
Transforming WVNET for the Future

Advancing technology through
innovation and collaboration.

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Executive Summary

In 2009 the Higher Education Policy Commission (HEPC) and the West Virginia Office of Technology (WVOT) were asked to find savings and efficiencies in telecommunications while divesting the state of valuable property in Morgantown that currently houses WVNET operations.

HEPC strongly believes that efficiencies can be gained through increased collaboration. To that end, this report provides an outline of obstacles to various options. Obstacles include statutory concerns; timing with moving the WVU terminating point from the WVNET facility; K-12 concerns over E-rate programs; the disposition of funds from the sale of property; and the disposition of the original institutional funding used to provide WVNET's ongoing state-funded appropriation. No obstacle is insurmountable, but each must be carefully addressed.

The report also analyzes three potential solutions. The first two solutions came from a WVOT summary of the meeting between HEPC, WVOT and the Chief of Staff on February 1, 2010. The third option is a hybrid of the first two options.

Option A: Consolidation of WVNET into WVOT (as proposed by WVOT). Obstacles with this option include disposition of staff (succinctly addressed by WVOT), relocation of WVNET equipment and cost saving estimates that seem overly optimistic.

Option B: Agency "divorce" to allow WVNET and WVOT to each go their own way. The primary obstacle is that the two agencies would end up competing to provide internet access for state and local government entities.

Option C: A hybrid approach that shares resources between the two entities. This plan would face difficulties in gaining staff buy-in and would require good faith efforts by both WVNET and WVOT to ensure that resources are maximized.

HEPC believes the best course of action is to immediately market the WVNET property site as being available for purchase. The required public notice period would allow stakeholders to secure commitments to use proceeds for a new WVNET location (regardless of management structure) and to develop a plan to ensure that service for WVU and K-12 are not adversely impacted by the move.

Transforming WVNET for the Future

It is no secret that WVNET has failed to reach its potential. At a time when many states are relying on educational cyberinfrastructure to build a knowledge economy, higher education must provide a leadership role to sustain this effect. Leadership implies innovation, creativity and broad focus. It also must include collaboration with all stakeholders – the Executive Branch, constitutional officers, public education and the various institutions of higher education. Over the years, the primary technology vehicle higher education, WVNET, evolved into an agency that has multiple roles – it serves as a provider to the West Virginia Office of Technology (WVOT) but also competes with WVOT to provide basic services. It is not unreasonable for policy makers to ask why two state-funded organizations act as competitors in serving the State of West Virginia. While the details of answering such a question is more complex than it may appear, the ability to maximize resources is readily available to the state. The rest of this document attempts to provide a framework for the current setting, address obstacles to collaboration or consolidation, and provide solutions to move the state forward.

Discussions of consolidating or expanding collaboration of the state’s IT programs have gained momentum over the past few months. The discussions arose from a series of factors, including the perceived duplication of effort between the two agencies, a desire to increase reliability and the need to respond to recent BRIM reports detailing the deficiencies in the facility that currently houses WVNET in Morgantown.

WVOT responded to this discussion by proposing to consolidate the two organizations under the Chief Technology Officer. Under the WVOT proposal, the CTO would “assume the dual role of CTO and Director of WVNet [sic]. CTO would be accountable to the Chancellor of Higher Education and Chancellor of the Technical and Community College for performance.”¹ The plan outsources WVNET to WVOT, having all WVNET employees report administratively to the CTO while retaining formal employment within higher education.

WVOT’s plan is designed to provide services that will:

- Reduce IT operating costs and gain organizational efficiency;
- Increase reliability and security; and,
- Minimize the need for the WVNET facility in Morgantown.²

WVOT, through the Chief Technology Officer, suggests that the state “move forward with the consolidation plan or for HEPC to present an alternative plan that addresses the goals outlined above.”³

The Office of the Vice Chancellor offers the following analysis and recommendations in response to the charge “to present an alternative plan.” The charge arises from a meeting on February 1, 2010 where two primary options were considered – full consolidation (the WVOT proposal) or “divorce” where each entity would go its own separate way. While this document analyzes both of those options, our belief is

¹ Kyle Schafer Memo to Larry Puccio dated December 9, 2009.

