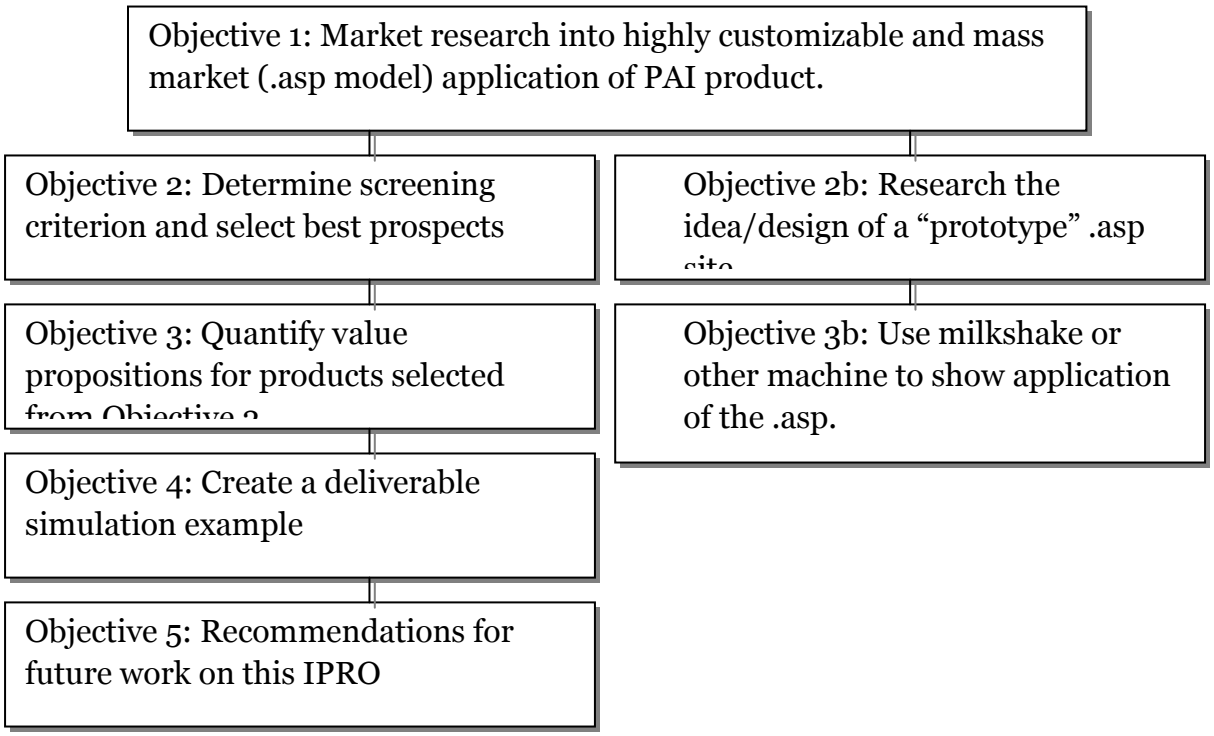
IPRO 316 Project Plan

New Applications for Virtual Reality Training

September 28, 2007

Objectives:



We have quite a few objectives for this IPRO. Our first objective is to research into both industrial and mass market applications of the Product Animations technology. After this first objective, we take 2 paths. The first leads to determining a screening criterion to select the best industrial prospects. We then plan to quantify the value propositions for the prospects selected from objective 2. When this is finished, we will create a deliverable simulation example, and finally write down any and all recommendations for future work with this IPRO. The other path leads to researching the idea or design of an ASP website. After this has been implemented, we want to use a PAI example of a milkshake machine, and show this on the ASP at IPRO day.

