Course Overview and Objectives

The wireless telecommunications landscape is rapidly evolving as it extends into traditional industries to create new value propositions including location based services (LBS), m-Commerce, m-Banking, m-Health, M2M, and mobile broadband services. Wireless telecommunications project managers are faced with the challenges of working with cross-functional teams to integrate multiple complex mobile and internet communications systems.

The course emphasizes the PMI framework (PMBOK), linkages between strategic intent and operations, and practical examples of project management in a global environment. Project Management concepts and PMI Knowledge Areas will be discussed within the context of a terrestrial wireless network deployment project, e.g. 3G or 4G network deployment. Specific areas include wireless telecommunication project environment, system architecture, wireless network lifecycle, stakeholder management, quality, scheduling, budgeting, procurement, systems integration, risk management, and project closeout.

Classroom discussions will include various mobile applications and project environments across the globe. This background will lay the foundation for students to manage various innovative projects related to wireless telecommunications. Students are expected to be able to develop and present a comprehensive project plan at the end of this course.

Required Readings

Required readings are accessible via the Blackboard or the TCOM547 Course Packet. Optional readings are not required for this course, but may enhance our understanding of the subject matter.

Recommended Reference


Note – This course does not address PMP certification testing strategies, and the PMBOK is not required for this course. However, students who are interested in pursuing PMP Certifications may benefit from the PMBOK principles discussed in this course. The relevant PMBOK sections are shown in the course syllabus as a benefit to students studying for the PMP Certification.
Performance Evaluation

Students will earn grades based on their understanding of the project management concepts, ability to assess projects and provide suitable recommendations, and their ability to create a comprehensive project management plan at the end of this course. The grading details are shown below:

- Assignments & contribution to class discussions 20%
- Written Deliverable 1 – Project Management Concepts: T5 Mega-Project Analysis 20%
- Written Deliverable 2 - Project Analysis & Presentation 30%
- Written Deliverable 3 - Project Management Plan & Presentation 30%

Contribution to class discussions (20%)
This course will focus on “real world” telecommunication issues that project managers may face in a network rollout. The readings and homework assignments are designed to enhance our understanding of the subject material. Students may be called upon to start off a discussion based on the required readings and assignments. It is expected that students prepare for each session and actively participate in our discussions.

Written Deliverable 1: - Project Management Concepts: Terminal 5 Mega-Project Analysis (20%)
Students will demonstrate their understanding of the project management concepts discussed in this course via a written analysis of the T5 project.

The T5 project is a mega-project (well over $1B) that resulted in the construction of the Terminal 5 Building at the Heathrow International Airport. The project also included several phases and involved 180 IT vendors and 163 IT systems. Please read the article below very carefully and describe how BAA approached the project within the context of the PMI Process Groups and Knowledge. For example, how did BAA approach the cost structure, risks, procurement, integration, etc. Would you classify this project as a success or failure? Why or why not? I am not looking for a summary of the paper, but your insight into how the specific knowledge areas were addressed.

Innovation in Megaprojects: Systems Integration in London Heathrow Terminal 5, Andrew Davies, David Gann, Tony Douglas, California Management Review, Case No. CMR420. Published 02/01/2009

Written Deliverable 2: Project Analysis & Presentation (30%)
Students are required to select a real telecommunications project and provide a concise analysis of the project’s intended value proposition and its outcome (if completed) or status (if ongoing). The project should be analyzed within the context of the PMI Knowledge Areas. Students should state the areas where they agree with how the project was handled, and offer alternative recommendations for areas where they think the project was poorly handled. The project deliverables will include a written report and a class presentation.
**Written Deliverable 3: Project Management Plan & Presentation (30%)**
Students will create and present a comprehensive Project Management Plan to the class. This plan should contain elements of the PMI Knowledge Areas and the Project Process Groups. The plan should include the value proposition, project assumptions & constraints, risks & contingencies, project monitoring & controlling techniques, and any other relevant information necessary to evaluate the proposed Project Management Plan. The project deliverables will include a written report and a class presentation.

**General Information**

**Academic Integrity**
GMU is an Honor Code university (please refer to the University Catalog for a full description of the code and the honor committee process). Academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else’s work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

**GMU Email Accounts**
Students must activate their GMU email accounts to receive important University information, including messages related to this class.

