

MEMORANDUM

TO: Provost Reed Dasenbrock

FROM: Camila A. Alire, Chair
Library Dean

Ted A. Garcia, Co-Chair
KNME General Manager & CEO

SUBJECT: KNME Futures Task Force Report

DATE: April 27, 2006

Reed, attached you will find the executive summary and report of the Task Force. You commissioned us in the fall to investigate the new technologies [DTV] soon to be available at KNME and to see how this technology could be applied to the future teaching/learning mission at UNM. The report centers on digital channel KNMD/Channel 9, KNME's second digital channel.

A task force was formed with the following members:

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Three years from now (2009) the digital signal of KNMD-TV (DTV) broadcast from the Sandia Crest and extended through regional translators will reach 98% of the population of northern and central New Mexico, approximately 1.6 million people. The ubiquity of this signal will be matched by the variety of devices the general population will have to receive it – from HD televisions with digital recording and storage to computing machinery ranging from desktops to laptops to handheld devices incorporating telephony, video, data retrieval, storage, and transmission. The digital devices of 2009, especially the hand-held variety, will allow students two-way access to all of the many resources of the University.

UNM students of 2009 and beyond will expect to engage the University and its resources – especially its curriculum -- in a greatly expanded, much more intensely collaborative and interactive manner than they do now, and they will expect to be able to initiate that engagement at virtually any time and any place. If we act decisively now, in 2009 UNM will take the first steps toward becoming a truly Extended University. We must

- **Transform Teaching** in all its forms of delivery, whether face to face or online, on Main Campus or at the Branches, to increase efficiency and efficacy by promoting and enhancing engagement and collaboration in every learning environment;
- **Transform Outreach to P-20 Teachers and Students** to promote engaged and collaborative educational programs and professional development opportunities;
- **Transform Outreach to the Community** in support of economic development, public policy initiatives, and all other points of contact.

Within the past year several initiatives at UNM have examined, assessed, and identified information technology service providers, services, and user needs. At the same time, curriculum initiatives in several departments, programs, and colleges are seeking new ways to work with a variety of online pedagogies in applications ranging from hybrid courses to electronic portfolios to wider use of online teaching in core courses, all of which promise to increase student retention and success. DTV technology offers a powerful, potentially unifying and enabling tool with which to build a network of learning and support centers that will realize the varied goals expressed by these groups.

The Task Force firmly believes that the KNMD-TV signal and the technologies that will allow interaction with it are welcome catalysts that should push UNM toward a future of increased and enhanced engagement and collaboration with its students, its future students in the P-20 learning community, and with all of the non-academic public and private communities that we serve.

The new digital technology offers UNM a means for positive transformation. We urge the University to take up this new tool and re-invent itself so that it may better address its mission in a changing world.

Three years from now (2009) the digital signal of KNMD-TV (DTV) broadcast from the Sandia Crest and extended through regional translators will reach 98% of the population of northern and central New Mexico, approximately 1.6 million people. The ubiquity of this signal will be matched by the variety of devices the general population will have to receive it – from HD televisions with digital recording and storage capability to computing machinery ranging from desktops to laptops to handheld devices incorporating telephony, video, data retrieval, storage, and transmission. The latter will likely be similar to today's cell phones, and they will likely be as widely disseminated among the general population as cell phones are now (Lester, 2006).

In 2009, the DTV signal will interact with these digitally evolved devices wherever in northern and central New Mexico their owners choose to turn them on. UNM students in 2009 will probably own these devices in numbers like to their ownership of cell phones today, and they will expect to use their devices to download data -- content – of all kinds and all varieties in whatever visual and audio forms it may be expressed. We see the beginnings of this technology available today in Apple iPods, which are being used on many campuses to receive course materials disseminated through local “pod casting” (Young, 2006).

The digital devices of 2009, especially the hand-held variety, will allow students two-way access through MyUNM-privileged downloads and uploads to all of the resources of the University, from its libraries, to its museums, to its special events, to its non-credit, special interest programs offered through the Division of Continuing Education. Most importantly, students will access the full range of UNM curricula, the degree programs we offer through the hundreds of individual courses UNM faculty teach in any given term. UNM students of 2009 and beyond will expect to engage the University and its resources – especially its curriculum -- in a greatly expanded, much more intensely collaborative and interactive manner than they do now, and they will expect to be able to initiate that engagement at virtually any time and any place.