² Email from Kyle Schafer, February 5, 2010.

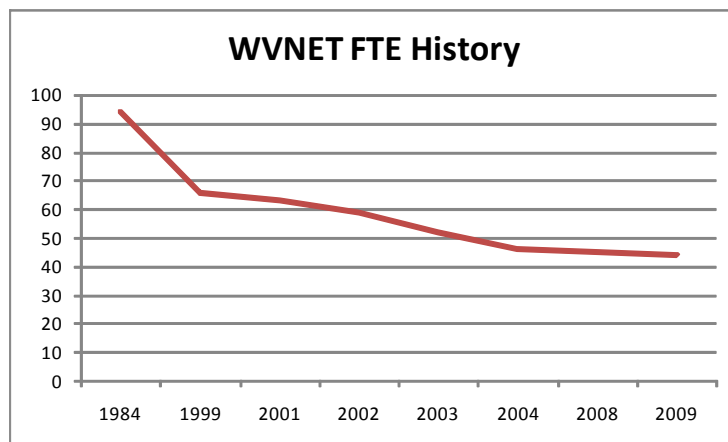
³ Email from Kyle Schafer, February 5, 2010.

that a hybrid approach is the best way forward, for we are all stewards of state resources and a collaborative effort allows for the state to maximize resources while meeting the goals outlined by WVOT.

The Current Setting: Information Technology in West Virginia

WVNET was created in 1975 to provide central computing facilities and wide-area network communications, linking its "central site" computing resources in Morgantown with institutional computing systems, K-12 schools, government and non-profit agencies.⁴ WVOT was created by Senate Bill 653 in 2006 "to advise and make recommendations to all state spending units on their information systems and to have the authority to oversee coordination of the state's technical infrastructure."⁵ WVNET and WVOT work collaboratively on many issues – e.g., WVNET provides after hours help desk support for WVOT while WVOT provides security scans in an effort to maintain a strong firewall to potential intruders. WVNET provides internet connectivity to the Executive Branch and WVOT services its customers through its own MPLS system.⁶ The development of the MPLS system reduced the need for services from WVNET to the point where today WVOT billing for service totals approximately \$400,000 (less than 10 percent of WVNET's annual revenue).⁷

It is important to note that WVNET has provided substantial savings to the state over the years. As technology advanced, WVNET has reduced staff and augmented services to meet the computing needs of higher education, public education and many local entities. FTE employees are less than half of what they were in the 1980's and staff reductions over the past ten years resulted in an organization that is significantly reduced in size.



Obstacles to Consolidation or Collaboration

There are many issues that must be addressed in charting WVNET's future. This is not to say that any obstacle is insurmountable – in fact, there are solutions to all potential obstacles if care is taken to ensure the proper steps are followed. The information below identifies obstacles present in the

⁴ www.wvnet.edu

⁵ §5A-6-1.

⁶ WVOT's Multiprotocol Label Switching System allows it to route data traffic independently of WVNET systems.

⁷ Email from Roberta Haddix dated February 5, 2010. Figure is net of pass through charges. If pass-through revenue is included, state government drops to 3% of WVNET revenue.

eventual transformation of WVNET. Regardless of who provides the ultimate management of the operation, if WVNET is to vacate its current location for a more appropriate facility, the issues below must be addressed.

Statutory Concerns

Over the course of discussions with WVOT, questions have been raised as to whether WVNET is subject to oversight from the Chief Technology Officer. West Virginia Code declares WVNET to be an independent agency, statutorily exempt from mandatory oversight from the CTO:

Notwithstanding any other provision of law or this code to the contrary, the council, commission and state institutions of higher education are not subject to the jurisdiction of the Chief Technology Officer for any purpose.⁸

WVNET functions as a part of the Higher Education Policy Commission. Part of the detailed, statutory responsibilities of the Commission include “management of the West Virginia Network for Educational Telecomputing.”⁹ West Virginia code further lists WVNET as an “institution of higher education”:

"State institution of higher education", in the singular or plural, means the institutions as defined in section two, article one of this chapter and, additionally, Pierpont Community and Technical College, a division of Fairmont State University... the Higher Education Policy Commission, the West Virginia Council for Community and Technical College Education, the West Virginia Network for Educational Telecomputing and any other institution so designated by the Legislature (emphasis added).¹⁰

