



**Internet2 Industry Strategy Council
Meeting Summary
July 11, 2005
9:00 am-3:00 pm EDT**

ISC Participants: Marv Adams, Bob Aiken, Dan Atkins, Gary Augustson, Steve Hall, Wes Kaplow, Stu Kippelman, Brian McFadden, Mike Nelson, Rick Rashid, Jack Waters

ISC members unable to participate: Judy Estrin

Special Guest: Tom West – National LambdaRail

Internet2 Participants: Jill Arnold, Gary Bachula, Steve Corbato, Ken Klingenstein, Cheryl Munn-Fremon, Barb Nanzig, Doug Van Houweling, Ellen Vaughan, Karen Doemer (scribe)

AGENDA

Welcome/Agenda Review/ Introductions
President's Report
Priority Effort Progress Report: Security
Overview of Technical and Organization Direction
Update/Matters Arising

Welcome/Agenda Review/Introductions

Marv Adams, CIO, Ford Motor Company was introduced as the new chair of the Industry Strategy Council. Bill Powers, retired from Ford Motor Company, was introduced as the deputy chair of the Industry Strategy Council.

Marv stated that the proposed consolidation of Internet2 and National LambdaRail (NLR) is very important. Internet2 needs to build a compelling value proposition and use the consolidation as a catalyst for membership. Marv recommended to the council that they read, "Democratizing Innovation" by Eric Von Hippel, <http://web.mit.edu/evhippel/www/democ.htm>).

Marv outlined his high-level thoughts and ideas in a document distributed to the council.

Purpose

A very high bandwidth, secure, widely available and inexpensive access network will be essential to enabling the emerging boundary-less world where unique forms of collaboration will be in great demand, real-time sensing world which will change the nature of many kinds of work, virtual and physical reality integration and highly distributed specialization. These enablers are the core elements of an innovative, adaptive culture and are essential for the survival of competitive institutions.

Strategies

- Create an industry learning community, integrating research, consulting-teaching and practice with diverse participation.
- Influence the resource allocation of Internet2/NLR
- Influence the direction/priorities of network providers
- Create showcase "wins" and promote them.

Mechanics

- Build value proposition / vision
- Use merger as a catalyst for membership drive
- Design physical and virtual forums that continuously gathers diverse feedback
- Synthesize the feedback into actions that propel the strategies

- Develop and track a few meaningful targets/metrics and make adjustments as necessary

Discussion Summary:

For specialization to be highly distributed, high bandwidth is a requirement. The ISC has two major areas of interaction: the community and the council. In the past it seems as if the sentiment within Internet2 has been "what can industry do for Internet2" not "what can Internet2 do for industry", this needs to change. Marv agreed that this idea is consistent with his vision and in making the council environment more strategic in orientation.

The emphasis on distributed collaboration is important. The National Innovation Initiative issued their final report in mid-December and suggested an aggressive strategy of change. Ideas are not enough, and infrastructure is needed to promote innovation. Adoption of technology was key in early days. This council could help figure out how adoption happens more quickly. Internet2 has found high barriers for marketplace issues, desktop video is a conspicuous example. Marv suggested that a presentation on this report be on the agenda for the next full day ISC meeting.

AI: Mike Nelson will work to find the right person for this presentation.

President's Report – Doug Van Houweling

Internet2 continues to be committed to a set of key objectives.

- Address the advanced networking needs and interests of the research & education community
- Provide leadership in the evolution of the global internet
- Leverage strategic relationships among academia, industry and government
- Catalyze activities that cannot be accomplished by other organizations
- Implement a systems approach towards a scalable and vertically integrated advanced networking infrastructure

Technical challenges are becoming increasingly difficult and we do not have the financial capabilities to do it all. Our resources come mostly from our members with some funding from the NSF. The total budget is approximately \$26M a year. About one-third of that is membership dues and two-thirds is from the shared cost of providing the network. Maybe 5% of funds come from federal support. Internet2 is running a big deficit this year and we need to rebuild our reserves.

