



Network Research Group

“With networking nobody is far away”

Ateneo de Manila University

<http://cng.ateneo.edu/cng/wyu/classes/cs197/>



Introduction



Some Statistics

- **1 Billion Internet users** in the World (15%)
(<http://worldinternetstats.com/>)
- **62% year-over-year subscriber growth rate** in 2005 (instats.com 2005)
- **2 Billion Mobile Phone users** in the World (30%)
(<http://gsmworld.org/>)
- VoIP will account for **75% of the world's voice traffic** by 2007 (Frost and Sullivan 2001)
- **76 million websites** on the Internet
(<http://netcraft.net>)



Objectives

- Aims to perform studies on a **broad range of topic areas**
 - Fixed Mobile Convergence
 - Internet protocols and applications
 - Next generation telecommunications
 - Data services
 - Traffic engineering and modeling
 - Systems and network design, management
 - Interoperability and security



Introduction

- **IP** is finding its way into **all of the world** telecommunications systems:
 - **Voice-over-IP** technology is fast becoming the de-facto means of voice communications
 - There are more and more **Internet subscribers** every year
 - **Mobile technologies** (2G and 3G) come with native IP support and applications
- More and **more content and services** are being made available via IP



Sampling of Projects



Previous Projects

- **2005-2006**

- Remote Controlled Surveillance with Wireless Video
- Portable Security Framework for Web-based Apps
- Universal Inbox Application for the Series 60 Platform

- **2004-2005**

- Constructing a DNS-Based Client Redirector for Generic Load Balancing
- Universal Chat Client for JXME-enabled Mobile Devices Using the JXME Implementation of JXTA



Previous Projects

- **2004-2005**

- An Adaptable Follow-Me Locator Service Using Automated Identification Devices
- Topological Analysis of the Philippine Internet
- Web-based Filesystem with Metadata Indexing
- 3D BGP Graph Visualization of Network Traffic and Bottlenecks Using Java 3D and Recursive Packet Trains



Previous Projects

- **2003-2004**

- AteneoCMP: Building a Convergent Messaging Platform
- Building a Data Warehousing Solution for Internet Mapping Data
- Feasibility of using Grid Computing Technology for Medical Applications
- Mapping the Philippine Internet using the Border Gateway Protocol



IP Services

- **Study and test SIP-based service deployments**
 - Telephony and Traditional Voice Calls
 - Video Conferencing
 - Instant Messaging and Presence
 - Application to Person (A2P)
 - Other Value Added Applications and Services
- **Centrex Services**
 - Universal Dialing Plan (ENUM/E.164)



Network Operations

- Create a platform for developing **operation and maintenance** strategies for new technology
- Serve as a **third-party carrier and vendor neutral** type testing facility
 - Similar to PIPAC for substance testing
- Determine **possible product packages** and marketing plans (with SOM)
- Develop **network management tools** (alternative to commercial solutions)



IP Engineering

- Collect and analyze core routing data
- Improve **Philippine Internet** topology and latency mapping
- **IP version 6** Network Deployment
- Deploy and study **content distribution services**
- **Web 2.0**-style Content Distribution
- Study **load balancing** and **failure over strategies** for core Internet services



Information Security

- Test and evaluate new IS **products** and technologies
- Evaluate new **IT security policies** and strategies
- **Philippine HoneyNet Project**
 - Monitor network security incident threats
 - Develop tools and strategies for IS
- Evaluation **Application Level Security** Tools and Technologies



Wrap-up



Conclusion

- Being in the **bleeding edge of IP engineering** and networking is of paramount importance
 - Traditional services becoming IP-enabled
 - Introduction of new services and technologies
 - Fixed going Mobile, Mobile going Fixed
- **Fixed Mobile Convergence (FMC)** is a current growth area
 - Opportunity for combinational products and services
 - New market for new players



References

- **SIP Forum** Website <<http://www.sipforum.org/>>
- **Ateneo de Manila University** Website <<http://www.ateneo.edu/>>
- **Ateneo IP Engineering Research** Site <<http://cng.ateneo.net/cng/wyu/cs197/>>