NETWORK PLANNING TASK FORCE

Michael Palladino
October 8, 2012
Today’s Agenda

- Security Enhancements: SafeDNS
- Enterprise Social Networking (ESN)
- InCommon Certificate Service
Information Security Update

Josh Beeman
FY’14 Requests for funding: SafeDNS

- 5 Virtual Machines, suitable for up to 17,000 users
  - Migration of existing pilot environment to modest production environment to start (2 nodes, ultimately 5 nodes)
  - Virtualized, Red Hat Linux on VMWare
  - New failover model, which entails resiliency via anycast DNS listening on both nodes (and cost to implement)
  - Small initial investment, suitable for uncertain adoption rate, scalable for wider adoption

- Yearly cost to operate: $14,800
- Cost per user per month: $0.07
Enterprise Social Networking
2012 Evaluation - Results to Date and Next Steps

Mark Aseltine
Agenda

- Market Landscape
- Evaluation Team
  - Team Composition
  - Evaluation Process
  - Findings to Date
- Next Steps
- Proposed Strategy
- FY14 Funding
Market Landscape

- The market is developing rapidly
  - Non-ESN products are adding ESN features
  - ESN suites continue to broaden their scope and add features
  - As usage expands, Gartner predicts specialist social software vendors will struggle to compete with established vendors of broader suites

- Major players are pursuing this market
  - VMware acquired Socialcast last year
  - Microsoft acquired Yammer this year
  - Google will be adding ESN capabilities to Google+
Evaluation – Team Composition

- 27 Team Members
  - 3 schools
  - 5 centers
  - 7 groups within ISC

- Multiple roles represented
  - System administrators
  - AuthN/AuthZ experts
  - Application developers
  - Communications specialists
  - Security and privacy specialists
  - Support specialists
Evaluation – Process

- Defined 103 requirements across 6 areas
- Initial review of the market narrowed the field to 3 candidate products
  - Google+
  - Socialcast
  - Yammer
- Test spaces were created and individual and concentrated group testing was completed
- Conference calls were held with each vendor to discuss technical and security criteria
Socialcast and Yammer both support core features and functionality.

With one or two exceptions for each product, both Socialcast and Yammer functioned as expected and were intuitive and easy to use.

Google+ does not yet function well as an ESN, though Google recently announced their intention to develop ESN capabilities.
Google+ ESN Plans

- Google is promising new features that would define Google+ as a true ESN, but...
- The earliest a beta will be available is January
- In addition, Google intends to retain the current, consumer oriented terms of service
- Google has not yet decided if it will be part of Apps for Education or the ‘core set’ of Google apps. The latter determines if it is covered by our contract.
Evaluation - Findings to Date

- Socialcast and Yammer support SSO via Shibboleth.
- Socialcast and Yammer both provide APIs or tools that we can use to provision and deprovision accounts and groups based on Penn data.
- Socialcast and Yammer support administrative functions at the full network or group level, but neither provide an intermediate level that would make it easier to do distributed administration.
- Socialcast and Yammer both support data export of the full database.
Evaluation - Findings to Date

Not Tested

- APIs and tools for pulling and pushing data between the ESN and web sites or applications,
- Application integrations with enterprise applications like Sharepoint
Next Steps

- Finalize assessments
- SPIA for vendors
- Initial review of standard MSAs and SOWs
- Reference calls
- Update market research
- Broaden testing?
- Pending approval on strategy and funding
  - Negotiate with the vendors
Proposed Strategy

- Pilot Phase – 6 to 12 months
  - Volume license for 1000-1500
  - Expand use to the full IT community
    - Support campus-wide collaboration
    - Support ongoing testing
  - Support use by selected pilot groups
    - Pilot use cases for faculty, staff, and students
    - Pilot application integrations?

- Rollout
  - Pending successful pilot phase
Proposed Strategy - Assumptions

- It’s only a matter of time
- Value in a shared solution
- Benefit to getting out in front
  - Avoid fragmentation
  - Avoid reactive implementation and support

Reality Check
  - What interest and needs are you seeing?
Proposed Strategy - Alternatives

- Free Yammer
  - By default, all @upenn.edu addresses
  - @wharton, @sas, etc. each become a distinct network
  - No administrative features and integration

- Free Socialcast
  - Full featured, but community size is limited to 50

- Private Facebook or Google+ groups

- Reality Check
  - What is already happening?
Proposed Strategy – FY14 Costs

- Pilot Only - $25K-$50K
  - Volume licensing for 1000-1500 accounts
  - One-time costs – implementation and integrations
    - Penn – SSO, provisioning accounts and groups based on Penn data
    - Vendor – Consulting or engineering services?
  - Assumes SSO and basic integrations

- Pilot and Rollout - $50K-$100K
  - Site license
  - One-time costs – implementation and integrations
  - Assumes SSO and integrations sufficient to support an initial campus-wide rollout
Enterprise Social Networking

Questions?

Thoughts?
Certs are used in secure web transactions (identified by web URLs that begin with https://)

Web server applies in advance to a certificate authority (CA) for a certificate, and proves their identity

CA signs a certificate for the server

Server presents that certificate when web browsers connect for service

User’s web browser validates a web server’s authenticity by seeing that it is signed by a CA which they are already configured to trust
Certificate Use at Penn Today

- Used for situations where encryption of traffic and/or assurance of authenticity of the server are wanted
- Used by secure web servers in almost every school and center, as well as by Penn WebLogin
- Certificate acquisition process managed by Business Services
- Roughly $50,000 spent per year on about 350 certificates at Penn
Process for Requesting and Renewing Certs

- OSL checks Requester’s Name with Assignments DB

- Thawte
  - User sends a CSR to OSL.
  - OSL requests a cert via [Thawte admin login](#) and approves it.
  - OSL sends the new or renewal cert to the User via Secure Share.

- Comodo
  - User receives login info from OSL and enters their own request on the [Comodo site](#).
    - (but renewals have to be placed by OSL; User sends CSR to OSL)
  - OSL approves it via [Comodo admin login](#).
  - User logs back in and downloads the cert from Comodo.
Certificates In Use

- Thawte: SSL, SuperCert, EV certs
  - Annual payment is made in advance for a set number of licenses. Individual certificate sales are debited from this Thawte account

- Comodo: Instant SSL, UCC cert, Wildcard cert
  - Payments are made periodically by ProCard to add funds to our account. Individual sales are debited from this Comodo account.

- Totals for FY’10 through FY’12

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The InCommon Certificate Service

- Unlimited 1-year and 3-year certificates for a fixed annual fee
- Comodo (one of our current providers) is the CA
- Includes all domains — .edu and non-edu alike, such as athletics and professional societies
- Nearly 200 colleges and universities are members
- Our cost as an Internet2 member would be $15,000 per year for unlimited certificates
Future Possibilities

- Certificates may be used in the future for user and/or device authentication
- User/device certificates would provide *mutual authentication*
- User/device authentication requires much larger number of certificates
- No per-certificate cost for InCommon certificates would be a significant cost efficiency
Proposal

- Become a customer of the InCommon Certificate service through Internet2 during FY14
- Penn organizations can transition over a period of time, and as certificates expire, to using the new service
- InCommon certificates would become the primary university certificate service over time
- Cost structure to be determined
  - Could be a (lower) price per certificate
  - Could be funded through CSF
What are new initiatives to CSF for FY’14

- Remaining 25% one-time for IDS ($127k)
- Box (about $150k)
- Enterprise Social Networking ($25 to $100k)
- SafeDNS ($15k)
- InCommon Certificate Service (about $20k)