Project PICTURES

• Overview
• Needs
• Benefits
Project PICTURES

What's in a name?

- Presence and
- Integrated
- Communications
- Targeted
- Ubiquitously to

- the Research and
- Education
- Sectors
Overview

• Aimed at lowering and overcoming communication barriers between research collaborators

• By growing a pervasive Presence, Instant Messaging and VoIP fabric.
  – Based on XMPP and SIP.
  – Targeted at the Higher Education and Research sectors.
  – Reaching out and touching all researchers, academics and students in these communities.

• Focused not on the meeting paradigm.
  – But efficiently enabling the informal and impromptu interaction for which initiating a meeting represents an unnecessary barrier.
  – Alongside and interoperable with typical meeting enabling technologies.

• Access Grid, H.323, VRVS, EVO, ...
Needs

- Email still a significant component in collaboration, but ...
- More modern communication technologies are eating away at its dominance. In particular:
  - Presence
  - Instant Messaging
  - Voice and Video
- These are becoming crucial in the process of collaboration between researchers, academics and students. But ...
- Seeing similar interoperability pains that accompanied the birth and adolescence of email.
  - Different protocols and limited points of interoperability.
- These pains will just intensify as more collaborators are working in VOs
  - cross institutional, interstate and international boundaries.
- Need to overcome collaboration barriers until the problem is fixed.
Benefits:
Enhancing Communication Productivity

• Many studies identified how a Presence and Integrated Communications infrastructure can promote enterprise productivity benefits
  – An average 32 minutes/day saved by knowing the best way to reach a collaborator.
  – An average 31 minutes/day saved by reaching a collaborator via Instant Messaging.
  – An average 53 minutes/day saved by escalating an IM session to voice/video conversation.
  – 59% of workers save more than 15 to 30 minutes/day reaching collaborators using a single communication identifier regardless of location.
Benefits:
Enhancing Communication Productivity

- US$1727/month/travelling-employee saved due to saving long distance, hotel phone and cell phone charges.
- 83% of workers say it would be useful to see each others’ status prior contacting them.
- 27% of enterprises have daily or weekly project delays due to difficulties in reaching key decision makers.
- 88% of enterprises say projects slow down or stop due to delays in reaching key decision makers

• These benefits can be translated to the Higher Education and Research sectors as a whole for the benefit of researchers, academics and students alike.

• But only if collaborating entities are “connected” over a PIC fabric(s).
Benefits:
Bridging Communication Silos

Worldwide Instant Messaging Market Share - July '08

Dominant Network by Country

Network Market Share by Country

http://BillionsConnected.com/blog
Data source: EQO Instant Messaging Platform | EQO.com
http://creativecommons.org/licenses/by-sa/3.0/
Benefits:
Bridging Communication Silos

Why create yet another PIC fabric?
– Aren't MSN, AIM/ICQ, Yahoo!, Skype, ... pervasive enough?
  • No.
    Its all about improved connectedness between participants.
– Telephone is near pervasive.
  • 99.999% chance that any 2 people can start collaborating
    (once communication identifiers discovered).
– Email is similar high.
– But MSN, AIM/ICQ, Yahoo!, Skype, ...
  are (mostly) non-interoperable silos.
  • People need accounts in each of their collaborators'
    technology silos.
– Another collaboration barrier to overcome.
Benefits:
Bridging Communication Silos

• Discipline and Institutional Silos exist too.
  – Research groups and some research disciplines (e.g. HE Physicists) tend to use a particular collaboration tool.
  – An institution may have already deployed an enterprise-level PIC fabric which may not “connect” with other PIC fabrics.

• What if they want to “cross-fertilize” with other disciplines/institutions.
  – Another collaboration barrier to overcome.
Benefits: Communication Layer Security

• Various PIC fabrics have varying degrees of security.
  – Both at application and protocol levels.
• Understanding of risks can be obfuscated.
  – Due to the proprietary nature of the application and protocol.
• Open standards like XMPP and SIP promote better understanding of risks and transport security.
  – C2S, S2S and E2E.
  – TLS and SRTP.
Benefits

• Strong Identity Management
  – Most commodity PIC fabrics employ non-existent or weak identity management.
  – Introduces some risk concerning with whom you are collaborating, unless it is by voice or video.
  – All identities within this proposed fabric are managed either by a university, a research institution or similar body.
    • Participants in intra-fabric communications are well identified.

• Other benefits
  – fabric will also provide a pervasive, secure and cost effective MOM layer.
    • Application level messaging across institutional boundaries.