida Gulf Coast University and the University of Southern Mississippi use WebCT to create test banks for practice tests for each course module in their humanities courses.

Automated grading and feedback probe students' preparedness and conceptual understanding, motivate them to keep on top of course material, and encourage them to spend more time on task. Students receive diagnostic feedback that (1) points out why an incorrect response is inappropriate and (2) directs them to material they need to review. While these practices are highly desirable in all courses, in distance-learning courses they can remove the time gap between submission of assignments or tests via mail or e-mail and instructor response. In addition, they



Using different kinds of personnel in addition to faculty members makes it possible to increase the number of students that can be served at reduced cost.

off-load a significant number of instructional tasks to the technology, thus reducing rather than increasing faculty workload.

4. Use a differentiated personnel strategy

Redesigning the way a whole course is delivered so as to use different kinds of personnel in addition to faculty members makes it possible to increase the number of students that can be served at reduced cost. Each of the following examples relies on adding personnel with specific responsibilities to the instructional mix and creating a division of labor both among faculty members and among others involved in the course.

- To accomplish its redesign of introductory mathematics, Rio Salado College (see www.center.rpi.edu/PewGrant/rd1award/rio.html) added a course assistant to address non-math-related questions—which characterized 90 percent of all interactions with students; to monitor students' progress; and to follow up with those who fall behind. This freed the instructor to teach more students and to concentrate on academic rather than logistical interactions with students. As a result, one instructor can teach 100 students concurrently enrolled in any of four math courses. Prior to the redesign, the instructor typically taught 35 students in one section.
- The University of Southern Mississippi's redesign of World Literature (see www.center.rpi.edu/PewGrant/RD3Award/USM.html) is organized around four four-week modules. A course coordinator, responsible for overall course administration, manages team teaching by four faculty members, who each teach one module in an area of expertise, and four graduate assistants, who help students with writing and

who grade students' essays. The faculty members are responsible for content, complementary materials, quizzes and exams. The coordinator and the four faculty members each receive credit for teaching a single course. Prior to the redesign, the university needed to staff 16–20 sections to serve the 800 students enrolled in the course; it now requires the equivalent of five staffed sections to serve all students. Thus, via a coordinated approach, the University of Southern Mississippi has more than tripled the number of students that can be served.

- The explicit goals of Florida Gulf Coast University's redesign of its required fine arts course (see www.center.rpi.edu/PewGrant/RD3Award/FGCU.html) are to accommodate enrollment growth and achieve greater coherence and consistency. Previously, the course was taught in sections of 30 students each. The redesign's single section comprises six modules, each designed by faculty experts. Students are placed into cohort groups of 60 and within them, peer-learning teams of six students each. A single full-time faculty member, responsible for both academic matters and preceptor supervision, teaches the course, working closely with a full-time course coordinator who is responsible for administrative aspects and with a group of preceptors who are responsible for interacting with students, monitoring student progress, overseeing four Web board discussions, and grading critical analysis essays. Preceptors, most of whom have a B.A. in English, are paid \$1,800 per cohort group; adjuncts who used to teach the traditional course were paid \$2,200 per 30-student section. The model allows Florida Gulf Coast University to scale by adding preceptors while maintaining important faculty oversight via ongoing curricular review and course coordination.

Each of these four strategies, used alone or in combination with one another, points the way to cost-effective methods of serving more students while increasing the quality of students' learning experiences. Reconsidering how to deliver as well as how to develop online courses is the key.

improved student learning in 20 of the 30 projects, with the remaining 10 showing no significant difference. Other outcomes achieved by the redesigns include increased course completion rates, improved retention, better student attitudes toward the subject matter, and increased student satisfaction with the mode of instruction compared with traditional formats.

A key idea in the redesign strategy is that the development and delivery of entire courses rather than individual classes are the objects of redesign. Most online courses, as discussed in the previous section, are developed and delivered by individual faculty members. Even those VUCs like CCCOnline and the RODP that develop courses once continue using individual faculty to deliver multiple sections of the same course, each of which is relatively small in size. The center's redesign strategies take advantage of information technology and a sophisticated division of labor to enable fewer faculty to serve larger numbers of students, thus reducing the cost of instruction. (See the discussion elaborating these strategies on page 31.) Detailed descriptions of the redesign projects and the strategies they use can be found at www.center.rpi.edu/PewGrant.html.

- Identify Partners That Might Benefit from and Share in Supporting Programs

SEV, when appropriate, would help identify potential partners to share the development costs and the risks associated with new educational initiatives, including the following.

Business community. Since much of the focus of SEV programs would be on nontraditional students, some members of the state's business and industrial community may find certain workforce development programs sufficiently valuable to their business interests so as to be convinced of the value of helping support those programs. Currently, and particularly so in high-tech industries, workforce reskilling is a continuing problem. To the extent that such businesses must provide compensated time off and time away from site for employees to reskill, the impact on the corporate bottom line is significant. Time-independent and place-independent learning opportunities have the potential to create significant savings for those industries. In those cases, it would not be unreasonable to create a public/private partnership to develop the venture capital for designing and delivering that educational offering.

Localities. Local communities, desirous of attracting specific industries to locate in their region, may find the capability to

SEV would not become an established feature of the state higher education landscape. It might operate over the next decade, providing the seed money for institutions to begin the process of meeting the demands of new economy students.

rapidly train the local workforce in the needs of that industry just as attractive a draw as offering special tax relief. Localities hard hit by the out-migration of major business enterprises may find the capability to quickly retrain segments of the laid-off workforce for new employment a welcome buffer to declining tax revenues and burgeoning unemployment rolls. There would be many situations in which both local and state government would find that the support of workforce-training programs has a positive effect on both their revenue and their costs.

