Executive Summary
Combined CIO / Connectors & Network Members (CNM) Meeting
April 24, 2012

Participants: 89

Purpose: To provide opportunity for Internet2 university member CIOs and Connector & Network Member executives to begin discussions and dialogue about the ecosystem of campus, state, regional and national networks and working together to suggest changes and formulate solutions going forward.

Desired Outcome: Meaningful small group discussions, report-out to group at large, and next steps.

Principles (from the CIOs) for today's discussion:
• For universities and colleges to succeed in the broad transformation of higher education it will require the coherent coordination of network and network-based services across the entire ecosystem of campus, state, regional, and national networks.
• As a community, we need to get to a vocabulary of “we” instead of “us vs. them”.
• From an ecosystem perspective, we should optimize our collective investment and not spend more on services or architectures than is necessary and prudent.

Questions (from the CIOs) for today's discussion:
• Question 1. Given the investment by our community in an extremely powerful national network fabric, what would a new business model look like that maximizes use of the national network, while keeping costs within current commitments?
• Question 2. Given "above the net" services have the potential to "expand the pie" while still reducing costs to university members through economies of scale, how can the NET+ Program work with the regionals in a positive fashion that contributes to the overall health of the network ecosystem by making good services available to all?
• Question 3. Given that CIOs have a vested interest in (as the users and major funders of) the networking ecosystem, how can they be productive and instrumental in contributing to the positive relationships of RONs, I2 and the campus network operations that lead to collaboration and a cohesive ecosystem? In particular, how can the RONs help the CIOs understand what the ecosystem looks like from their perspective?

Questions (from the CNMs) for today's discussion:
• Question 1. Regional networks serve a diverse set of organizations with a broad set of services (e.g., commodity services, videoconferences, support for general internet traffic and highly specialized research traffic). This creates a dynamic tension between serving the broader mission of the connecting organizations and the innovation/research needs of the University. What are the approaches/strategies for addressing the issues?
• Question 2. What are the top three things that the regionals can do to enable the campuses to participate in the innovation platform and services? How can the campuses support the regionals?
• Question 3. As institutions adopt cloud services and deliver high-bandwidth content services to students (i.e. Netflix), how can the regionals and the CIOs work together to ensure that bandwidth, reliability and funding are built into the service model?
**Report Outs**

- **Question 1.** Given the investment by our community in an extremely powerful national network fabric, what would a new business model look like that maximizes use of the national network, while keeping costs within current commitments?

**Table #1 (Tim Lance)**
Small group should continue this discussion
Need absolute transparency to real, actual costs.
Need to know end-to-end performance and costs to make decisions on a regional basis.
Mentioned how some regionals can serve K12 and others cannot serve K12 directly.
Need to continue this discussion between Internet2 and regionals.
Live in a time of abundant bandwidth
While regionals have diverse business models, Internet2 has only one model for recovering fees. This model is out-of-date, going back to 1997, and could be updated.

**Table #2 (Don Welch)**
Address this with respect to principles to inform work going forward
Simplicity drives increased adoption
Specialization of entities (connector vs. regional – not the same)
Having a simple model is important
Model that focuses on strengths
Business models are old
Predictability and stability as move forward
Lost our focus on greater good.
Would be a big plus to have model that focuses on the common good.

- **Question 2.** Given "above the net" services have the potential to "expand the pie" while still reducing costs to university members through economies of scale, how can the NET+ Program work with the regionals in a positive fashion that contributes to the overall health of the network ecosystem by making good services available to all?

**Table #4 (Justin Sipher?)**
Reminded that proposals can come from regionals and member campus CIOs
Transparency is critical
Need our RON partners to know what is in the works, be ready to scale and meet need.
**NUGGET:** any affected or host RON should be aware of new NET+ service on the onset, including budget, funding, NDAs, etc. Include early adopters and pilots and others, as adequate scaling is needed.

Tracy Futhey added, perhaps as a step zero in NET+ Services:
1. Exchange information regarding who is doing what to avoid redundant efforts.
2. Recognize differences in RONs may make co-branding a possibility for some, but not for others; idea of wholesaling to RONs in addition to what is offered to member campuses.

Table #3 (Dave Jent)
Need to have mechanism for the regionals to have outreach beyond Internet member campuses
Need for workshops for both providers and users, explain the service offering and the options for how regional can provide a service to the NET+ fabric.
Develop relationships quickly: what was heard in the CIO meeting is different than what was heard in the CNM meeting. Alignment/direction set is needed.

NOTE: Jack Suess added that the methodology stages used in NET+ (incubate, early adopter, general availability, etc.) should be explained to the community, make the process known for what needs to be done to move forward.