The understanding that WVNET is statutorily exempt from WVOT does not mean that higher education should dismiss the opportunities that can be provided through a close working relationship with WVOT. It may mean that full consolidation, as proposed by WVOT, would require statutory change to accomplish. Unlike WVOT, there is a layer of oversight between the Chancellor’s Office and the Executive Branch – the Higher Education Policy Commission. The HEPC is responsible for employing the Chancellor and the Chancellor serves at the will and pleasure of the Commission. HEPC and the Chancellor are committed to being team players to benefit the citizens of West Virginia, but any substantive change such as the one proposed by WVOT properly deserves formal consideration by the Commission.

Although there are statutory obstacles, there are ways to address this issue for each of the three proposals outlined in the analysis section of this document.

WVNET Property/Facility

While there is no consensus on the plan as a whole, all parties agree that the property where WVNET currently resides is not the highest and best use of the land. Moreover, the facility was designed for

⁸ §18B-1B-4 (a) (22)(C)

⁹ §18B-4-2 (k).

¹⁰ §18B-6-1a (i).

1970s-era computing equipment and is inadequate for today's technology infrastructure. There are two primary obstacles to selling the property:

1. A recent assessment of the property indicates a value of approximately \$6.5 million.
 - a. WVOT's consolidation plan will result in the move of WVNET operations to Flatwoods or Charleston.¹¹ There is significant expense to such a move – an expense that could be offset with proceeds from the sale. One of the impediments to selling the property over the past several years has been a missing guarantee to ensure that proceeds would be available to facilitate a move.
 - b. WVU is planning to expand its Data Center Operations. Co-location with WVNET in Morgantown would allow for central support, savings on architectural fees, and unified facility management.¹² Even with a move within Morgantown, there are expenses that must be covered. Initial plans figured that proceeds from a sale of the current property would offset that cost.
2. Timing is of vital importance to West Virginia University. West Virginia University's fiber connections terminate at the WVNET facility. WVU estimates it will take 16 – 24 months to move the terminal services to its data center on campus.¹³ Sale of the property must include a plan to allow for an appropriate solution to address this issue.

There is no doubt that WVNET's current location would be better used for other purposes. The state has the opportunity to relocate WVNET to another location – whether at WVU or at a state facility in Flatwoods or Charleston. However, this must be done with solid planning to ensure uninterrupted service.

WVNET General Revenue

A key goal of the WVOT consolidation plan is to eliminate the general revenue subsidy for WVNET. The general revenue appropriation was originally transferred from institutional budgets – the institutions will likely anticipate that those funds would be returned to their budgets. Of the original appropriation of \$2,190,000, 50.8% came from the University System, 27.5% from the College System, 19.4% from the Medical Centers and 2.3% from the central office.¹⁴

E-Rate Program

WVNET was the only bidder for the West Virginia Department of Education's (WVDE) E-rate program. WVOT was not able to bid because it does not offer internet service. In future rounds of bidding (four years out), if no changes are made, WVOT will likely bid on the service as they begin to offer internet service. Changes to the service contract are complicated – the WVDE expressed concern that changes could cost the state \$2.6 million in E-rate discounts either for unallowable charges or changes in provider:¹⁵

¹¹ Email from Kyle Schafer dated February 8, 2010.

¹² Email from Rehan Khan dated February 11, 2010.

¹³ Email from Tim Williams dated February 12, 2010.

¹⁴ Email from Jan Fox dated January 14, 2010.

¹⁵ Email from Vicki Allen dated February 8, 2010.

The WVDE posted an E-rate Form 470 in late November 2008 for E-rate services of Internet access, email service, DNS and web-hosting services. WVNET was the successful bidder and is the current provider. WVNET has a Service Provider Identification Number (SPIN) with the Universal Services Administrative Corporation (USAC) and discounts invoices to the WVDE. WVNET agrees to accept payment in arrears until E-rate funding is approved and files all of the necessary reimbursement paperwork with USAC. WVNET does not include any “billing” or “administrative” fees (which are not eligible for E-rate discounts) on WVDE invoices.¹⁶

County Boards of Education are also impacted by any move of the WVNET facility, regardless of management. Once WVNET moves to a new location, each county must update its contracts with the Universal Service Administrative Company (USAC) to ensure funds are not lost. This is not a difficult process, but one that will consume some time and must not get lost in the shuffle.