In 2009, UNM will, if we act decisively now, take the first steps toward becoming a truly Extended University, promising its students and all of the communities in New Mexico with whom UNM interacts a greatly enhanced level of engagement and collaboration.

There is no doubt that this vision of the near future offers great promise and great opportunity; there is also no doubt that this vision poses an equally great challenge. In a time of limited resources, we must direct whatever resources UNM can muster to the task of transforming how we present ourselves to New Mexico, increasing the quality of engagement and collaboration in all of the activities the University undertakes. We must

- **Transform Teaching** in all its forms of delivery, whether face to face or online, on Main Campus or at the Branches, to increase efficiency and efficacy by promoting and enhancing engagement and collaboration in every learning environment;

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- **Transform Outreach to P-20 Teachers and Students** to promote more engaged and collaborative concurrent enrollment programs and teacher professional development opportunities;
- **Transform Outreach to the Community** in support of economic development, public policy initiatives, and all other points of contact with the non-academic professional communities in New Mexico to promote increased engagement and collaboration through the broad availability of digitally mediated interactions.

The task force committee firmly believes that the coming of the DTV signal and the technologies that will receive it should act as a catalyst, pushing UNM to focus its energies and its resources specifically on the enhanced engagement and collaboration these technologies enable. The technology is finally only a tool that offers us the potential for action. The goal is a future enhanced by increased engagement and collaboration with all of those with whom we partner to make a better New Mexico.

Transforming teaching

The many faculty currently using WebCT, personal web sites, eReserves, class list-servs, to disseminate content to students are changing the face of teaching at UNM. The ubiquity of DTV would accelerate this process and, potentially, make it more effective for more people in more ways over a greater range of availability and modalities of presentation. Class time (face to face instruction) would be devoted much less to the delivery of content (lecturing and note-taking) and much more to interaction with content; that is, students interacting with each other and with professors in the classroom as they use content delivered outside of class via DTV.

The DTV signal can become a unifying technology that both shapes and hastens the development of this new pedagogy. With a digital video camera, professors can record lectures, small group discussions, supplemental lecture or lesson materials, other faculty with expertise in the class subject, and distribute these digital files to students who access them via MyUNM downloads (see Figure 1, below).

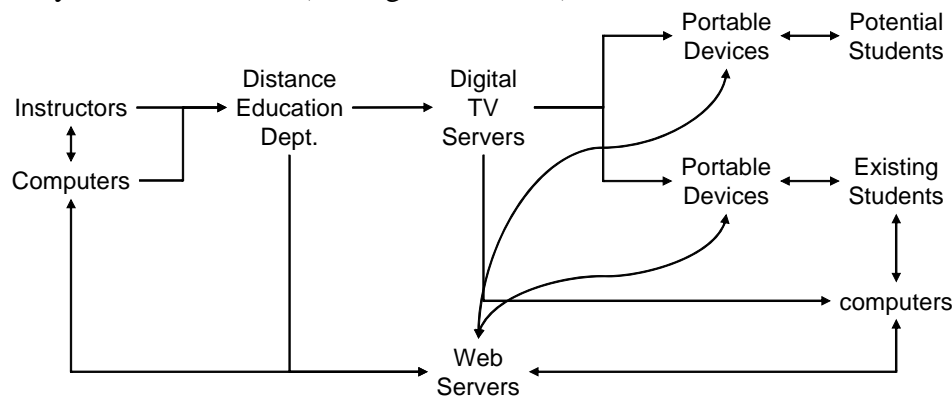


Figure 1. Digital TV Context Diagram—Instructor, Infrastructure, and Students. Instructors working with distance education development groups at UNM create digital classroom environments and digital content for delivery via DTV and the web. Students using portable devices and computers can receive the content and interact with instructors, other students, and the course content via DTV and the web.

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As illustrated above, the “portable devices” that students would use to receive the DTV signal would transform our sense of what it means to “take a class.”

Such a transformed approach to teaching reshapes the idea of the learning community as attached to the classroom seen as a fixed point in time and space. Graduation rates may improve as, with DTV access, we offer, for example, more “hybrid” courses that combine face-to-face class meetings with online delivery, allowing two and three classes to be scheduled in TR and MWF classrooms and times that, previously, would be occupied by single courses. Offering more sections of required courses in “prime times” will enable more students who are now listed as “opt outs” to enroll in required courses and progress toward their degrees in a timely fashion.

