Georgetown University
Global Classroom

Teaching and Learning through Immersive Telepresence: Lessons Learned from First Deployment
Outline

• Intro Georgetown University and GU Qatar
• Our first global class
• Why look at telepresence
• Selection process
• What we installed
• Network setup
• Challenges
• Wish List
Georgetown University

• Founded in 1789
• Located in Georgetown, Washington DC
• School of Foreign Service founded 1919
• 2005 – Invited by the Qatar Foundation to open a branch campus in the Education City, Doha, Qatar
Qatar Foundation

- Private, chartered, nonprofit organization, founded in 1995 by His Highness Sheikh Hamad bin Khalifa Al-Thani, Emir of Qatar
- Chaired by Her Highness Sheikha Mozah Bint Nasser Al-Missned, wife of the Emir
- Aims to develop the citizens of Qatar through a network of centers devoted to progressive education, research and community welfare
School of Foreign Service in Qatar

- Classes commenced in September 2005
- Same curriculum and academic requirements as main campus
- Objective – Deliver program using the same methods and philosophy as home campus
- Currently 145 students, 29 faculty
- First graduating class May 2009
First Distance Learning Class

• January 2007 (Comparative Political Systems)
• Preferred faculty unable to travel to Doha due to commitments in Washington
• Options:
  – Find a new professor (Not leading expert on the subject)
  – Deliver course using available video conferencing technology
First Distance Learning Class

- Doha
  - Video conference enabled lecture hall
  - Students restricted to left lower tiers
  - 3 42” plasma monitors
  - Fixed camera, push to talk microphones
  - Professor is talking head
First Distance Learning Class

• Washington, DC
  – Convert projection studio classroom to video conferencing
  – Set-up and tear-down for each class
  – Needed camera operator
  – 2 42” monitors – one for professor, one for students
  – Unable to see Doha students very well
  – Difficult to encourage dialogue between locations
Student Opinion of Distance Learning Class

Expectations exceeded – 100 % DC, 40 % Doha

Expectations met – 60 % Doha

All impressed how well technology worked and how little the impact on course delivery

Slight disadvantage being remote site (Doha students)

Talking Head
Professor’s Opinion of Distance Learning Class

Felt like a Talking Head
Inanimate – Forced to stand in one position
Difficult to identify individual students and their reactions
Difficult to generate real dialog between students in Doha and Washington
Technology Challenges

Washington
- Assemble and tear down for each class
- Manual camera control
- Required dedicated technical support

Doha
- Poor room design
- With lights on, hard to see screens
- With lights off, too dark for professor to see students
- Had to pre-send presentation materials
Parameters for Search

- Life size or near life size image
- Looks like a classroom or seminar room
- Doha capacity of 15+ students
- Facilitates discussion
- Minimum customization
- Standards-based
- Easy to operate

DOES NOT REQUIRE DEDICATED SUPPORT
Selection Process

- Technology committee
- Sales presentations
- Demonstrations
- Negotiations

- For real telepresence, all units in the call must be same vendor
  - Standards-based systems give best interoperability for hybrid (non-telepresence) calls
Georgetown’s Selection

**Washington**

Polycom RPX 208
- Constrained by size of rooms available
- 2-tiers
  - 4, 4 seating
- Replace in-table monitors with one 42” content monitor
- 3rd camera to record events

**Doha**

Polycom RPX 218
- Largest room available
- 3-tiers
  - 4, 6, 8 seating
- Replace in-table monitors with two 42” content monitors

---

Georgetown University
School of Foreign Service in Qatar
Doha RPX Room
Firsts and near-Firsts

- First Polycom RPX in the Middle East
- First to use Internet rather than dedicated leased circuit
Network Setup

- 155 Mbps Internet2 peering link Doha to New York
- All traffic travels through VPN tunnel
- Latency (Doha – DC)
  - Atlantic 208ms
  - Pacific 350ms
Academic Usage

- **Spring 2008 – First class (3 hours per week)**
  - Professor and 6 student in Washington
  - 6 students and TA in Doha

- **Fall 2008**
  - 2 classes:
    - Entrepreneurship
      - Professor in Washington, Students Washington and Doha
    - Economics
      - Professor in Doha, Students Washington

- **Spring 2009**
  - Professor Doha, Students Doha and Washington
  - Student discussion groups
Other Usages

- Administration meetings
- Event planning
- Employee training
- Dual-campus student group activities
- Employment interviews
  - Point to point and multi-point

Current usage is 3-5 hours per day
Challenges

• Time zones and scheduling
• Finding other RPX rooms
• Network latency
  – Recommended is 150ms or less
  – Current latency 200ms
• Firewalls
Service Challenges

• Service contracts and education
  – Limited local expertise

• VNOC services and monitoring
  – Contract costs
  – Out source or In source

• Secure access from the Internet
Wish List

• Lectern style
• Dealing with animated professors
• Adding an electronic whiteboard
• Recording