**Office of Disability Services**
If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. [http://ods.gmu.edu](http://ods.gmu.edu)

**Other Useful Campus Resources:**
Writing Center: A114 Robinson Hall; (703) 993-1200; [http://writingcenter.gmu.edu](http://writingcenter.gmu.edu)
University Resources “Ask a Librarian” [http://library.gmu.edu/mudge/IM/IMRef.html](http://library.gmu.edu/mudge/IM/IMRef.html)
Counseling and Psychological Services (CAPS): (703) 993-2380;[http://caps.gmu.edu](http://caps.gmu.edu)
University Policies: The University Catalog, [http://catalog.gmu.edu](http://catalog.gmu.edu), is the central resource for university policies affecting student, faculty, and staff conduct in university affairs.
<table>
<thead>
<tr>
<th>Session 1 - Aug 31</th>
<th>Introduction to the Telecommunications Industry &amp; Project Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Readings:</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>The Five Competitive Forces That Shape Strategy</strong>, Michael E. Porter, HBS Press, Published 01/01/2008</td>
<td></td>
</tr>
<tr>
<td><strong>Recommended Readings (Optional):</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>The Broadband Availability Gap, OBI Technical Paper No 1</strong>, Federal Communications Commission, April 2010</td>
<td></td>
</tr>
<tr>
<td>• <strong>The Role of Mobile Phones in Sustainable Rural Poverty Reduction</strong>, World Bank, June 15, 2008</td>
<td></td>
</tr>
<tr>
<td>• <strong>Survey on Mobility</strong>, The Economist, April 10th, 2008</td>
<td></td>
</tr>
<tr>
<td><strong>PMBOK Reference – Chapters 1 &amp; 3</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Topics:</strong></td>
<td></td>
</tr>
<tr>
<td>• PM Framework</td>
<td></td>
</tr>
<tr>
<td>o Enterprise Environmental Factors</td>
<td></td>
</tr>
<tr>
<td>o Project Phases</td>
<td></td>
</tr>
<tr>
<td>o Knowledge Areas</td>
<td></td>
</tr>
<tr>
<td>o Components for Effective Project Management</td>
<td></td>
</tr>
<tr>
<td>• Wireless Network Deployment</td>
<td></td>
</tr>
<tr>
<td>o Intro to Wireless Telecommunications</td>
<td></td>
</tr>
<tr>
<td>o Wireless Telecommunications Industry Trends</td>
<td></td>
</tr>
</tbody>
</table>
## Session 2 - Sep 7

### Strategy & Organizational Structure

#### Required Readings:
- **What is Strategy**, Michael E. Porter, HBS Press, Published 11/01/1996
- **Voxiva Case Study**: Cynthia Casas, William LaJoie, University of Michigan Business School, Published 2003

#### PMBOK Reference – Sections 2.3 & 2.4

#### Topics:
- PM Framework
  - Organizational Structure
  - Organizational Process Assets
  - Portfolio, Program & Project Management
- Wireless Network Deployment
  - Wireless Network Deployment Considerations

#### Classroom Discussion – Telehealth: Voxiva (Peru)
Session 3 - Sep 14

Project Life Cycle & Wireless Telecommunications Project Environment

Required Readings:
- **The Celtic Tiger Moves to the Beat of the Reggae Boyz**, Inger Boyett, Nottingham University Business School, Published 2005

Project Databases (Optional Browsing):

*International Projects*

*US Based Projects*
- Broadband USA - [http://www2.ntia.doc.gov/awards](http://www2.ntia.doc.gov/awards)

Selected Local Capital Region Projects (Washington DC Metro)
- Dulles Corridor Metrorail Project (VA), Metropolitan Washington Airports Authority (MWAA) - [http://www.dullesmetro.com/about/resources_links.cfm](http://www.dullesmetro.com/about/resources_links.cfm)
- Intercounty Connector (ICC), Maryland Department of Transportation (MDOT) State Highway Administration (SHA) - [http://www.iccproject.com/project-overview.php](http://www.iccproject.com/project-overview.php)

PMBOK Reference – Sections 2.1 & 2.2

Topics:
- PM Framework
  - Project Conception
  - Project Life Cycle

- Wireless Network Deployment
  - Technologies, Networks, Architecture, Applications
  - Wireless Network Deployment Lifecycle

Classroom Discussions:
- **Wireless Network Deployment – Digicel (Jamaica)**
- **Wireless Competitor Analysis Exercise (National Capital Region)**
### Session 4 - Sep 21

#### Project Charter & Stakeholder Management Strategy

**Readings:**
- **Managing Disputes with Nonmarket Stakeholders: Wage a Fight, Withdraw, Wait, or Work It Out**, Anne T. Lawrence, California Management Review, Fall 2010