The DTV “any time any place learning community” will greatly extend the learning environment of the individual student and the professor’s ability to shape that learning environment. Students could interact with the course materials and with each other in ways that are driven by that interaction as much as or even more than they are driven by their interactions with the professor. Students may be grouped according to content interests and learning styles, access material directed to their groups, prepare assignments in a variety of formats that they share with other student groups and with the professor, and thus interact with each other in a digital learning environment in which they share responsibility for teaching and for learning with each other and with the professor. Teaching in this manner focuses on increased engagement and collaboration, the qualities that studies suggest increase student retention and success (Twigg, “Costs,” 2005).

Course Design, Creation, and Renovation

Faculty will need a central place to receive information and practical assistance transforming their course materials to take advantage of this new pedagogy. Some combination of such existing groups as CASTL, New Media and Extended Learning, Media Technology Services, CAPS (students will need tutoring to be brought into the digital world of learning as well), and the UNM Online Course Standards Task Force (which includes faculty in COE who specialize in developing online training) would likely be good places to start.

This entity should occupy a single site on campus and should be charged first with exploring the best practices associated with the developing digital pedagogy as it is being used nationally and next with facilitating its use across UNM on Main Campus and at the Branches which, with digital access, will likely find their curricula and missions re-defined.

Outreach to P-20 students and teachers

The DTV signal could drive UNM’s efforts to create focused, media-driven linkages between the university and the public schools by bringing into public school classrooms educational materials that UNM offers as “expert systems” of pedagogical and disciplinary knowledge available for teachers to adapt to the special needs of their classrooms and their students. The DTV signal offers a greatly enhanced video stream that from a central location can deliver an array of educational resources that teachers may then access to address their individual needs.

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UNM should consider the development of an “Institute Without Walls” for the enhancement of Elementary and Secondary Education, mediated to the P-20 community through the DTV signal. Such an Institute would develop strategies and content in partnership with UNM faculty from all disciplines in collaboration with teachers and administrators from the P-20 communities within reach of our DTV signal. The result would be a collaborative venture designed to create content and best practices that would inform programs and materials that promote professional development for teachers, disciplinary-focused interactions, and concurrent enrollment for advanced students seeking college credit.

The instructional materials generated by this institute would be archived and readily accessible, a digital repository of pedagogical and disciplinary expertise available to classroom teachers through all of the venues facilitated by the DTV signal and its accompanying technological devices. Such an Institute would partner with the public schools to seek private, state, and federal government funding and support for its mission.

DTV programs directed to P-20 students and their instructors may also increase UNM enrollments by “locking in” students to UNM early in their learning development. “Lock-in” is a common business strategy whereby a company freely supplies information technology to its customers. These customers become so accustomed to using the technology that when a competing company--using different technologies--tries to take customers away, they are reluctant to switch.

In preparation for the next Legislative funding requests, the New Mexico Public Education Department (PED) has commissioned the development of a plan for a statewide New Mexico Virtual School (K-12). If UNM partners with this initiative and others like it using the power and reach of the DTV signal as unique features of our contribution, we can be in a position to provide most of the P-20 students a learning environment that “locks them in” to UNM, making it easy for them to enroll at UNM and reluctant to switch to competing universities.

Outreach to the non-educational community

The DTV signal would help UNM build networks of engagement and collaboration whereby we exchange information through video, supporting documents, and technical information with the New Mexico community in all of its variety. Any community member anywhere in central and northern New Mexico could participate in educational/cultural events (not necessarily credit bearing courses) through DTV delivery of talks, performances, gallery exhibitions, and other events sponsored by UNM.

For example, the University Libraries creates and hosts significant digital collections that tell the unique stories of the settlement and growth of New Mexico. The Libraries actively partner with other libraries, museums, and historical societies to present these collections to the extended communities in New Mexico and throughout the Southwest. Through Dspace, the Libraries’ institutional repository, the intellectual output of UNM faculty and institutes can be collected, catalogued, and added to the digital stream of resources delivered by DTV.