Federal Privacy Issues/ Federal Filtering Rules

WVNET hosts a variety of applications that must meet federal guidelines in relation to HIPPA (medical records) and FERPA (student records). All three medical schools have invested significant time and resources to ensure that their systems protect patient privacy. This expertise can be transferred, but the discussion must involve staff from WVU, Marshall University and the West Virginia School of Osteopathic Medicine. Similar issues arise in relation to student records – FERPA requires that identifiable student records be protected. This month the Higher Education Policy Commission initiated a grant that will begin the process of tracking students from K-12 into post-secondary training. The database managers must be able to ensure that the data is protected in relation to FERPA.

The West Virginia Department of Education (WVDE), as a requirement for E-rate funding, manages filtering of Internet access for all public schools on the K-12 network. The filtering engines are located at the K-12 Points of Presence (POPS) in Charleston and Morgantown. WVNET provides physical space for the housing of the filtering engines in Morgantown. The WVDE handles the administration of the filtering and has a contract with a service provider for the filtering license. WVDE must be able to maintain control of this filtering in order to certify to USAC that filtering is in place and is monitored. The K-12 network cannot be combined with Higher Education or State Agencies in a way that would prevent filtering for the schools. Any change of facility must allow for filtering process to continue under management of WVDE.¹⁷

Higher Education Applications

WVNET hosts a variety of applications for higher education institutions. These include SunGard Banner, Blackboard/WebCT Campus Edition, and Oracle. These applications are critical to the higher education enterprise function and have little, if any, crossover to state government. Relocation of these systems and the individuals that manage them must be carefully considered. The central housing of Banner is

¹⁶ Memo from Brenda Williams via email attachment via Vicki Allen dated February 8, 2010

¹⁷ Memo from Brenda Williams via email attachment via Vicki Allen dated February 8, 2010

essential to the Community and Technical College System institutions that do not have the staff or resources to dedicate to local hosting of the system.¹⁸

Analysis of Options

The obstacles above provide challenges that must be addressed – the solution to overcome each obstacle will be driven by the policy path chosen. The first two options focus on the options proposed by WVOT – consolidation or “divorce.”¹⁹ The final option offers a hybrid approach that would take advantage of the strengths of each organization while ensuring critical service, especially to community colleges and regional four-year institutions.

Option A: Consolidation with WVNET

Full consolidation with WVNET will take, at a minimum, a complex memorandum of understanding between WVOT and HEPC. The WVOT plan focuses on moving operations to the Executive Branch while protecting the retirement and employment status of WVNET employees. The plan envisions savings of \$544,000 through attrition over three years, \$900,000 through contract renegotiations and additional efficiency savings of \$500,000 that would result in WVNET operating as a fee-based organization by 2013.

Obstacles:

1. *WVNET is not part of the Executive Branch.* Statutory provisions must be addressed.
2. *Cost and timing of liquidating facility.* The plan does not address the complexity of moving the WVNET operation center, either in relation to cost or in timing for WVU.
3. *Turnover savings may be overly optimistic.* The WVOT recommendation of creating savings through attrition seems aggressive. This would require a 17 percent reduction in staff over three years.
4. *Contract estimates may be based on faulty assumptions.* Much of the contract renegotiation appears to have been accomplished. Commission staff have asked for data to support the \$900,000 figure but have yet to receive it from WVOT. During the course of the conversation, WVOT repeatedly compared WVNET’s internet charges to those contracted by Marshall University recently – however the comparison is flawed in that WVOT apparently compares Marshall University’s pass through rate to WVNET’s full service rate. An apples-to-apples comparison shows that the Marshall rate of \$45 is similar to the WVNET rate of \$47.56.

At the time of the E-rate contract, WVNET charged \$119 per megabit for internet connectivity (including access and support services). Through lowered connectivity rates, WVNET reduced charges last year to \$71 per megabit and will be reduced again as provider rates drop. It appears that the \$900,000 figure was derived by comparing Marshall’s \$45 rate to the WVNET \$119 rate – if so, the savings will not be realized as planned.