Sustaining this large community is a very complex and ever changing prospect. With the changes anticipated within the organization this council needs to focus on the question, "How do we sustain the community?"

Discussion Summary

- Defining the value proposition is increasingly difficult. It would be very helpful to have language from the industry community on how they benefit from membership.
- The message that is heard most often is about bandwidth and performance metrics, these need to be only part of the message.

AI: Please send your comments and questions on topics of interest and things you would like to see Internet2 doing to Marv (madams99@ford.com) and Bill (wfpowers@aol.com).

Priority Effort Progress Report: Security – Ken Klingenstein

Marv provided his thoughts on security and the relevance of the Internet2 efforts for industry. He commented on our networked economy and that the increasing ubiquity of computing has led to the exponential growth of "bad things" without a corresponding growth of solutions. The network economy implies interdependency and there are real risks for an economic crisis, not just a network crisis. Our overburdened system has no clear perimeters, no certification standards. Identification and authentication problems are a major problem. Internet2's work in this area can play an important part in the research and development of changes to the technology.

Ken summarized the progress on Internet2's security efforts. He stressed the importance of an inclusive view of security and that the federated approach is the heart of security and middleware. Most security tools today are backbone centric and represent centrally facilitated enterprise security. Internet2's goal is to provide an open source framework and tools for the network and for the enterprise user. The best synergy with the corporate members comes from "fellow travelers" rather than from vendors. Bill Powers asked what results were expected for the security efforts and activities. Ken stated that it is difficult to quantify results at this time -- that there are deep policy issues that the community needs to tackle.

A discussion on effective ways to engage corporate members followed. Brian noted that better security would result when people began to take security measures; when security measures were adopted. Discussion continued regarding the adoption of security solutions and the need for a critical mass from several areas using and deploying security measures. It was suggested that the council might convene a small group to gather and understand industry requirements for security. The strategy of this group could be one of teaching and learning through partnerships with the broader Internet2 community to help the government understand the problem and to demonstrate that the Internet is key for business. If our industry thoughts are clearly defined then at the time of crisis we will be prepared to emerge as clear leaders. Ken indicated that federations could be one of the core technologies for solving the security issues – that perimeter defenses are not working. Ken said that having more input from corporate members on use requirements would be helpful. He stated that while Shibboleth has good visibility that persistent federations have not yet occurred in the corporate sector. Ken commented on the increased interaction with the federal government. A market is being created for the Identity Service Provider.

Action Item: Security

The ISC should work on a definition of security requirements from the industry perspective. The ISC could convene a small group to address this. Additionally, what role should the ISC play relative to security - policy, lobbying, working with federal agencies? *Council members to follow up with Marv and Bill with their thoughts on security and on participation in a sub-group.*

Overview of Technical and Organizational Direction – Doug Van Houweling

Consolidation NLR/Internet2 – Doug Van Houweling

The Internet as a whole faces major challenges. Network architecture is in the process of changing and this consolidation could provide the opportunity to focus the two organizations on a common set of objectives. Thinking of Internet2 as a multi-layered system allows us to see the intersection points more clearly. The Abilene and NLR networks have a good geographic match. Internet2 has already reserved a wave on NLR for HOPI experimentation.

Technical Direction

Network Future Group A was commissioned to develop the technology model for our needs in the future. We need to think of network infrastructure in three dimensions. Abilene is Layer 3 and a long term production network. NLR allows us to operate in a fuller 3D space. NLR provides Layer 1 long term network that is experimental. NLR allows us to think about networks different from what Abilene can provide. The participation in NLR clearly shows that there is a demand in the community.

There are dependencies in this system and fundamentally all of this depends on a policy framework. We recognize that Middleware is needed for implementing policy. NLR members provided \$5M each (except Cisco who provided other resources). Internet2 contributed \$10M and we have two seats on the board: Doug Van Houweling and Steve Corbato.