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Similarly, the Anderson School can bring networking and communication tools enhanced by DTV access to bear on all of its programs that partner with professionals and the world of commerce in the private and public sectors. UNM would enhance its ability to help build businesses, stimulate entrepreneurial connections, form project teams, and facilitate the communication that occurs in pursuing all of these activities.

Though the Division of Continuing Education, professional development and workforce education opportunities would grow, enhanced by the resources that could be delivered via DTV. Working professionals from around the state seeking professional development courses or certificate programs could tap into the programs from UNM Continuing Education. In addition, the new medium would strengthen our ability to offer customized professional development training programs delivered to clients via DTV at their worksites or locations of their choosing. Continuing Education plays an important role in reaching non-traditional students; increasing exposure to UNM through this medium would increase opportunities for recruiting these populations for degree programs.

Similarly, the numerous projects and programs that impact public policy in the areas of land use, water, law, cultural preservation, immigration, health, and so on may be enhanced. The DTV signal offers UNM a new tool that promises to connect the communities, institutions, and individuals involved in these issues.

A convergence of ideas

Within the past year several initiatives have examined, assessed, and identified information technology service providers, services, and user needs. At UNM, these initiatives include IT Strategic Planning, Advanced Media Initiatives (AMI), and the UNM Classroom Technology Initiative (Vantage Report). Other statewide technology organizations, including the NM Virtual College and NMCHECS Education Technology Consortium, have done similar work.

All of these efforts have sought to understand the role of information technology (IT) in higher education better, and they have all expressed conclusions and recommendations that bear upon the issues discussed in this report. A developing convergence of ideas, recognition of common needs, and opportunity for collaboration is emerging from the similar recommendations offered by these independent planning processes. Two in particular, the UNM Information Technology Strategic Plan and the Advanced Media Initiative (AMI), suggest a future that would be significantly enhanced by application of the DTV technology.

The UNM IT Strategic Plan is a product of collaborative thinking and planning by key leaders and support staff of IT services across UNM seeking to coordinate the work of IT service providers and identify how to bring the greatest strategic value of IT to support the institution's vision, mission and goals. The first key strategy addresses instructional use of IT, specifically to "develop a network of learning and support centers, both physical and virtual, which inspires users to embrace and apply technologies that enhance teaching, learning, productivity, and collaboration." DTV technology offers a particularly powerful tool with which to build this "network of learning and support centers."

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The Advanced Media Initiative (AMI) was commissioned by the UNM Chief Information Officer “to develop a campus-wide strategic plan that would guide the development of advanced media technologies to support the University’s educational, research, and services missions. Because of the diverse stake holder participation in AMI, the findings and recommendations from this effort represent a unique consensus among media service providers about what is required to efficiently provide powerful and relevant media technology services at UNM.” Following are two recommendations from the AMI report:

1. Create information technologies resource centers (physical and virtual) that will offer training programs and support services. These centers will provide individuals in the community a facilitated opportunity to learn and use media technologies.
2. Develop a cohesive media technologies curriculum that addresses the general and targeted needs of the University community.

Certainly each of these recommendations involves efforts that would be significantly enhanced by the use of DTV technology.

Finally, we note that in the winter of 2005-2006 a faculty roundtable was held and organized by the Vantage Technology Consulting Group. Among the recommendations from that report titled “UNM Classroom Technology Initiative” the following two would certainly embrace the use of DTV technology as an enabling force:

1. Design and identify possible locations for a new experimental/boutique technology classroom for the main campus. The suggested model would accommodate up to 30 students with a design that could ultimately be applied to larger classrooms.
2. Design technical and pedagogical support programs to help faculty develop effective courses based on proven technology-based teaching methods and materials.

All of these planning initiatives represent a convergence of ideas and interests within the information professions at UNM -- among colleagues working with library, media, and information systems. DTV can be the unifying technology that will help us achieve what we are now identifying as common goals.

Allocating resources to make the vision reality

Each of the efforts described above requires allocation or re-allocation of space and expert staff personnel. Office space, classroom and training space, studio and development space, server space – all will be needed. To be effective, these resources should be available in one place, not dispersed across the campus in a few rooms here, a few hallways there. This space must be peopled with expert staff -- curriculum designers, IT professionals, digital library experts, library information specialists, program managers, communication professionals, and office support staff -- in numbers sufficient to facilitate the work of the entire University, on the Main Campus and beyond.