Granting agencies. Other potential sources of seed money include granting agencies both private and public. One can imagine potential programs of sufficient innovation and/or scalability that would attract the interest of philanthropic organizations or federal government agencies. For example, the U.S. Department of Education has occasionally funded teacher education programs; similarly, private foundations have funded a significant number of online learning initiatives. In such cases, seed money or venture capital could be the joint responsibility of the state government and the external agency.

Conclusion

SEV would not become an established feature of the state higher education landscape. Rather, it might operate over the next decade, providing the seed money for institutions to begin the process of meeting the demands of new economy students. As such, it would be appropriate that the charter of SEV contain a sunset clause, or in some other fashion, after a number of years, undergo rigorous scrutiny in terms of the need and desirability for its continuance.

Initial investment. The costs to begin SEV are minimal. An



operating budget of \$1.5 million a year would be sufficient to pay for staff and services and provide in excess of \$1 million a year in seed money to begin addressing a state's educationally underserved communities. While the biennial portfolio of SEV projects might be well in excess of \$1 million, the venture capital flowing to each of the institutional initiatives would more likely be measured in the hundreds of thousands of dollars. Suffice it to say that each project would be quite different, ranging in size and scope of community served, having differing intentions and aspirations, sometimes delivering a short course of study leading to some form of certification, and sometimes representing a full course of study leading to a degree.

Staffing the proposed SEV is critical to its success. The size of the staff must be quite small, with a commitment to remain small and with size being commensurate with the volume of RFP activity. In the very early existence of SEV, the staff might consist of only a president and an administrative assistant. As the volume of activity increased, one or two more staff members with a good understanding of higher education might be added. The issue here is to ensure that funds allocated to SEV reach the institutions of higher education without significant deductions for overhead.

Happily, all states are blessed with strong colleges and universities. Through careful planning and the initiation of sound business plans built around those new technologies, SEV can aid each state in increasing the capacity of state academic institutions to serve the state's citizens.

The role of the president would be crucial to the success of SEV. The president must be able to understand the nature of the underserved constituencies in the state and ensure that they get well served, work with institutional presidents and their designated staffs to create innovative and cost-effective responses to RFPs, convince the state's policy makers of the worth of various projects, and involve the private sector, philanthropic organizations, and other governmental agencies when and where appropriate.

SEV would not offer any programmatic student services itself. Rather, it would provide a Web portal and a basic call center to respond to requests for information and to refer students to designated contacts at the colleges and universities offering online programs. It would rely on each campus's offering a program to provide the student and administrative services required by distant learners, limiting SEV's student support services role to disseminating program information and publicizing programs that are available. The institution that offers the program would carry out the requisite processes of application, acceptance, registration, and so on.

The result of this work over many programs would be to increase the capacity of state institutions to serve the citizens of a state. The intent of SEV must be to find ways of funding the needed educational programs and delivering those programs at a distance to citizens who cannot come to the campuses of the institutions. Happily, all states are blessed with strong colleges and universities—educational resources that can be marshaled to use the new technologies for reaching broader markets than the students who do come to the campuses. Through careful planning and the initiation of sound business plans built around those new technologies, SEV can aid each state in increasing the capacity of state academic institutions to serve the state's citizens.

It is sometimes useful to remember the first law of engineering: if it ain't broke, don't fix it.

In the case of America's institutions of higher education, the second law of engineering may be as appropriate: if you can't or don't want to fix it, feature it.

An approach that features institutional autonomy is preferable to one that tries to fix it.

Symposium Participants

Mike Abbiatti

*Associate Commissioner for Information
and Learning Technology*
Louisiana Board of Regents

Robert C. Albrecht

Chancellor Emeritus
Western Governors University

Gordon K. Davies

Former President
Kentucky Council on Postsecondary
Education

Rhonda Epper

Director, Online Program Development
Community College of Denver

William H. Graves

Chairman and Founder
Eduprise

Cathy Gunn

Director
Illinois Virtual Campus

Christine E. Haile

Interim Chief Information Officer
State University of New York at Albany

Joel Hartman

*Vice Provost, Information Technologies
and Resources*
University of Central Florida

John T. Harwood

Director, Education Technology Services
Pennsylvania State University

Fred Hurst

Dean, Distributed Learning
Northern Arizona University

Carolyn Jarmon

Associate Director
Center for Academic Transformation

Ed Klonoski

Executive Director
Connecticut Distance Learning
Consortium

Anne H. Moore

*Associate Vice President, Learning
Technologies*
Virginia Polytechnic Institute and
State University

Julie Porosky

Executive Director
MarylandOnline

Daniel Rabuzzi

Chief Executive Officer
Kentucky Virtual University

Richard A. Skinner

President
Georgia G.L.O.B.E.

David A. Spencer

President and CEO
Michigan Virtual University

Mary Beth Susman

Vice President for Educational Services
Community Colleges of Colorado

Carol A. Twigg

Executive Director
Center for Academic Transformation

Jack M. Wilson

Chief Executive Officer
UMassOnline

Virtual Participants

George Connick

President Emeritus
Education Network of Maine

Robert C. Heterick Jr.

Senior Associate
Center for Academic Transformation

Paula Short

Vice Chancellor for Academic Affairs
Tennessee Board of Regents

Rapporteur

Patricia A. Bartscherer

Program Manager
Center for Academic Transformation

Center
for Academic
Transformation

RENSSELAER POLYTECHNIC INSTITUTE
4TH FLOOR, WALKER LAB, TROY, NEW YORK 12180-3590
PH 518-276-6519 • FX 518-695-5633 • WWW.CENTER.RPI.EDU