Background Information:

Training operators on complex industrial equipment is a $15 billion industry. The pharmaceutical, semiconductor, and food industries are significant segments of the training market where training is particularly difficult and expensive. A large proportion of this training necessitates removing critical processing and packaging equipment from active service, resulting in lost productivity and sales. The cost of equipment downtime for training and the resulting loss of production can range from tens of thousands to hundreds of thousands of dollars per year, far exceeding the cost of the training itself. Equipment operators and their outsourced training providers have sought to avoid or reduce these costs by offering supplemental training, e.g., instructor-

led seminars, manuals and videos. However, research has demonstrated that operator cognition and skill development is significantly higher (up to 9 times higher) when a trainee can see or visualize the item, look at it from a variety of aspects and interact with it, or in other words, when the person can learn by doing. Visual simulation training, in which the trainee learns in a 3-D, virtual environment, is the preferred alternative to other passive training methods, but, to date, the extremely high cost of harnessing this technology has limited its application.

Product Animations Inc. (PAI) is a technology company providing product and services to develop 3-D visual simulations for interactive operator training on industrial equipment. Using PAI's technology the cost and time to produce these programs is reduced by at least 60% versus other options. PAI's proprietary software product, VRTrain, takes digital assets, such as computer-aided design (CAD) drawings, and other graphical files and efficiently converts them into 'virtual reality' simulations, allowing industrial equipment buyers to train new operators more effectively at far less cost than traditional passive training. PAI's technology has been proven with Bosch Medical Packaging, G.D. Searle, Wyeth, Niro Soavi and others, thus confirming the validity, cost competitiveness and promise of PAI's visual simulation tools for the desktop computer.

The company's business to date is highly concentrated in the Pharmaceutical industry where equipment is very expensive, product changeovers are frequent and operator interaction is significant. Downtime for training or from miss-operation is very costly. The value proposition in this environment is very high and easily supports the company's current business model.

IPRO 316 proposes to find profitable new markets and applications of this technology beyond operator training in the Pharmaceutical industry, either in industry or for the end user, which would benefit from PAI's products.

Methodology/Brainstorm/Work Breakdown Structure:

A) The problems are:
   i. Research possible markets for PAI products beyond that of the pharmaceuticals production companies and create a list to deliver to PAI.
   ii. Research possible new methods of delivering the product and decide if these options are feasible for PAI to use for their products. These methods include:
      i. On a website
      ii. DVD

B) In order to find new possible markets for PAI products, the team is first doing general research to find different companies and products that could benefit from the training materials PAI creates. After finding a healthy list of options, the team as a whole is refining the list down to a select few for more in depth research. As part of the team is doing more in depth research, other members of the team will create a list of criterion with which to rate the select list of

companies in order to find one or two very promising options. Also, a portion of the team will be researching new venues for marketing the finished product. The research will be focus around the possibility of using as ASP website to market the products.

Our goals to complete for this IPRO are to develop a list of markets for PAI to purse for developing into new products and also decide if any new marketing tools would work for PAI products. In addition, the team will decide if it is possible to create a simple example of the new marketing tool, and create one if the group decides it on doing it.

C) The testing involved with finding the new markets is simply going over our list of possibilities with PAI and having them decide if our options will work out. As for the methods of marketing, the first step will be the creation of prototypes. After prototypes are created and reviewed by team members, the prototypes will be presented to PAI to find out their view of our prototypes.

D) All basic research and presentations will be stored on a single server for future use. This includes companies looked into (both that are deemed viable and not viable options for PAI), the presentations used to show the team, and all presentations and information delivered to PAI. The information about new marketing venues will also be included, as well as all work done to create prototypes. If a website is created by the group, a link to the site will also be included in the files saved on the server.

E) All feedback from PAI will be used to help direct the work after receiving the feedback. If the feedback is received at the conclusion of this semester, the group will sum up the details and document them for use by future IPRO groups.

F)

Project Plan Lead Author	Kyle
[1,4] Objectives/ expectations [5] Budget	Ian
[2] Background	Jeff
[3] Methodology	Erik

[7,8] Team assignments, Designated roles	Shigy

Expected Results:

PAI is looking for other markets to branch out as well as the potential for severing some of their products over the Internet. Because of the limited manpower of the company, this group will work to research opportunities on the company's behalf. By finding a new market for PAI, we will be accomplishing exactly what the company is looking for.