**Recommended Readings (Optional):**
- **The Broadband Availability Gap**, OBI Technical Paper No 1, Federal Communications Commission, April 2010

**PMBOK Reference – Sections 4.1, 4.2 & 10.1**

**Topics:**
- PM Framework: Initiating Project Phase
  - Project Charter
  - Stakeholder Management Strategy
  - Project Management Plan Components
- Wireless Network Deployment
  - Market Setup

**Classroom Discussion:** Mobile Financial Services (mFS): M-PESA (Kenya)

### Session 5 - Sep 28

#### Project Requirements & Scope Baseline

**Readings:**
- **Delusion and Deception in Large Infrastructure Projects**, Bent Flyvbjerg, Massimo Garbuio, Dan Lovallo, California Management Review, Case No. CMR423. Published 02/01/2009

**PMBOK Reference – Sections 5.1 – 5.3**

**Topics:**
- PM Framework: Planning Project Phase
  - Scope Management Knowledge Area
    - Project Requirements
    - Scope Baseline – Project Scope Statement, Work Breakdown Structure (WBS)
- Wireless Network Deployment
  - Network Deployment Objectives

**Written Deliverables 1:**
- Project Management Concepts - T5 Mega-Project Analysis Due (UK)
### Session 6 - Oct 5

**Project Schedule**

**Readings:**
  - Chapters 3 - 6

**PMBOK Reference – Sections 6.1 – 6.5**

**Topics:**
- PM Framework: Planning Project Phase
  - Time Management Knowledge Area – Planning Phase
    - Activity Definition, Sequencing, Resource Estimation & Duration Estimation
    - Schedule Baseline
- Wireless Network Deployment
  - Time-to-market considerations
  - Resource Procurements & outsourced services

**Deliverables:**
- Project Selection Due (Project Analysis Deliverables due on Oct 26)

### Session 7 - Oct 12

**Budgets, Human Resources & Quality Plans**

**Readings:**

**PMBOK Reference – Sections 7.1 – 7.2, 8.1, & 9.1**

**Recommended Readings (Optional):**
  - Chapters 2 - 4
Topics:
- PM Framework: Planning Project Phase
  - Human Resource Plan
  - Quality Management Plan
  - Process Improvement Plan
  - Cost Baseline
  - Funding Requirements
- Wireless Network Deployment
  - Implications of Link Budget Assumptions
  - Design Review
  - Search Ring Approvals

Classroom Discussion: EHAS Telehealth Exercise (Peru)

Session 8 - Oct 19

Risk Management & Procurement Plans

Readings:
- The Six Mistakes Executives Make in Risk Management, Nassim N. Taleb, Daniel G. Goldstein, Mark W. Spitznagel, HBS Press, Published 10/01/2009
- The Diax Case (C): Non-Market Challenges in the Swiss Wireless Telephony Business, Stefan Schuppiser, Executive MBA Universitat Zurich, Published 2001

Recommended Readings (Optional):

PMBOK Reference – Sections 10.2, 11.1 to 11.5, & 12.1

Topics:
- PM Framework: Planning Project Phase
  - Risk Registers
  - Risk Related Contract Decisions
  - Make or Buy Decision
  - Statements of Work (SOW)
  - Source Selection Criteria
- Wireless Network Deployment
  - Initial Design Review
  - Zoning and Regulatory Compliance Assessment
  - Contingency Planning

Deliverables:
- Project Analysis Presentations Begin
- Final Project Topic Selection

Classroom Discussion: Zoning: diAx (Switzerland)
### Session 9 - Oct 26

**Scope, Schedule & Cost Control**

**Readings:**
- *Is Your Project Turning into a Black Hole?* Mark Keil, Magnus Mahring, California Management Review, Vol 53, Fall 2010

*PMBOK Reference – Sections 5.5, 6.6 & 7.3*

**Topics:**
- PM Framework: Executing / Monitoring & Controlling Project Phases
  - Completed Deliverables & Work Performance Information
  - Change Requests
  - Work Performance Measurements
  - Budget Forecasts
- Wireless Network Deployment
  - Site Candidate Selection
  - Physical Site Construction
  - Systems Integration

**Deliverables:**
- Continuation of Mid-term Project Analysis Presentations
- Written Deliverable 2 - Project Analysis Due

### Session 10 - Nov 2

**Scope Verification, Quality Control & Quality Assurance**

**Readings:**

*PMBOK Reference – Sections 5.4, 8.2 & 8.3*

**Topics:**
- PM Framework: Executing / Monitoring & Controlling Project Phases
  - Quality Control Measurements
  - Validated Changes
  - Validated & Accepted Deliverables
  - Change Requests
- Wireless Network Deployment
  - Site testing
  - Network Optimization