Organizational Direction

Network Future Group B was commissioned to think about organizational requirements to allow the two organizations to align appropriately. They recommend that NLR and Internet2 combine and that a single authority be established.

Neither organization has the desire to restrain the activities of other. A major component of these discussions will be to consult broadly with our communities. At the start of the new organization Doug Van Houweling will be CEO and Tom West will be Deputy CEO. The objective is to have a plan accepted by both boards to get that plan adopted by September 2005.

Discussion Summary

Steve Hall commented that a consolidation would advance high performance computing. He recommended that our governing structure be something like Congress and the Senate with participation predicated on contributions. Stu Kippelman commented that there would need to be a menu of new services to invest in and that will require formulation of value propositions. It is not a matter of funding in industry it is how the funding is being used. We need to have a diverse understanding of value. Mike Nelson pointed out that IBM wants to be part of a leading edge networking community, to tap into talent on our level and learn what is happening.

Tom West pointed out that this consolidation is a natural evolution of what we have been doing. Ownership, management and control of an infrastructure. This frees us to think about uses that we could not think about before. Our goal is to get every institution on the backbone with fiber. It is a natural extension of Internet2 to push the envelope. Higher Education operates in the promise to come. We build it so that it is there when the researchers need it. Bob Aiken pointed out that NLR and Internet2 are not networks so much as they are research environments. Without a service level agreement scientist in production environments won't use it. Bob pointed out that this environment allows for both conservative and risk oriented activities.

In the research university community the research objectives come from faculty. Internet2 derives its main research agenda from that. The new infrastructure will support a broader agenda in network research and we expect this to come primarily from members of the combined organization. NLR is designed to be a research environment, Abilene architecture is a production level infrastructure.

Rick Rashid asked what the combined organization will be called. This has not been decided. Internet3 is not available.

Marv asked about cost cutting and revenue opportunities. Doug commented that we have been advised by legal council not to talk about this yet. We do expect some savings, maybe as much

as 20%. In the combining of the two organizations we must be thoughtful. We believe that the principle area of additional revenue will come from providing services to the community.

Advanced networking is not high bandwidth. The really interesting stuff that lies ahead is in leveraging applications and the network below, with providing transparencies for applications and security measures. How can we put security in that creates transparencies? It will be important that we think about this consolidation as an opportunity to leverage in terms of the protocol stack.

Dan Atkins noted that CISE study ran into the confusion that surrounds advancement on the network. This consolidation could provide a richer space to explore. The conversation from this morning really raises the questions of the Value Proposition for the industry sector. Does it mean increased space to be competitive? Does it mean increased capabilities? Being a research network only, will limit what we as a community can do. There certainly is less need for corporate involvement. The need for a high level production network gives us more reason to participate. Rolling off the higher level applications is very important.

We are a 501.c.3, we facilitate research we are not a research entity. We need to be selective about what we get into, need partners to be engaged that are best suited for and interested in the broader areas. Can we put a value proposition on the table that will engage industry? Research is clearly the catalyst. Industry will look for the transition, when it can be rolled out. Predictability is important to tech transfer. The new infrastructure should allow some redundancy increasing reliability.

If there were a group of corporate members that wanted to get together with Internet2 to try to formulate the value proposition for industry that would be exciting. It would be useful to take a cross section of users and clearly articulate their requirements for the infrastructure. The only way to create revenue is to generate the value proposition for growth. In car sales we always look for the "why buy" thing. We really need to get a few hard hitting points. What is unique that they can't get anywhere else. We should also identify constituencies- academic, carrier, vendor, federal, etc.

Gary Augustson disagreed with this mindset; he suggests that it creates incrementalism on ROI that we cannot get past. The question/mindset should be rather to explore how you would change your business process if bandwidth were virtually free.