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The efforts of these people would serve the development and training needs associated with transforming teaching, transforming P-20 outreach, and transforming outreach to the community to take advantage of the DTV signal.

Conclusion

The Task Force firmly believes that the KNMD-TV signal and the technologies that will allow us to interact with it are welcome catalysts that should push UNM toward a future of increased and enhanced engagement and collaboration with its students, with its future students in the P-20 learning community, and with all of the non-academic public and private communities in New Mexico that we serve.

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Supporting Sources and Materials

On the digital world:

“People from age 18 to 29 and minorities are more likely to use their phones as personal computers, digital music players, cameras, and more, an AP-AOL-PEW poll found. . . . Minorities were far more likely than whites to use the phones to take pictures, send text messages, and use the Internet, though the minority rates were influenced by enthusiasm among Hispanics – who tend to be a younger population, the poll found.” “Youth Minorities Lead Cell-Phone Revolution,” **Will Lester, AP, in *Albuquerque Journal*, 4/4/06.**

“[T]oday’s undergraduate college and university students [are] digital natives . . . [who] grew up with one or more computers in their household and with one or more Internet connections. . . . They have enjoyed access to the world’s digital resources via the World Wide Web since elementary school. . . . US teenagers, not simply college and university prospects, use the Internet (87 percent), use it daily (51 percent), play games online (81 per cent), get news online (76 percent), and . . . communicate with one another. “Growing Up Digital,” **Richard N. Katz, Foreword to *ECAR Study of Students and Information Technology, 20005: Convenience, Connection, Control, and Learning*, by Robert B. Kavavik and Judith B. Caruso, Vol 6, 2005, EDUCAUSE Research Study.**

US workers across all kinds of industries, including the US Military “are ditching e-mail in favor of other software tools that function as real-time virtual workspaces. Among them: private workplace wikis (searchable, archivable sites that allow a dedicated group of people to comment on and edit one another’s work in real time); blogs (chronicles of thoughts and interests); Instant Messenger (which enables users to see who is online and thus chat with them immediately rather than send an e-mail and wait for a response); RSS (really simple syndication, which lets people subscribe to the information they need)” **“E-Mail Is So Five Minutes Ago -- It’s being replaced by software that promotes real-time collaboration,” Michelle Conlin, *Business Week*, 11/28/05**

I use e-mail mostly only to keep in touch with older relatives. **UNM Freshman responding to a survey question about student use of email, instant messaging, text messaging, and other media during WAC Week, Fall 2005.**

Students see the “primary benefit of technology in courses is convenience, followed by connectedness.” **Kvavik and Caruso (cited above), p. 12**

In October, Stanford began using iTunesU to deliver materials for some courses on a pilot basis .. among the files are songs for music courses and lectures. Only Stanford students and professors can access the materials . . . by entering their campus userID and password. **“Can Apple Make a Campus Comeback?” Jeffrey A. Young, *Chronicle of Higher Education*, 3/10/06.**

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Transforming Pedagogy:

[T]his effort, which involved 55,000 students annually, is the Program in Course Redesign, led by the National Center for Academic Transformation. The center has been able to show how technology can be used to achieve quality enhancements and cost savings. In a recent review of the program presented to Lumina Foundation for Education, researchers showed improved student learning in 25 of the 30 projects, with the remaining 5 showing learning equivalent to traditional formats. All 30 institutions reduced their costs for the courses involved by 37 percent on average (ranging from 15 percent to 77 percent) and produced a collective annual savings of \$3 million. Of the 24 that measured retention, 18 showed noticeable increases.

Demonstrable gains in student learning have been produced through: continuous assessment and diagnostic feedback; increased collaboration among students; computer lab hours in which faculty and or/peer tutors provide one-on-one assistance; and online tutorials. These instructional techniques are hardly revolutionary. What has changed dramatically is our capacity to incorporate good pedagogical practice into courses with very large numbers of students — a task that would have been impossible without technology.

Among the most effective cost reduction techniques are: on-line course management systems, automated assessment of homework, quizzes, and tests, online tutorials, shared resources for course development, utilizing undergraduate learning assistants instead of graduate students, and using the Web to reduce classroom space requirements.

“Improving Learning and Cutting Costs,” Carol A Twigg, *Inside Higher Education*, 11/2/05