• Question 3. Given that CIOs have a vested interest in (as the users and major funders of) the networking ecosystem, how can they be productive and instrumental in contributing to the positive relationships of RONs, I2 and the campus network operations that lead to collaboration and a cohesive ecosystem? In particular, how can the RONs help the CIOs understand what the eco system looks like from their perspective?

Table #4 Joe Lazor
Add to the CIO Principles: Try to better understand the regionals as related to their funding and services. (Carnegie R1s and others)
Look at setting strategic direction for the organization, not just the “flavor of the day”. Key focus to enable programs, tied to funding to move toward achievement through cost sharing collaborative model.
Set roles and responsibilities for next 6 months, tie together CIO/RON/Internet2 in a coordinated, inclusive basis. Is this done through a PAG?

• Question 1. Regional networks serve a diverse set of organizations with a broad set of services (e.g., commodity services, videoconferences, support for general internet traffic and highly specialized research traffic). This creates a dynamic tension between serving the broader mission of the connecting organizations and the innovation/research needs of the University. What are the approaches/strategies for addressing the issues?

Table #5 Steve Corbato / Larry Conrad
Dynamic tension as RONs face pressure of research vs. broader BTOP efforts, governance, and K-12.
Add to Principles: Recognize heterogeneity, some regionals lead with bandwidth and services.
R1s need it better, bigger and sooner
R1s need to make speculative investments
Regionals may need to adjust governance to allow for participation in research innovation.
Potential area for tension is around NET+ Services. What is the advantage for doing this service? Through aggregation, national will have advantage in most instances, but not all.

Larry Conrad cautioned to be careful to press regionals to modify business model ahead of demand. Regionals cannot be expected to make investments if demand is not there. (Dynamic provisioning and SDN as example.)

- **Question 2.** What are the top three things that the regionals can do to enable the campuses to participate in the innovation platform and services? How can the campuses support the regionals?

**Table #6 Greg Palmer**
Really need 3-4 days to discuss this.

**NUGGET 1:** In many situations, campuses faced with multiple layers/networks before the even get to Internet2. Best if the multiple layers don’t compete and present a unified front to campus.

**NUGGET 2:** Important to have the full range of stakeholders (Libraries, Research groups, Healthcare), a diverse group of organizations engaged with regional and with CIO. CIO can give access, be part of the educational process and show benefit.

**NUGGET 3:** Provide fundamental building blocks from regional to campus (ID Management, Storage), understanding the base service and working collaboratively to provide it. Bi-directional communication and collaboration is key.

Palmer later added that when speaking with CIOs, regionals are treated like vendors, respond to RFPs, and compete for services. What would work better is to have regionals brought in at the planning stage. If you are included in the process, you are more likely to come up with financial advantages and benefits.

**Table #7 Brian Voss**
Didn’t really respond, but rather decided to “question the question”. No three nuggets given.

Is this whole concept of innovation a good idea or is the real goal getting ourselves out of financial difficulties?

What can we do to make more money? This will create competition. One could argue that national and regionals are doing the same thing. Now finding competition can eat us – much like the telecos who complain that we are eating into their business.

National approach would be to take the state and regional out of the mix and make it less visible.

Focus on innovation stage, not the commodity innovation. This would “keep the dandelion heads out of the mower blades.”

Do we keep national vs. regionals, or take a fresh approach and start over? Track record of not having the maturity to do this exists.
• Question 3. As institutions adopt cloud services and deliver high-bandwidth content services to students (i.e. Netflix), how can the regionals and the CIOs work together to ensure that bandwidth, reliability and funding are built into the service model?

Table #8
This group came up with more questions than answers.
Inclusivity needs to be a priority for RONS, Campuses and Internet2.
Services need to be inclusive. In terms of Cloud Services, evaluate all at regional and national level.
Diverse set of needs for each piece of the ecosystem.
Communication is key priority. In Oklahoma, bigger institutions get together and take those commonalities back to RONs and Internet2.
Tension creating least common denominator vs. what is at the cutting edge.
Participation is key; folks can’t just jump in and jump out.
There is strong need for communication within each state and Internet2.

Closing Comments and Wrap: George asked that report out notes be sent to terris@internet2.edu. Participants were reminded today was a good start, but just that, a start. Gathering common themes, such as having better communication will be difficult. Working with diverse groups and opinions is difficult, recognizing that it’s often much easier to “just write a check”.

He also pointed out that 34 out of 38 regionals have the word COMMUNITY in their tagline or mission statements.

Transparency is key. We have a brand new network and we can move forward with a clean slate. George thanked folks for participating in this meeting today, and reminded that this conversation is not over. Next steps will be to identify areas of interests, convey smaller groups and work on accomplishing what’s needed.

End 10:00 AM