TILSON

November 5, 2015

Barbara Grimes, Chair
Vermont Interactive Technologies Coordinating Council
Vermont Technical College
Randolph Center, VT 05061

Dear Ms. Grimes:

Attached please find Tilson's report to the Council containing our recommendations regarding what further areas of inquiry the Council might undertake to support continued videoconferencing capabilities in the State of Vermont. Recognizing that time, funds, and options are all limited, we have focused our recommendations on two focused and high-priority scopes of work. Scope A focuses on documenting the current system so that a successor manager would have a reasonable option to put the network equipment to use. Scope B is a high-level assessment of the business case for operation of VIT network equipment at a reduced level or in an alternate form by the State of Vermont, intended to inform conversations by the Council and other decision-makers.

Although these scopes of work are intended to be useful if VIT were to engage any vendor, should the Council chose to proceed with this further inquiry, Tilson is ready and willing to do the work we have laid out if we are engaged by Nov. 16, 2015. (Beyond this point we will need to evaluate if sufficient time would remain to complete the work.) Understanding that the time remaining to do the work is limited, I am including Tilson's price for the work: $10,000 for Scope A and $5,000 for Scope B.

Please feel free to contact me if you have any questions or would like to move forward.

Regards,

Christopher Campbell
Director for Broadband and Energy Consulting

cc: Tara Lidstone, VIT Executive Director

Vermont Interactive Technologies

VIT Transition: Maintaining Options for Supporting Continued Videoconferencing Capabilities in the State of Vermont

Submitted to:

Vermont Interactive Technologies Coordinating Council

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Background and Summary of Work

Vermont Interactive Technologies (VIT) has provided videoconferencing services within Vermont since 1988. It has operated as an organization with administrative support services provided by the Vermont State College system, and the Vermont State College system (VSC) has been an anchor user, in recent years representing approximately 80% of the hours of usage on the system. VIT also serves a variety of State of Vermont, educational, non-profit, and private for-profit clients. Its primary service is room-based videoconferencing at 13 sites with 17 studios statewide, using on-site technical staff to support conferences at each of its locations. It also offers mobile studio equipment and bridging options to connect to other standards-based videoconferencing systems and services in Vermont or around the world.

VIT's funding model has relied on a combination of operating and capital appropriations from the State of Vermont and user fees collected from users. However, this funding model was severely disrupted in state Fiscal Year 2016 when the Vermont Legislature passed operating appropriations for VIT sufficient to only sustain operations through December 2015. Furthermore, the Vermont State College System has announced its intention to discontinue its use of VIT and implement its own videoconferencing platform. Given these realities, VIT has made plans to discontinue operations by the end of calendar 2015.

Given these impending events, the VIT Coordinating Council[1] engaged Tilson to provide assistance for how to most efficiently support services delivered over videoconferencing in Vermont. The first phase of this work, represented by this report, consisted of a concentrated review of the information likely to be available for any study and recommendations regarding a scope of work that would be feasible and of greatest value given the time and budget limitations.

Tilson conducted on-site and videoconference interviews with VIT staff, Coordinating Council members, and VIT users who agreed to participate on October 20, 2015. It also reviewed documents presented to the VIT working group, a body created by legislation to study and make findings and recommendations regarding VIT and its future; specifically, how VIT's organization or assets, or both, should be used to best meet the needs of the Vermont public.

Key Findings and Constraints

Staff, users, and Coordinating Council members attending the October 20th meeting all spoke eloquently about the value of VIT to its users and the state. Users attending spoke of increased

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[1] The VIT Coordinating Council consists of members appointed by the Governor. It provides oversight of and advice to VIT's management. It will also remain in existence after VIT's planned shut-down.

costs and decreased access for populations that they served. A recurring theme was that one of VIT's key value differentiators for its users were its fully-staffed conferences that did not require users to have any training or technical knowledge of how to use the system—it would just work. This staffing commitment is also by far the most significant operational cost of the system. Conversely, space for the conferencing rooms were virtually cost-free to VIT, as they were provided by sponsoring organizations within the community.

The interviews and documents reviewed also identified a number of key constraints for any further work:

- Due to the requirements involved in closing down operations around the holiday period, VIT has determined that it is fast-approaching a "Point of No Return" on December 23, 2015.
- As a result, there is a very high likelihood that there will be a loss of all staff (and most institutional knowledge) upon this December 23rd, 2015.
- There is no foreseeable funding mechanism that is reasonably likely to provide any new operating funds before the "Point of No Return" and therefore forestall the immanent loss of staff.
- VSC has already stood up its own videoconferencing system and is therefore almost certain not to be a user of a future network based on VIT equipment, at the very least in the foreseeable future.
- Only a very limited amount of funds are available to perform any further study—likely not to exceed $20,000, including the cost of the present study.

Finally, the interviews identified the fact that ownership of the network assets upon VIT ceasing operation had been the subject of discussion and debate. However, the working consensus appears to be that the State of Vermont will become the owner, either as a matter of law, or de facto for lack of a clear alternative.