¹⁸ Email from Tom Blevins dated February 4, 2010.

¹⁹ Email from Kyle Schafer dated February 8, 2010.

Option B: "Divorce"

During a February 1, 2010 meeting between the Department of Administration, HEPC and the Chief of Staff, consideration was given to the option of having WVNET and WVOT go their own separate way. The "divorce" option would result in WVOT bidding out its own internet service, but would have minimal impact on WVNET.²⁰ If WVOT went its own separate way the cost to operating revenue for WVNET would be approximately \$133,000. Including pass through costs, the total revenue loss amounts to approximately \$400,000. The impact to WVNET would be a slight lengthening of the replacement cycle for equipment.

Obstacles:

1. *Costs to WVOT have not been estimated for internet access.* Informal discussions with the CTO leave the impression that the cost to them may actually be less. WVOT already has the equipment in place to connect directly to the internet, so startup costs should be minimized.
2. *Close attention would need to be paid to lost economies of scale.* WVOT is only 4 percent of WVNET internet service, but a "divorce" would lead WVOT to begin to offer internet service in competition with WVNET. In the long term this may reduce each agency's ability to take advantage of bulk pricing.
3. *Disposition of IP Addresses.* WVNET is the "owner" of the state's IP addresses. IP addresses are more than numerical web addresses. Each device that connects to a network or the internet requires an IP address – this includes computers, printers, IP phones, switches and hardware. WVOT has complained of difficulty in obtaining IP addresses from WVNET. HEPC has asked repeatedly for WVOT to provide examples of the systemic problem so that the issue can be addressed. To date, no information has been provided. Regardless, it seems to be a fairly straightforward process to split up the IP addresses in the "divorce" process.

Option C: Hybrid Approach

WVNET and WVOT offer similar services throughout state government. Internet filtering, email management, and data backup are the most commonly cited areas where the agencies offer the same service. From the WVNET perspective, these are services that have little impact on the bottom line as they are not part of the core business. It is also clear that each agency has the skill to offer these basic services. From the higher education perspective, the option of contracting for technical services has some appeal. WVNET's focus needs to be on maintaining enterprise systems, expanding access to K-12 and supporting WV EPSCOR's cyber-infrastructure development. HEPC has repeatedly offered to pursue the hybrid approach as it seems to meet the goals of gaining efficiency and cutting costs while preserving the core mission of each organization.

Obstacles:

1. *Consolidation of staff.* HEPC has requested examples of overlapping staff and duties. To date, this has not been provided. On February 12, 2010 WVOT again offered to look at the WVNET

²⁰ Email from Roberta Haddix dated February 5, 2010.

organizational chart to determine where functions overlap. HEPC had not received comment on this at the time of printing.

2. *Development of an MOU.* Much like the consolidation plan, this approach requires a sharing of staff. In this approach, however, it appears that there may be synergies developed that would formalize working relationships between the two organizations. This holds the potential to provide efficiencies through collaboration.
3. *E-rate considerations.* As with other options, attention must be paid to the E-rate program. Failure to move this process forward in a systematic way could significantly jeopardize the state's eligibility for the program (jeopardizing \$2.6 million in funding for local schools).

Implementation of a Solution

There are substantial obstacles to be overcome regardless of how WVNET's future is directed. The state should pursue a course of action that provides both efficiency and savings for the state while ensuring the viability of education-specific applications and K-12 funding.

1. Announce that the WVNET property is for sale. Ensure announcement allows for time to relocate equipment and WVU termination point housed at WVNET.
 - a. While announcement is out, gain consensus on using proceeds from sale to pay for WVNET move. **Deadline:** Mid-March.
 - b. Finalize WVU data center plan.
2. Joint development of MOU between WVNET and WVOT. **Deadline:** June 30. Key Pieces:
 - a. Outsourcing of internet routing/ hardware maintenance to WVOT
 - b. Delineation of best provider for various services (list not all inclusive):
 - i. Email
 - ii. Filtering
 - iii. Web Hosting
 - iv. Enterprise data support
 - v. Data storage
3. Confirm E-rate status with WVDE to ensure compliance. **Deadline:** prior to signing of management MOU.