At this point in the semester, your team will begin the design and detailed development of a single product platform concept (or possibly top 2 concepts). It will become increasingly more important to be visualizing and testing your ideas in 3D (in the physical world, not merely in the virtual world). In class the faculty has emphasized, “Prototype early and often... fail your way to success.” You are strongly encouraged to quickly (and frequently) model your ideas.

1. The fastest way to visualize a 3D form is by using either foam core, foam blocks (form dependent), plastic sheets, paper, cardboard, sheet styrene, etc. for rapid visualization, in order to effectively evaluate the design in real space.

2. If appropriate, the engineers should begin creating a mechanical bread-board of the selected concept, a working demonstration of the principle being proposed.

3. These models (at various levels of detail & finish) provide an effective means for volume studies, use, and form factor studies based upon full scale layouts.

4. The models and bread-boards provide the designers and engineers the opportunity to begin the process of synthesizing both aspects of this development effort into a single successful product platform concept.

5. As the ideas evolve, begin to generate the 3D geometry in either SolidWorks or Pro-E. This data can provide Pactiv with STL files, should it be necessary to engage their assistance (model shop) in the prototype process. Each team should rely on their Pactiv contact and leverage their industry experience for specific approaches to materials and processes for fabrication of models, and/or prototypes.

6. These DEUs (Design Evaluation Units) - models, bread-boards, rapid prototypes, will provide valuable discussion and evaluation tools for the entire team and allow the business/marketing students to be an active part of the process.

All students who have completed the A&A Project Lab Orientation are able to fully participate in the fabrication of these models.

1. Fabrication of full scale volume studies, form factor studies, and mechanical bread-boards. Culminating with end of term fully finished models. Keep in mind, this is an on-going process, the objective is to effectively iterate the design over multiple physical embodiments, learning and strengthening the concept from each previous version.

2. Generate 3D geometry, export .STL files, and fabricate rapid prototypes as is appropriate to the product platform concept.

3. Photograph the models 1) as hero; and 2) in situ, for end of term presentation.

4. As these models become available at the various stages, share them with the class and faculty, incorporate them into the in-class reviews.

Due Date

as models become available... through... Tuesday, April 25, 2006

Final presentation to Pactiv Corporation at Pactiv, Vernon Hills R&D facility