Doug agreed with both of these comments. The industry membership of Internet2 is very different in its consumption of resources from the university membership. Very few industry members have connectivity. All universities have connectivity. So by thinking about new capabilities that are not linked to connectivity but to services allows us to re-evaluate. Robust, secure networking is going to happen. Internet2 can influence how that comes together.

Jill indicated that Internet2 has done a lot of work on industry value proposition. Engagement in the community is the most significant value proposition. We have not heard much about the value of bringing industry together with academia. We have multiple value propositions and they need to be looked at. There needs to be an "aha" for each sector. This council needs to spend time working on this or a sub-committee of this council. This is a big issue and we don't want to lose the energy of this discussion.

AI: Council members to send feedback to Marv and Bill on how to structure a group to discuss the value proposition and your willingness to participate in that group.

Marv asked the question, what happens if this falls apart? Doug talked about the output of Group A and Group B where it was clear that it would not be good if this falls apart. Each organization would experience large overlap. The community that supports this level of activity is not large enough to sustain this in a parallel manner. It is also believe that the community would segment, choose sides. The consolidation is critical to success of each organization. Internet2 would probably remain stable for the next 4 years if the consolidation fails. NLR and Internet2 are both committed to survival and it is clear that there is a need for both but both may not be sustainable by this community.

Dan Atkins added that he was cautiously optimistic that the NSF is would take some responsibility for provisioning a stable environment. If Internet2 and NLR did not exist it would significantly impede progress. Leaders of major research universities have a vested interest in global scale research. It is the responsibility of these two organizations to work together.

Updates

There is a lot of information in the briefing book. The corporate brochure is the starting place for the value proposition. At the Spring Member Meeting we presented a score card for feedback from our corporate members. The results are in the book. A member assessment is going out to all membership and has a section for corporate members.

Gary Bachula provided on update on conversation with the Motion Picture Association of America (MPAA) and the Recording Industry Association of America (RIAA). Gary met with Dan Glickman from the MPAA and Cary Sherman from the RIAA. Discussion revolved around innovation and security and Gary invited them to join Internet2. It would be great to have them within membership and we will need to be certain that we communicate the neutral value proposition.

In both telecom reform and broadband policy the regulatory structure is stove piped. Higher education saw this and decided that they needed to be engaged. A coalition has started to emerge with several higher education organizations. Effort is emerging and we have put together principles for this policy and reform. Educause has a broadband policy group. The telecom act of 1996 is likely to be re-written and there are concerns that this policy would be written by individuals who are not well educated on the needs and purpose. We want to put this in front of industry to combine resources of knowledge and influence. Is there a way we could approach a group like the Packard Foundation for funding? Do we want to try to consolidate this platform? Gary responded that we believe that there is great overlap between industry and education. There could be ways of finding common ground with those who have an interest and resources for lobby. Marv wanted to know if the council thought it is appropriate to pull together information about interest in advocacy. Gary Bachula will put some thoughts together and send them to Marv.

Wrap Up

Marv proposed topics for next agenda.

- Value Proposition – Why Buy?
- Trust – Security, Audit, Identify, Authentication - relative to industry needs
- Infrastructure for Innovation
- Consolidation Update

Next Steps

Mid-September would be a good check point. Could do a telephone update call on the consolidation and have a full meeting in November.

Meeting Comments

- Would like to have further discussion on federations and how to adapt those to the corporate environment, looking for a process to engage corporate members around this topic.
- Need discussion on infrastructure for innovations. Building one or two use cases per initiative could a long way to getting answers.
- We need to talk about what we are doing. Show and tell would be a nice add to the agenda.
- We want to rationalize the value proposition and think about the strategic non-member.

- Meeting location at airport is good.
- Binders good ahead of time
- Open discussion opportunities
- Good energy
- Like that we have some actionable items
- Excellent new chair
- Having Tom here was good. Having principles here to talk is good.

Action Item: Stu Kippelman proposed that we add a day to the next face to face so that each member can talk about important issues with their companies and how we look to internet2 to help with that.