Our expected results for our main research objective:

Through research we expect to find two promising markets for PAI to expand.

Using one of these markets and PAI resources, we will deliver an initial simulation. This simulation will provide a proof of concept for the company to expand on.

Our expected results for an ASP prototype:
Using a simulation that is already created, we will produce a simulated asp to demonstrate the feasibility and design of a real web site.

Project Budget:

Description	**Cost**	**Approximate timeline**
Purchase of Demo software	$100	Mid semester
ASP development cost	$100	Mid semester
IPRO Project display (IPRO day)	$200	End semester
Milkshake	$200	End semester

Schedule of Tasks and Milestone Events:

Please see attached document for Gantt Chart.

Individual Team Member Assignments:

First Name	**Last Name**	**Major/Minor**	**Skills / Strengths**	**Experience / Academic Interest**	**Team (Tech / Business)**	**Assignments done for IPRO so far.**	**L: Leader S: Subteam M: Member**

Ah reum	Jeong	Business Administration (Marketing)	Computer: Excel, Power Point, Word	Received an excellence prize in marketing strategy contest in 2006 Conference Assistant in APEC senior office meeting in Korea in 2005 Market Researcher in PHOENIX COMMUNICATION, Seoul, Korea in 2004 summer /Interested in marketing and sales	Business	Researching VR in chemical lab. Participated in Ethic seminar.	M
Erik	Doolittle	Aerospace and Mechanical Engineering/ Air Force Aerospace	Microsoft Office, CAD, Engineering Graphics, Minimal C++	Sustainable fuel sources (ie. Hydrogen fuel cells, PCM in batteries, etc.)/ Marketing research and project application	Technical	Researched John Deere agriculture as possible VR application. Collaborated team work schedules. Formed contacts within the JD Corp. and received task specific information.	S
Erik	Mead	Electrical Engineering	Microsoft Office, Pspice, Decent Java	Practical application of engineering practices	Tech/ Business	Reasearched Microprocessors. Done agendas for meetings and Project plan sections.	S
Ian	Roe	Aerospace Engineer	Microsoft Office, ProEngineer, Leadership, Budgeting	Interested in evolving technologies and entrepreneurship	Business/ Tech	Mintues, Research into Heavy Industry and Energy.	M
Jeffrey	Stanford	Mathematics / Computer Science	Office software; experience in writing a code of ethics	Interested in applications	Business/ Tech	Went to ethics seminar. Researched applications for VR in the food industry.	M

Jeong shik	Kim	Business Administration	Microsoft Office: Word, Excel, Powerpoint	Interested in market research	Business	Researched for VR in military exercises. Went to Business Planning Seminar about Conducting Market Segments.	M
Kyle	Knopp	Internet Communication	Microsoft Office, Macromedia Dreamweaver, Macromedia Fireworks, Adobe InDesign, General Web Design	Interested in ASP Model, exploring new opportunities for PAI. Experience in Web Design	Business	Researched for VR in trade school applications. Went to Project Management Seminar about how to manage your project effectively.	M
Mark	Malanowski	Computer Science	Backend web development, general programming, organization, public speaking, writing.	General programming, public speaking, writing experience. Academic interest is information security.	Tech	Research into ASP's, Project Management Workshop	M
Nick	Cantoni	Computer Science	MS Office, Programming	Work-like collaboration	Business/ Tech	Market research, collect skills/interests	M
Shane	Steward	Computer Science	Microsoft Office	Web development	Tech	Attended IPRO games, Ethics Workshop, and Project Management Workshop	M

Designation of Roles:

A. Assign Meeting Roles

Minutes Taker:	Ian Roe
Agenda Maker:	Erik Mead

Time Keeper:	Erik Mead

B. Assign Status Roles

Master Schedule Maker:	Erik Doolittle
iGROUPS:	Jeff Stanford