In summary, it appears likely that the State of Vermont will likely become the owner of the VIT network equipment in January 2016. This network will still be technically capable, with the capacity to support both room-based videoconferencing and bridging of a variety of videoconferencing services and locations around the state and around the world. However, the State will lack the institutional knowledge of the system. Due to the departure of its largest user (VSC), even if the network were to continue to operate in some form, it would have much more available capacity. And it seems very likely that there will be a discontinuity of operations of some length due to lack of funding. We have kept these factors in mind when making recommendations for two potential scopes of work to perform next.

Scope A: System Documentation

Given the immanent near complete loss of institutional knowledge at VIT, documentation of the system becomes a critical and urgent task if the State of Vermont or any VIT successor

manager is to even have a viable option to put to use in some form the equipment in which the State has invested. Although the State has not made a decision to continue to use the network equipment (and may never do so), investing in documentation represents an insurance policy. It will ensure that much as possible of the current information VIT holds is captured in written format for future usage. For this reason, Tilson recommends that VIT consider commissioning the following scope of work as soon as possible.

1. **Project Management**

Work tasks:
a. Create and maintain a project plan for the length of the consulting services, including resources, and delivery dates.
b. Provide regular communication and progress reports.
c. Complete work not later than Dec. 23, 2015.

✓ **Deliverable:** Project Plan

2. **Discovery and Report**

Conduct a technical review of applicable systems including reviewing their specifications, implementation parameters, support and maintenance and use.

Work tasks:
a. Inventory the videoconferencing network equipment used by VIT. Identify critical information including, model, age, location, and function.
b. Inventory any existing key vendor contacts.
c. Collect or create a functional diagram of how the network elements are interconnected.
d. Document network infrastructure, communications links and standards used to interconnect the network elements to each other and to external networks. Include
e. Document network procedures for operations including:
   - Initiating conferences (intra-network and inter-network)
   - Common user requests and support tasks within conferences
   - Troubleshooting procedures
   - Recording and conference record procedures
   - Conference conclusion procedures
f. Document facilities systems (access control, surveillance, etc.) with the local network.
g. Document any key software systems and required hardware, including vendor, version, age, and function.
h. Collect or specify technical qualifications required of key personnel.

✓ **Deliverable:** Document Portfolio

All documentation will be authored to the highest precision possible given the following assumptions:

- This scope assumes reasonable and timely access to key technical personnel and VIT's available documentation during the project.
- Tilson Personnel will be provided with the credentials and permissions that are reasonably necessary to perform hardware and network analysis activities

Scope B: Videoconferencing Business Cases

VIT will cease to operate under its legacy business model at the end of 2015, and that model seems unlikely to be revived in its historical form. That said, the State of Vermont, in inheriting a network with the capability to provide both room-based videoconferencing and bridging of various videoconferencing, is not bound by the operational model of VIT as currently configured. Coordinating Council members suggested that greater use of videoconferencing platforms by the State of Vermont could provide opportunities for cost savings as well as better serving the public. Users interviewed also suggested that the costs savings associated with their use of VIT could justify some increase in user fees, an outcome preferable to them over elimination of their access to the service. The current VIT funding and operating model is going away, but are there alternative models for operating the network that the State will inherit that could still be viable?

This scope option would attempt to identify the cost to the state to the State of Vermont to continue to operate all or a portion of the VIT network for a reduced/different audience that includes State of Vermont users and remaining external users, and high-level assessment of possible business cases to continue to do so.

Given the very limited funding remaining to VIT, this work would need to be high-level and very targeted. A more comprehensive and in-depth financial, technical and/or operational study could be accomplished if more time and funding were to be made available, and with greater access to State of Vermont information about travel and personnel costs. In this limited study, the specific cases to consider would include:
- consideration of what level of state travel reduction would be required to cost-justify the continued operation of the network equipment in some form,
- what level of outside user fees would be required to support re-started operations in a reduced or more limited form?

Analysis Required

a. Based on historical cost and use data, estimate a minimum level of staffing and expenditure required to support continued use of the VIT network equipment by the State of Vermont to support the State's legacy applications of the VIT network ("the Base Cost I").
b. Estimate an incremental level of staffing and expenditure over the Base Cost I required to support use of VIT network equipment by the State of Vermont as bridge between other desktop or room-based videoconferencing systems available to state agencies or state employees.
c. Estimate the level of state employee travel displacement (in miles and hours saved) necessary to cost-justify the costs estimated in (a) and (b).
d. Based on historical cost and use data, estimate a minimum level of staffing and expenditure required to support continued use of the VIT network equipment at a reduced level as a scheduled resource by the historical users of the VIT network, minus the VSC ("the Base Cost II").
e. Estimate the user rates based on historical usage levels (excluding the VSC) required to support the Base Cost II.

✓ **Deliverable:** Report containing the analysis delivered on or before Dec. 23, 2015.

This scope assumes access to key management personnel and VIT's historical budget, rate structure, and financial data. This scope does not assume that the consultant will have access to State of Vermont travel cost data, but will use reasonable but generic assumptions or readily-available public data about costs such as personal vehicle fleet car mileage costs, other travel expenses, and the value of time spent traveling.