COE M.Eng. Programs

Marketing Communications Research and Plans

Systems Engineering; Civil and Environmental; and Engineering Management

Presented to M. Eng. Council
December 14, 2011

COE Marketing and Communications Dept.
Projected Ten-Year Employment (2008-18)

Engineers overall: ↑11%
Civil Engineers: ↑24%
Environmental Engineers: ↑31%
*Industrial Engineers: ↑14%

* Proxy for Systems Engineering not listed in BLS Handbook.
Masters in Engineering Goals

Aim:
Enhance recruitment to improve yield, quality and diversity of incoming class

While:
• Educating “market” about M. Eng Vs. MSc degrees
• Using MarComms resources effectively
• Measuring MarComms effectiveness
• Engaging common themes and cross referencing programs and specialties
• Using student-centered language and channels
<table>
<thead>
<tr>
<th>Phase</th>
<th>What</th>
<th>Who</th>
<th>By When</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Survey: Cornell faculty and students, economy, industry, competitors, tactics</td>
<td>MarComms and Program</td>
<td>9/11</td>
</tr>
<tr>
<td>2</td>
<td>Present Survey findings Finalize goal(s), target(s), positioning</td>
<td>MarComms and Program</td>
<td>10/11</td>
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<tr>
<td>3</td>
<td>Design Marketing Communications Plan incl. common M.Eng.: positioning; info on broad programming ; ‘look and feel’ and emails</td>
<td>MarComms</td>
<td>11/11</td>
</tr>
<tr>
<td>4</td>
<td>Present and review final Plan</td>
<td>MarComms and Program</td>
<td>12/11</td>
</tr>
<tr>
<td>5</td>
<td>Complete final revisions w/resources</td>
<td>MarComms</td>
<td>1/12</td>
</tr>
<tr>
<td>6</td>
<td>Develop communications materials</td>
<td>MarComms and other resources</td>
<td>2-4/12</td>
</tr>
<tr>
<td>7</td>
<td>Execute Communications Plan</td>
<td>Program</td>
<td>3 &amp; 4, 8-11/12 &amp; 2-4/13</td>
</tr>
<tr>
<td>8</td>
<td>Measure tactical results</td>
<td>MarComms</td>
<td>5/12; 1/13, 5/13</td>
</tr>
<tr>
<td>9</td>
<td>Assess against targets</td>
<td>MarComms and Program</td>
<td>5/14</td>
</tr>
</tbody>
</table>
Student Survey Objectives

• Determine student preferences and habits, to customize messages and tactics
• Identify Cornell strengths and opportunities (competitive advantage), to craft ‘Unique Selling Proposition’ (USP)
• Explore competition, to enhance/fine-tune
• Review past tactics, to help develop tactical, measurable plan
Objectives - Systems Engineering

1. Educate market about Systems Engineering
2. Diversify student industry representation (beyond defense and aerospace: e.g. federal govt./military and consumer)
Objectives - Civil and Environmental Engineering (Six Concentrations)

• Increase student yield:
  Environmental Fluid Mechanics & Hydrology;
  Environmental Processes; Geotechnical Engineering; and
  Transportation Systems Engineering

• Increase student diversity (Women & URMs):
  Structural Engineering; and Environmental & Water
  Resource Systems Engineering
2010 Vs. 2011: On-Campus Vs. Distance Learning

- Focus Group-New Students: September 2011
- e-Questionnaire: October/November 2011
Focus Group Results - Systems

Why Systems Engineering?
• I don’t like the word “Management” in “Engineering Management”
• Need to distinguish between Systems Engineering, Operations Research and Eng. Management

Kind of person for Systems Engineering?
• A people person; You want human interaction but don’t want to give up your talent; Want to look at the big picture
• Good at math and did well at science but don’t want to stare at a computer screen for your entire career; Not just design “I” brackets. You love technical things but don’t want to fly a desk; Don’t lose your technical background. Systems is a good balance between technical and management
• It’s about negotiations, trading between different considerations
• For people from any background who can accelerate their career in one year by getting all the skills in Systems
# e-Questionnaire Results - Systems

**Cornell’s Strengths Ranked**

<table>
<thead>
<tr>
<th>Rank</th>
<th>2010 Students</th>
<th>2011 Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Its Ivy League</td>
<td>Ivy League</td>
</tr>
<tr>
<td>2nd</td>
<td>Cornell one of few to offer Systems Engineering</td>
<td>Cornell one of few to offer Systems Engineering</td>
</tr>
<tr>
<td>3rd</td>
<td>Project-based curriculum</td>
<td>Project-based curriculum</td>
</tr>
<tr>
<td>4th</td>
<td>Interdisciplinary</td>
<td>Premium faculty and teaching</td>
</tr>
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</tr>
<tr>
<td>6th</td>
<td>Short Cornell program</td>
<td>USNWR ranking</td>
</tr>
<tr>
<td>7th</td>
<td>USNWR ranking</td>
<td>High quality student body</td>
</tr>
<tr>
<td>8th</td>
<td>High quality student body</td>
<td>Short Cornell program</td>
</tr>
<tr>
<td>9th</td>
<td>Alum network</td>
<td>Alum network</td>
</tr>
<tr>
<td>10th</td>
<td>As Cornell grad, convenient access</td>
<td>As Cornell grad, convenient access</td>
</tr>
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</table>
e-Questionnaire Results - Systems

"Lack of awareness of Systems Engineering prevents a significant number of engineering students and professionals from choosing this program."

“Agree” & “Strongly Agree”: 61%
Minimal awareness of Systems Engineering is a major obstacle to “finding” Cornell program, therefore opportunity for Cornell to educate the market about Systems Engineering and “own” this growing field.

*A Public Relations Strategy*

... In addition to more traditional direct communication about Cornell program
Student Surveys – Civil and Environmental, and Engineering Management

• Focus Group - November 9, 2011

• E-Questionnaire (*In progress*)
Focus Group Results – New Students
Civil and Environmental, and Engineering Management

• Engineering Management’s marketing being located in School of Civil and Environmental Engineering is confusing, especially given variety of students’ undergrad disciplines
  – Prospective students: Don’t look for Engineering Management on CEE web site
  – Current students: Projects, courses and job listings limited
• Project-based not well known
• Some other institutions ally with business school for Engineering Management
• International experience important
• Indian Diaspora in U.S. influential
Next Phase: Competitor Analysis

**Systems Engineering**
- Georgia Tech
- U Penn
- MIT
- U of Michigan
- Carnegie Mellon
- Columbia

**Civil and Environmental; and Engineering Management**
*(To be confirmed by e-Questionnaire)*
- Carnegie Mellon
- Dartmouth
- Duke
- U of Rochester
- Stanford