*Classroom Discussion – E-911 / LBS Project: Wireless Enhanced 911 Services (US)*
<table>
<thead>
<tr>
<th>Session 11 - Nov 9</th>
<th><strong>Project Communications &amp; Performance Reports</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readings:</strong></td>
<td></td>
</tr>
<tr>
<td>• Are Your Engineers Talking to One Another When They Should, Manuel E. Sosa, Steven D. Eppinger, Craig M. Rowles, Harvard Business Review, Case No. R0711J. Published 11/01/2007, Harvard Business School Publishing</td>
<td></td>
</tr>
<tr>
<td>• National Cultures and Work-Related Values: The Hofstede Study Herminia Ibarra, Harvard Business School, Published January 31, 1996</td>
<td></td>
</tr>
<tr>
<td><strong>PMBOK Reference – Sections 10.3 – 10.5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Topics:</strong></td>
<td></td>
</tr>
<tr>
<td>• PM Framework: Executing / Monitoring &amp; Controlling Project Phases</td>
<td></td>
</tr>
<tr>
<td>o Change Requests</td>
<td></td>
</tr>
<tr>
<td>o Performance Reports</td>
<td></td>
</tr>
<tr>
<td>• Wireless Network Deployment</td>
<td></td>
</tr>
<tr>
<td>o Internal &amp; External Team Communications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 12 - Nov 16</th>
<th><strong>Risk Monitoring, Procurement Contract Award &amp; Monitoring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readings:</strong></td>
<td></td>
</tr>
<tr>
<td>• What Works: ITC’s E-Choupal and Profitable Rural Transformation, Kuttayan Annamalai, Sachin Rao, World Resources Institute, wwwwri.org, Published August 2003</td>
<td></td>
</tr>
<tr>
<td>• Winner’s Curse in IT Outsourcing, Thomas Kern, Leslie P. Willcocks, Eric Van Heck, California Management Review, Case No. CMR221. Published 01/01/2002</td>
<td></td>
</tr>
<tr>
<td><strong>PMBOK Reference – Sections 11.6, 12.2 &amp; 12.3</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Topics:</strong></td>
<td></td>
</tr>
<tr>
<td>• PM Framework: Executing / Monitoring &amp; Controlling Project Phases</td>
<td></td>
</tr>
<tr>
<td>o Change Requests</td>
<td></td>
</tr>
<tr>
<td>o Selected Sellers</td>
<td></td>
</tr>
<tr>
<td>o Procurement Contract Award</td>
<td></td>
</tr>
<tr>
<td>• Wireless Network Deployment</td>
<td></td>
</tr>
<tr>
<td>o Performance Monitoring</td>
<td></td>
</tr>
<tr>
<td>o Pre-launch Coordination</td>
<td></td>
</tr>
<tr>
<td><strong>Classroom Discussion – E-Commerce Project: ITC’s E-Choupal (India)</strong></td>
<td></td>
</tr>
</tbody>
</table>

| Nov 23 | Thanksgiving Recess |
| Session 13 - Nov 30 | **Team Management & Project Integrated Change Control**  
**Readings:**  

*PMBOK Reference – Sections 9.2 – 9.4, 4.3 – 4.5*  

**Topics:**  
- PM Framework: Executing / Monitoring & Controlling Project Phases  
  - Project Staff Assignments  
  - Resource Calendars  
  - Performance Assessments  
- Wireless Network Deployment  
  - Network Deployment Coordination  

**Deliverables:**  
Project Management Plan Presentations begin  

| Session 14 - Dec 7 | **Project & Contract Closure, Lessons Learned**  
**Required Readings:**  
- *Lost Roots: How Project Management Came to Emphasize Control Over Flexibility and Novelty*, Lenfle Sylvain, Christoph Loch, California Management Review, Fall 2010, Vol 53  

**Recommended Readings (Optional):**  
- *Closing the Gap: The Link Between Project Management Excellence and Long Term Success*, Economist Intelligence Unit, October 2009  

*PMBOK Reference – Sections 4.6, 12.4*  

**Topics:**  
- PM Framework: Closing Project Phase  
  - Closed Procurements  
  - Final Product or Service and/or Transition  
  - Project Closeout & documentation  
- Wireless Network Deployment  
  - System Warranties  

**Deliverables:**  
Project Management Plan Presentations (continued)  
Written Deliverable 3 - Project Management Plan Due